J000369-TA01b
May 2023

Proposed Residential Development of 35 New Dwellings

Land off Maes Meurig, Meliden, Denbighshire

Transport Assessment

Prepared on behalf of:

Kingscrown Land & Commercial

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1.0 INTRODUCTION

1.1 This Transport Assessment (TA) has been prepared by Focus Transport Planning Ltd (Focus TP) on behalf of Kingscrown Land & Commercial to consider highways and transport issues with respect to proposals for the development of land off Maes Meurig, Denbighshire for 35 new residential dwellings. The purpose of the report is to apprise the Local Planning and Highway Authority (LPA & LHA), Denbighshire County Council (DCC), of the proposed highway access arrangements to support residential development of the site and the anticipated local transport network related effects of the operation of such a scheme. A formal planning application for the residential proposals is anticipated to be submitted in Spring / Summer 2023.

1.2 The application site comprises land to the northern boundary of the settlement of Meliden, Denbighshire, but is within easy walk of a range of local shops and services and the route of regular bus services. It is envisaged that residential development of the site could provide the opportunity to deliver up to 35 properties, via a mix of housing types, with the site to be served via a single new access point linking directly to the existing local residential cul-de-sac route of Maes Meurig.

1.3 The scope and nature of matters considered within this report reflects issues that have been established during preliminary discussions with officers of DCC highways department. The report therefore includes an assessment of the proposed site access strategy via Maes Meurig, review of the operational performance and safety of the key connecting local junction of The Grove / A457 Ffordd Talargoch and development traffic effects at other locations within the immediate settlement of Meliden.

1.4 The core structure of the remainder of this TA report is therefore as follows:

- A description of the location of the application site and its planning status, identification of prevailing national and local planning & highways policy and a review of other relevant local planning and highway matters.

- A review of existing local highway network conditions – including an analysis of existing observed baseline traffic levels and historical road safety records.

- An audit of sustainable transport opportunities available in the immediate vicinity of the application site, including a review of local walking & cycling catchments and accessibility to public transport.

- A description of the main development elements proposed – including a review of proposed vehicle and pedestrian site access arrangements, car parking and large vehicle servicing.

- An assessment of the anticipated travel demand associated with the application scheme during critical weekday periods and the predicted local assignment of this traffic.

- An assessment of the practical operational effects of the re-development proposals over the immediate local highway network.

- Summary and conclusions.

2.0 SITE LOCATION, EXISTING SITE USE & RELEVANT PLANNING POLICY

2.1 Site Location

2.1.1 The application site is located to the northern edge of the settlement of Meliden, a village to the southwest of Prestatyn. A plan illustrating the strategic location of the application site in relation to the surrounding built up areas of Meliden and Prestatyn and the local distributor road routes of the A574 and A548 is included as **Figure TA1** to this report, with an aerial photo plan of the existing site layout and immediate local streets included as **Figure TA2**. The aerial image shows the site in the context of the immediate local road routes of Maes Meurig, Ffordd Gwilym / The Grove, A547 Ffordd Talargoch / Meliden Road and Ffordd Penrhwylfra.

2.2 Existing Site Layout and Planning Designations

Existing Site Land Use

2.2.1 The application site is of approximately 0.87 hectares in size and comprises undeveloped scrubland to the northern built-up edge of the settlement of Meliden. To the north and west, the land is bounded by additional undeveloped land, to the east by a large property and associated grounds (accessed off Cefn-Y-Gwrych) and to the south by the alignment of the unadopted cul-de-sac section of Maes Meurig and a local footpath route (DCC PROW Ref: 205/22). To the south west of the site is the local residential cul-de-sac road of Ffordd Gwilym.

2.2.2 The site is currently undeveloped and is not understood to be in regular use. There does not currently appear to be any available existing vehicular access point to the site, with access limited to informal pedestrian access via gaps in existing hedge boundary features.

Planning Status

2.2.3 The application site represents an allocated residential site within the current adopted Denbighshire LDP (2006-2021), under Policy BSC1 ‘Growth Strategy for

Denbighshire' (see **Figure TA3**). The allocation text identifies that the site provides the potential for 30 new dwellings as part of the defined 'lower growth town' of Prestatyn / Meliden. As part of the allocation process for the LDP, it is understood that DCC undertook a preliminary review of the site and noted the following with respect to highways and access matters:

- The site is located in Meliden a town providing access to some local services.
- The site lies within close proximity to bus stops, providing a regular service to Rhyl & Prestatyn.
- It is considered that suitable highway access to the site could be created, however, a detailed Transport Assessment would be required to be prepared at the planning application stage to provide comfort in relation to network capacity.

2.2.4 The application site is also identified as a formal 'candidate site' (site reference CS-43E-126) as part of the development of the replacement Local Plan (see **Appendix TA1**), with the associated candidate site plan identifying that the site offers the potential to comply with the LDP preferred strategy. The 2019 draft LDP Strategy identifies a proposed level of future housing growth within the next plan period of 3,775 new homes. Meliden is identified as a Category 2 'Local Centre' within the LDP Preferred Strategy settlement hierarchy, with Local Centres defined as "settlements providing a more limited range of medical, education, financial and retail serves than main centres. Settlements with a local role in the delivery of services and facilities for the surrounding settlements and open countryside". The proposed LDP spatial strategy notes that new development will be focussed on category 1 – 3 settlements.

2.3 Relevant Planning Policy Framework

2.3.1 The following paragraphs provide a summary of transport related planning policy matters that are considered relevant to the application scheme. This review includes consideration of transport policy guidance set out in both national and local planning and transport policy documentation.

National Planning Policy: Future Wales – the National Plan 2040

2.3.2 Future Wales represents the national development plan for Wales to 2040, and was adopted in February 2021. With reference to transport matters, this document seeks to ensure "a Wales where people live in places where travel is sustainable', identifying that sustainable transport much be "embedded within development to enable easy and convenient access from one place to another".

2.3.3 This document references the Active Travel (Wales) Act 2013 as the influence to integrating active travel with new development. The Active Travel Guidance (February 2020) has been referenced in the design of the site access which incorporates footways and dropped kerbs/tactile paving.

National Planning Policy: Planning Policy Wales (PPW)

2.3.4 PPW11 (updated 24 February 2021) sets out the land use planning policies of the Welsh Government, and is supported by a series of Technical Advice Notes.

2.3.5 Transport is considered in detail in Chapter 4.1 of PPW. The document sets out the aims "to ensure new development is located and designed in a way which minimises the need to travel, reduces dependency on the private car and enables sustainable access to employment, local services and community facilities."

2.3.6 The document states that this will be done by "integrating development with sustainable transport infrastructure and designing schemes in a way which maximises provision and use of sustainable forms of travel, including prioritising these modes over the private car."

2.3.7 The document states that the planning system can assist with improving transport choice and achieve the above aims in the following ways:

- Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;
- Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and
- Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles.

2.3.8 Accordingly, this TS has been prepared to include the consideration of; accessibility by sustainable modes, including walking, cycling and public transport; road safety; and the impacts of the development on the local highway network.

Technical Advice Note 18: Transport (TAN18)

2.3.9 PPW is supplemented by Technical Advice Note (TAN) 18 which provides detailed guidance on implementing the transport objectives contained in PPW.

2.3.10 TAN18 sets out thresholds of development at which formal transport assessment is considered as being necessary, identifying a threshold of greater than 100 dwellings for residential development schemes. Given that the application scheme only represents a development scheme of circa 20 dwellings, there is an argument that formal transport appraisal of the project is not required. However, as the proposals include for direct vehicle access to a County A-road standard route (A549), it is considered that the preparation of a technical assessment document is appropriate in this case.

Denbighshire Local Development Plan 2006 - 2021 (DLDP)

2.3.11 The Denbighshire Local Development Plan (DLDP) is the adopted development plan for Flintshire for the 15-year period 2000 – 2021. Although the adopted LDP became time expired at the end of 2021 it remains the adopted Development Plan for Denbighshire this time, as there have been delays in the preparation of the

replacement Local Plan. DCC are at the early stages of preparing a replacement Plan for the County, with the May 2019 Draft Preferred Strategy understood to represent the most recent statement on future Local Plan matters.

2.3.12 In advance of the adoption of a replacement Local Plan, the policies with the 2006-2015 DLDP remain the reference planning guidance when considering the suitability of new development. DLDP policies relevant to the consideration of highways and transport matters associated are as set out below:

Policy RD 1 - Sustainable Development and Good Standard Design

Development proposals will be supported within development boundaries provided that all the following criteria are met…

vii) Provides safe and convenient access for disabled people, pedestrians, cyclists, vehicles and emergency vehicles together with adequate parking, services and manoeuvring space. Proposals should also consider impacts on the wider Rights of Way network surrounding the site; and

viii) Does not have an unacceptable effect on the local highway network as a result of congestion, danger and nuisance arising from traffic generated and incorporates traffic management/calming measures where necessary and appropriate. A transport assessment and travel plan will be required where appropriate; and

ix) Has regard to the adequacy of existing public facilities and services….

Policy ASA 1 – New Transport Infrastructure

Development proposals for the provision of new transport infrastructure and improvements to existing infrastructure facilities will be supported providing that the following criteria are met:

- ***there is a need and justification for the proposal on economic and/or social grounds; and***
- ***there are no unacceptable effects on the natural and built environment; and***
- ***provision is made for safe access by all users, including cyclists, pedestrians and the mobility impaired.***

Policy ASA 2 – Provision of Sustainable Transport Facilities

Development proposals expected to result in a need to bring forward improvements to public transport, walking or cycling infrastructure will be required to incorporate or contribute to the cost of their provision. Subject to individual assessments, schemes may be required to provide or contribute to:

- ***Capacity improvements or connection to the cycle network;***
- ***Provision of walking and cycling links with public transport facilities;***
- ***Improvement of public transport services.***

Policy ASA 3 – Parking Standards

Development proposals, including changes of use, will be expected to provide appropriate parking spaces for cars and bicycles. If the use of a property or premises requires parking infrastructure for mobility impaired people, these facilities will be taken into account when determining the amount of parking space required. Consideration will be given to the following circumstances (where they apply) in determining parking provision:

- ***The site is located within a high-densely populated area;***
- ***Access to and availability of public transport is secured;***
- ***Parking is available within reasonable distance of the site;***
- ***Alternative forms of transport are available in the area.***

2.3.13 Supporting text to policy ASA1 also notes that:

"Major developments will have implications on existing travel patterns in an area. Locating retail, housing, education facilities and health services can cause change to travel directions, travel frequencies and the choice of means of transport. A Transport Assessment for a proposed development should assist in predicting implications and identifying measures to counteract the likelihood of negative impacts. Like non-motorised user audits, the conclusions and recommendations of a transport assessment should be incorporated into the development proposal.

Information with regard to transport assessment requirements and process can be found in Technical Advice Note (TAN) 18: Transport, Appendix D."

