



From: HSP Consulting Engineers Ltd
 To: Wrexham Council Highways Development Control
 Date: 18th May 2022
 Subject: **Transport Technical Note for Planning Application Reference: SJG/P/2022/0002**

Introduction:

This Transport Technical Note has been prepared by HSP Consulting Engineers Ltd on behalf of our client and applicant Taylor Reed Homes Ltd, in support of a recently submitted planning application (reference: P/2022/0002) for the *'erection of 4 dwellings and construction of access road and installation of septic tank'* on land adjacent to Bettisfield Road in Bettisfield, Wrexham.

The local planning and highways authority, as a unitary authority, is Wrexham Council (WC). WC Highways Development Control (HDC) has provided post application feedback to the submitted planning application, with this being contained within **Appendix A** for reference. Subsequent to the feedback received, there has been email correspondence between HSP Consulting and WC Highways Development Control to agree on the internal design of the site, access arrangements and the scope of any submitted transport studies to support the planning application.

This Transport Technical Note has been prepared to resolve the post-application comments outlined by WC HDC, and subsequently allow for a positive highway's recommendation to the planning application.

The location of the site within the context of Bettisfield and Whitchurch is provided in **Figure 1** below, whilst **Figure 2** highlights the red line boundary of the site and its relationship to the local road network. The OS Grid reference of the site is 346015 (Easting) and 335361 (Northing).

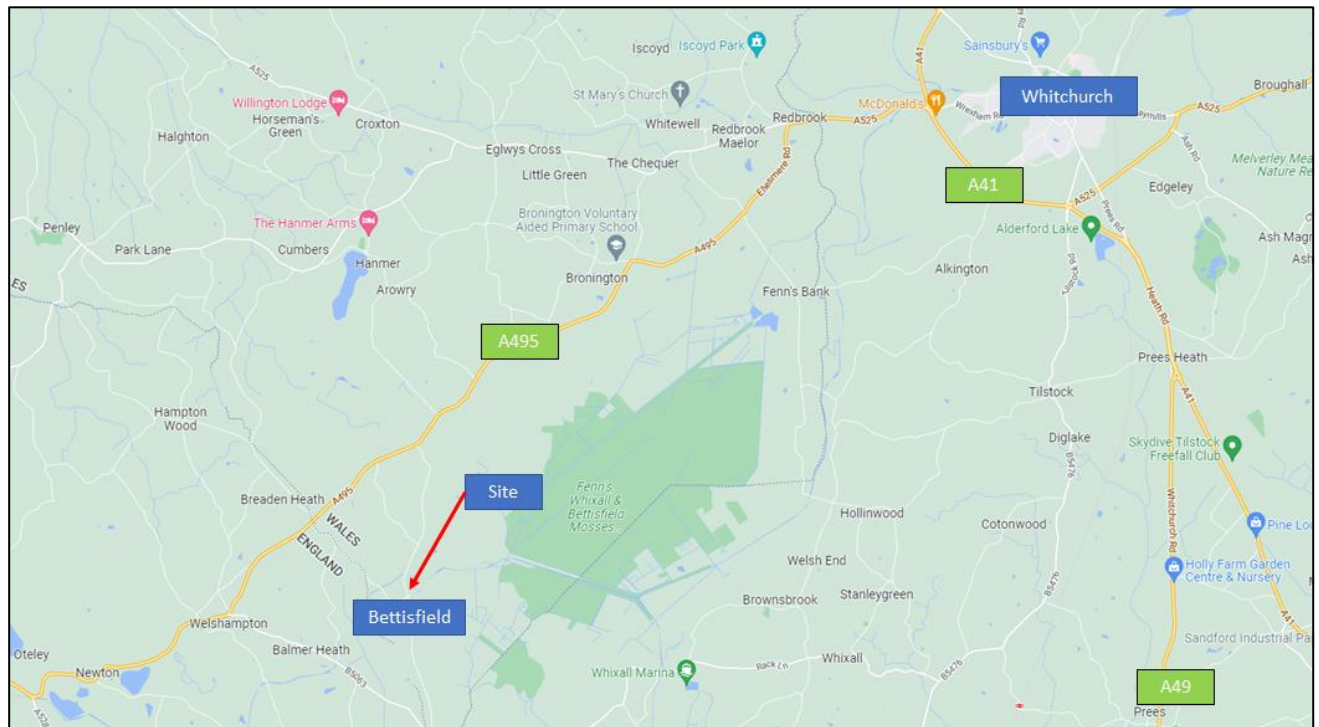


Figure 1: Site Location

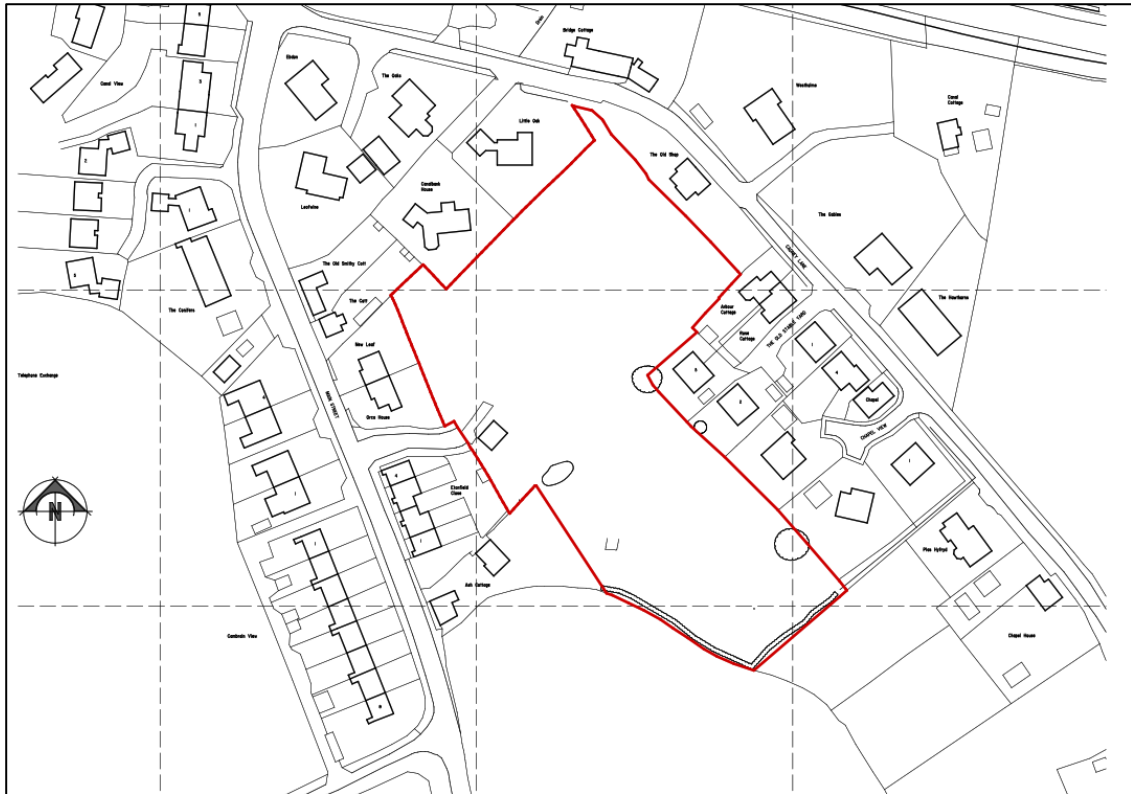


Figure 2: Site Location Within Immediate Vicinity of Bettisfield

Post Application Correspondence from WC HDC:

Following submission of the planning application (Reference: P/2022/0002), a series of post application responses and correspondence has been received from WC HDC relating to the following principal matters. Further details regarding these matters can be found in **Appendix A** of this Transport Technical Note.

