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Ysgol Gymraeg Bro Morgannwg, Barry

Transport Assessment

Vale of Glamorgan Council

Project number: 60571314

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Quality information

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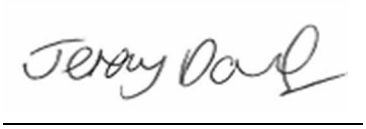

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	05.12.2018	Draft for Client review		Spiro Panagi	Associate Director
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Table of Contents

Figures

Appendices

1. Introduction

1.1 Introduction

1.1.1 AECOM was appointed through the design and assessment stages of the school project to provide advice on the overall scheme through to RIBA Stage 2; this includes scoping discussions and baseline desk studies. An assessment of the current highway network has been undertaken, along with the commissioning of traffic surveys across the network.

1.1.2 Furthermore, AECOM was commissioned by the Vale of Glamorgan (VoG) to provide transport planning and highways advice to inform a planning application for the refurbishment of Ysgol Gymraeg Bro Morgannwg (YGBM).

1.1.3 We liaised with the VoG, in their role as the Local Highway Authority (LHA), during a scoping exercise for the Transport Assessment (TA). A Scoping Note was prepared and sent to the LHA to gain an understanding of the level of assessment required for the TA. The LHA provided a response with some further recommendations, where suggested additions or changes in approach were taken on board, wherever possible. A copy of the final agreed scoping report is included at **Appendix 1.1**, together with the exchange that took place informing the final document.

1.2 Site Location and Existing Usage

1.2.1 The site is situated in Barry, within the VoG. It lies to the south of the A4226 and west of the A4050, around 1.6km to the north of Barry Town Centre. Cardiff and Cowbridge lie approximately 16km and 21km to the north-east and west respectively. Residential areas are located to the east, south and west. Whitmore High School (WHS) and Barry Hospital are located immediately to the north and east of the site respectively, with Barry Hospital sharing an access with the school site onto the A4050. Barry Hospital does not provide any emergency services and primarily provides outpatient services; a full description of the hospital's functions is set out in **Section 2.2**. The location of the site and the surrounding area is shown on **Figure 1.1**.

1.2.2 The site is accessed via the A4050, which connects Barry to Cardiff International Airport (CWL) via the A4226 and Cardiff City Centre via the A4226 and A4050. It is occupied by the existing YGBM, which is a co-educational welsh medium school (with primary, secondary and sixth form pupils), and associated playing fields and sports pitches.

1.2.3 Whitmore High School (WHS), located immediately to the north and Pencoedtre High School (PHS) located approximately 2km northeast, are also preparing planning applications for a new high school.

1.3 Proposed Development

1.3.1 The existing school population comprises 1,133 pupils (1,015 primary/secondary and 118 sixth form) and has consent for up to 1,361 pupils. The existing staff numbers are a total of 109; of which 91 are connected with the secondary component (74 of those are teaching staff).

1.3.2 The proposals will seek planning permission to enrol 1,660 pupils, of which 250 are sixth form. The staff numbers are proposed to remain the same as currently exists.

1.3.3 The proposals for expansion and refurbishment are limited solely to the comprehensive element of the wider school campus; this will include the erection of a new teaching block and improvement to the sports facilities.

1.3.4 WHS, the neighbouring site, is also undergoing development in line with 21st Century Schools. There is potential for these bodies (Sports Centre and School) to merge links and possibly utilise facilities around a timetabled agreement. There are proposals developed as part of the new WHS to share school bus servicing arrangements. The WHS site will include access and parking for YGBM to reduce the impact of a Passenger Service Vehicle (PSV) movements on the existing shared access of YGBM with Barry Hospital.

1.3.5 This TA will address the transport planning inputs required to inform the planning application and its level of assessment has been agreed through meetings and discussions with the Local Education Authority (LEA).

1.4 Report Structure

1.4.1 The TA examines the existing transport and highway issues relating to the proposed development. It considers the expected travel demand and also investigates methods of limiting car based travel to produce a sustainable development in line with national and local planning guidance.

1.4.2 The TA is structured as follows:

- Section 2 – Existing Situation and Site Accessibility: Examines the local transport conditions in the vicinity of the site and the accessibility of the site to non-car modes of travel;
- Section 3 – Development Proposals: Provides a detailed description of the development proposals, including the proposed means of access and parking provision;
- Section 4 – Planning Policy Review: Considers the development in the context of relevant national and local planning and transport policies;
- Section 5 – Trip Generation and Distribution: Sets out the existing/forecast trip generation for all modes of travel and method of trip distribution for the proposed development;
- Section 6 – Traffic Impact Assessment: Examines the impact of the development proposals on the highway network during the weekday AM and PM peak hours;
- Section 7 – Transport Implementation Strategy: Details the key measures recommended to improve the existing conditions, along with encouraging sustainable travel; and
- Section 8 – Conclusions: Summarises the key findings and conclusions of the TA.

2. Existing Situation and Site Accessibility

2.1 Introduction

2.1.1 This section of the TA provides a description of the site location and its existing usage, the local highway network, current safety and traffic conditions, and accessibility to non-car modes of travel.

2.2 Site Location and Existing Usage

2.2.1 The site is situated in Barry, within the VoG. It lies to the south of the A4226 and west of the A4050, around 1.6km to the north of Barry Town Centre. Cardiff and Cowbridge lie approximately 16km and 21km to the northeast and west respectively. Residential areas are located to the east, south and west. Whitmore High School (WHS) and Barry Hospital are located immediately to the north and east of the site respectively, with Barry Hospital sharing an access with the school site onto the A4050. The location of the site and the surrounding area is shown on **Figure 1.1**.

2.2.2 The premises are accessed via the A4050, which connects Barry to Cardiff International Airport (CWL) via the A4226 and Cardiff City Centre via the A4226 and A4050. It is occupied by the existing YGBM, which is a co-educational welsh medium school (with primary, secondary and sixth form pupils), and associated playing fields and sports pitches.

2.2.3 Barry Hospital does not provide any emergency services and primarily provides outpatient services; the hospital's functions are set out in **Table 2.1**.

Table 2.1: Key Services at Barry Hospital

Barry Hospital Key Services	
Dental	Pharmacy
Information and Support Centre	Plebotomy
Minor Injuries Unit	Dietician
Mental Health Services for Older People	Occupational Therapy
Primary Care out of hours	Podiatry
Older Persons Acute and Intermediate Care Directorate (Day Hospital)	Physiotherapy
Outpatients Clinic	Speech and Language Therapy

2.2.4 As **Table 2.1** highlights, there are no emergency services associated with Barry Hospital, it primarily provides out-patient services.

2.3 Local Highway Network

2.3.1 The local highway network is shown on **Figure 1.1**. The site is accessed via a signal-controlled junction with the A4050 to the east. The access road from the A4050 splits at a priority junction and serves separate access roads to Barry Hospital and YGBM, with YGBM forming the minor arm of the junction. This short section of route between the signalised junction and the priority access junction has a carriageway width of 6m with footways on both sides of 1.5m minimum width; the footway on the north side serves the access to Barry Hospital and the footway on the south side serves the access to YGBM. The road has double yellow line parking restrictions on both sides.

2.3.2 The minor arm access road to YGBM is located around 30m west of the A4050. The access road to YGBM has a carriageway width of 6m with footways on both sides of 1.5m minimum width. It is subject to a 5mph speed limit and street lighting is provided. There are double yellow lines parking restrictions on the north side, and also on the south side for a distance of 30m from the link to the A4050. At, around 70m along the internal route the access road to YGBM connects with a one-way loop that serves the school car park, coach waiting area and the access to the primary school. There are zebra crossings provided across the entrance to and the exit from this internal loop

2.3.3 The existing car park comprises 88 spaces, this is in addition to a separate car park located near the school reception which has capacity to accommodate 16 parking spaces, which includes 2 parking spaces designated for disabled users and spaces for visitors. Another parking area, adjacent and separate to this provides parking for school minibuses. In additional to these, there is an unmade overflow car park located to the south of the main parking area that provides an additional informal 36 spaces. In terms of cycle parking there is an existing provision of 10 sheffield cycle parking stands providing spaces to park 20 bicycles.

2.3.4 The link to the A4050 connects with the A4050 at a signal-controlled junction. The A4050 forms the northern and southern arms, and the access road to Barry Hospital/YGBM access forms the western arm. The junction incorporates signal-controlled pedestrian crossings on the southern and western arms; these are in a staggered arrangement meaning crossing movements are undertaken in two stages. There are Advanced Stop Lines (ASLs) for cyclists on all arms of the junction.

2.3.5 The section of the A4050 passing the site routes on a north-south alignment between the A4050/A4226 corridor and the A4055. It is a single carriageway road of up to 11.5m width, but this typically includes hatching and on-street parking such that the typical effective carriageway width is around 7m. There are footways on both sides of the carriageway of 2m minimum width. This section of the A4050 is subject to a 30mph speed limit and street lighting is provided. A speed camera is located approximately 170m north of the junction with YGBM and Barry Hospital, largely managing the speeds along the A4050 in this area.

2.3.6 The A4050 connects to Barry Road at a mini-roundabout junction located around 650m to the south of the A4050/access road serving Barry Hospital and YGBM signal-controlled junction. The A4050 forms the northern and southern arms, and Barry Road forms the eastern arm. Barry Road is a key east-west link, serving surrounding residential areas. The A4050 continues southwards towards the town centre and A4055.