2.3.14 It is noted that the Draft Preferred Strategy for the replacement Local Plan states the following regarding transport and accessibility matters:

"Proposals for new facilities, and improvements to existing facilities, which improve accessibility to employment and services, particularly by sustainable means, will be supported.

Developments will be expected to make provision for Active Travel and green infrastructure as part of their design, and link into wider networks."

2.3.15 The application scheme would help to meet the core transport and accessibility policy objectives identified in prevailing and draft future Local Plan policy, by locating the proposed residential development adjacent to existing mature residential areas and within an acceptable walking distance of a small range of local shops / 'everyday' services. Furthermore, the site would be designed and developed to encourage trip making by alternative travel modes to the private car (walking / cycling / public transport).

North Wales Joint Local Transport Plan 2015

2.3.16 The North Wales Joint Local Transport Plan (LTP) was jointly prepared by the six North Wales Local Authorities. The LTP's vision is to "remove barriers to economic growth, prosperity and well-being by delivering safe, sustainable, affordable and effective transport networks".

2.3.17 The LTP aims to address the following key issues for North Wales:

- The ability of the strategic road and rail corridors to provide the necessary good connectivity, for people and freight, within North Wales, to the ports and to the rest of the UK to support the economy and jobs, including tourism;
- The lack of resilience of the road and rail networks to planned and unplanned events including extreme weather;
- The need for good access to and between the three Enterprise Zones in North Wales;
- The lack of viable and affordable alternatives to the car to access key employment sites and other services; and
- The need for good road links to / from the trunk road network into the rural areas to help retain the viability of local businesses and support the Welsh language and culture.

2.3.18 The LTP provides the strategic baseline for considering developments that have a transportation element within the wider area. With reference to the proposed residential development which in the subject of this TA, consideration will be made

of the wider integration within the highways network and the promotion of access by sustainable travel modes.

2.4 Other Relevant Planning Matters

2.4.1 It is considered relevant to note that new residential development has historically been proposed at the adjacent Mindale Farm site. A planning application (DCC Planning Ref: 20218/0750) was submitted for this site in 2018 and subsequently refused by DCC in September 2019, against officer recommendation.

2.4.2 It is noted that highways and transport matters represented one of the reasons for refusal of the Mindale Farm proposals, however, whilst refusal of the scheme was upheld following Public Inquiry, it is noted that the final Inspector's decision letter noted that refusal was on the grounds of surface water drainage & flood risk and that the Council's identified highways reasons for refusal were rejected. Ultimately the Inspector noted the following with respect to the highways matters raised by the Council:

> ***"13. No objections were raised by the Highways Authority prior to the determination of the planning application, subject to planning conditions being imposed. The Council's reason for refusal and its subsequent Statement of Case are non-specific, with little to indicate concerns over particular junctions or areas. Nevertheless, technical evidence was submitted by the LPA at the Written Statement of Evidence (WSoE) stage of the appeals process and, along with the evidence submitted at the Inquiry, it became clear that the concerns relate principally to the Ffordd Penrhwylfa/ A547 priority junction and, in particular, the right turn out of the minor road during peak times in the morning. Given that I have not seen any persuasive arguments to lead me to deviate from the Inspector's conclusion in the previous appeal that the local highway infrastructure could generally accommodate the increased traffic generated by the proposed development without harm to highway safety [Appeal Ref: APP/R6830/A/17/3174131], I shall concentrate on the most recent technical objections relating to the Ffordd Penrhwylfa/ A547 priority junction."***
>
> ***"16. …I have not seen any cogent evidence to lead me to conclude that the development would lead to an unacceptable form of congestion and neither have I seen anything to suggest that the delays associated with the appeal scheme would be materially worse than what would have been anticipated when the site was allocated for residential development. Indeed, the observations made at the time of my site visit were that the***

junction is not particularly unusual for such a built-up area and the arguments that the proposed development would lead to unacceptable risk taking at the junction in question remain unsupported by robust evidence. It is also notable that the appellant has not previously been asked to provide mitigation at this junction and it is relevant to note that the evidence indicates that there are no records of any personal injury accidents within the vicinity of the junction.

17. I accept that the delays referred above may represent an inconvenience to some road users. However, the evidence suggests that such impacts would be modest and limited to relatively short periods of time. As such, I remain unconvinced by the Council's suggestion that such highway impacts would represent a material threat to highway safety. I also remain unconvinced that such impacts would have an unacceptable negative impact on the well-being and quality of life of existing and proposed residents.

18. In coming to these conclusions, I have fully considered the in-combination effects associated with committed developments within the area, including those granted planning permission after the refusal of the application subject of this appeal. However, I have not seen anything to lead me to deviate from my overall conclusion that the highway impacts would be acceptable…"

2.4.3 The consideration of the Mindale Farm site at appeal allowed for the identification of areas of common ground / agreed methodology for the consideration of new residential related traffic within the settlement of Meliden. To ensure on-going consistency of approach, relevant agreed assessment criteria have been adopted, where practical, as part of the analysis work set out in this TA report.

3.0 REVIEW OF EXISTING LOCAL HIGHWAY NETWORK CONDITIONS

3.1 Description of the Local Highway Network to the Application Site

3.1.1 As noted in section 2.2 to this report, the application site is directly fronted along much of its southern boundary by the western cul-de-sac section of Maes Meurig. Reference to DCC adoption records (see **Figure TA4**) suggests that whilst the majority of the Maes Meurig road corridor appears to be adopted, the immediate site frontage cul-de-sac and adjacent terminal junction with the unadopted track route of Cefn-Y-Gwrych are not identified as forming part of the adopted highway network. The cul-de-sac section of Maes Meurig is of circa 4.8m carriageway width, with a circa 1.8m segregated footway to the non application site side and serves 5-dwellings (3 detached properties and 2 semi-detached), all benefiting from in-curtilage private drives. The route is street lit and terminates at a gated access (vehicle gate and pedestrian 'kissing gate') to the public right of way (DCC PROW Ref: 205/22) that continues westwards to Ffordd Ty Newydd (see **Appendix TA2**).

3.1.2 To the east of the cul-de-sac section of Maes Meurig is the unlit unadopted route of Cefn-Y-Gwrych. This route serves a small number of immediate frontage properties, before narrowing to a rough single-track character route serving a small number of terraced properties before ultimately connects to Isfryn Road. Existing signs at the junction with Maes Meurig identify Cefn-Y-Gwrych as being private, with access stated as being restricted to 'authorised users only', albeit that there is no physical restriction on vehicle or pedestrian access from Maes Meurig.

3.1.3 To the south of the junction with Cefn-Y-Gwrych, Maes Meurig is of generally 5.5m carriageway width, characterised by frontage residential development and a 2.0m segregated footway to the eastern side. Site visits suggest that some on-street parking takes place on this section of route, despite all frontage properties benefitting from in-curtilage driveway or garage parking. To the western side of the route is a wide landscaped verge area and separate short (circa 115m) parallel cul-de-sac route (also known as Maes Meurig), which serves 13 bungalow properties. This cul-de-sac route is served by a segregated footway to the western

side of the cul-de-sac carriageway, which links back to the main Maes Meurig route via a flight of steps at the termination point of the cul-de-sac.

3.1.4 The main Maes Meurig route climbs steadily southwards for approximately 150m away from the junction with Cefn-Y-Gwrych before narrowing to 4.8m carriageway width and passing through a short section of S-bends, including a 90-degree bend at the connection to Ffordd Pennant. A pedestrian and gated vehicle connection to the Memorial Gardens play area is available to the outside of this bend feature, as well as an additional pedestrian route linking to Isfryn Road (S). An off-road footpath link is available through the adjacent Memorial Gardens, providing an alternative direct pedestrian route to A547 Ffordd Talargoch and local convenience store.

3.1.5 Ffordd Pennant is a short section (circa 55m) of straight horizontal connector road route, linking Maes Meurig to Ffordd Gwilym / The Grove and serves just four frontage properties, plus a driveway to a fifth house. This section of route is of circa 4.5m carriageway width and is characterised by circa 3m footways to both sides. Connection to Ffordd Gwilym / The Grove is via a simple give-way connection, with Ffordd Gwilym acting as the priority route. Ffordd Pennant continues onwards to the west, effectively forming a crossroad with Ffordd Gwilym / The Grove, with the western section of route providing access to additional frontage residential properties and a link to the local road route of Ffordd Ty Newydd. Overall the section of Maes Meurig and Ffordd Pennant that directly serves the application site land (i.e. the area to the east of Ffordd Gwilym) is noted to serve less than 50 existing properties in total (including those properties fronting the immediate unadopted section of Cefn-Y-Gwrych and other Maes Meurig cul-de-sac arms).

3.1.6 The junction of Ffordd Pennant and Ffordd Gwilym / The Grove provides slightly restricted lateral visibility from the Ffordd Pennant eastern arm in the non-leading direction (to the left), due to the presence of an adjacent property boundary hedge feature (see **Appendix TA2**). In practice this visibility is not noted to give rise to material highway safety issues (no road safety record at this location – see section 3.3 to this report) and reinforces the need for side road traffic to stop and give-

way to through traffic on Ffordd Gwilym / the Grove. In practice, baseline traffic demand at this location is generally very low, with typically less than 2 vehicles per minute passing through the junction (either on Ffordd Gwilym / The Grove or the Ffordd Pennant side road at peak times.

3.1.7 To the north of the junction with Ffordd Pennant, Ffordd Gwilym is a cul-de-sac route serving circa 35 frontage properties. To the south, the route is known as The Grove and provides a short section of uphill route (circa 85m) before terminating at a simple T-junction with the main district distributor road route of A547 Ffordd Talargoch. The Grove is a circa 7m carriageway residential road route with minimum 1.8m – 2.0m footways to both sides for the section between Ffordd Pennant and Ffordd Talargoch.

3.1.8 Review of the layout of the terminating junction of Ffordd Gwilym (The Grove) / A547 Ffordd Talargoch demonstrates that it is characterised by a good standard left-turn entry radius (circa 8m), but relatively limited left-turn exit radius. The layout of the junction is such that traffic waiting at the give-way line at the side road access benefits from good lateral visibility, at levels well above minimum 2.4m by 43m sightline requirements for access to a 30mph route (see **Figure TA5**). The A547 Ffordd Talargoch / The Grove junction is also accessed by a local driveway connection opposite The Grove side road, with this driveway giving access to a small rear parking area associated with The Star public house.

3.1.9 A547 Ffordd Talargoch is a single carriageway County A-road route of circa 7.3m operating carriageway in the vicinity of The Grove side road access point. The route operates under a 30mph speed limit, benefits from street lighting and provides segregated footways to both sides. Part of the southwestbound carriageway of the approaches to the junction with The Grove are marked as on-street parking bays, with the majority of the remainder of the route being controlled either by double yellow line parking restrictions or zig-zag markings associated with the nearby traffic signal-controlled pedestrian crossing.

3.1.10 The section of northern footway to the west of The Grove side road connection is marked as a shared footway / cycleway, providing segregated cycle links towards

Rhuddlan. This footway also links to a traffic signal-controlled crossing, which is located circa 60m to the west of The Grove side road connection. A local footway connection via Tan-Y-Maes is available to the south, lining directly to the Dyserth – Prestatyn segregated walk / cycle route.