- Access Visibility and sightlines;
- Traffic Regulation Orders and Traffic Calming Measures on the Site Frontage;
- Internal Layout Configuration re. access road widths and turning head provision;
- Parking Provision and manoeuvring space;
- Sustainable development and accessibility

This Transport Technical Note intends to address the above matters in order to allow for a positive highway's recommendation for the planning application.

Site Location and Existing Use:

The site is located on land adjacent to Bettisfield Road, measuring approximately 6000 sqm in area and accessed from a shared unnamed road. The site is located in the village of Bettisfield, situated approximately 10km to the southwest of Whitchurch and 20km to the south east of Wrexham.

The site is bound by the following uses:

To the north by: Cadney Lane

To the east by: Residential Housing accessed from Cadney Lane and Chapel View;

To the south by: Agricultural Fields;

To the west by: An unnamed private road owned by our client and applicant, providing an access to properties fronting onto Bettisfield Road.

The existing shared access road (adjacent to the site) and forming onto Bettisfield Road benefits from a varying width of between 7 metres (at the mouth of the access), with this reducing to 5.5m adjacent to the site. At the mouth of the access, there is radius kerbs of circa 3m on both sides of the junction with dropped kerbs and tactile paving. **Figure 3** presents an image of the existing vehicle access present which benefits from pedestrian footways on both sides of the carriageway that are a minimum of 2 metres in width, but are in general conformity, 2.5m in width. The existing vehicle access achieves visibility sightlines of in excess of 120m (to the south) and 30m (to the north) to the carriageway edge. **Figure 4** presents an image of the visibility sightlines that can be currently achieved at the vehicle access.

The existing vehicle access was recently constructed as part of planning application reference (P/2007/0494). It should be noted that this access road is privately owned and maintained by the client and applicant of this planning application.



Figure 3: Existing Shared Access Road



Figure 4: Visibility Sightlines of Existing Vehicle Access

Planning History:

The Wrexham Council public access planning portal has been reviewed to understand the planning background and history of the site.

Following a review of the planning portal, the below applications are of relevance to the site:

- Application Reference: P/2022/0002 – Erection of 4 dwellings and construction of access road and installation of septic tank;
- Application Reference: P/2017/0290 – Erection of 9 no detached dwellings with associated garages, parking and access arrangements;
- Application Reference: P/2015/0555 – Residential Development (14 x 5 bed detached houses) and new vehicular / pedestrian access;
- Application Reference: P/2009/0971 – Demolition of Nags Head together with the erection of 4 no dwellings;
- Application Reference: P/2007/0493 – Erection of 5 no detached dwellings;
- Application Reference: P/2007/0494 – Erection of 9 no detached dwellings;

With regards to planning application reference: P/2017/0290, a Design and Access Statement was prepared to support this planning application, along with relevant submitted site plans drainage studies and environmental studies. The proposed site layout of this planning application is presented in **Figure 5** for reference highlighting an internal access road connecting onto Bettisfield Road. A turning head was provided for this application for use by car, delivery, refuse and fire tender vehicles.

A highways consultation response was received in respect to planning application reference (P/2017/0290) which outlined that the internal road network would need to be privately owned and maintained and could not be proposed for adoption. A refusal decision notice for this planning application was received on the 12th March 2018, which was based on surface water flooding matters and ecological matters. It is understood that a positive highways recommendation was provided for this planning application.

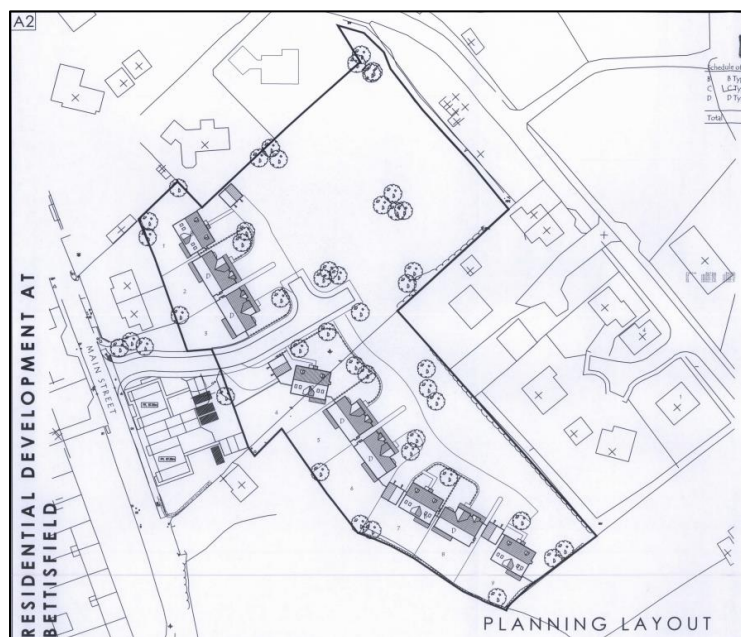


Figure 5: Proposed Site Layout (Planning App: P/2017/0290)

A planning application (Reference P/2015/0555) was submitted to WC in 2015 relating to the development of 14, 5 bedroom detached houses including a new vehicular and pedestrian access. This planning application was supported by a Design & Access Statement, ecological reports, ground investigation reports and site plans. A site layout of the development proposals is provided in **Figure 6** for reference.