2.3.7 The A4050 connects to the A4226 at a roundabout junction located around 600m to the north of the A4050/access road serving Barry Hospital and YGBM signal-controlled junction. The A4050 forms the north-eastern and south-eastern arms, and the A4226 forms the south-western arms. There is an uncontrolled crossing on the south-eastern arm of the A4050; this comprises dropped kerbs, tactile paving and a central island, meaning crossing movements are undertaken in two stages.

2.3.8 The A4050/A4226 corridor is one of the key highway links in the wider area. The A4050 provides a connection between the A48 and A4232 at Culverhouse Cross (Cardiff) to the north. It also connects with the A4231 to the east, which provides access to industrial land to the southeast. To the southwest, the A4226 serves CWL and also provides a connection to the A48.

2.3.9 The A4050/A4226 corridor within Barry is a single carriageway road subject to a 40mph speed limit. There is a shared footway/cycleway on the south side of carriageway, with crossing facilities provided on side roads. There is also a footway on the north side of the carriageway along most of the corridor, with non-provision generally limited to a section east of Merthyr Dyfan Road (MDR). Other key junctions along the corridor and not already referenced in the preceding paragraphs include the A4050/A4231 and A4226/B4266 roundabouts junctions, and the A4050/MDR and A4050/Stirling Road signal-controlled junctions.

2.4 Highway Operational Conditions

Traffic Surveys

2.4.1 A number of traffic surveys have been undertaken to establish the operational conditions on the local highway network. These have included locations directly related to the highway network in the immediate vicinity of the site. Data from other locations surveyed as part of wider work in the area have also been included.

2.4.2 An independent survey company was commissioned to undertake Junction Turning Count (JTC) surveys. These were undertaken between the hours of 07:00-10:00 and 14:00-18:00 on Wednesday 27th June 2018 – a neutral time, as agreed by the LHA. The locations of surveyed junctions are shown on **Figure 2.1** and are as follows:

- A4050/MDR signal-controlled junction;

- MDR/ PHS access priority junction;
- A4050/A4426 roundabout;
- A4050/access road serving Barry Hospital and YGBM signal-controlled junction;
- Barry Hospital access/YGBM access priority junction;
- A4050/Barry Road mini-roundabout junction;
- A4226/entrance to WHS/Barry Fire Station crossroads junction; and
- A4226/exit from WHS/Stirling Road signal-controlled junction.

2.4.3 From analysis of traffic movements to/from the site access, it was identified that the weekday AM and PM peak hours are 08:00-09:00hrs and 15:00-16:00hrs respectively; this corresponds with the morning drop-off/afternoon pick-up periods. The observed traffic flows on the surveyed network during these time periods are shown on **Figures 2.2** and **2.3**. The traffic flows on the key highway links in the vicinity of the site are summarised in **Table 2.2**.

Table 2.2: Summary Weekday Traffic Flow Information

Link No. and Description		Direction	AM Peak Hour (08:00-09:00)		PM Peak Hour (15:00-16:00)	
			Total Vehicles	HGV%	Total Vehicles	HGV%
1	A4050, east of A4050/A4226 roundabout junction	EB	873	7%	961	4%
		WB	829	7%	1,014	4%
		Two-Way	**1,702**	**7%**	**1,975**	**4%**
2	A4050, south of A4050/A4226 roundabout junction	NB	502	7%	625	4%
		SB	555	4%	635	1%
		Two-Way	**1,057**	**5%**	**1,260**	**2%**
3	A4226, west of A4050/A4226 roundabout junction	EB	874	5%	841	4%
		WB	777	7%	884	5%
		Two-Way	**1,651**	**6%**	**1,725**	**4%**
4	A4050, north of A4050/access road to Barry Hospital and YGBM signal-controlled junction	EB	588	5%	808	3%
		WB	780	3%	798	1%
		Two-Way	**1,368**	**4%**	**1,606**	**2%**
5	A4050, south of A4050/access road to Barry Hospital and YGBM signal-controlled junction	NB	682	4%	760	3%
		SB	769	3%	836	1%
		Two-Way	**1,451**	**4%**	**1,596**	**2%**
6	Access road to Barry Hospital and YGBM	EB	258	3%	276	2%
		WB	363	1%	190	1%
		Two-Way	**619**	**2%**	**466**	**1%**
7	YGBM access	EB	223	3%	207	2%
		WB	273	1%	146	1%
		Two-Way	**496**	**2%**	**353**	**2%**
8	A4050, north of A4050/Barry Road mini-roundabout junction	NB	685	4%	849	3%
		SB	754	4%	822	14%
		Two-Way	**1,449**	**4%**	**1,671**	**8%**
9	Barry Road, east of A4050/Barry Road mini-roundabout junction	EB	936	2%	834	1%
		WB	740	3%	1,083	2%
		Two-Way	**1,676**	**2%**	**1,917**	**2%**
10	A4050, south of A4050/Barry Road mini-roundabout junction	NB	847	2%	726	2%
		SB	710	4%	948	13%
		Two-Way	**1,557**	**3%**	**1,674**	**8%**

2.4.4 **Table 2.2** shows that the A4050/A4226 corridor carries the highest volume of traffic of the examined highway links during the AM and PM weekday peak hours. The YGBM access carries around 500 vehicles during the weekday AM peak hour and 350 vehicles during the weekday PM peak hour; a higher level of traffic during the AM peak hour is not unusual given pupil and staff arrivals are likely to occur concurrently during this period, whereas staff departures typically occur following pupil departures during the PM peak hour. The differences may also indicate that pupils dropped off by car during the AM peak hour use other modes during the PM peak hour.

On-Site Observations

2.4.5 A site visit of the school start (morning peak) and finish (afternoon peak) times was undertaken on Tuesday 27th November 2018. During the site visit, the operation of the school in terms of pupil and vehicle movements and their interaction was observed. The school opening times are staggered, with the primary element of the school starting at 08:30 and the secondary/sixth form element at 09:00.

2.4.6 The vehicular operation of the school during the start time of the secondary school appeared to be highly congested, both at the traffic signals accessing the school and within the school car park where parents and buses were dropping off. It was confirmed that on the day of the site visit, there was a Year 7 school trip leaving for Llangranog, returning on Friday. This field trip intensified the congestion during this peak time, with parents transporting their children and their luggage to school and therefore the observations were undertaken at a worst case AM peak.

2.4.7 During the morning period, secondary school pupils were witnessed crossing the pedestrian crossing at the signal-controlled junction for one stage, but rather than using the central reservation and crossing via the dedicated crossing for the second stage, the pupils walked past the central reservation and across the middle of the carriageway instead. This also happened during the school finishing time. It is noted from the current arrangements that there is not any real opportunity to change the crossing arrangements, as it is currently staggered to fit around residential driveways on each side of the carriageway

2.4.8 The finishing times are also staggered with the secondary school finishing at 15:05hrs and the primary school finishing at 15:30hrs. The coaches and minibuses associated with the secondary school collection parked in a single file, utilising both coach waiting areas which are currently provided. These buses vacated the area before 15:15hrs, where the lanes became available for the primary school parents to use to pick-up their children.

2.4.9 The car park was congested during both the school start and finishing times, with queuing back to the signal-controlled junction; at times, this is observed to be caused by vehicles waiting for pupils to cross the zebra crossings at the car park access. The crossings, however, are fundamental in the safe movement of pedestrians across the car park and into the school and will therefore remain a key function during the proposals.

2.4.10 A large number of pedestrians were observed using the northern footway along the access road and crossing the carriageway access to Barry Hospital, rather than using the southern footway and crossing at the controlled pedestrian crossing at the traffic signals. The northern footway is obstructed at the school entrance by the main school gate structure. There is no safe crossing provision to the southern footway at the access, neither is there a safe crossing point across the access to Barry Hospital. Despite this lack of formal provision, pupils do opt to use this route. It is suggested that measures are introduced to encourage pupils to use the southern footway at the school access.

2.4.11 Recommendations for the above on-site observations are included in **Table 3.1** in **Section 3.4.**

2.5 Road Safety

2.5.1 Personal Injury Collision (PIC) data has requested from the Welsh Government (WG); the purpose of this is to determine whether there are any locations on the highway network with poor collision records.

2.5.2 At the time of writing, no response has been received. Therefore, an initial review has been undertaken using the 'Crashmap' online resource. An extract showing the PICs recorded in the study area during the most recent five-year period, from 1st January 2013 to 31st December 2017, is reproduced at **Appendix 2.1**.

2.5.3 A total of 24 PICs were recorded in the five-year period, of which 21 were 'slight'. The remaining three PICs were categorised as 'serious'. No fatal PICs were recorded. The PIC data is summarised in **Table 2.3.**

Table 2.3: Summary of PICs

Location	No. of PICs by Severity			No. of PICs Involving Pedestrian / Cyclist Casualties
	Slight	Serious	Total	
A4226, west of A4050/A4226 roundabout junction	6	0	6	1
A4050, east of A4050/A4226 roundabout junction	1	1	2	0
A4050, between A4226 and access road to Barry Hospital/YGBM	8	1	9	5
A4050/access road to Barry Hospital/ and YGBM signal-controlled junction	1	0	1	0
A4050, between access road to Barry Hospital/YGBM and Barry Road	3	1	4	3
A4050/Barry Road mini-roundabout junction	2	0	2	1
Total	**21**	**3**	**24**	**10**

2.5.4 **Table 2.3** shows that most PICs in the study area have been recorded on the A4050, between the A4050/A4226 roundabout junction and the A4050/access road to Barry Hospital and YGBM signal-controlled junction. This highway link also has the highest number of recorded PICs involving pedestrian/cyclist casualties. Only one PIC has been recorded at the A4050/access road to Barry Hospital and YGBM signal-controlled junction; this was 'slight' and did not involve pedestrian/cyclist casualties.