3.1.11 To the west of The Grove access point, the A547 provides County A-road standard links to Dyserth, Rhuddlan and onward links to the A55 Chester – Holyhead trunk road. To the east the route provides connections to Prestatyn and ultimately connects with the A548 North Wales coast road which provides eastern links towards Mostyn, Flint and the Deeside industrial area.

3.1.12 Approximately 210m to the east of the junction with The Grove, the A547 connects with Ffordd Penrhwylfa at a one-way semi-circular side road connection, looping around the Miners Arms pub and other local properties. Access to Ffordd Penrhwylfa is via the western one-way entry connection, with exit onto the A547 (known as Meliden Road at this point) via a one-way connection further to the west (two exit lanes on the side road). Ffordd Penrhwylfa provides local distributor road connections to the north towards western residential areas to Prestatyn and Ffrith Beach. Sections of Ffordd Penrhwylfa are of reduced standard layout, characterised by narrow operating width and no segregated footways. Some local footway connections are available between Ffordd Penrhwylfa and the residential areas adjacent to the application site, with pedestrian connections to Maes Meurig via Isfryn Road (S).

3.2 Observed Background Local Highway Network Operating Conditions

3.2.1 Background operating conditions on key connecting links to the application site have been established via the undertaking of a local weekday traffic survey exercise at the junction of A547 Ffordd Talargoch / The Grove on Thursday 19 January 2023. This survey also included for the recording of traffic speeds on Ffordd Talargoch approaching The Grove side road connection (see **Appendix TA3** for collected traffic data).

3.2.2 Traffic flow data was collected for traditional AM & PM 'rush hour' peak periods over the time periods 07:30 – 09:30 and 15:30 – 18:00. **Figure TA6** to this report

illustrates total 'rolling hourly' total recorded traffic movements across the survey area. Review of this exercise demonstrates that maximum hourly traffic levels took place during the AM peak period 08:30-09:30, with 1437 vehicle movements recorded during this time. Maximum PM peak demand occurred for the hour 16:30-17:30, showing a broadly similar level of traffic demand, i.e. 1382 vehicle movements. HGV / bus traffic levels were noted to be less than 2% of overall traffic during rush hour periods.

3.2.3 Recorded turning movements at the A547 Ffordd Talargoch / The Grove junction for the above identified maximum AM and PM peak hours are illustrated in **Figure TA7(a&b)** to this report. Review of this information suggests that peak hour demand on the A547 Ffordd Talargoch to the east of The Grove is of the order of 1,425 vehicles during the AM peak and 1,370 vehicles in the PM peak.

3.2.4 Traffic demand using The Grove side road connection is noted to be low, being of the order of 57 two-way (in + out) vehicle trips in the AM peak and 60 in the PM peak, or circa 1 vehicle per minute.

3.2.5 This 2023 recorded traffic data has been supplemented by additional traffic data recorded at the A547 Meliden Road / Ffordd Penrhwylfa junction further to the east, as extracted from the DCC evidence submitted to the Mindale Farm public inquiry. It is understood that this data was collected in March 2020 and was agreed between the parties at the Public Inquiry as being representative of background conditions at this junction. The original March 2020 traffic survey data has been used to calculate the AM & PM peak demand for the study time periods identified in paragraph 3.2.2 and growthed to a 2023 base year by use of relevant locally adjusted 2020 – 2023 NTM growth factors (1.0278 AM Peak and 1.0275 PM Peak). This additional 2023 based data is also presented in **Figure TA7(a&b)** to this report.

3.2.6 The recorded manual speed survey information for vehicles on A547 Ffordd Talargoch approaching the application site access point is also included in **Appendix TA4**. Review of this information demonstrates the following core off-peak dry-weather speeds:

Recorded Southwestbound Traffic:

- Average Speed: 23.6 mph
- 85th Percentile Speed: 26.9 mph

Recorded Northeastbound Traffic:

- Average Speed: 27.7 mph
- 85th Percentile Speed: 30.3 mph

3.2.7 These speed survey results demonstrate that typical off-peak average operating speeds on the immediate section of the A547 Ffordd Talargoch corridor are below the prevailing 30mph speed limit, with 85th percentile speeds at or around this threshold. There is no evidence of significant volumes of traffic operating substantially above the speed limit. Southwestbound speeds were noted to be generally lower, which is considered likely to reflect the traffic calming influence of local parking bay / bus stop features located within the southwestbound carriageway.

3.3 Road Safety: Review of Personal Injury Accident Records

3.3.1 An appraisal of the operational safety of the immediate local highway network to the application site has been carried out through a review of historical Personal Injury Accident (PIA) data obtained from the crashmap.co.uk database for the 10-year search period (Jan 2012 to Dec 2021 inclusive). This database includes for all accident incidents as recorded by the police & emergency services and therefore represents 'industry standard' data utilised for the calculation of accident rates and the assessment of highway safety. The specification of a ten-year search period is well in excess of minimum study requirements recommended in good practice guidance, with the study area including for the full length of Maes Meurig / Ffordd Pennant / The Grove and the terminal junction connection with A547 Ffordd Talargoch.

3.3.2 Details of the extent of the search area and the number & location of recorded accident events are illustrated in **Figure TA8** to this report.

3.3.3 Review of the recorded accident data demonstrates that no accident events have taken place for the full length of Maes Meurig / Ffordd Pennant, including the junction with Ffordd Gwilym. A single serious class accident has been recorded to

the immediate east of the A547 Ffordd Talargoch / The Grove junction. Review of the details of this incident identify that it took place in 2017 at a location in excess of 20m from the junction, close to the local convenience store and involved a collision between a vehicle and pedestrian crossing the road.

3.3.4 Two other serious pedestrian incidents (both in 2018) have been recorded in the immediate vicinity of the local convenience store, involving persons crossing the road in this location.

3.3.5 Based on the above review of issues, it is ultimately concluded that there are no clear & substantive prevailing road safety issues involving traffic using Maes Meurig / Ffordd Pennant / The Grove, or turning to / from A547 Ffordd Talargoch, that would call the development of the application site for residential land use into question. Some pedestrian crossing issues are noted in the immediate vicinity of the local convenience store, however, this facility can be safely accessed by residents of the application site by use of the nearby controlled crossing just to the west of the junction with The Grove (see section 4.3 to this report). It is ultimately concluded that there is no clear requirement for the implementation of new highway safety mitigation measures to cater for predicted development traffic levels.

4.0 SITE ACCESSIBILTY AUDIT

4.1 Introduction

4.1.1 Development of the application site for residential land use would need to satisfy the key planning and transport related sustainability objectives of:

- Reducing the need to travel, especially by private car;
- Ensuring accessibility to a range of sustainable travel options.

4.1.2 The nature of local sustainable transport connections available within the immediate catchment of the application site are summarised below.

4.2 Access to Public Transport

4.2.1 Local bus stops to the application site are available on the A547 Ffordd Talargoch corridor. Eastbound and westbound stops with shelters, flagpost and bus boarder kerbs are located approximately 500m from the application site (150m to the west of the A547 Ffordd Talargoch / The Grove junction). An additional westbound stop (flagpost only) is located to the frontage of the Star Inn, circa 300m from the application site.

4.2.2 The bus stops on A547 Ffordd Talargoch are served by those regular frequency bus routes identified in **Table TA4.1** below. A plan of available bus route connections is also illustrated in **Figure TA9** to this report.

Table TA4.1: Bus Services Available from Local Stops on A547 Ffordd Talargoch

Service	Route	Mon-Fri / Sat / Sun Daytime Frequency
13	Prestatyn – Rhuddlan – Colwyn Bay - Llandudno Junction - Llandudno	Every 40 mins / Every 40 mins / 6 buses per day
19	Prestatyn – Dyserth – Carmel – Holywell - Bagillt - Flint	5 per day / 2 per day / No service
35 / 36	Rhyl – Prestatyn – Dyserth – Rhuddlan – Rhyl (Circular Service)	2 per hour (each way) / hourly (each way) / 2 hourly (each way)

4.2.3 Review of this bus service information identifies that the stops offer regular frequency connections to Prestatyn town centre (3-4 per hour), Rhyl (2 per hour) and other wider connections to Llandudno, Holywell and Flint.

4.2.4 Additional public transport connections are available from bus Prestatyn rail station which is linked directly to the site via the local bus services. Prestatyn station is served by trains on the North Wales coastal line (Chester – Llandudno Junction - Holyhead) and offers access to the following services (weekday daytime frequencies):

- Hourly Birmingham to Holyhead service (Crewe / Chester / Llandudno Junction)
- Hourly Manchester Airport to Llandudno service (Manchester / Runcorn / Chester / Llandudno Junction).
- 2 - Hourly Holyhead to Cardiff service (Llandudno Junction / Chester / Shrewsbury / Hereford / Newport).
- Limited frequency Holyhead – London service (Llandudno Junction / Chester / Crewe).

4.3 Accessibility to Local Facilities (Walking and Cycling)

4.3.1 In addition to the above identified local public transport connections, the application site's location within the settlement of Meliden also provides the opportunity for access to local shops, services and community facilities by foot or cycle. National planning guidance notes that walking is the most important mode of travel at the local scale, offering the greatest potential to replace short distance car trips of under 2km. Guidance produced by CIHT also notes that 800m represents an 'acceptable' walking distance to community facilities and shops, with 1.2km representing a 'preferred maximum'. 2km has been identified as a suitable walk distance for regular commuting trips and journeys to / from school.

4.3.2 As noted above, local footway connections on immediate sections of Maes Meurig / Ffordd Pennant / The Grove and A547 Ffordd Talargoch are of generally of good quality (typically of minimum 2m width) with additional local walking connections

via pedestrian only links available via the public footpath that runs along part of the southern boundary of the site and links through the Memorial Gardens.

4.3.3 A formal traffic signal-controlled crossing point of A547 Ffordd Talargoch is also available to the west of the junction with The Grove providing safe crossing opportunities and linking to the off-road Prestatyn – Dyserth walk / cycle route. **Figure TA10** to this report illustrates suitable walking catchments from the site and **Figure TA11** demonstrates the location of 'everyday' type destinations that lie within a convenient and practical walking distance, including:

- Primary schools;
- Local convenience shopping and take-aways;
- Community Centre;
- Leisure facilities, park & gym;
- Public house.

4.3.4 **Figure TA12** to this report illustrates existing key formal active travel connections within the settlement of Meliden and linking to Prestatyn which further encourage local foot access.

4.3.5 National planning guidance also notes that cycling has the potential to substitute for short car trips – particularly those journeys of 5km or less, or which could form part of a longer journey by public transport. The location of the application site allows for practical cycling access to a range of local areas including all of the built-up area of Meliden, Prestatyn and Ffrith Beach, as well as parts of the surrounding local settlements of Rhyl, Dyserth & Rhuddlan (**Figure TA13**).