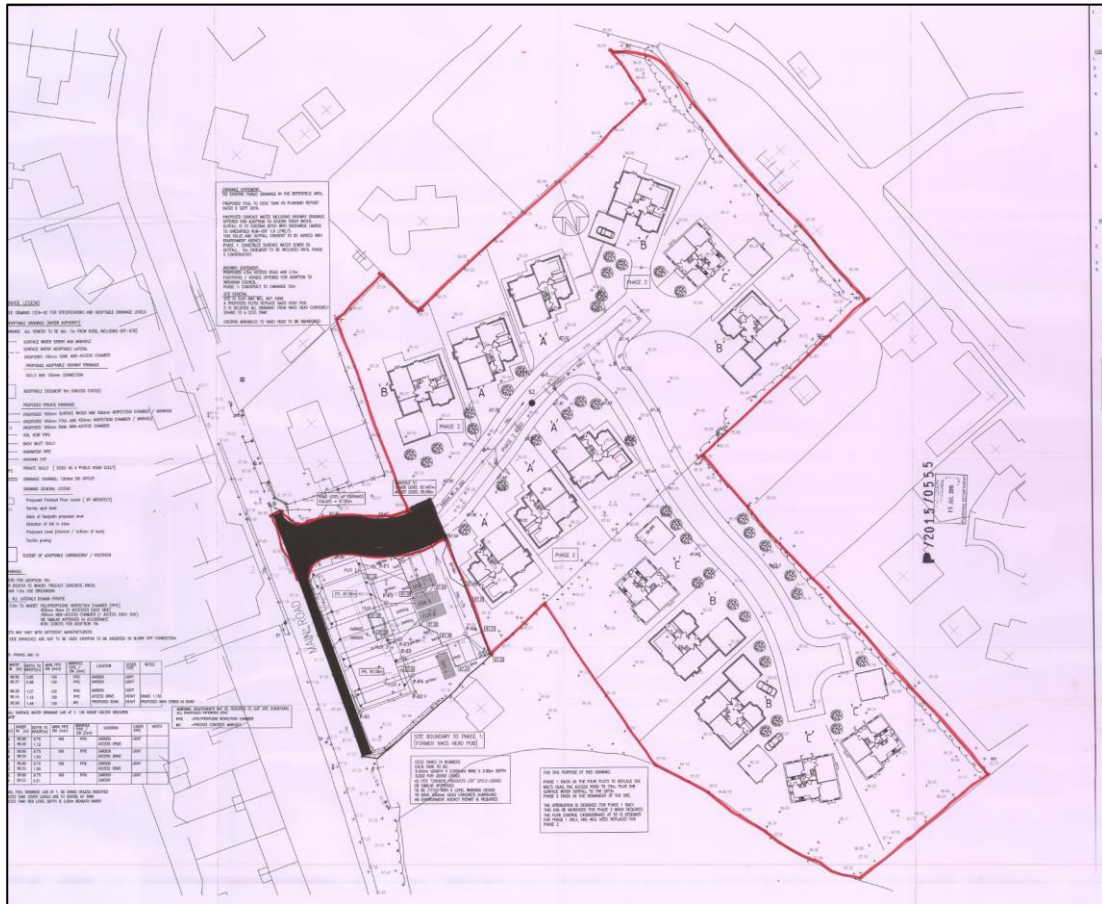


Figure 6: Proposed Site Layout (Planning App: 2015/0555)

There is no highways post application consultation response on the planning portal to review for this planning application. The decision notice to this planning application was issued on the 17th of November 2015 relating to planning refusal for the following matters of Development and Flood Risk, Surface water run-off, Biodiversity Conservation and Development Objectives. There were no recorded highway matters for refusal.

A planning application (Reference: P/2009/0971) was submitted to WC on the 25th of November 2009. This planning application related to the demolition of the former Nags Head public house and the erection of 4 no. Town houses. The proposed site layout of this planning application is provided in **Figure 7** for reference. This planning application was approved at planning committee with a decision notice issued on the 14th of February 2011 granting planning approval for the development proposals. This development has since been constructed to date and is situated adjacent to the site (taking access from the shared unnamed access road)

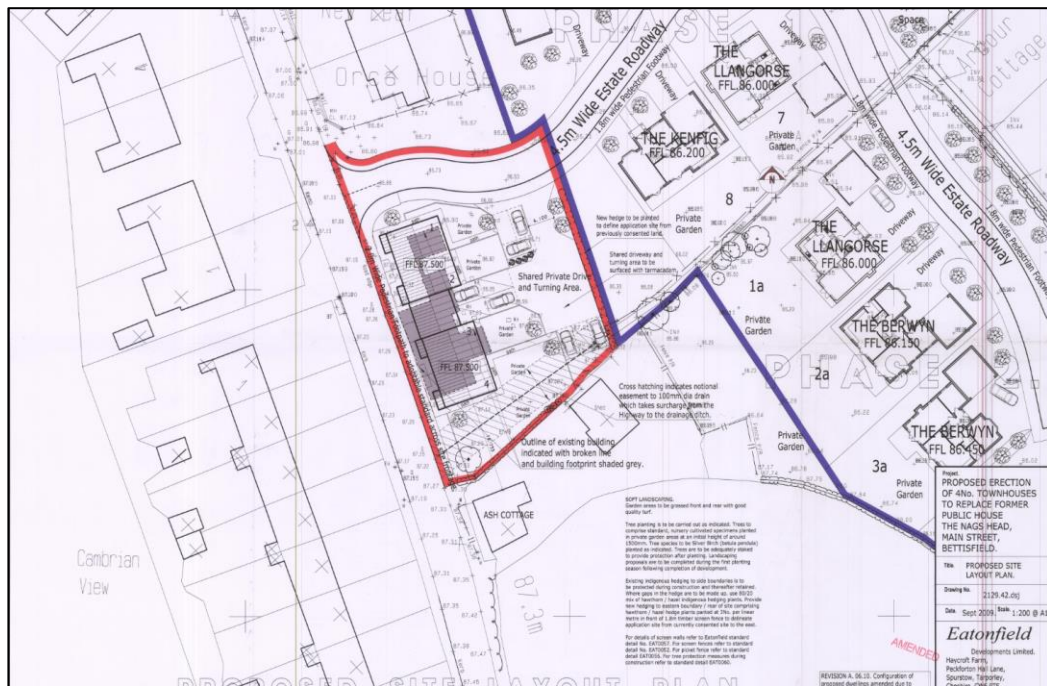


Figure 7: Proposed Site Layout (Planning App: 2009/0971)

Planning applications reference: P/2007/0493 and P/2007/0494 relate to the erection of 5 dwellings and 9 dwellings respectively on the site. Both planning applications were approved subject to a series of conditions. A section 106 agreement was also prepared for these planning applications which included financial contributions to educational provision in the locality of the site. The proposed site layout for these planning applications is not available on the planning portal for reference.

Personal Injury Accident Data Review

The National Planning Practice Guidance ‘*Transport evidence bases in plan making and decision taking*’ document outlines the following in respect to obtaining personal injury accident data on the road network:

“Critical locations on the road network with poor accident records should be identified. This is to determine if the proposed development will exacerbate existing problems or, if proposed, whether highway mitigation works, or traffic management measures will help to alleviate the problems”.