2.5.5 Further analysis of PIC data will be undertaken once the data requested from the WG has been received. This will be issued as an addendum to this TA.

2.6 Walking and Cycling

2.6.1 As identified in **Section 2.4**, the local area to the site provides a network of footways and cycle-ways and pedestrian/cycle infrastructure which facilitate active travel for users of the site. The surrounding residential areas generally have footways on both sides of the carriageway, are in good state of repair and street lighting is provided.

2.6.2 There are footways on both sides of the access road serving YGBM and these are both illuminated. The northern footway, however, has restricted access where the school gate structure is positioned at this point. The position of the school gates creates a barrier to pedestrians and only allows less than 0.5m at the edge of the footway for pedestrians to continue their route into the school. In addition to this, there is no safe pedestrian route directly to this footway. The current footway provision on this side of the access road starts approximately 1m before the school gates; pedestrians cross at the Hospital access to get to this point. There is a dropped kerb provided at the start of this footway provision, implying pedestrians can cross the school access from the northern footway to the south, although this leads to where the southern footway is separated from the carriageway with an unbroken grass verge.

2.6.3 Crossing movements within the site are facilitated through the provision of zebra crossings. There are footways on both sides of the A4050 where it passes the site; these are illuminated. Signal-controlled pedestrian crossings are provided on the southern and western arms of the A4050/access road to Barry Hospital and YGBM signal-controlled junction. Other crossing facilities on the A4050 include a staggered signal-controlled pedestrian crossing and a zebra crossing located around 350m north and at 375m south of the A4050/access road to Barry Hospital and YGBM signal-controlled junction respectively.

2.6.4 There is an off-road shared footway/cycleway link between the A4226 and A4050 (connecting to the A4050 at the A4050/access road serving Barry Hospital and YGBM signal-controlled junction), which provides a more direct link than car modes for trips to/from the north. This is designated as a Public Right of Way (PRoW) (Reference: B1/25/1). There is a shared footway/cycleway on the south side of A4050/A4226 corridor. There is also a cycle route along the A4050, with a combination of on-road and off-road facilities.

2.6.5 The footways along the A4050 are generally in good state of repair, with some areas exhibiting stress cracks and deformations due to tree roots. The majority of local junctions at adjoining side streets have dropped kerbs and tactile paving in place provided; however, there are some areas lacking tactile provision.

2.7 Local Facilities

2.7.1 The Institution for Highways and Transportation's (IHT's) *Guidelines for Providing for Journeys on Foot*, published in 2000, identifies that 2km is the preferred maximum distance that people will walk for commuting and education purposes. Cycling has been identified as having the potential to replace car trips of up to 5km. 5km equates to approximately a 20 minute journey by bicycle.

2.7.2 **Figure 2.4** shows a 2km walking catchment from the site**.** From a pupil and staff perspective, this is primarily related to the distance travelled from their place of residence. This shows that there is a significant level of residential development within walking distance.

2.7.3 It is also beneficial for other day-to-day facilities such as retail and health facilities to be within walking and cycling distance. The distance and indicative walking/cycling times to these facility types are set out in **Table 2.4** and the locations of the facilities shown on **Figure 2.4**. This shows there is a range of retail and health facilities within active travel distances of the site.

Table 2.4: Accessibility to Local Facilities

	Local Facilities	Walking Accessibility		Cycling Accessibility	
		Distance (m)	Time (Minutes)	Distance (m)	Time (Minutes)
1	Barry Hospital	300m	3½ minutes	300m	1 minute
2	One Stop Convenience Store (Winston Road)	650m	7½ minutes	650m	2 minutes
3	Co-Op Convenience Store (Claude Road)	850m	10 minutes	850m	2½ minutes
4	Highlight Park Medical Practice (Stirling Road)	950m	11½ minutes	950m	3 minutes
5	Tesco Supermarket (Stirling Road)	950m	11½ minutes	950m	3 minutes
6	Barry Town Centre	2,200m	26 minutes	2,200m	6½ minutes

Note: Distances are approximate and measured from the centre of the site and along existing footways and cycle-ways.

2.8 Public Transport

Introduction

2.8.1 Existing public transport services operating in the vicinity of the site have been identified with reference to current timetable and routeing information.

Bus Services

2.8.2 The nearest bus stops to the site are the 'Hospital' bus stops on the A4050, located 300m east of the site, equating to a 3½ minute walk. The northbound bus stop comprises a bus shelter and off-line bus layby, and the southbound bus stop is marked by a pole-mounted flag. Services can also be accessed from the 'Highlight Park' bus stops on the A4226, located around 700m north of the site, equating to an 8½ minute walk. The bus stops comprise bus shelters and off-line bus laybys.

2.8.3 The IHT's *Guidelines for Providing for Public Transport in Developments*, published in 1999, suggests 400m as the acceptable walking distance to a bus stop. The 'Hospital' bus stops are therefore considered to be within the suggested acceptable walking distance from the site. The 'Highlight Park' bus stops are beyond the suggested acceptable distance; however, the guidelines state that this does not need to be slavishly adhered to, rather it is more important to provide services that are easy to understand and attractive to use.

2.8.4 **Table 2.5** provides a summary of bus services accessed from these bus stops.

Table 2.5: Bus Service Information

Service	Route	Direction	Days	First Service	Last Service	Approximate Frequency
96/96A	Cardiff – Barry	Towards Barry	Mon-Fri	08:25	23:14	30 minutes
			Sat	08:14	23:14	30 minutes
			Sun	09:50	23:10	60 minutes
		Towards Cardiff	Mon-Fri	07:00	22:58	30 minutes
			Sat	07:00	22:58	30 minutes
			Sun	10:03	23:58	60 minutes
97/97A	Barry – Barry	Clockwise	Mon-Fri	08:09	16:49	30 minutes
			Sat	09:39	16:09	30 minutes
		Anticlockwise	Mon-Fri	07:41	16:51	30 minutes
			Sat	09:11	15:41	30 minutes
100	Merthyr Dyfan – Highlight Park (via Barry)	Towards Highlight Park	Sun	12:31	23:36	60 minutes
303	Bridgend – Barry	Towards Barry	Mon-Sat	07:32	01:02	60 minutes
			Sun	07:48	00:28	120 minutes
		Towards Bridgend	Mon-Sat	07:29	23:59	60 minutes
			Sun	09:29	23:29	120 minutes
T9	Cardiff – Cardiff Airport	Towards Cardiff Airport	Mon-Sat	04:32	23:02	30 minutes
			Sun	05:32	23:02	30 minutes
		Towards Cardiff	Mon-Sat	05:05	00:05	30 minutes
			Sun	06:05	00:05	30 minutes
X91	Cardiff – Llantwit Major (via Leckwith)	Towards Llantwit Major	Mon-Fri	06:30	18:15	2 services
			Sat	08:57	16:47	2 services
		Towards Cardiff	Mon-Fri	07:41	19:30	2 services
			Sat	10:08	18:08	2 services

Notes:

1. *Information obtained from Traveline Cymru (November 2018).*
2. *Times for first/last service on Services 96/96A, 97/97A, 100 and 303 are the arrival/departure times at/from the 'Hospital' bus stops on the A4050.*
3. *Times for first/last service on Services T9 and X91 are the arrival/departure times at/from the 'Highlight Park' bus stops on the A4226.*
4. *Services 96/96A, 97/97A and 100 are operated by Cardiff Bus. Services 303 and T9 are operated by New Adventure Travel. Service X91 is operated by Capital Links/Cardiff Bus.*

2.8.5 **Table 2.5** shows that the 96/96A, 97/97A and T9 services offer frequent weekday services. Services to/from Cardiff are available every 30 minutes and hourly services are available to/from Bridgend. The 97/97A is one of the key services within Barry; it operates on a 30 minute frequency and takes a circular route that serves numerous residential areas and key destinations within Barry, including the town centre and railway stations. The route is shown on the extract below.

Route of Service 97/97A (Source: Traveline Cymru)

2.8.6 In addition to these services, there are numerous school transport services that provide specifically for pupil travel to/from the site. These are as follows:

- S2 – From Barry Island (also serves WHS);
- S10 – From Holton Road via Barry (also serves PHS and YGBM)
- S74 – From Eglwys Brewis, St Athan, Rhoose and Rhoose Point;
- S75 – From Ogmore-by-Sea, Southerndown, Wick, St Donats and Llantwit Major;
- S76 – From Redlands Road and Penarth;
- S76A – From Dinas Road, Lavernock and Penarth;
- S77 – From Llandough, Eastbrook, Dinas Powys;
- S78 – From Ewenny, Cowbridge, A48 and Wenvoe;
- S79 – From Colwinston, Llysworney, Llandow, Llancadle and Llancarfan;
- S80 – From Windsor Road, Penarth and Dobbins Road;
- S81 – From Ystradowen, Maendy, Prisk, Welsh St Donats and Welsh Hawking Centre;
- S82 – From St Mary Church, Tre-Aubrey and Llantrithyd;
- S83 – From Treoes, Graig Penllyn, Penllyn and Pentre Meyrick; and
- S84 – From Crossways, Llanblethian and Llandough.

Rail Services

2.8.7 There are four railway stations serving Barry; these are Barry, Barry Island, Barry Docks and Cadoxton. All stations are located on the Barry Branch line between Cardiff Central and Barry Island. Barry is also the junction at the start of the Vale of Glamorgan line which serves Rhoose and Llantwit Major and terminates at Bridgend.