4.4 Accessibility Summary

4.4.1 Overall it is concluded that the application site represents a suitable location for residential development, forming part of an established settlement and within a practical walking distance of good frequency public transport services (bus) and small selection of everyday local shops, services & facilities.

4.4.2 Such locational characteristics will deliver the potential for residents of the application site to utilise sustainable transport for some ‘everyday’ journeys and therefore meet core planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

5.0 REVIEW OF THE DEVELOPMENT PROPOSALS

5.1 Development Principles

5.1.1 The application scheme represents the development of land off Maes Meurig, Meliden for future residential land use. A masterplan illustrating the proposed general arrangements of the application scheme is included as **Appendix TA5** to this report.

5.1.2 The proposals envisage the delivery of 35 new residential dwellings, providing the following schedule of units:

- 10 * 1-bedroom apartment dwellings;
- 12 * 2-bedroom dwellings (house);
- 13 * 3-bedroom dwellings (house).

5.1.3 The attached masterplan also identifies the layout of proposed internal site vehicle arrangements, car parking areas, cycle parking and ancillary landscaping zones.

5.2 Highway Access Arrangements

5.2.1 Vehicle access to the application scheme is proposed to be taken via a new estate road cul-de-sac connection from the private cul-de-sac section of Maes Meurig, circa 22m from the existing Maes Meurig terminal junction connection with Cefn-Y-Gwrych (measured junction centre to junction centre). This new site access junction has been designed to reflect typical adoptable standard roads serving small residential developments, viz: (see also **Figure TA14** to this report)

- 4.8m main carriageway width;
- 2m footway to western side of route, connecting to existing southern footway to Maes Meurig cul-de-sac:
- 4.5m left turn in radius and 15m left turn exit radius connections to Maes Meurig.

5.2.2 The new junction design also includes for some minor road widening to the immediate section of Maes Meurig at the junction with Cefn-Y-Gwrych to allow for comfortable two-way passage of light vehicle movements between the junctions and to avoid vehicle conflicts (see **Appendix TA6** to this report for example swept path analysis of the junction and estate road). The proposed location of the new site access junction allows for the delivery of the following sightlines from the new estate road side road connection (see **Figure TA15**):

- *Leading direction visibility (to right):* 2.4m by 25m (suitable for 20mph approach speeds);
- *Non-leading direction visibility (to right):* 2.4m by 33m (suitable for 25mph approach speeds);

5.2.3 Such visibility provision is considered entirely suitable given the nature of connecting sections of Maes Meurig, which are noted to be of generally slow-speed character. Excellent junction to junction sightlines would be available between traffic waiting at the new development side road connection point and side road traffic at the Maes Meurig / Cefn-Y-Gwrych junction.

5.2.4 The internal development estate road is to be provided at a 4.8m carriageway width, with some localised widening (up to 5.2m)on the initial bend on entering the site to allow for two-way large car passing. The majority of the route would be characterised by 2.0m footways to both sides of the road corridor, ensuring direct footway access to frontage properties. The internal development highway layout has been designed to promote 20mph operation, including regular bends of maximum 30m centreline radii. Forward visibility splays of minimum 25m would be protected around all internal bends to promote safe operation (see **Appendix TA5**).

5.2.5 In addition to the vehicle access arrangements, a new pedestrian connection will be provided from the site direct to the public right of way that runs along the southern boundary to part of the site. This pedestrian only connection is likely to be of steep gradient due to site topography.

5.3 Development Car Parking & Cycle Parking

Car Parking

5.3.1 Guidance on suitable car parking levels to support new development in Denbighshire is set out in DCC Supplementary Planning Guidance Note "Parking Requirements in New Developments". Review of this document identifies that the application site would fall within 'Parking Zone 1' (i.e. County Urban Areas), with parking for new residential development in these areas to be provided as follows:

- *Apartments:* 1 space per bedroom (up to a maximum of 3 spaces), 1 space per 5 dwellings for visitors.
- *Houses:* 1 space per bedroom (up to a maximum of 3 spaces), 1 space per 5 dwellings for visitors.

5.3.2 The guidance also notes that curtilage parking and garages should be provided as the most secure parking option wherever possible, preferably located alongside the dwelling. Garages should only be counted as parking spaces if they have clear internal dimensions for a single garage of 6m x 3m.

5.3.3 It should be noted that the DCC car parking standards are 'maximum' standards. The supporting text to the guidance notes that exceptions to the delivery of these maximum standards may be acceptable under the following circumstances:

- Where the implementation of these standards would cause road safety or congestion problems additional provision will be required.

- Should a particular development not justify the levels of parking indicated, the Authority may give consideration to a variation in standards relating to the nature of development, a lower level of car ownership in urban areas and those well serviced by public transport. In these circumstances, a fully reasoned assessment of the parking provision proposed (covering areas such as existing public transport or parking provision) will be the subject of negotiation with the Council.

- Local circumstances (e.g. the availability and existing capacity of nearby parking and public transport). Each planning application will be assessed on their own merits according to the size, nature, location, density, employment and traffic generation characteristics of the proposed development.

5.3.4 In the case of the application scheme, resident car parking will be provided at the following levels that are broadly in accordance with the maximum standards set out in the SPGN, viz:

- 1-bedroom apartment properties: 1 space per unit, plus additional visitor spaces.
- 2-bedroom property: 2 car parking spaces.
- 3-bedroom property: 2 car parking spaces.

5.3.5 All parking for the 2 & 3 bedroom houses will be provided as private 'in-curtilage' frontage parking located to the back of the estate road footway. Apartment parking will be provided as a mix of either back of footway parking (units 1, 2 and 22 & 23) and dedicated parking spaces within small private parking court features, accessed from the ends of the turning head feature.

Cycle Parking

5.3.6 DCC parking standards do not set our any prescribed standards for cycle parking to support new residential development, albeit that the SPGN text does note that secure and convenient cycle parking areas may be considered. In order to encourage active travel to / from the application site and promote the management of car trip demand, the development proposals will include for the potential for secure cycle parking at each unit. This would be delivered by garage dedicated lockable cycle store features within the garden areas of the housing units and within the managed curtilage of the apartment units.

5.4 Site Servicing

5.4.1 The internal road layout to the application scheme has been designed to be able to accommodate typical service vehicle movements appropriate to a residential land use. Residential schemes typically generate a relatively low level of HGV demand, with service vehicle access being mainly restricted to waste collection and ad-hoc deliveries of goods to residents. Many of these delivery movements would likely be undertaken by Transit Van / Luton Van style max 7.5t mgw vehicles and would not require a long duration of stay on site.

5.4.2 In recognition of the need to accommodate occasional larger service vehicle movements, the application scheme internal highway layout has been designed to include for a suitable large vehicle turning / manoeuvring head area. **Appendix TA6** to this report demonstrates vehicle swept path assessment runs within the site, including the movement of large refuse collection vehicles.

6.0 PREDICTED TRAVEL DEMAND ASSOCIATED WITH THE APPLICATION SCHEME AND ANTICIPATED DEVELOPMENT TRAFFIC IMPACT

6.1 Predicted Trip Demand Levels Associated with the Application Scheme

6.1.1 This section of the TA report seeks to identify the future level of traffic demand anticipated to be generated by the application scheme. These estimates have been undertaken via reference to trip rates agreed by DCC in relation to the recent public inquiry appraisal of the nearby Mindale Farm residential scheme. These trip rates (vehicle trips per dwelling) are summarised in **Table TA6.1** below, which also includes for the application of application of these rates to the 35-dwelling scheme at Maes Meurig.

Table TA6.1 – Agreed Mindale Farm Trip Rates and Application to Proposed Development Quantum at Ffordd Gwilym

	Mindale Farm Agreed Trip Rates			Ffordd Gwilym Development Traffic (35 Units)		
	Arrival	Departure	Total	Arrival	Departure	Total
AM Peak (08:00-09:00)	0.146	0.505	**0.651**	5	18	**23**
PM Peak (17:00-18:00)	0.409	0.224	**0.633**	14	8	**22**

6.1.2 Review of the above exercise suggests that the application scheme would only be expected to result in rush hour peak traffic levels of circa 22 / 23 vehicles per hour (in + out) or less than 1 vehicle every 2 minutes.

6.2 Development Trip Assignment

6.2.1 Development traffic has been assigned to the immediate highway network based on the results of the traffic assignment exercise prepared in support of the Mindale Farm planning application and agreed with DCC highways for appraisal at the recent public inquiry. This exercise was based on local traffic surveys at the time of that application, which identified the following development traffic routing proportions (see also **Appendix TA7** to this report, which includes for an extract from the Meliden Farm TA report).

A547 Ffordd Talargoch (West of Site)

- AM Peak Arrival: 29%
- AM Peak Departure: 31%

- PM Peak Arrival: 45%
- PM Peak Departure: 30%

A547 Ffordd Talargoch (East of Site)

- AM Peak Arrival: 71%
- AM Peak Departure: 69%

- PM Peak Arrival: 55%
- PM Peak Departure: 70%

Development Traffic on Ffordd Penrhwylfa

- AM Peak Arrival: 45%
- AM Peak Departure: 41%

- PM Peak Arrival: 33%
- PM Peak Departure: 41%

6.2.2 The application of these local traffic routing proportions to the predicted Maes Meurig development traffic demand levels identified in section 6.1 above is illustrated in **Figure TA16(a&b)** to this report for AM & PM peak periods respectively. This suggests that, in practice, it is unlikely that total development traffic demand of in excess of 16 vehicles per hour would be experienced on any section of the A547 Ffordd Talargoch corridor and less than 10 vehicles per hour on Ffordd Penrhywlfa. Such traffic levels (of the order of less than 1 development related vehicle movement every 4 minutes on either the A547 or Ffordd Penrhwylfa) are not of a volume that would typically be expected to give rise to a material change in highway network operational conditions.

7.0 IMPACT ASSESSMENT

7.1 Assessment Time Periods

7.1.1 In order to ensure a robust assessment of the practical traffic impact of the application scheme, this TA report has sought to assess the time periods of likely maximum potential traffic impact. This maximum impact could be expected to occur when existing baseline flows on the immediate local network and predicted development flows combine to give rise to the highest overall hourly flows. During such time periods, local network links and junctions could be expected to be operating at maximum demand conditions.

7.1.2 For the purposes of this appraisal, development traffic network impact assessment has been carried out for the following time periods:

- AM Peak Period: 08:30 – 09:30
- PM Peak Period: 16:30 – 17:30

7.1.3 It is anticipated that the earliest that full completion and occupation of all proposed dwellings at the application site could be delivered by end of 2026. An opening year date of 2026 has therefore been utilised for the remainder of this report.

7.1.4 In addition to this opening year analysis a further 'future year' scenario has been considered for the year 2028. This test assumes a 5-year horizon from the date of planning submission (2023). The use of this 5-year assessment horizon, post submission of the planning application, is in accordance with good practice guidance for the appraisal of development related traffic impact and therefore ensures a robust appraisal of development traffic impact.