To confirm the safety record on the highway network within the direct vicinity of the site, personal injury collision statistics have been obtained directly from the CrashMap database for the latest five year period on record of between 2017 – 2021 on the local road network. **Figure 8** presents an extract of the scope of accident data study area that has been examined.

As highlighted in Figure 8, there has been no recorded personal injury accidents in the vicinity of the site or within the village of Bettisfield within the latest five year period; demonstrating an excellent highway safety record on the local road network. Based on this, it can be considered that the development proposals will not exacerbate any existing highway safety issues on the local road network.

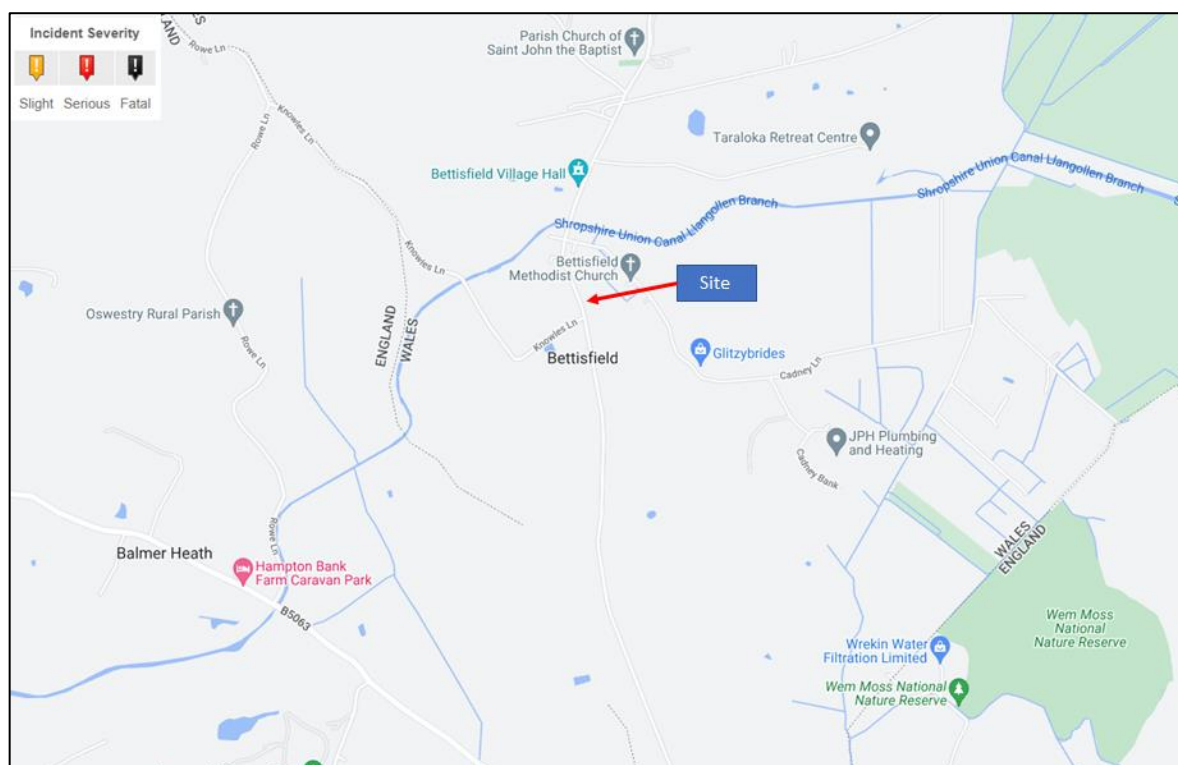


Figure 8: PIA Review (2017 – 2021)

Accessibility of Site

The adopted National Planning Policy Framework (July 2021) outlines the following in respect to considering development proposals

Paragraph 110: In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- Safe and suitable access to the site can be achieved for all users;*
- The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide;*
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.*

Paragraph 111 of the NPPF outlines the following:

“Development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”

In line with NPPF, and local guidance incorporated within the Wrexham Unitary Development Plan and Wrexham Local Development Plan 2, the accessibility of the site should be reviewed and analysed in the context of the development proposals.

Adjacent to the site on Bettisfield Road, there are good condition pedestrian footways on both sides of the carriageway. On the east side of the carriageway, there is a pedestrian footway that measures circa 2 metres wide, whilst on the west side of the carriageway there is a footway which measures circa 1.5m wide. It should be noted that the site benefits from dropped kerbs and tactile paving at the mouth of the shared access road and Bettisfield Road. **Figure 9** presents an image of the pedestrian footways on Bettisfield Road.



Figure 9: Pedestrian Footways on Bettisfield Road

It is noted that Bettisfield Road is currently subject to a national speed limit however is currently undergoing public consultation with respect to reducing the speed limit to 30mph. The Automatic Traffic Counts undertaken on Bettisfield Road and explored further below, provides further traffic data information in relation to the local road network.

There are a number of public right of ways in the vicinity of the site which can be used to connect into the surrounding villages of Northwood, Bronington, Whixhall, Welsh End and Hollinwood. **Figure 10** presents the public right of way routes in the context of the development site.

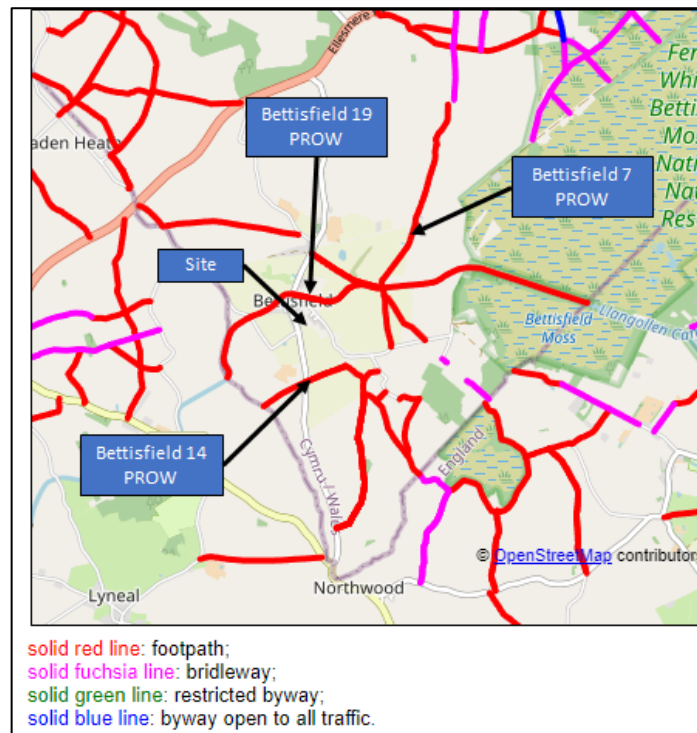


Figure 10: Public Right of Way Map, Bettisfield

Bettisfield Road benefits from being relatively low trafficked with 507 Average Annual Daily Traffic (Two way) with on average 51% of vehicles travelling southbound and 49% of vehicles travelling northbound. Based on this, the local road network is conducive for both pedestrian and cycle traffic. With regards to cycling, National Cycle Route Network 455 is situated approximately 2km to the south of the site. National Cycle Route Network 455 stretches from Oswestry to Whitchurch and runs largely parallel to the Llangollen Canal. **Figure 11** presents the routing of National Cycle Route Network 455 which is primarily on-road but utilises quiet and low trafficked rural roads.