2.8.8 The nearest station to the site is Barry; this is located approximately 2.4km to the southeast of the site (equating to a circa 29 minute walk or 7½ minute cycle). The station can also be accessed via the 97/97A bus service. The station is managed by Transport for Wales. **Table 2.6** shows that regular services to key destinations are accessible from Barry railway station.

Table 2.6: Service Information

Direction	Days	First Service	Last Service	Approximate Frequency
Cardiff Central – Barry	Mon-Fri	05:44	23:54	15 minutes
	Sat	05:44	23:53	15 minutes
	Sun	08:49	22:49	15-30 minutes
Barry – Cardiff Central	Mon-Fri	05:19	23:15	15 minutes
	Sat	05:19	23:15	15 minutes
	Sun	09:00	23:00	15-30 minutes
Barry – Bridgend	Mon-Fri	06:04	23:06	60 minutes
	Sat	06:05	22:05	60 minutes
	Sun	09:05	21:05	120 minutes
Bridgend – Barry	Mon-Fri	06:15	23:15	60 minutes
	Sat	06:15	23:15	60 minutes
	Sun	10:15	22:15	120 minutes

Notes:

1. *Information obtained from National Rail timetable (November 2018).*
2. *Services times are arrival/departure times at/from Barry.*

2.8.9 The site is considered to have a good accessibility via railway services. The provision of direct services is a considerable benefit to encouraging sustainable travel for site users and an alternative to travelling by vehicle.

2.9 Summary

2.9.1 The site is situated in Barry, within the VoG. It lies to the south of the A4226 and west of the A4050, around 1.6km to the north of Barry Town Centre. Cardiff and Cowbridge lie approximately 16km and 21km to the northeast and west respectively. Residential areas are located to the east, south and west. Whitmore High School (WHS) and Barry Hospital are located immediately to the north and east of the site respectively, with Barry Hospital sharing an access with the school site onto the A4050.

2.9.2 The local highway network to the site includes the YGBM access road, access road serving Barry Hospital and YGBM, the A4050, Barry Road and A4226. Traffic surveys were undertaken to identify existing operational conditions and to inform the traffic impact assessment. These have identified the two-way traffic flows on the key links in the study area during the weekday AM and PM peak hours as follows:

- Access road to YGBM: 350-500 vehicles per peak hour;
- Access road to Barry Hospital and YGBM: 500-600 vehicles per peak hour;
- A4050 (south of the A4226): 1,000-1,700 vehicles per peak hour;
- Barry Road: 1,700-1,900 vehicles per peak hour;
- A4050 (east of the A4226): 1,700-2,000 vehicles per peak hour; and

- A4226: 1,700 vehicles per peak hour.

2.9.3 PIC data has been requested from the WG, but has not yet been supplied at the time of writing. An initial review of PIC data has been undertaken using the 'Crashmap' online resource. This has identified that 24 PICs have been recorded in the study area during the five-year period from 1st January 2013 to 31st December 2017. Further analysis of PIC data will be undertaken once the data requested from the WG has been received. This will be issued as an addendum to this TA.

2.9.4 The site benefits from existing provision for pedestrians and cyclists in the locality; this includes footways on both sides of the majority of roads surrounding the site, with some allowing for shared use. Local facilities are located within walking and cycling distance of the site.

2.9.5 During a site visit, a number of vehicular and pedestrian observations were made. These are summarised, accompanied by a series of recommendations in **Table 3.1** in **Section 3.4**.

2.9.6 Bus services are accessible from bus stops located on the A4050, which are within the IHT's suggested 'acceptable' walking distance. Other services are accessible from bus stops located on the A4226; while these are slightly beyond the suggested 'acceptable' walking distance; it is considered that site users would be willing to walk the additional distance given the frequency of services. Both bus stops provide access to frequent weekday services, including those to Cardiff and local routes that serve numerous residential areas and key destinations within Barry, including the town centre and railway stations. There are also numerous school transport services that provide specifically for pupil travel to/from the site.

2.9.7 Rail services are available from numerous railway stations in the town, the nearest being Barry station. This provides accesses to high frequency services to/from Cardiff Central (every 15 minutes on weekdays) and reasonable frequency services to/from Bridgend (every hour on weekdays). Overall, the site is considered accessible by sustainable modes.

3. Development Proposals

3.1 Introduction

3.1.1 This section of the report provides a description of the development proposals, including the site access strategy.

3.2 Overview of Proposals

3.2.1 The existing school population comprises 1,133 pupils (1,015 primary / secondary and 118 sixth form) and has consent for up to 1,361 pupils. The existing staff numbers total 109; of which 91 are connected with the secondary component (74 of those are teachers).

3.2.2 The proposals will seek planning permission to enrol 1,660 pupils, of which 250 are sixth form. The staff numbers are proposed to remain the same as currently exists.

3.2.3 The proposals for expansion and refurbishment are solely for the comprehensive element of the school, including the erection of a new teaching block and improvement to the sports facilities. The masterplan is shown at **Appendix 3.1**.

3.2.4 WHS, the neighbouring site, is also undergoing development in line with 21st Century Schools. There is potential for these bodies (Sports Centre and School) to merge links and possibly utilise facilities around a timetabled agreement.

3.3 Phases

3.3.1 The school is proposed to be built in multiple phases between summer 2019 and autumn 2021. This is to ensure the school can continue to operate during the expansion.

3.4 Access Strategy

Vehicle Access

3.4.1 The site will continue to be served off the A4050, with the spur from the signalised-controlled junction facilitating separate access to Barry Hospital and YGBM. The access road to YGBM is located around 30m west of the A4050.

3.4.2 As part of the WHS site masterplan, it is proposed to develop shared school bus drop-off facilities with YGBM. This is being progressed in anticipation that the YGBM and WHS proposals will follow a similar application timeline and be of benefit to the wider highway network by removing large PSV movements from the shared hospital and school access. The 14 buses which will be relocated to the new bus drop off accessed via WHS will arrive using the same vehicular access; two of these buses already access WHS in the existing situation. The proposed internal circulation changes will facilitate YGBM buses to continue along the WHS access road to a new layout of bus drop-off/pick-up area, situated immediately southwest of the WHS car park. Pupils will be able to walk to YGBM via a secure pedestrian footpath. Acceptable footways will be provided at each coach drop-off location and a link to YGBM school grounds. The location of the school bus drop off point can be viewed in the Masterplan (see **Appendix 3.1**).

3.4.3 Swept Path Analysis (SPA) has been undertaken of the proposed bus bay pick-up/drop-off point, accessed via WHS off the A4226, as shown in **Appendix 3.2**. Based on information provided by the client, a mix of coaches and minibuses will serve YGBM, therefore an SPA was undertaken using a 15m coach. Bus bays are provided to accommodate eleven coaches and three minibuses. The SPA indicates that the current design adequately accommodates the manoeuvring of a 15m coach and the parking of the 14 buses required in total.

3.4.4 SPA was also undertaken of a fire tender vehicle and a refuse vehicle entering YGBM school grounds, turning and exiting in a forward manoeuvre. These are also included in **Appendix 3.2**.

3.4.5 All pick-up/drop-off points provide areas for boarding/alighting buses, with safe pedestrian access to/from YGBM. A controlled zebra crossing will also be provided to allow pedestrians to cross the carriageway to safely walk to YGBM.

3.4.6 General staff parking will remain in its current location. The topography of the neighbouring school sites is fairly flat, so access is easy for all for transfer from school transport and any areas of ascension will have a ramp provided for the mobility impaired.

Pedestrian and Cycle Access

3.4.7 It is proposed that all abilities shall be able to easily enter into and move through the landscape and each space within it, via level or ramped entry points where necessary. Existing footpaths may be re-aligned to suit new desire lines and entry points.

3.4.8 The masterplan includes a safe and convenient network of footways into the school, using the existing off road provision and the continued utilisation of the zebra crossings at the access and egress of the car park, along with an additional zebra crossing linking the informal parking area (to be redeveloped as part of the scheme) to the existing footways. Pedestrian access will be via the existing main pedestrian access off the A4050, with an additional pedestrian entrance to the south of the site via Greenbanks Drive. Safe off-road footpaths will be provided, linking the coach drop-off/pick-up location with the school building.

3.4.9 During the site walkover audit, it was observed that a significant number of pupils were using the northern footway along the access road to leave the school at the end of the school day. It is considered a potential safety concern for pupils to be making this movement across the access to Barry Hospital, therefore it is suggested that a controlled (zebra) crossing is provided, potentially with the inclusion of a raised plateau, at the entrance to the school, inside the gates. This will facilitate pedestrian movements across the carriageway to the southern, more appropriate footway, to continue their journey to the signalised junction. An extension of the guard rail would discourage pedestrians from crossing at the Hospital access and approaching the northern footway from this approach.

3.4.10 **Table 3.1** summarises the observations made during the site visit that could be improved with the aim to enhance safety and reduce traffic congestion, particularly during the school start and finishing times.