7.2 Calculation of Baseline ('Do-Nothing') & Baseline + Development ('Do-Something) Traffic Estimates

7.2.1 Baseline network traffic conditions for the future modelled years has been calculated via the application of locally adjusted National Transport Model (NTM) forecasts. The 2026 and 2028 traffic growth factors associated with NTM figures adjusted for census super output area 'Denbighshire 008' are set out in **Appendix TA8** and summarised below:

2023 – 2026 Growth Factors	*2023 – 2028 Growth Factors*
Weekday AM Peak – 1.0237	Weekday AM Peak – 1.0384
Weekday PM Peak – 1.0235	Weekday PM Peak – 1.0386

7.2.2 Scoping discussions with DCC officers have not identified any local 'committed development' schemes that need to be explicitly modelled within the network analysis. It is known that there are some local housing commitments approved within the nearby settlements of Dyserth and Rhuddlan, but past analysis of the local highway network to Meliden (Mindale Farm application) included for the effects of such development commitments as part of the general traffic growth methodology set out in paragraph 7.2.1 above.

Predicted 'Do-Nothing' Baseline Traffic Conditions

7.2.3 The application of the identified local growth factors to the observed background traffic movements recorded during the 2022 traffic survey exercise are set out in **Figure TA17(a&b)** and **Figure TA18(a&b)** for 2026 and 2028 future year scenarios respectively.

Predicted 'Do-Something' Baseline + Application Scheme Traffic Conditions

7.2.4 Calculation of the 'Do-Something' Baseline + Application Scheme traffic flow scenarios considered in this assessment are set out as follows:

- **Figure TA19** 2026 Baseline + Development - i.e. Baseline Traffic (Figure TA17) + Development Traffic (Figure TA16).

- **Figure TA20** 2028 Baseline + Development - i.e. Baseline Traffic (Figure TA18) + Development Traffic (Figure TA16).

7.3 Link Impact Assessment (Percentage Change)

7.3.1 Link flow operational assessments have been carried out for the immediate highway links to the application site, including The Grove, A547 Ffordd Talargoch and Ffordd Penrhylwfra. The effects of development traffic associated with the application scheme on these links has been identified by considering the predicted changes in hourly traffic demand values between the 2026 Opening Year 'Do-Nothing' (Baseline) and 'Do-Something' (Baseline + Development) scenarios. The 2026 modelled opening year has been utilised in this case, as it represents the year of maximum potential percentage change associated with the application scheme, when compared to Baseline traffic levels.

7.3.2 Traditionally the review of highway link impact suggests that more detailed assessment is typically only required, should traffic flow changes exceed the following guideline thresholds:

- Traffic to / from the development exceeds 10% of existing two-way traffic on the adjoining highway; or,
- Where traffic to / from the development exceeds 5% of the existing two-way traffic flow on the adjoining highways at locations where traffic congestion exists within the assessment period or in other sensitive locations.

7.3.3 March 2007 Welsh Government Guidance TAN18 Annex E (para E4) provides some further advice re: likely material increases in traffic demand, when specifically reviewing occasions under which additional analysis might be required for developments affecting the Welsh Strategic Road Network. In this case TAN18 guidance states:

> ***"When assessing whether or not to consult the Assembly…local planning authorities must give full consideration to the effects of a development's traffic would have at a junction, particularly in respect of the additional turning movements created. As a broad guide the Assembly Government would regard an increase in turning movements in the order of 5% as material in most cases, that is, a 5% increase of traffic using any link of the junction. Where the capacity of the junction is, or is near to, being exceeded, a smaller percentage increase on a link would normally be material."***

7.3.4 It is therefore concluded that a 5% threshold represents a reasonable 'starting point' for further assessment of link impact on the immediate local highway network, albeit the use of such a threshold should of course, be viewed in the context of the predicted total development traffic levels – section 6.1 to this report having already identified that total development traffic demand on any of the identified main study links could be expected to be a maximum of 16 additional vehicle movements in a peak hour.

7.3.5 **Table TA7.1** below demonstrates the anticipated changes in 2026 Baseline traffic flows associated with the addition of the predicted application scheme traffic estimates.

Table TA7.1: Predicted Changes in Link Flow on Immediate Sections of the Local Highway Network to the Application Site

	2026 AM Peak Period			2026 PM Peak Period		
	Devel	Baseline	% Change	Devel	Baseline	% Change
The Grove (N of A547 Junction)	23	58	39.4%	22	61	35.8%
A547 West of The Grove	7	1425	0.5%	9	1365	0.6%
A547 East of The Grove	16	1459	1.1%	13	1402	0.9%
Ffordd Penrhylwfra North of A547	9	382	2.5%	8	390	2.0%

Two-way vehicle flow totals

7.3.6 Review of the link flow assessment results demonstrates that the application scheme is only predicted to result in link flow increases of less than 1.25% of 2026 Baseline conditions on A547 Ffordd Talargoch and less than 2.5% on Ffordd Penrhwylfa. Such increases are well below traditional guideline 'trigger' thresholds for the undertaking of additional impact assessment and reflect the generally low

levels of development traffic demand predicted (typically of the order of 1 additional vehicle every 4 minutes on any section of A547 Ffordd Talargoch).

7.3.7 Traffic flow increases on the section of The Grove on the approach to A547 Ffordd Talargoch are predicted to be of the order of 33% - 36%. This is primarily a function of the existing very low level of baseline traffic using this route and is not considered to reflect a likely significant impact on the ability of this route and the connecting links of Ffordd Pennant and Maes Meurig to accommodate predicted future development traffic levels.

7.3.8 Research on the operating capacity of local urban access roads affected by on-street parking is limited, with existing national guidance providing no clear capacity / impact threshold. IHT Document "Transport in the Urban Environment" (1997) included a chapter titled 'Alternative Concepts of Road Link Capacity' which includes a review of the concept of 'Environmental Capacity' (section 32.4 to the document), which is defined as:

> ***"The capacity of a street or area to accommodate moving and stationary vehicles, having regard to the need to maintain the (chosen) environmental standards."***

7.3.9 Transport in the Urban Environment notes that the environmental capacity for an access road or local distributor route is typically likely to lie in the range 300-600vph (two-way), demonstrating that maximum traffic flow compatible with a good environment could be substantially lower than traffic capacity values merely determined by reference to the width and alignment of the carriageway or other constraints along its length.

7.3.10 The 1977 first edition of DB32 Residential Roads and Footways provides further support to this principle of lower operating capacity for narrower residential roads affected by on-street car parking. Appendix 4 to first edition DB32 included information relating to the calculation of delays to traffic on single-lane carriageways with passing places (which accords well to two-way roads reduced over sections to single direction operation due to on-street parking), with the information set out in DB32 based on TRL working paper TSN29R. The conclusions

of this working paper, subsequently reflected in the DB32 Appendix 4 analysis, was that:

> ***"Single lane roads with passing places spaced at between 45m and 60m (centre to centre) would give satisfactory traffic operation in housing estates at two-way flows of up to 300 veh/h. The resulting average delay to traffic is unlikely to exceed 5 seconds per vehicle over 180m. A further experiment showed that networks of single-lane roads could operate satisfactorily at similar flows levels."***

7.3.11 Based on the above review of available analysis / research, it is concluded that local access routes experiencing traffic flow levels of less than a 300vph (two-way) 'threshold' would not typically demonstrate any material evidence of unacceptable congested / over-capacity operation and, therefore, could be considered to be operating efficiently. In practice, however, it is likely that a higher threshold to this minimum 300vph (two-way) threshold would still not result in unacceptable congestion / delay issues - particularly in the case of wider routes with greater opportunities for passing place frequency in excess of 45m-60m.

7.3.12 Given the above review, it is considered that application site development traffic impact could be expected to be of only generally limited scale and would not result in 'severe' network operational effects that would require the provision of specific network capacity improvements over and above the proposed enhanced access arrangements to serve the application scheme.

7.4 A547 Ffordd Talargoch / The Grove Junction Operational Capacity

7.4.1 Notwithstanding the above conclusions regarding link impact, in order to provide a comprehensive understanding of potential operational issues of the application scheme, this TA report also includes for an appraisal of the future capacity of the terminal junction of The Grove and A547 Ffordd Talargoch (main application site traffic connection to the wider highway network). Operational capacity of this junction has been assessed using industry standard analysis software for give way junctions (JUNCTIONS – PICADY Module). The geometric parameters utilised within the model have been based on those discussed and agreed at the Public Inquiry associated with the nearby Mindale Farm application.

7.4.2 The PICADY software considers junction performance with respect to the Ratio of Flow to Capacity (RFC) and associated traffic queuing. RFC values for approach arms between 0.00 and 0.85 are generally considered to represent stable and acceptable operating conditions. Values between 0.85 and unity (1.0) represent variable operation (i.e. possible substantive queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction). RFC values in excess of unity represent overloaded conditions (i.e. congested conditions).

7.4.3 Historical DfT design guidance states the following with respect to the design of new junction schemes and operating capacity thresholds:

> ***"Due to site to site entry variation, there may be a standard error of prediction of the entry capacity by the formulae of + or - 15% for any site. Thus, queuing should not occur in the various turning movements in the chosen design year peak hour in 5 out 6 peak periods or sites, if a maximum RFC of about 85% (0.85) is used. Similarly, if a maximum RFC of 75% is used, queuing will theoretically be avoided in 39 out of 40 peak hour periods or sites.***
>
> ***The general use of designs with an RFC of about 85% is likely to result in a level of provision which will be economically justified…."***

7.4.4 The above guidance identifies that it is possible for a junction to operate with individual RFC levels of above 0.85 without unacceptable congestion and delay taking place. The 0.85 threshold identifies the optimum position at which operational capacity is maximised when viewed against the likely frequency of queuing and delay events. RFC values of above 0.85 simply demonstrate a greater potential for congestion and delay to occur, which must be viewed in the context of the extent of future year horizon under assessment and general network wide conditions.

7.4.5 Junction assessment work has been carried out for the Opening Year 2026 and future Design Year 2028 for both the 'Do-Nothing' Baseline and 'Do-Something' Background + Development scenarios. The results of these 2028 assessment model runs are summarised in **Table TA7.2** below, with relevant PICADY model outputs attached as **Appendix TA9**.