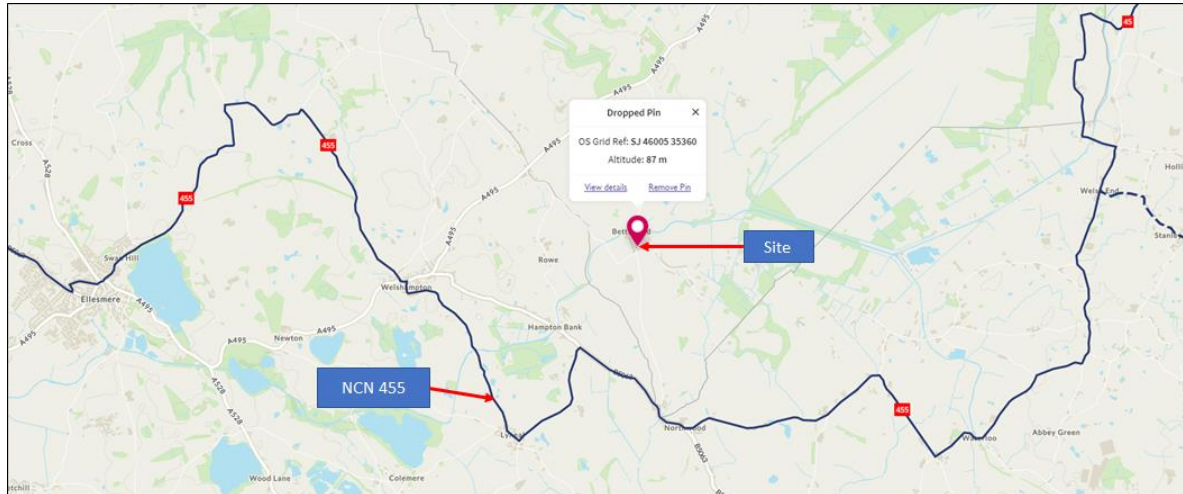


Figure 11: National Cycle Route Network 455

With regards to public transport infrastructure, there is a public bus stop waiting facility situated approximately 155 metres to the north of the site, utilising the pedestrian footways situated on Bettisfield Road. **Figure 12** presents an image of this bus stop waiting facility. It is understood that this facility is used to accommodate a single return trip once every Monday to Wrexham which is provided by a 16 seater accessible service bus.



Figure 12: Public Bus Stop on Bettisfield Road

It is to be appreciated that the development site is situated within a remote and relatively rural location whereby (by nature of the site's location) there are limited public transport options. Notwithstanding the above, the development proposals relate to 4 x 5 bedroomed detached houses which complements the existing housing landscape and environment of Bettisfield. The development proposals will incorporate electric vehicle charging infrastructure to comply with sustainable development principals; whilst there is a good quality pedestrian network (including public right of ways) in the vicinity of the site that can be used to circulate around Bettisfield and the surrounding villages of: Bronington, Norwood, Whixhall, Breaden Heath and Hollinwood. In line with Paragraph 110 of the NPP, it can be considered that the development proposals conform to the adopted policy of promoting sustainable transport modes where practical and reasonable given the type of development and its location.

Development Proposals

Proposed Development

The proposed development relates to the provision of 4 detached 5 bedroom houses with accompanying parking provision and a private internal access road. The development will take access from an upgraded unnamed shared access road that forms onto Bettisfield Road. This existing access road is owned by the client and applicant of this planning application.

The proposed site layout is presented in **Figure 13** for reference, which includes a 6m shared surface street (4.8m wide carriageway with 1.2m pedestrian zone delineated by a textured surface treatment) and turning head; with private driveways serving the residential houses on-site. It should be noted that the physical size of the development area (within the red line boundary of the site) is constrained due to wider related civils and drainage matters.



Figure 13: Proposed Site Layout

Proposed Access Arrangement and Internal Access Road

Following correspondence with WC HDC, it was agreed that a shared surface street arrangement would be appropriate to serve the development; with the internal road network proposed to be private and not adopted with this controlled through a Section 106 agreement and a management company in place.

Subsequently, it is proposed to provide a level shared surface street arrangement internally within the site that will measure an overall 6 metres in width, with a dedicated 1.2 metre pedestrian zone that will be highlighted through textured surface treatment. The proposed 6 metre overall width allows for appropriate manoeuvring room into and out of the private driveways; whilst also enabling a car vehicle to pass a large goods vehicle in line with guidance from Manual for Streets. Vehicle tracking has been undertaken and is included in **Appendix B** highlighting the manoeuvrability of all anticipated vehicles on-site including that of the below vehicles. It should be noted that a turning head has been provided on the site to allow for all the below vehicles to enter and exit the development in forward gear.

- Car Vehicle (DB32);
- Delivery Vehicle (7.5T Box Van);
- Refuse Vehicle (Phoenix 2 Duo- 11.2m long) and;
- Fire Tender (DB32)

With regards to refuse vehicle movements, the client and applicant has agreed that this will take place through arrangements with a private contractor, with this included within the Section 106 agreement.

The proposed internal road network will connect onto an upgraded shared access road (which subsequently forms onto Bettisfield Road) which has been requested in line with correspondence from WC HDC. It is proposed to realign the existing shared access road to provide a uniform width of 4.8m throughout its length; with widened pedestrian footways on either side of the access road. **Figure 14** presents the proposed design of the upgraded shared access road, which allows for a minimum 1.8m footway on the north side (however generally conforming to 2m and wider in width) of the shared access road and 2m on the south side. The proposed pedestrian footway improvements will be conducive to pedestrian movements towards and away from the site.

The upgraded shared access road assists to improve pedestrian connectivity through enhanced pedestrian footway widths, but also improved vehicle visibility splays, with 33m being able to be achieved to the north of the site and in excess of 120m to the south of the site, to the carriageway edge. The upgraded access arrangement will comprise of a uniform 4.5m radius on both sides of the junction with central and give way white line markings present along with realigned dropped kerbs and tactile paving. Vehicle tracking is provided in Appendix B demonstrating the movement of all vehicles on approach and exiting the proposed access arrangement and internal road network.