Table 3.1: Vehicular and pedestrian-related observations and subsequent recommendations

Observation	Recommendation
Congestion at the traffic signals causing tailbacks and queuing in both directions along the A4050: A4050 (southbound): Queuing to A4050/A4226 roundabout; A4050 (northbound): Queuing beyond the College access.	Reduction and potential removal of all school buses from the school access (included as part of the development proposals). Introduce travel interventions via a School Travel Plan (STP) to encourage more staff and pupils to travel to school via alternative modes to the private car.
A4050 (southbound) – Vehicles parked on approach to the signals, forcing vehicles to merge and queue single file while over taken the vehicle(s).	A4050 (southbound) – Provision of informal and temporary parking restrictions by placing traffic control cones on a daily basis restricting parking along the eastern side of the carriageway to ensure vehicles can utilise both lanes approaching the signal-controlled junction (during school AM/PM peaks). All dwellings have ample off-road parking and vehicles are still able to park along the western side of the carriageway.
A4050 (northbound) – Vehicles parked on unrestricted highway causing obstruction to queuing traffic.	A4050 (northbound) – As above, introduce informal and temporary parking restrictions along the highway (in the form of traffic control cones, on a daily basis) to the extent of the two lane provision approaching the signals (during school AM/PM peaks)..
Queuing back to the traffic signals as vehicles entering the school wait for pedestrians to cross the zebra crossing at the car park entrance.	Introduce travel interventions via a STP to encourage more staff and pupils to travel to school via alternative modes to the private car.
Vehicle speed reduction measures along the access road. The access road currently has a 5 mph speed limit; measures should be introduced to ensure that this is followed.	Provide signage along the school access road, with the inclusion of physical speed reduction measures. This would complement the proposed zebra crossing at the entrance to the school access road.
Pedestrians are using the northern footway to access the school. There is no safe provision to access this footway, with the school gates providing a barrier to pedestrians on this side, with some pedestrians forced into the carriageway.	Provide a controlled (zebra) crossing, potentially with the inclusion of a raised plateau) at the entrance to the school, inside the gates. This will facilitate pedestrian movements across the carriageway to the southern, more appropriate footway, to continue their journey to the signalised junction. The inclusion of guard rail extension at the Hospital access; to extend along the footway of the Hospital access as far as the zebra crossing. This will discourage the crossing of pupils at the Hospital access

3.5 Parking Provision

Car Parking

3.5.1 YGBM currently has a main car park for secondary staff, which is also used by a small handful of sixth form students. This car park currently has 88 car parking spaces, seven motorcycle spaces and a drop off area currently used for school buses. This drop off area will remain in place as part of the scheme, for parent pick up/drop off i.e. unaffected by the application.

3.5.2 The school also has additional parking for visitors and disabled users at a car park located near the existing school entrance with capacity for 16 vehicles. There is also and adjacent separate parking area for mini buses. In addition to these, there is an unmade overflow car park to the south of the existing main car park, this provides informal parking for 36 cars in unmarked bays. Therefore the current car parking capacity at the comprehensive school equates to 140 parking spaces.

3.5.3 The primary school parking is entirely separated from the secondary school, it has a gated car park for 16 staff, plus two spaces for blue badge holders. It also has separate car parking spaces for visitors; six spaces plus three spaces for blue badge holders. This does not form any part of the application scheme proposals.

3.5.4 The proposals for the school are for the expansion and refurbishment solely for the secondary element of the school, including the erection of a new teaching block and improvement to the sports facilities. As the proposals are an expansion to the existing comprehensive school and not a new development, it is not considered necessary to apply the VoG Parking Standards 2015, adopted as SPG, to the existing car parking provision at the school. However, any subsequent new proposals which may require consideration will be set out later in this section.

3.5.5 The proposals for car parking at the secondary school are as follows:

- Retain the 88 spaces in the existing general car park;
- Removal of the visitor and disabled parking at the existing entrance, to allow the expansion of the school building as part of the proposals; and
- Formalise the unmade over flow car parking area, providing 34 parking spaces.

3.5.6 The total parking spaces proposed will be 122 spaces, as a replacement to the existing 140. The parking proposals as part of the secondary school expansion result in an overall reduction of 18 car parking spaces, based on the existing parking provision detailed in **paragraphs 3.5.1** and **3.5.2**.

3.5.7 The car parking adjustments, comparing existing with proposed, are summarised in **Table 3.2**.

Table 3.2 Summary of parking provision adjustments

Parking Type	Existing	Proposed
General Car Park	88	88
Visitor & Disabled	16	-
Additional Parking	36 (informal)	34 (formal)
Total Parking	**140**	**122**

3.5.8 As mentioned above, the new elements of the application proposals will be considered in accordance with current parking guidance. The proposals would not see an increase in staff levels but there will be increases in student numbers. The VoG parking standards includes parking guidance for sixth form students and makes provision for 1 car parking space per 20 students. The sixth form uplift of 132 students would equate to a total of 7 parking spaces. However, the 122 car parking spaces proposed as part of the secondary school expansion are considered sufficient and do not include this addition, this will work to reduce the overall existing car parking situation and the reliance on private car use..

3.5.9 The VoG Parking Standards 2015 has been used to assess disabled parking at the proposed school. Parking provision advice for disabled blue badge holders does not specifically mention the school land planning use class. Instead the requirement is set out as 5% for employment parking and one space (minimum) plus 6% for parking open to the general public. On this basis the requirement for 5% would be most appropriate for these proposals, which equates to six spaces. It is therefore suggested that the proposals allow for this.

3.5.10 Guidance also states, and therefore it is suggested, that there be one parking space allocated for a commercial vehicle, three spaces allocated for visitors with motorcycle parking to be provided at a level of 5% of the car parking provision, which equates to five spaces. The seven existing motorcycle spaces will remain, which equates to more than the 5% requirement based on the VoG parking standards.

Cycle Parking

3.5.11 The VoG Parking Standards 2015 has also been used to assess the cycle parking at the proposed school. The guidance states that cycle parking should be located in a safe, secure and convenient location and for reasons of security, cycle parking facilities should be located in areas that are visible and therefore allow for informal surveillance. The school currently has space for 20 bicycles, in the form of 10 stands and a shelter. Only two bikes were observed to be parked there during the time of the site visit.

3.5.12 The parking standards have been used to assess the cycle parking provision required as part of the proposals. **Table 3.3** summarises the cycle parking standards as per the standards, along with the proposed cycle parking for the development.

Table 3.3: Cycle Parking Standards

Development Type	Sub-Category	Cycle Parking Type	Standard	Allocation of Spaces
Education	Secondary Schools & Colleges of Further Education	Short Stay	1 stand per 100 students	12
		Long Stay	1 stand per 5 staff	18
			1 stand per 6 students of age 17	42
			Total	**72**

3.5.13 Based on the parking standards, it is recommended that space and facilities are provided to park a total of 72 bicycles as part of the proposed development. It may be suitable to distribute these stands in a number of suitable locations around the school site particularly near school entrances.

3.5.14 Given the current local take up of cycle parking it may be considered to provide further cycle parking (from the 20 already provided) as demand increases. This could be provided, as an example, as part of ongoing Travel Plan measures.

3.6 Construction Traffic

3.6.1 Managing the construction effects will form part of the Construction Traffic Management Plan (CTMP) or similar document, to be secured by planning condition. The management measures will be intended to protect the environment, amenity and safety of local residents, businesses, the general public and the surroundings in the vicinity of the proposed development.

3.6.2 As part of the CTMP, a construction vehicle routeing regime for access to the construction site will be identified and agreed with the LHA to ensure that drivers of construction related vehicles do not use inappropriate routes which are unsuitable by virtue of their width, alignment or character. The CTMP will also consider measures to discourage deliveries during peak traffic periods on the highway network. There will ongoing monitoring of the CTMP during the construction phase to establish the effectiveness of the measures.

3.7 Summary

3.7.1 This chapter has provided a description of the development proposals, including the site access strategy.

3.7.2 The proposals for YGBM are for the expansion and refurbishment of the comprehensive element of the school, including the erection of a new teaching block and improvement to the sports facilities.

3.7.3 The existing school currently has 1,133 pupils enrolled with a permitted capacity of 1,361 pupils. The existing staff numbers total 109; of which 91 are connected with the secondary component (74 of those are teachers).

3.7.4 The proposals will seek planning permission to enrol 1,660 pupils, of which 250 are sixth form. The staff numbers are proposed to remain the same as currently exists.

3.7.5 The school is accessed off the A4050 and shares its access with Barry Hospital. As part of the WHS site masterplan, it is proposed to develop shared school bus drop-off facilities with YGBM. This is being progressed in anticipation that the YGBM proposals will follow a similar application timeline and to benefit the wider highway network by removing large PSV movements from the shared hospital and school access. The masterplan includes a safe and convenient network of footways into and within the school grounds. Pedestrian access will be via the existing main pedestrian access off the A4050.

3.7.6 The total number of parking spaces proposed to serve the secondary school as part of the proposals is 122 spaces, this will result in a reduction of the current provision of 140 spaces. The existing 7 motorcycle spaces will remain as part of the proposals.

3.7.7 The VoG Parking Standards 2015 has been used to assess disabled parking at the proposed school. Parking provision advice for disabled blue badge holders does not specifically mention the school land planning use class. Instead the requirement is set out as 5% for employment parking and one space (minimum) plus 6% for parking open to the general public. On this basis the requirement for 5% would be most appropriate for these proposals, which equates to 6 spaces. It is therefore suggested that the proposals allow for this.

3.7.8 Based on the parking standards, it is recommended that cycle parking stands are provided for parking a total of 72 bicycles as part of the proposed development. It may be suitable to distribute these stands in a number of suitable locations, particularly located in close proximity to school entrances. An approach could be discussed with VoG Highway Officers which introduces cycle parking as demand increases through school Travel Planning measures.

4. Planning Policy Review

4.1 Introduction

4.1.1 This section of the report provides a review of existing planning and transport policies at a national and local level considered relevant to the proposed development.