Table TA7.2: A547 Ffordd Talargoch / The Grove Junction PICADY Results

2026 Opening Year 'Do-Nothing' Baseline Conditions

Turning Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Traffic Flow (PCUs)	RFC	Queue (PCU)	Traffic Flow (PCUs)	RFC	Queue (PCU)
Exit from The Grove to A547	38	0.10	0.1	34	0.08	0.1
Right Turn to The Grove from A547	16	0.07	0.1	19	0.07	0.1

2028 Design Year 'Do-Nothing' Baseline Conditions

Turning Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Traffic Flow (PCUs)	RFC	Queue (PCU)	Traffic Flow (PCUs)	RFC	Queue (PCU)
Exit from The Grove to A547	38	0.10	0.1	34	0.08	0.1
Right Turn to The Grove from A547	17	0.07	0.1	20	0.08	0.1

2026 Opening Year 'Do-Something' Baseline + Development Conditions

Turning Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Traffic Flow (PCUs)	RFC	Queue (PCU)	Traffic Flow (PCUs)	RFC	Queue (PCU)
Exit from The Grove to A547	56	0.16	0.2	42	0.10	0.1
Right Turn to The Grove from A547	20	0.08	0.2	27	0.11	0.2

2028 Opening Year 'Do-Something' Baseline + Development Conditions

Turning Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Traffic Flow (PCUs)	RFC	Queue (PCU)	Traffic Flow (PCUs)	RFC	Queue (PCU)
Exit from The Grove to A547	56	0.16	0.2	42	0.11	0.1
Right Turn to The Grove from A547	20	0.08	0.2	27	0.11	0.2

7.4.6 Review of these capacity assessment results demonstrates that the A547 Ffordd Talargoch / The Grove junction is predicted to operate with significant spare capacity during peak periods for all future year assessment scenarios, even including for the additional of predicted application scheme traffic. Maximum RFC is predicted to be well below the 0.85 capacity thresholds and queuing would be at negligible levels. Maximum predicted junction operation would occur during the AM peak period under 2028 future Design Year conditions with maximum predicted RFC at 0.16 (exit from The Grove) and associated queuing of 0.2.

7.5 Impact Statement

7.5.1 Operational capacity assessments have been undertaken for key immediate sections of the local highway network to the application site. These results demonstrate that:

Link Flow Impact

- Predicted additional traffic levels associated with the proposed Maes Meurig residential development scheme during critical AM & PM peak periods could be expected to be generally low, with maximum development related increases on immediate sections of Maes Meurig, Ffordd Pennant & The Grove. These routes would still be expected to be operating well within recognised environmental capacity thresholds. Wider link flow effects would be minimal, being less than 1.25% of 2026 Opening Year baseline traffic demand on immediate sections of A547 Ffordd Talargoch and less than 2.5% of Baseline conditions of Ffordd Penrhwylfra – relating to traffic increases of less than one vehicle every four minutes during traditional 'rush hour' network peak periods. Such additional development flow levels would not typically be expected to result in a material / severe change in local network operating conditions.

A547 Ffordd Talargoch / The Grove

- Detailed operational capacity testing of the A547 Ffordd Talargoch / The Grove T-junction layout, which could be expected to be utilised by the vast majority of application scheme related trips, demonstrates that the junction could be expected to operate with a substantive level of spare capacity, even including for 2028 future year conditions and predicted Maes Meurig development traffic demand estimates. Predicted RFC levels would be well below critical threshold values and maximum queuing at negligible levels and would not result in a material / severe impact on through traffic movements on A547 Ffordd Talargoch.

7.5.2 Given the above review of issues, it is considered that application site development traffic impact could be expected to only be of generally limited scale and would not result in 'severe' network operational effects that would require the provision of additional network capacity or safety improvements.

8.0 SUMMARY AND CONCLUSIONS

8.1 This Transport Assessment (TA) has been prepared by Focus Transport Planning Ltd (Focus TP) on behalf of Kingscrown Land & Commercial to consider highways and transport issues with respect to proposals for the development of land off Maes Meurig, Denbighshire for 35 new residential dwellings. The purpose of the report is to apprise the Local Planning and Highway Authority (LPA & LHA), Denbighshire County Council (DCC), of the proposed highway access arrangements to support residential development of the site and the anticipated local transport network related effects of the operation of such a scheme. The application site comprises land to the northern boundary of the settlement of Meliden, Denbighshire, albeit within easy walk of a range of local shops and services and the route of regular bus services. It is envisaged that residential development of the site could provide the opportunity to deliver up to 35 properties, via a mix of housing types, with the site to be served via a single new vehicle access point linking directly to the existing local residential cul-de-sac route of Maes Meurig.

Site Location & Relevant Planning Designations

8.2 The application site is of approximately 0.87 hectares in size and comprises undeveloped scrubland to the northern built-up edge of the settlement of Meliden. The site is currently undeveloped and is not understood to be in regular use. There does not currently appear to be any available existing vehicular access point to the site, with access limited to informal pedestrian access via gaps in existing hedge boundary features.

8.3 The application site represents an allocated residential site within the current adopted Denbighshire LDP (2006-2021), under Policy BSC1 'Growth Strategy for Denbighshire'. The application site is also identified as a formal 'candidate site' (site reference CS-43E-126) as part of the development of the replacement Local Plan, with the associated candidate site plan identifying that the site offers the potential to comply with the LDP preferred strategy. Meliden is identified as a Category 2 'Local Centre' within the LDP Preferred Strategy settlement hierarchy, with Local Centres defined as "settlements providing a more limited range of

medical, education, financial and retail serves than main centres. Settlements with a local role in the delivery of services and facilities for the surrounding settlements and open countryside". The proposed LDP spatial strategy notes that new development will be focussed on category 1 – 3 settlements.

8.4 It is considered relevant to note that new residential development has historically been proposed at the adjacent Mindale Farm site, with an application for a residential scheme refused in 2019, including a highways-based reason for refusal. Whilst this refusal was upheld at appeal, on grounds of surface water drainage & flood risk, it is important to note that the Council's identified highways reasons for refusal were rejected by the Inspector, who noted that he had not reviewed any evidence that suggested that the highway impacts related to residential development in this location would be unacceptable.

Existing Local Highway Network Conditions

8.5 The site forms a southern boundary to the local cul-de-sac route of Maes Meurig, a local unadopted route, adjacent to the adopted section of the Maes Meurig residential access road and the unadopted track of Cefn-Y-Gwrych. To the south of the site the main Maes Meurig route corridor is of generally 5.5m carriageway width, with a footway to the eastern side of the route. The route then narrows to 4.8m carriageway width through a local S-bend feature and then to 4.5m over the short section of Ffordd Pennant which connects to Ffordd Gwilym / The Grove. Visibility in the non-leading direction from the Ffordd Pennant side road at this junction is slightly constrained by adjacent hedge boundaries, however, traffic speeds and volumes at this location are low and the junction shows no history of road safety issues.

8.6 Circa 85m to the north of the junction with Ffordd Pennant, The Grove terminates at a simple T-junction connection with A547 Ffordd Talargoch. Good lateral visibility is available from The Grove side road connection, well in excess of requirements for access to 30mph route. A547 Ffordd Talargoch is a single carriageway County A-road route of circa 7.3m operating carriageway width in the vicinity of The Grove side road access point. The route operates under a 30mph

speed limit, benefits from street lighting and provides segregated footways to both sides. To the west of The Grove access point the A547 provides links to Dyserth, Rhuddlan and onward links to the A55 Chester – Holyhead trunk road. To the east the route provides connections to Prestatyn and ultimately connects with the A548 North Wales coast road which provides eastern links towards Mostyn, Flint and the Deeside industrial area.

8.7 Background operating conditions on key connecting links to the application site have been established via the undertaking of a local weekday traffic survey exercise at the junction of A547 Ffordd Talargoch / The Grove in January 2023. Review of this exercise demonstrates that maximum hourly traffic levels took place during the AM peak period 08:30 - 09:30, with 1437 vehicle movements recorded during this time. Maximum PM peak demand occurred for the hour 16:30 - 17:30, showing a broadly similar level of traffic demand, i.e. 1382 vehicle movements. HGV / bus traffic levels were noted to be less than 2% of overall traffic during rush hour periods. Traffic demand using The Grove side road connection is noted to be low, being 57 two-way (in + out) vehicle trips in the AM peak and 60 in the PM peak, or of the order of 1 vehicle trip per minute.

8.8 Speed survey information for the A547 Ffordd Talargoch on the approach to the junction with The Grove, indicates that average operating speeds on the immediate section of the A547 Ffordd Talargoch corridor are below the prevailing 30mph speed limit, with 85th percentile speeds at or around this threshold. There is no evidence of significant volumes of traffic operating substantially above the speed limit.

8.9 An appraisal of the operational safety of the immediate local highway network to the application site has been carried out through a review of historical Personal Injury Accident (PIA) data obtained from the crashmap.co.uk database for the 10-year search period (Jan 2012 to Dec 2021 inclusive). Review of the recorded accident data demonstrates that no accident events have taken place over the full length of Maes Meurig / Ffordd Pennant, including the junction with Ffordd Gwilym / The Grove. A single serious class accident has been recorded to the immediate east of the A547 Ffordd Talargoch / The Grove junction. Review of the details of

this incident identify that it took place in 2017 at a location in excess of 20m from the junction, close to the local convenience store and involved a collision between a vehicle and pedestrian crossing the road. It is therefore concluded that there are no clear & substantive prevailing road safety issues involving traffic using Maes Meurig / Ffordd Pennant / The Grove or turning to / from A547 Ffordd Talargoch that would call the development of the application site for residential land use into question.

Site Accessibility

8.10 It is considered that the application site represents a suitable location for residential development, forming part of an established settlement and within a practical walking distance of good frequency public transport services (bus) and a small selection of everyday local shops, services & facilities. Such locational characteristics will deliver the potential for residents of the application site to utilise sustainable transport for some 'everyday' journeys and therefore meet core planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

Review of Key Development Scheme Principles

8.11 The application scheme represents the re-development of land off Maes Meurig, Meliden for future residential land use, delivering 35 new dwellings across a range of house types and sizes.

8.12 Vehicle access to the application scheme is proposed to be taken via a new estate road cul-de-sac connection from the private cul-de-sac section of Maes Meurig, circa 22m from the existing Maes Meurig terminal junction connection with Cefn-Y-Gwrych (measured junction centre to junction centre). This new junction has been designed to reflect typical adoptable standard roads serving small residential developments and also includes for some minor road widening to the immediate section of Maes Meurig to allow for comfortable two-way passage of light vehicle movements.

8.13 The proposed location of the new site access junction allows for the delivery of sightlines suitable for the nature of connecting sections of Maes Meurig, which are noted to be of generally slow-speed character. Excellent junction to junction sightlines would be available between traffic waiting at the new development side road connection point and side road traffic at the Maes Meurig / Cefn-Y-Gwrych junction.

8.14 The internal development estate road is to be provided at a 4.8m carriageway width, with some localised widening on the initial bend (up to 5.2m) on entering the site to allow for two-way large car passing. The majority of the route would be characterised by 2.0m footways to both sides of the road corridor, ensuring direct footway access to frontage properties. The internal development internal highway layout has been designed to promote 20mph operation.

8.15 In addition to the vehicle access arrangements, a new pedestrian connection will be provided from the site direct to the public right of way that runs along the southern boundary to part of the site. This pedestrian only connection is likely to be of steep gradient due to site topography.

8.16 Car parking at the site will be provided at the following levels, with the parking for the 2 & 3 bedroom houses to be provided as private 'in-curtilage' frontage parking located to the back of the estate road footway. Apartment parking will be provided as a mix of either back of footway parking (units 1, 2 and 22 & 23) and dedicated parking spaces within small private parking court features, accessed from the ends of the turning head feature.