Figure 14: Proposed Upgrades to Existing Shared Access Road

Proposed Off-Site Highway Works

It is understood that Bettisfield Road is subject to a proposed TRO of 30mph which is currently being drafted by Wrexham Council's legal department and will subsequently undergo public consultation in the immediate future. This TRO is for a reduction in speed only on Bettisfield Road, with no committed plans in place for traffic calming features as part of this.

Bettisfield Road is currently subject to a national speed limit of 60mph. To understand the composition of traffic flows and speed data on Bettisfield Road, automatic traffic counters were placed on Bettisfield Road for a seven day, 24 hour period between 11/03/2022 – 17/03/2022, in the below locations shown in **Figure 15**.

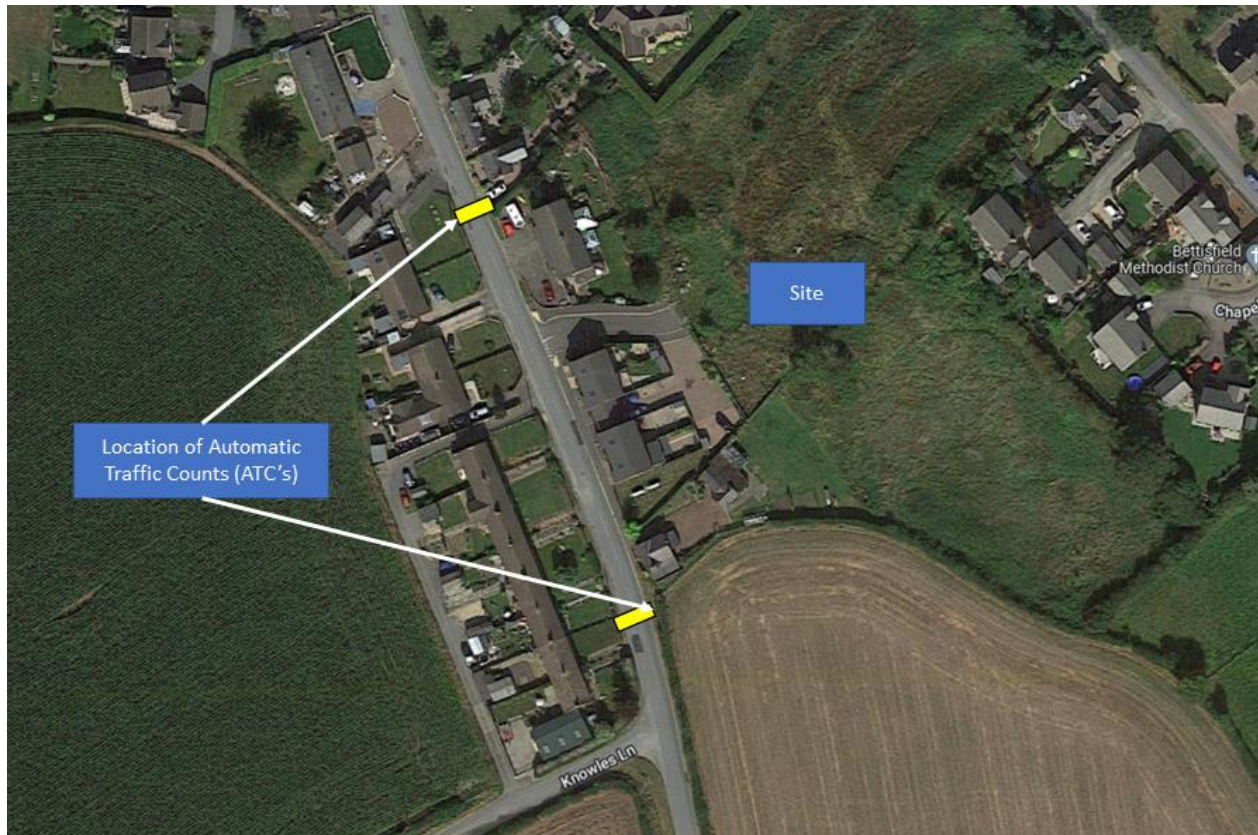


Figure 15: Location of Automatic Traffic Counters, Bettisfield Road

The results of both the Automatic Traffic Counts on Bettisfield Road are provided below in Table 1 and 2.

ATC (North of Access)

Table 1: Analysis of Automatic Traffic Count (North of Site Access)

Hour Beginning	Total Vehicles	HGV	HGV %	HDV	HDV %
00:00	0	0	0%	0	0%
01:00	0	0	0%	0	0%
02:00	0	0	100%	0	100%
03:00	0	0	0%	0	0%
04:00	1	0	0%	0	0%
05:00	5	0	8%	0	8%

Hour Beginning	Total Vehicles	HGV	HGV %	HDV	HDV %
06:00	15	2	12%	2	12%
07:00	32	8	24%	8	24%
08:00	56	10	18%	11	20%
09:00	33	7	20%	7	21%
10:00	31	6	20%	6	21%
11:00	34	9	26%	9	27%
12:00	37	8	23%	8	23%
13:00	30	5	18%	5	18%
14:00	36	9	26%	9	26%
15:00	49	8	15%	8	16%
16:00	36	7	19%	7	19%
17:00	44	6	13%	6	13%
18:00	30	4	12%	4	12%
19:00	17	2	10%	2	10%
20:00	9	1	13%	1	13%
21:00	6	1	11%	1	11%
22:00	4	1	30%	1	30%
23:00	2	0	8%	0	8%
Daily (00:00 – 24:00)	507	93	18%	95	19%
85th Percentile Speed (Northbound)	33.3mph				
85th Percentile Speed (Southbound)	34.3mph				
Average Speed (Northbound)	26.2mph				
Average Speed (Southbound)	27.3mph				

ATC (South of Access)

Table 2: Analysis of Automatic Traffic Count (South of Site Access)

Hour Beginning	Total Vehicles	HGV	HGV %	HDV	HDV %
00:00	0	0	0%	0	0%
01:00	0	0	0%	0	0%
02:00	0	0	100%	0	100%
03:00	0	0	0%	0	0%
04:00	1	0	0%	0	0%
05:00	5	1	17%	1	17%
06:00	14	3	18%	3	18%
07:00	29	8	29%	8	29%

Hour Beginning	Total Vehicles	HGV	HGV %	HDV	HDV %
08:00	52	10	19%	11	20%
09:00	31	7	21%	7	23%
10:00	26	7	27%	7	27%
11:00	30	9	30%	9	30%
12:00	32	8	25%	8	26%
13:00	26	5	20%	5	20%
14:00	34	10	29%	10	29%
15:00	44	9	19%	9	20%
16:00	34	7	22%	7	22%
17:00	42	8	18%	8	19%
18:00	27	4	15%	4	15%
19:00	14	2	14%	2	14%
20:00	9	1	16%	1	16%
21:00	6	1	11%	1	11%
22:00	3	1	41%	1	41%
23:00	1	0	14%	0	14%
Daily (00:00 - 24:00)	463	101	22%	103	22%
85th Percentile Speed (Northbound)	37.9mph				
85th Percentile Speed (Southbound)	39.1mph				
Average Speed (Northbound)	29.3mph				
Average Speed (Southbound)	31.0mph				

In line with the speed survey results, the following visibility splay parameters are required at any upgraded access arrangement based on the minimum stopping sight distance calculations within Manual for Streets:

- Visibility to the north of the access: 52m in line with the recorded 85th percentile speed of 34.3mph
- Visibility to the south of the access: 60m in line with the recorded 85th percentile speed of 37.9mph

Following correspondence with WC HDC, it has been requested for any upgraded access arrangement to achieve visibility splay parameters of 2.4m x 43m in line with a road subjected to a 30mph speed limit; with visibility splays being taken to the carriageway edge.