4.2 National Policy

Planning Policy Wales Edition 10, December 2018

4.2.1 Edition 10 of *Planning Policy Wales* (PPW) was published in December 2018 and sets out the land use planning policies of the Welsh Government (WG). It is supported by a number of Technical Advice Notes (TANs), which provide detailed planning advice on subjects contained within PPW. *TAN 18: Transport* is considered of particular relevance to the proposed development and is included in this policy review. An overarching theme within PPW is the commitment of the WG to sustainability.

4.2.2 Planning policy in Wales is plan-led, with up to date LDPs forming a fundamental part of the system. PPW states that planning applications *"must be determined in accordance with the adopted plan unless material considerations indicate otherwise"*. This section provides a review of the VoG LDP to demonstrate that the proposed development accords with policy.

4.2.3 PPW outlines the vision for development of a more effective and efficient transport system, the promotion of more sustainable and healthy forms of travel, as well as minimising the need to travel. PPW indicates that this will be achieved through integration:

- *"within and between different types of transport;*
- *between transport measures and land use planning;*
- *between transport measures and policies to protect and improve the environment; and*
- *between transport measures and policies for education, health, social inclusion and wealth creation."*

4.2.4 Paragraph 4.1.8 states that the Welsh Government (WG) is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the Well-being of Future Generations Act.

4.2.5 Therefore the WG outlines a support for a transport hierarchy in relation to the accessibility of new development that prioritises walking and cycling in the first instance, followed by public transport, and finally private motor vehicles. This TA provides a number of measures to encourage sustainable travel with the view to reduce single occupancy car travel. These measures are set out in the **Transport Implementation Strategy (TIS), Section 7.**

4.2.6 Paragraph 4.1.10 states:

"Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services."

4.2.7 Paragraph 4.1.50 states that car parking provision has a major influence on both mode choice and development patterns, and that *"minimum parking standards are no longer appropriate"*.

4.2.8 Paragraphs 4.1.56 to 4.1.57 identify the requirements for development proposals to be accompanied by a TA. It directs professionals to the TAN 18 for guidance on the preparation and content of TA's.

Technical Advice Note (TAN) 18: Transport (2007)

4.2.9 TAN 18 describes how to integrate land use and transport planning, and explains how transport impacts should be assessed and mitigated. It supports, and should be read in conjunction with, PPW.

4.2.10 The integration of land use and transport planning forms part of an overall sustainable development approach by the Welsh Government towards strategy and policy objectives. This is predominantly through maximising the accessibility of developments by sustainable modes of transport. This also includes reducing the need to travel and encouraging multi-purpose trips. Accessibility is defined in TAN 18 as *"the relative ability to take up services, markets or facilities"* (p.8).

4.2.11 The proposed development demonstrates a clear link between land use and transport planning, and is accessible by a range of sustainable transport modes. It provides opportunities to improve the walking and cycling infrastructure to the site, enhancing the potential for active travel.

4.2.12 Paragraph 4.6 states that parking standards for new development should be determined on an evidence basis which includes accessibility to other modes of transport. As the proposals are for the expansion and refurbishment of the secondary school and not a new school building, it is not considered necessary to apply the VoG Parking Standards to the existing car parking provision at the school. The proposals do, overall, reduce the existing car parking at the school by 18 car parking spaces. The parking standards have been used to determine the cycle parking required at the school (see **Section 3.5**).

4.2.13 Section 5 requires all new development to be designed in a way that is inclusive for all. The design of the development also plays an important role in providing genuine alternatives to car travel. This includes sufficient cycle parking in close proximity to the school access, improving walking routes to the school such a new pedestrian access via Greenbanks Drive and existing zebra crossings at the car park entrance and egress.

4.2.14 Section 7 considers the role that public transport can play in offering an alternative to car travel, giving emphasis to the provision of new services and has a large number of public bus services passing the site, along with a large number of school bus transport.

The Wales Transport Strategy (2008)

4.2.15 The *Wales Transport Strategy* (WTS) sets out the WG's main aims in improving transport:

- *"Reducing greenhouse gas emissions and other environmental impacts;*
- *Improving public transport and better integration between modes;*
- *Improving links and access between key settlements and sites across Wales and strategically important all-Wales links; and*
- *Increasing safety and security."*

4.2.16 As discussed in previous sections, the proposed development will improve integration between modes, facilitate use of existing public transport availability, enhance sustainable travel, and improve connectivity. It is therefore considered to be aligned with the WTS.

National Transport Finance Plan (2015)

4.2.17 The purpose of the National Transport Finance Plan (NTFP) is to:

- Provide the timescale for financing schemes undertaken by the WG;
- Provide the timescale for delivering these schemes and detail the estimated expenditure required to deliver the scheme; and
- Identify the likely source of financing to allow delivery to take place.

4.2.18 The NTFP is not a policy document nor does it seek to prioritise schemes to be taken forward. It brings together projects already being delivered. Some of these are already under construction. Others are already under development, but are not yet being built.

Active Travel (Wales) Act 2013

4.2.19 The *Active Travel (Wales) Act* became law in Wales in November 2013. The Act makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve their infrastructure for walking and cycling every year. It also requires both the WG and local authorities to promote walking and cycling as a mode of transport.

4.2.20 The purpose of this Act is to require local authorities to continuously improve facilities and routes for pedestrians and cyclists and to prepare maps identifying current and potential future routes for their use. The Act also requires new road schemes (including road improvement schemes) to consider the needs of pedestrians and cyclists at design stage.

4.2.21 The Act is accompanied by a statutory design guidance document, published in December 2014, which provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure, and is to be used at all stages of the process. Reference has been made to this guidance in the planning and design of the proposed development.

4.2.22 When carrying out its duties under the *Active Travel (Wales) Act 2013*, the VoG will seek to address the transport issues in areas of inactivity within the Communities First cluster area in Barry, as well as other centres of population This will be achieved by promoting transport schemes to improve sustainable transport infrastructure thereby enabling safe and affordable access to employment sites. Safe Routes in Communities schemes will be promoted to provide effective and affordable transport services to enable the best opportunities to encourage active and safe travel.

Wellbeing and Future Generations Act 2015

4.2.23 The *Wellbeing of Future Generations (Wales) Act 2015* has resulted in the WG outlining seven goals in a 'wellbeing statement' (published in 2017) that contribute to sustainable development and details the aims to improve economic, social, environmental and cultural wellbeing of Wales for future generations. The Act places a duty on Local Authorities to set wellbeing objectives and contribute to achieving the seven well-being goals, which are:

- A prosperous Wales;
- A resilient Wales;
- A healthier Wales;
- A more equal Wales;
- A Wales of cohesive communities;
- A Wales of vibrant culture and thriving Welsh language; and
- A globally responsible Wales.

4.2.24 The seven goals form the basis for twelve objectives, also detailed in the wellbeing statement. Several of these are directly relevant to this proposed scheme:

- Drive sustainable growth and combat climate change;
- Promote good health and well-being for everyone;
- Build healthier communities and better environments; and
- Deliver modern and connected infrastructure.

4.2.25 By improving sustainable transport infrastructure within the area surrounding the school, a mode shift away from car to walking, cycling and bus use will be encouraged. Sustainable transport will become more accessible and efficient allowing better connections between areas of leisure, employment and education whilst also encouraging growth. By creating an area that supports active travel the communities that use, the area will be healthier and have an improved environment to live and work and be educated in.

4.3 Local Policy

4.3.1 Planning legislation states that applications must be determined in accordance with the Development Plan unless material considerations indicate otherwise.

The Vale of Glamorgan Local Development Plan

4.3.2 *The Vale of Glamorgan Local Development Plan (LDP) 2011-2026* was updated in June 2017. The vision for the VoG is a place:

"That is safe, clean and attractive, where individuals and communities have sustainable opportunities to improve their health, learning and skills, prosperity and wellbeing; and

Where there is a strong sense of community in which local groups and individuals have the capacity and incentive to make an effective contribution to the future sustainability of the area."

4.3.3 In support of the social, economic and sustainable themes intrinsic to the LDP and Community Strategy Vision, ten key strategic objectives have been developed that set the context of the LDP Strategy. The strategic objective most appropriate to this scheme is:

- **Objective 3**: To reduce the need for VoG residents to travel to meet their daily needs and enabling them greater access to sustainable forms of transport.

4.3.4 The LDP further develops 'Strategic Policies' to underpin the LDP Strategy and further develops policies specifically relating to 'Managing Growth', 'Managing Development' in the VoG.

4.3.5 Strategic Policy SP7 (Transportation) states:

"Sustainable transport improvements that serve the economic, social and environmental needs of the Vale of Glamorgan and promote the objectives of the South East Wales Regional Transport Plan and the Local Transport Plan will be favoured"; and

*"Priority will be given to schemes that improve highway safety and accessibility, public transport, walking and cycling. All new developments that have a direct impact on the strategic transportation infrastructure will be required to deliver appropriate improvements to the network"***.**

4.3.6 The proposed scheme recommends a number of improvements to improve highway safety and walking and cycling safely to/from school. In particular is the northern footway along the school access road, which currently has no safe pedestrian connection across the Barry Hospital access. More information is contained in **Table 3.1**.

4.3.7 Policy MG6 (provision of Education Facilities) for Managing Growth in the VoG provides details of land allocations for specific school sites, however, it goes onto state that *"existing schools will be extended or improved to meet demand for school places during the plan period."*

4.3.8 YGBM is expanding its comprehensive facilities in order to facilitate the demand required for a welsh medium school.