- 1-bedroom apartment properties: 1 space per unit, plus additional visitor spaces.
- 2-bedroom property: 2 car parking spaces.
- 3-bedroom property: 2 car parking spaces.

8.17 In order to encourage active travel to / from the application site and promote the management of car trip demand, the application scheme will include for the potential for secure cycle parking at each unit. This would be delivered by

dedicated lockable cycle store features within the garden areas of the housing units and within the managed curtilage of the apartment units.

8.18 The internal road layout to the application scheme has been designed to be able to accommodate typical service vehicle movements appropriate to a residential land use, including an adoptable standard turning head / manoeuvring zone.

Predicted Development Trip Demand & Network Assignment

8.19 Estimates of predicted traffic demand associated with the Maes Meurig application scheme have been undertaken via reference to trip rates recently agreed with DCC in relation to the recent public inquiry appraisal of the nearby Mindale Farm residential scheme. Review of this exercise suggests that the Maes Meurig application scheme would only be expected to result in rush hour peak traffic levels of circa 22 / 23 vehicles per hour (in + out) or less than 1 vehicle every 2 minutes.

Development traffic has been assigned to the immediate highway network based on the results of the traffic assignment exercise prepared in support of the Mindale Farm planning application and agreed with DCC highways for appraisal at the recent public inquiry. This assignment exercise suggests that, in practice, it is unlikely that total Maes Meurig development traffic demand in excess of 16 vehicles per hour would be experienced on any section of the A547 Ffordd Talargoch corridor and less than 10 vehicles per hour on Ffordd Penrhywlfa.

Development Traffic Impact Assessment

8.20 Operational capacity assessments have been undertaken for key immediate sections of the local highway network to the application site. These results demonstrate that:

Link Flow Impact

- Predicted additional traffic levels associated with the proposed Maes Meurig residential development scheme during critical AM & PM peak periods could be

expected to be generally low, with maximum development related increases on immediate sections of Maes Meurig / Ffordd Pennant & The Grove. These routes would still be expected to be operating well within recognised environmental capacity thresholds. Wider link flow effects would be minimal, being less than 1.25% of 2026 Opening Year baseline traffic demand on immediate sections of A547 Ffordd Talargoch and less than 2.5% of Baseline conditions of Ffordd Penrhwylfa – relating to traffic increases of less than 1 1 vehicle every four minutes during traditional 'rush hour' network peak periods. Such additional development flow levels would not typically be expected to result in a material / severe change in local network operating conditions.

A547 Ffordd Talargoch / The Grove

- Detailed operational capacity testing of the A547 Ffordd Talargoch / The Grove T-junction layout, which could be expected to be utilised by the vast majority of development related trips, demonstrates that the junction could be expected to operate with a substantive level of spare capacity, even including for 2028 future year conditions and predicted Maes Meurig development traffic demand estimates. Predicted RFC levels would be well below critical threshold values and maximum queuing at negligible levels and would not result in a material / severe impact on through traffic movements on A547 Ffordd Talargoch.

8.21 Given the above review of issues, it is considered that application site development traffic impact could be expected to only be of generally limited scale and would not result in 'severe' network operational effects that would require the provision of additional network capacity or safety improvements.

Summary & Conclusions

8.22 Overall, it is concluded that the development of the application site for residential land use would not result in a material impact on the existing and future operation of the immediate local highway network. The proposals are not anticipated to result in a significant increase in development flows on local links, with key

immediate routes capable of accommodating future development traffic volumes without operational or environmental capacity concerns The location of the application site is also considered to offer practical opportunities to encourage the use of alternative travel modes to the private car for a range of 'everyday' journeys, with the proposals considered suitable to meet key transport objectives re: encouraging sustainable development.

8.23 Based on the review of issues set out in this report, Focus TP would have no hesitation in commending the scheme to the Council with respect to highways and transport matters.

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FIGURES

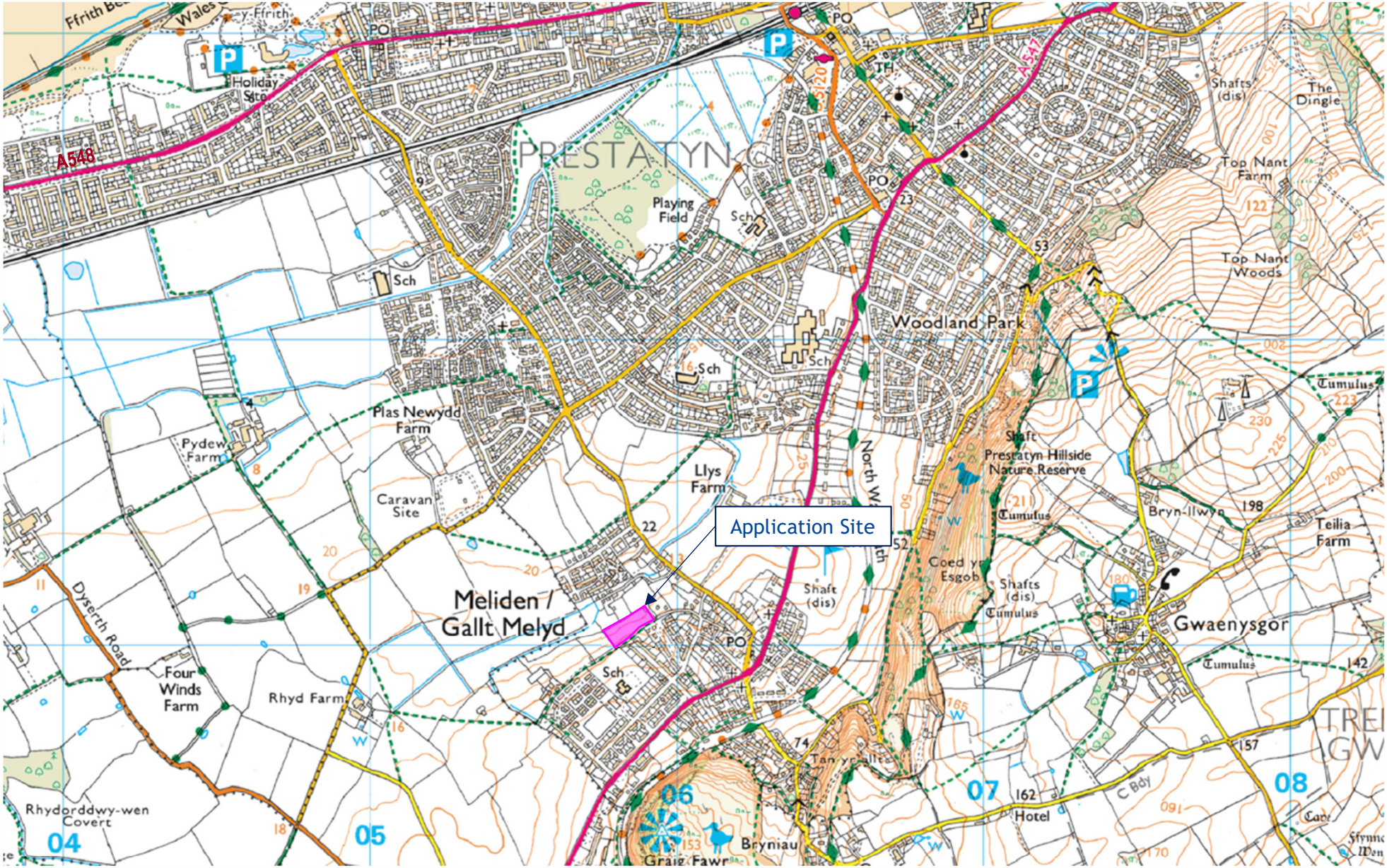

Figure TA1 **Site Location: Wider Context**

J000369 Land off Maes Meurig, Meliden May 2023

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Figure TA2 **Site Location: Local Context**