Given the existing visibility splay constraints including that of no footway present on the eastern side of the carriageway, a low height wall associated with Property Name: Orca House adjacent to the site and offending vegetation associated with that of third party land (as shown in **Figure 16** below), achieving 43m to the north of the site (and in excess of this) can only be achieved by taking visibility splays to the centre of the carriageway.



Figure 16: Constraints to Visibility (North of Site)

Following communications with WC HDC, it is proposed to provide a traffic calming scheme including that of road narrowing (through the form of a buildout) with priority signage for northbound travelling vehicles on Bettisfield Road. The traffic calming scheme will include a raised speed cushion between the kerbed buildout and the adjacent existing pedestrian footway on the west side of the carriageway. A proposed plan of the off-site highway works, and traffic calming is included in **Figure 17** and **18** below and **Appendix C** for reference. Vehicle tracking of the proposed off-site highway works is also included in **Appendix D**.

The proposed traffic calming feature will work in tandem with the 30mph speed limit Traffic Regulation Order currently being considered on Bettisfield Road by WC and will assist to significantly lessen north and southbound travelling speeds on the carriageway in the vicinity of the site. The proposed traffic calming feature will also assist to ensure traveling southbound vehicles are situated in the centre of the carriageway on approach to the vehicle access; allowing visibility to be improved at the upgraded access arrangement.

Figure 19 and **Appendix E** presents the proposed visibility splays of the access, to the centre of the carriageway which conforms with the required visibility splay parameters. It should also be noted that, due to the presence of the traffic calming feature, travelling southbound vehicles will be travelling significantly below 30mph (likely to be 20mph) which will further assist to improve the safety of the upgraded vehicle access.

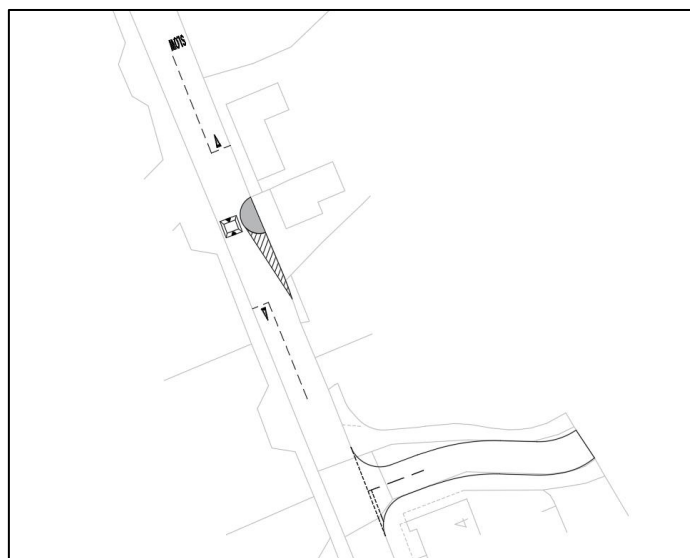


Figure 17: Proposed Road Narrowing on Bettisfield Road



Figure 18: Proposed Road Narrowing on Bettisfield Road with Dimensions

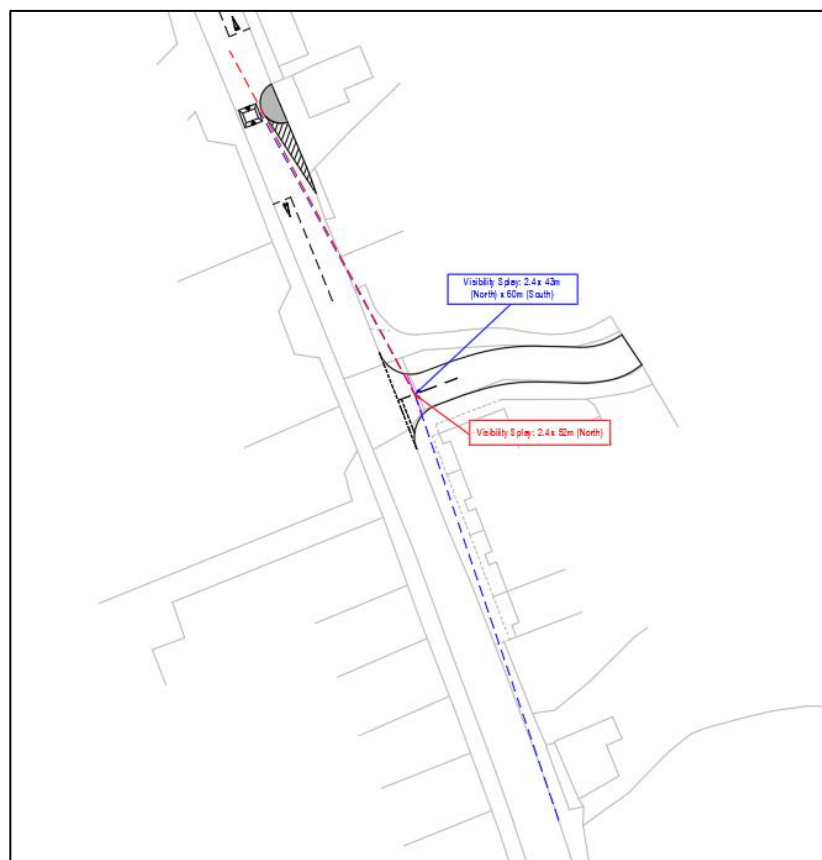


Figure 19: Proposed Visibility Splays

Proposed Parking Provision

The adopted parking standards of Wrexham Council are contained within Local Planning Guidance Note 16. Following correspondence with WC HDC, it is advised that the development considers parking provision for each housing plot in accordance with the maximum requirements which are 4 car parking spaces per unit for 5 bedroom dwellings.

In line with guidance, it is proposed for each house to comply with the maximum requirements, with a double driveway / car port arrangement being provided for each of the houses on-site that are a minimum of 6 metres wide x 12 metres long; allowing for four car vehicles to be parked on each of the driveways simultaneously.