4.3.9 Policy MG16 (Transport Proposals) for Managing Growth has been designed to safeguard a number of transport schemes. In addition to this, it maintains a commitment to encouraging walking and cycling. It states:

"An essential element in encouraging an increase in walking and cycling is the provision of a network of high quality dedicated routes that link communities and provide access to local retail, employment and recreation opportunities. The LDP will seek to encourage and give priority to those proposals that enhance opportunities for walking and cycling".

4.3.10 The development will encourage the increase of walking and cycling to the school through the recommended safety measures to the internal access road and removal of the northern footway. Furthermore, the introduction of a STP will further encourage sustainable travel to the school. More details on the proposed targets for mode change are contained in **Section 7**.

4.3.11 Policy MD2 (Design of New Development) states that development proposals should:

- *Provide a safe and accessible environment for all users, giving priority to pedestrians, cyclists and public transport users;* and
- *Have no unacceptable impact on highway safety nor cause or exacerbate existing traffic congestion to an unacceptable degree.*

4.3.12 In respect of this, the LDP states:

"All new development should be highly accessible. Walking and cycling have an important role to play in the management of movement across the area, particularly reducing the number of short trips taken by car. Developers will be required to ensure that new developments encourage walking and cycling by giving careful consideration to location, design, access arrangements, travel 'desire lines' through a development, and integration with existing and potential off-site links. Providing safe and convenient walking and cycling environments will help tackle health problems associated with physical inactivity and social exclusion factors arising from car dependency, poor access to services and public transport facilities."

4.3.13 YGBM has a number of acceptable walking and cycling routes, as previously discussed.

The Vale of Glamorgan Local Transport Plan 2015-2030

4.3.14 The Local Transport Plan (LTP) seeks to identify the sustainable transport measures required to ensure the VoG adheres to current requirements and good practices to allow for a sustainable transport environment for the period 2015 to 2020 as well as looking forward to 2030. It therefore seeks ways to secure better conditions for pedestrians, cyclists and public transport users and to encourage a change in travel choices away from the single occupancy car.

4.3.15 As most journeys by car, particularly for shopping and school travel, are relatively short, better conditions for pedestrians and cyclists can lead to a reduction in car use. A reduction in car use can promote good health and well-being, reduce the negative impacts on the environment that car travel can bring, offer better access to services and facilities, which in turn can offer improved economic opportunities and reduce the potential for traffic accidents. Sustainable transport infrastructure and services are therefore an important feature of modern day life.

The Vale of Glamorgan Parking Standards 2015

4.3.16 The *Vale of Glamorgan Parking Standards 2015* have been prepared in the context of *Planning Policy Wales Edition 7 (July 2014)* as SPG for the (now superseded) *Vale of Glamorgan Adopted Unitary Development Plan 1996-2011 (UDP)* and the (then) emerging *Vale of Glamorgan Local Development Plan 2011- 2026*. It sets out the VoG's parking standards and explains the planning policy for parking requirements for new developments or changes of use.

4.3.17 The 2015 parking standards have been adopted as SPG. The parking standards seek to promote and ensure transparent and consistent approaches to the provision of parking. In addition to this it helps to inform developers and designers what is expected of them in terms of sustainability considerations and travel planning.

4.3.18 The SPG provides additional design guidance in regard to parking which has been referenced in the design of the proposed development and has been used to determine the number of maximum car parking spaces and cycle parking at the school.

4.3.19 As the proposals are for the expansion and refurbishment of the secondary school and not a new school building, it is not considered necessary to apply the VoG Parking Standards to the existing car parking provision at the school. The proposals do, overall, reduce the existing car parking at the school by 18 car parking spaces. The parking standards have been used to determine the cycle parking required at the school, details of which are provided in **Section 3.5**.

4.4 Summary

4.4.1 This section of the report has provided a review of existing planning and transport policies at a national and local level that are considered relevant to the proposed development.

4.4.2 Planning law requires that applications for planning permission must be determined in accordance with the current Development Plan. The proposed development is considered to align with the objectives of the LDP.

4.4.3 The proposed development will facilitate opportunities for sustainable travel through the implementation of a STP, which will be sought as a planning condition, and is both a requirement of the national and local policy.

4.4.4 The proposed development will comply with the national and local policy and guidance, with access to the site being safe and suitable for all users and improved over the existing situation.

4.4.5 Furthermore, it has been demonstrated that the site is accessible via a range of sustainable modes including walking, cycling and public transport. In summary, the proposals comply with national and local policies.

5. Trip Generation and Distribution

5.1 Introduction

5.1.1 This section of the TA sets out the method for calculating the mode share for the existing school population, and the trip generation and distribution associated with the additional pupil population as part of the development proposals.

5.2 Existing School

5.2.1 The existing school population comprises 1,133 pupils (1,015 primary / secondary and 118 sixth form) and 109 staff. It is has consent for up to 1,361 pupils.

5.2.2 The existing comprehensive school does not currently have a School Travel Plan (STP); this document would typically contain data on the existing mode share of the pupil and staff population, established through travel surveys. A STP will be developed, to be secured by planning condition.

5.2.3 In the absence of a STP, the TA has utilised a combination of data sources to establish the existing mode share of the pupil and staff population. This includes traffic survey data at the school access, data on school bus use held by the VoG, and data recorded from the 2011 Census. This is considered a reasonable method for establishing an interim mode share, and will be reviewed as part of the development of the STP.

Stage 1: School Access Traffic Generation

5.2.4 The starting point for the assessments has involved analysis of the traffic survey data collected at the school access. For the purposes of this exercise, the analysis has focused on the data collected during the morning period, specifically between 07:00 and 09:00hrs. This is considered a reasonable period to provide a snapshot of pupil and staff travel behaviour; school days commence at 08:30/09:00hrs and therefore it is expected that most/all pupils and staff will be on-site by 09:00hrs, taking account of any late pupil arrivals and differences in staff working hours.

5.2.5 **Table 5.1** summarises the movements to/from the site during this period. These include cars/LGVs and cycles, while movements associated with school buses have been excluded; pupils arriving by this mode are captured in data supplied by the VoG. It is noted that no cycle movements were recorded in the survey; for pupils, it is possible that they may dismount prior to the access and walk along the footway.

Table 5.1: Car/LGV and Cycle Movements (Staff and Pupils) – AM Period (07:00-09:00hrs)

Mode	Arrivals	Departures
Car/LGV	340	228
Cycles	0	0
Total	**340**	**228**

5.2.6 The next stage of the process has been to identify which trips are associated with pupils and staff. The following assumptions have been made:

- Trips associated with staff are ‘arrivals’ only;
- Trips associated with sixth form pupils are ‘arrivals’ only; and
- Trips associated with secondary pupils are escorted and therefore involve an ‘arrival’ and a ‘departure’.

Stage 2: Staff Mode Share

5.2.7 The number of staff arriving by car/LGV has been identified based on a mode share derived through analysis of the 2011 Census 'Journey to Work' data. This has been undertaken for employment trips to the 'Vale of Glamorgan 010' Middle Super Output Area (MSOA); this area contains the existing school and is the most detailed/smallest geographical area available for analysis of method of travel to work. The mode share has been applied to the staff population total of 109; the mode share and resulting number of staff using each mode is set out in **Table 5.2**.

Table 5.2: Staff Mode Share

Mode	Mode Share	No. of Staff
Walk	11%	12
Cycle	2%	2
Public Transport	5%	5
Car	83%	90
Total	**100%**	**109**

Note: Summation errors due to rounding.

5.2.8 **Table 5.2** shows that 83% of staff (90 in total) travel by car. Walking is the next most popular mode for staff, with a mode share of 11% (12 in total).

Stage 3: All Pupils

5.2.9 The next stage has been to identify the movements to/from the site associated with primary/secondary and sixth form pupils. This has been derived by deducting the 'arrivals' associated with staff in **Table 5.2** from the 'arrivals' in **Table 5.1**, as shown in **Table 5.3**.

Table 5.3: Car/LGV and Cycle Movements (Primary/Secondary and Sixth Form Pupils) – AM Period (07:00-09:00)

Mode	Arrivals	Departures
Car/LGV	250	228
Cycles	0	0
Total	**250**	**228**

Stage 4: Sixth Form Pupil Mode Share

5.2.10 The vehicular movements associated with sixth form pupils have then been identified by deducting 'departures' from 'arrivals' in **Table 5.3**. The resulting movements to/from the site associated with sixth form pupils are set out in **Table 5.4**.

Table 5.4: Car/LGV and Cycle Movements (Sixth Form Pupils) – AM Period (07:00-09:00)

Mode	Arrivals
Car/LGV	22
Cycles	0
Total	**22**

5.2.11 For robustness, it is assumed that car/LGV movements associated with sixth form pupils have an occupancy level of one pupil per car; this therefore equates to 22 sixth form pupils travelling by car. The VoG has supplied data on school bus use by sixth form pupils; this shows that 52 pupils travel by school bus. In summary, it is identified that, of the 118 sixth form pupils at the existing school, 22 travel by car, 52 by school bus, and none cycle (as none were recorded in the traffic survey). The remaining 44 pupils are assumed to walk. This information and the resulting mode share is shown in **Table 5.5**.

Table 5.5: Mode Share – Sixth Form Pupils

Mode	No. of Pupils	Mode Share
Walk	44	38%
Cycle	0	0%
School Bus	52	44%
Car	22	18%
Total	**118**	**100%**

Stage 5: Primary/Secondary Pupil Mode Share

5.2.12 The vehicular movements associated with primary/secondary pupils are considered to be those remaining following deduction of staff 'arrivals' and sixth form pupil 'arrivals' from **Table 5.1**. The resulting movements to/from the site associated with secondary pupils are set out in **Table 5.6**.