J000369 Land off Maes Meurig, Meliden May 2023

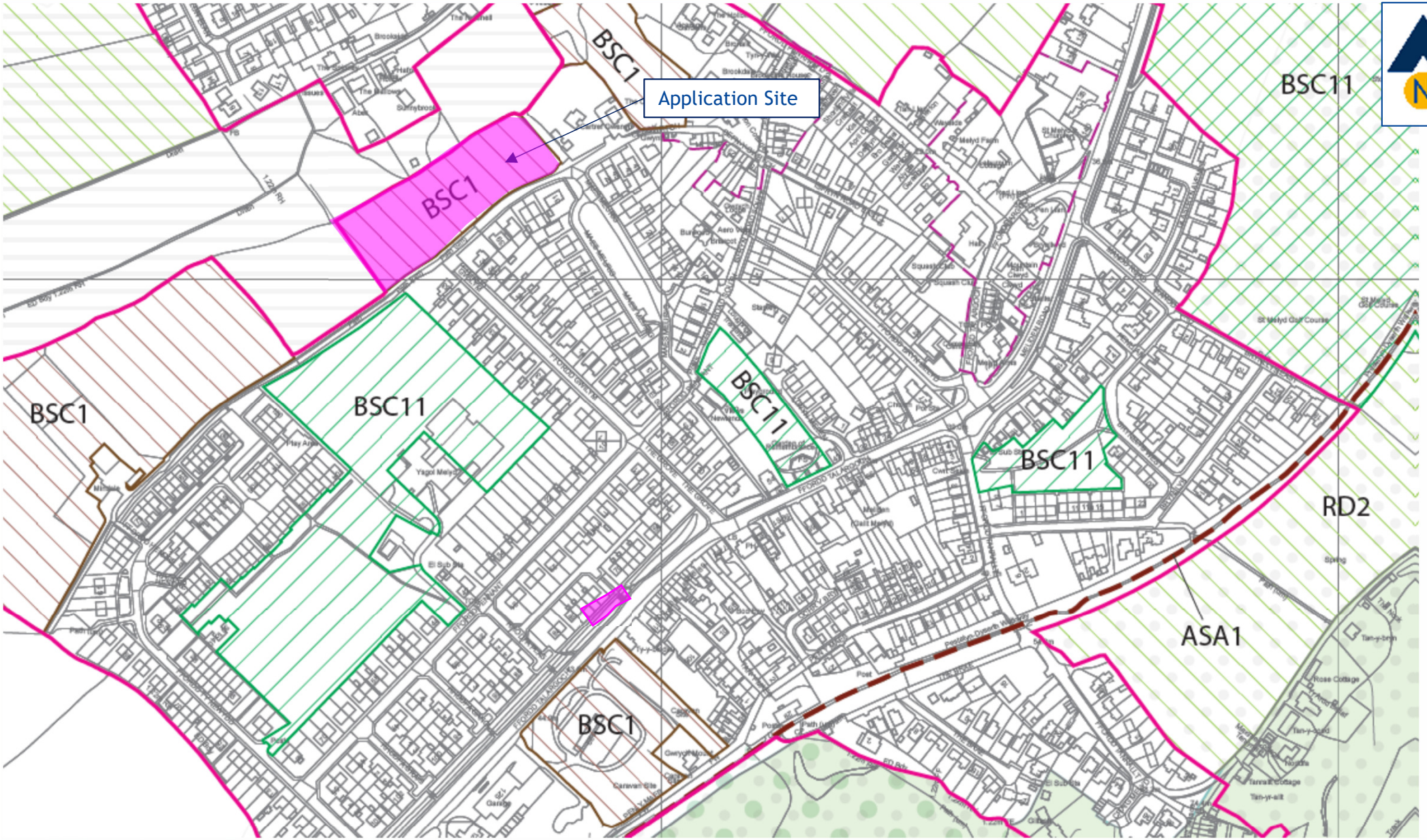

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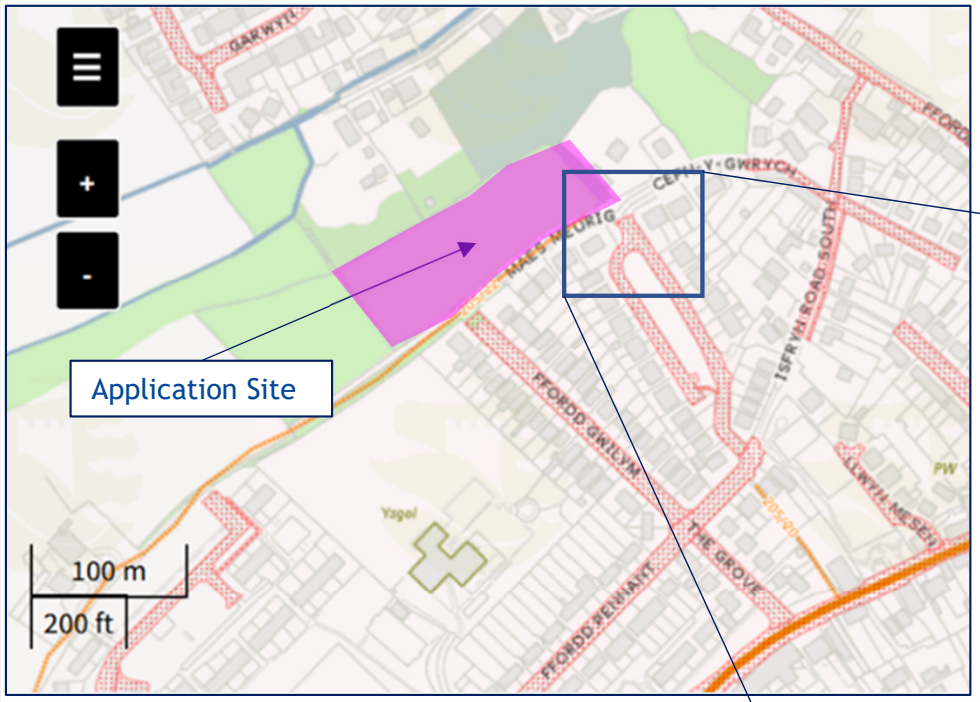
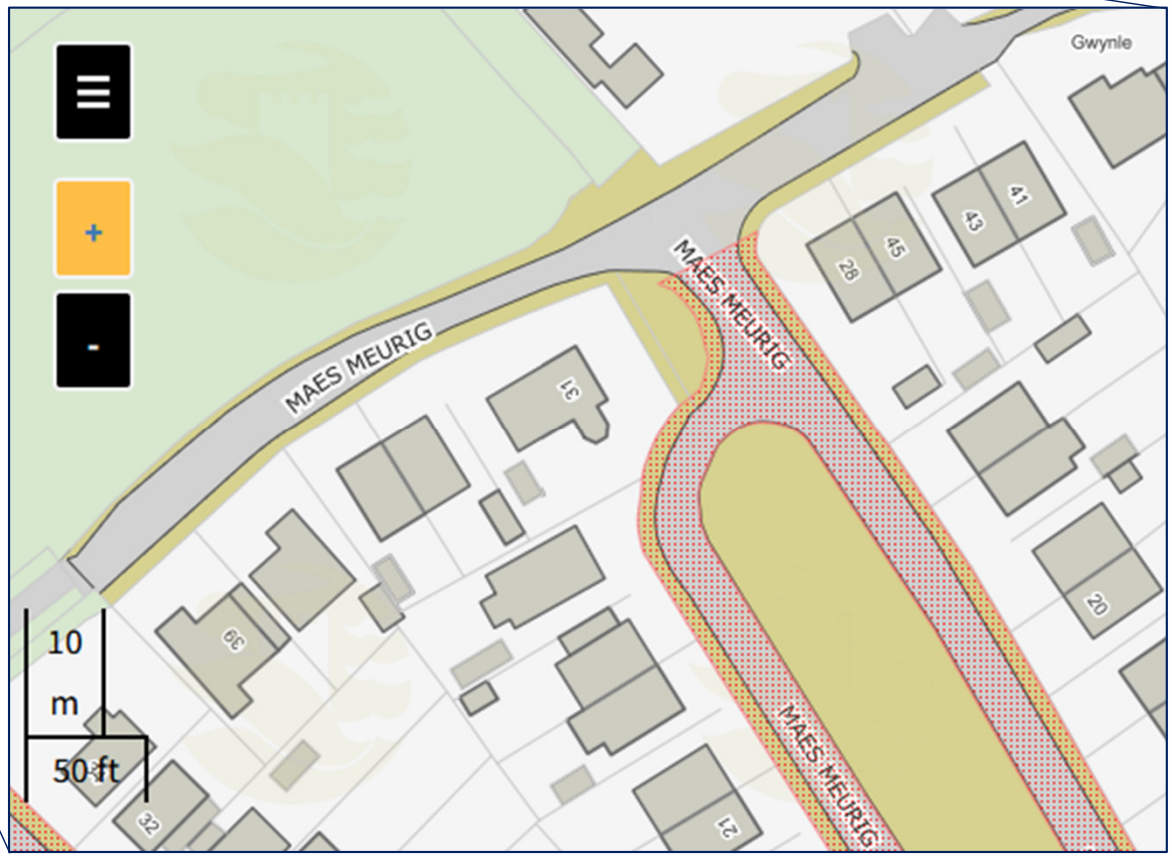
Figure TA3 **Site Allocation in Denbighshire LDP (2006-2021)**

J000369 Land off Maes Meurig, Meliden May 2023





Adopted Roads

Adopted
Stopped up

Public Rights of Way - displays from 10000 scale

Footpath
Bridleway
Byway Open to All Traffic

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Figure TA4 **Extent of Adopted Highway & Public Rights of Way**

J000369 Land off Maes Meurig, Meliden May 2023

Revision:
A -
-

Client:
Kingscrown Group

Project:
Land at Maes Meurig, Meliden

Drawing Title:
Available Sightlines at Junction of A547 Ffordd Talargoch / The Grove

Drawing Number: Figure TA5
Revision: -

Date: 19/04/23
Scale: 1:350@A3

Drawn By: APB
Checked By: -

Status:
Information

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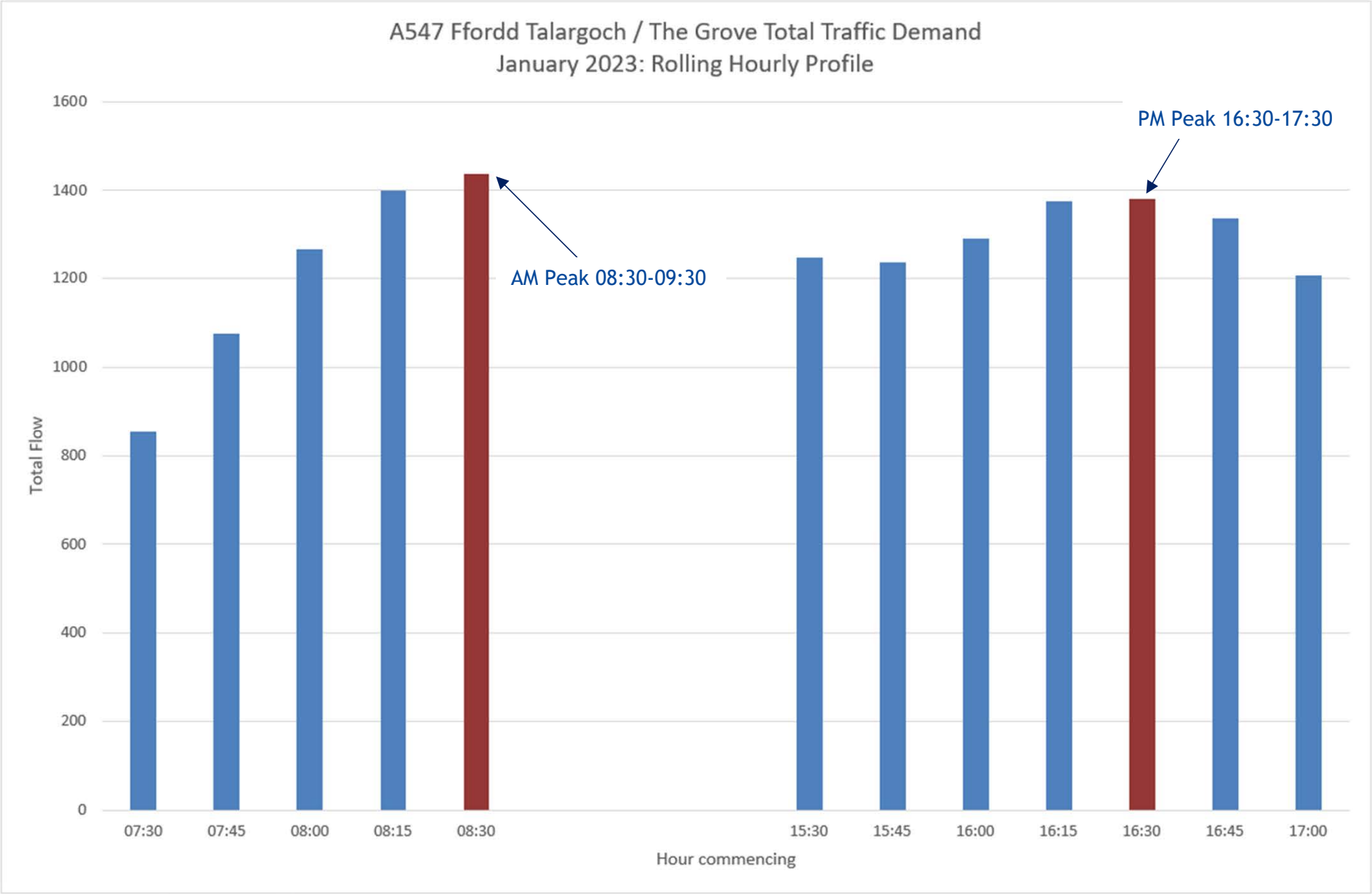

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Figure TA6 **A547 Fford Talargoch / The Grove Rolling Hourly Profile**

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