The adopted cycle parking guidance outlines the following for each new dwelling to adhere to “*Sufficient space to provide at least 2 secure cycle parking spaces per dwelling*”. Based on this, it is proposed to provide cycle storage in the rear of the dwellings and in the curtilage of the property (within a cycle store / shed facility) which can accommodate 2 cycles.

With regards to electric vehicle charging infrastructure, it is proposed for each house to have a socket next to each of the driveways which has a charging point specification of 7kw Mode 3 with Type 2 connector. This will allow for each of the houses on-site to accommodate electric vehicles in the future.

With regards to larger vehicles such as delivery vehicles and refuse vehicles, a turning head is provided on the site allowing for such vehicles to enter and exit in forward gear through a maximum of a 3 point turning manoeuvre.

Trip Generation

To understand the anticipated traffic generation of the site, the industry standard and proprietary TRICS database has been used, selecting sites that are similar in terms of location, use, and parking provision.

The complete TRICS output is presented in **Appendix F** for reference. **Table 3** presents the forecasted vehicle traffic generation of the site, highlighting that the development will generate 3 two way vehicle trips in the AM Peak Hour, 2 two way vehicle trips in the typical PM Peak and 24 two way daily vehicle trips.

Table 3: Vehicle Trip Rate and Traffic Generation

Time Range	Trip Rate (per dwelling)			Traffic Generation (4 dwellings)		
	IN	OUT	Two Way	IN	OUT	Two Way
07:00-08:00	0.085	0.288	0.373	0	1	1
08:00-09:00	0.305	0.492	0.797	1	2	3
09:00-10:00	0.068	0.169	0.237	0	1	1
10:00-11:00	0.254	0.271	0.525	1	1	2
11:00-12:00	0.203	0.237	0.440	1	1	2
12:00-13:00	0.339	0.237	0.576	1	1	2
13:00-14:00	0.288	0.288	0.576	1	1	2
14:00-15:00	0.085	0.220	0.305	0	1	1
15:00-16:00	0.407	0.169	0.576	2	1	2
16:00-17:00	0.237	0.203	0.440	1	1	2
17:00-18:00	0.339	0.271	0.610	1	1	2
18:00-19:00	0.356	0.203	0.559	1	1	2
Daily (07:00 - 19:00)	2.966	3.048	6.014	12	12	24

Based on the anticipated vehicle traffic generation of the site, it is to be deemed that the development proposals in line with Paragraph 111 of the NPPF will not have an unacceptable impact on highway safety, and that the residual cumulative impacts on the road network will not be severe.

With regards to pedestrian and public transport demand, **Tables 4 and 5** highlight the forecasted demand on the surrounding pedestrian and public transport infrastructure. **Appendix F** includes the complete TRICS output for reference.

As highlighted in Table 4, it is forecasted that there will be a demand for up to 7 two way pedestrian trips on the local pedestrian infrastructure, and 0 two way public transport trips during the course of a daily period. Based on the above numbers, it is to be considered that this demand can be safely accommodated both on and off-site within Bettisfield, without any additional mitigation (from that of proposed) being required.

Table 4: Pedestrian Trip Rate and Traffic Generation

Time Range	Trip Rate (per dwelling)			Traffic Generation (4 dwellings)		
	IN	OUT	Two Way	IN	OUT	Two Way
07:00-08:00	0.068	0.102	0.170	0	0	1
08:00-09:00	0.136	0.186	0.322	1	1	1
09:00-10:00	0.017	0.017	0.034	0	0	0
10:00-11:00	0.051	0.153	0.204	0	1	1
11:00-12:00	0.085	0.017	0.102	0	0	0
12:00-13:00	0.051	0.051	0.102	0	0	0
13:00-14:00	0.034	0.102	0.136	0	0	1
14:00-15:00	0.034	0.068	0.102	0	0	0
15:00-16:00	0.220	0.017	0.237	1	0	1
16:00-17:00	0.119	0.085	0.204	0	0	1
17:00-18:00	0.136	0.017	0.153	1	0	1
18:00-19:00	0.034	0.034	0.068	0	0	0
Daily (07:00 - 19:00)	0.985	0.849	1.834	4	3	7

Table 5: Public Transport Trip Rate and Traffic Generation

Time Range	Trip Rate (per dwelling)			Traffic Generation (4 dwellings)		
	IN	OUT	Two Way	IN	OUT	Two Way
07:00-08:00	0.000	0.000	0.000	0	0	0
08:00-09:00	0.000	0.000	0.000	0	0	0
09:00-10:00	0.000	0.000	0.000	0	0	0
10:00-11:00	0.000	0.000	0.000	0	0	0
11:00-12:00	0.000	0.000	0.000	0	0	0
12:00-13:00	0.000	0.000	0.000	0	0	0

Time Range	Trip Rate (per dwelling)			Traffic Generation (4 dwellings)		
	IN	OUT	Two Way	IN	OUT	Two Way
13:00-14:00	0.000	0.000	0.000	0	0	0
14:00-15:00	0.000	0.000	0.000	0	0	0
15:00-16:00	0.000	0.000	0.000	0	0	0
16:00-17:00	0.017	0.000	0.017	0	0	0
17:00-18:00	0.000	0.000	0.000	0	0	0
18:00-19:00	0.000	0.000	0.000	0	0	0
Daily (07:00 - 19:00)	0.017	0.000	0.017	0	0	0

Summary and Conclusion:

From a review of the development proposals and considering adopted policy in the form of both the National Planning Policy Framework, Manual for Streets and local adopted policy contained within the Wrexham Unitary Development Plan and Wrexham Local Development Plan 2, it is to be considered that the site has been designed in line with appropriate highway and planning policy design guidance.

Paragraph 111 of the NPPF explicitly outlines that development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impact on the road network would be severe. The proposed development being that of 4 x 5 bedroomed detached houses benefits from suitable parking provision with an internal access road that measures 6 metres in width (being a shared surface street), with appropriate turning head facilities that is suitable for all anticipated vehicles on the site. The development proposals also include upgrades to the existing shared access arrangement onto Bettisfield Road; along with traffic calming on the main highway which will work successfully in tandem with any proposed traffic regulation order change towards a 30mph speed limit. The proposed traffic calming will also assist to significantly reduce travelling speeds on the local road network and will benefit highway safety in the vicinity of the site.

A review of the forecasted traffic generation of the development highlights that the site will only generate 24 two way vehicle movements over the course of a day, with a limited pedestrian and public transport trip demand. Based on the above and considering both the existing makeup of the local road network and development proposals; it is to be considered that this demand will be safely accommodated within Bettisfield with the development site not having a 'severe' impact in terms of traffic volume or highway safety on and off-site.