Table 5.6: Car/LGV and Cycle Movements (Primary/Secondary Pupils) – AM Period (07:00-09:00hrs)

Mode	Arrivals	Departures
Car/LGV	228	228
Cycles	0	0
Total	**228**	**228**

5.2.13 It is assumed that some car/LGV trips transport more than one pupil, for example when siblings or friends travel together in the same vehicle. To account for this, a factor of 1.4 pupils per vehicle, based on analysis of TRICS, for this specific land use category, has been applied; this therefore equates to 319 primary/secondary pupils travelling by car. The VoG has supplied data on school bus use by primary/secondary pupils; this shows that 377 pupils travel by school bus. In summary, it is identified that of the 1,015 primary/secondary pupils at the existing school, 319 travel by car, 377 by school bus, and none cycle (as none were recorded in the traffic survey). The remaining 319 pupils are assumed to walk. This information and the resulting mode share is shown in **Table 5.7**.

Table 5.7: Mode Share – Primary/Secondary Pupils

Mode	No. of Pupils	Mode Share
Walk	319	31%
Cycle	0	0%
School Bus	377	37%
Car	319	31%
Total	**1,015**	**100%**

Note: Summation errors due to rounding.

Stage 6: Summary Pupil Mode Share of Existing School

5.2.14 The values in **Tables 5.5** and **5.7** have been combined to derive the mode share for all pupils at the existing school, as shown in **Table 5.8**.

Table 5.8: Mode Share – All Pupils

Mode	No. of Pupils	Mode Share
Walk	363	32%
Cycle	0	0%
School Bus	429	38%
Car	341	30%
Total	**1,133**	**100%**

5.2.15 **Table 5.8** shows that 38% of pupils (429 in total) travel by school bus. Walking is the next most popular mode for pupils, with a mode share of 32% (363 in total), followed by car, with a mode share of 30% (341 in total).

5.3 Proposed School

5.3.1 The proposed development will result in an additional 395 secondary pupils and an additional 132 sixth form pupils. Staffing numbers are expected to remain at the level of the existing school.

5.3.2 For the additional secondary and sixth form pupils, it is envisaged that these will travel according to the respective mode shares of the existing school.

Sixth Form Pupils

5.3.3 It is envisaged that the additional 132 sixth form pupils will travel according to the mode share of existing sixth form pupils shown in **Table 5.5**. The resulting number of pupils travelling by each mode is shown in **Table 5.9**.

Table 5.9: Mode Share – Additional Sixth Form Pupils

Mode	No. of Pupils
Walk	50
Cycle	0
School Bus	58
Car	24
Total	**132**

5.3.4 As per the existing school, it is assumed that sixth form pupils travelling by car will do so at an occupancy level of one pupil per car; this therefore equates to an additional 24 ‘arrivals’ during the AM period and 24 vehicle ‘departures’ during the PM period; for robustness, these are assumed to occur during the AM and PM peak hours.

Secondary Pupils

5.3.5 It is envisaged that the additional 395 secondary pupils will travel according to the mode share of existing secondary pupils in **Table 5.7**. The resulting number of pupils travelling by each mode is shown in **Table 5.10**.

Table 5.10: Mode Share – Additional Secondary Pupils

Mode	No. of Pupils
Walk	124
Cycle	0
School Bus	147
Car	124
Total	**395**

5.3.6 As per the existing school, it is assumed that secondary pupils travelling by car will do so at an occupancy level of 1.4 pupils per car and be escorted; this therefore equates to an additional 89 vehicle ‘arrivals’ and 89 vehicle ‘departures’ during the AM and PM periods; for robustness, these are assumed to occur during the AM and PM peak hours.

Summary Pupil Mode Share

5.3.7 The values in **Tables 5.9** and **5.10** have been combined to derive the mode share for the additional pupils at the school, as shown in **Table 5.11**.

Table 5.11: Mode Share – Additional Pupils

Mode	No. of Pupils	Mode Share
Walk	174	33%
Cycle	0	0%
School Bus	205	39%
Car	148	28%
Total	**527**	**100%**

5.3.8 The values in **Tables 5.8** and **5.11** have been combined to derive the mode share for the existing and additional pupils at the school, as shown in **Table 5.12**. These should form an initial baseline for setting of STP targets, prior to school travel surveys being undertaken.

Table 5.12: Mode Share – Existing + Additional Pupils

Mode	No. of Pupils	Mode Share
Walk	537	32%
Cycle	0	0%
School Bus	634	38%
Car	489	29%
Total	**1,660**	**100%**

Note: Summation errors due to rounding.

Summary Traffic Generation and Distribution

5.3.9 **Table 5.13** sets out the traffic generation associated with the additional pupils during the AM and PM peak hours.

Table 5.13: Traffic Generation – Additional Pupils

Time Period	Arrivals	Departures	Total
AM Peak Hour (08:00-09:00)	113	89	202
PM Peak Hour (15:00-16:00)	89	113	202

5.3.10 In terms of distribution, it is assumed that the additional traffic will generally follow that of existing movements on the surveyed network. As such, the traffic has been distributed based on observed turning proportions at the surveyed junctions; where appropriate, movements to/from certain junction arms have not been allowed due to the land uses served.

5.3.11 The resulting distribution of traffic associated with the additional pupils during the AM and PM peak hours is shown on **Figures 5.1** and **5.2** respectively.

5.3.12 The proposals for YGBM will result in buses using the WHS access instead of the YGBM access. There are currently 14 buses to/from YGBM; this equates to the removal of 28 vehicle movements at the YGBM access and the signal-controlled junction during the AM and PM peak hours.

5.4 Summary

5.4.1 The TA has utilised a combination of data sources to establish the existing mode share of the pupil and staff population. This includes traffic survey data at the school access, data on school bus use held by the VoG, and data recorded from the 2011 Census. This is considered a reasonable method for establishing an interim mode share, and will be reviewed as part of the development of the STP.

5.4.2 For the existing school, it is identified that 83% of staff travel by car. Walking is the next most popular mode for staff, with a mode share of 11%. For pupils, 30% travel by car, 38% by school bus and 32% walk. No pupils were identified as cycling; however, these may have not been captured in the survey of traffic movements at the school access, for example, due to pupils dismounting prior to the school access.

5.4.3 The additional pupils are envisaged to travel according to the identified mode shares of the existing pupil population. The resulting mode share of the existing and additional pupils combined shows that 29% will travel by car, 38% by school bus and 32% walk. These should form an initial baseline for setting of STP targets, prior to school travel surveys being undertaken.

5.4.4 The additional pupils at the school will generate an additional 202 vehicle movements during the AM and PM peak hours. These have been distributed onto the surveyed network based on observed turning proportions, taking account of appropriate origins/destinations.

5.4.5 The proposals for YGBM will result in buses using the WHS access instead of the YGBM access. There are currently 14 buses to/from YGBM; this equates to the removal of 28 large vehicle movements at the YGBM access and the signal-controlled junction during the AM and PM peak hours.

6. Traffic Impact Assessment

6.1 Assessment Scenarios

6.1.1 The planning application is to be submitted in 2019. The impact of the proposed development on the local highway network has been assessed in a future year of 2021; this is expected to be the opening year of the proposed development.

6.1.2 The assessment scenarios for the weekday AM peak hour (08:00-09:00hrs) and weekday PM peak hour (15:00-16:00hrs) are as follows and have been agreed with the LHA:

- Scenario 1 – 2018 Base Year;
- Scenario 2 – 2021 Without Development; and
- Scenario 3 – 2021 With Development.

6.1.3 In order to estimate future growth in traffic flows, traffic growth factors have been obtained from TEMPro (NTEM Dataset 7.0). The TEMPro program is based on the National Trip End Model (NTEM) and takes into account changes in car ownership and local planning forecasts regarding housing and employment.

6.1.4 The forecast has been based on an 'Urban, Principal' road. The surveyed network comprises numerous MSOAs; these are 'The Vale of Glamorgan 007', 'The Vale of Glamorgan 010' and 'The Vale of Glamorgan 013'. An average has been calculated from the derived factors and has been used for assessment, which is considered reasonable. The derived factors and the calculated average are set out for the AM peak period (07:00-10:00) and Interpeak period (10:00-16:00) in **Table 6.1**.

Table 6.1: TEMPro Growth Factors

Time Period	MSOA	Growth Factor
AM Peak Period (07:00-10:00)	The Vale of Glamorgan 007	1.041
	The Vale of Glamorgan 010	1.027
	The Vale of Glamorgan 013	1.040
	Average	**1.036**
Interpeak Period (10:00-16:00)	The Vale of Glamorgan 007	1.048
	The Vale of Glamorgan 010	1.036
	The Vale of Glamorgan 013	1.048
	Average	**1.044**

6.2 Spreadsheet Model

6.2.1 A spreadsheet model has been developed for the assessment scenarios for each of the time periods. The traffic flows and relevant figures are referenced in **Table 6.2**.

Table 6.2: Spreadsheet Model Figures

Figure No.	Description
2.2	Traffic Flows – 2018 Base Year: Weekday AM Peak Hour (08:00-09:00)
2.3	Traffic Flows – 2018 Base Year: Weekday PM Peak Hour (15:00-16:00)
6.1	Traffic Flows – 2021 Without Development: Weekday AM Peak Hour (08:00-09:00)
6.2	Traffic Flows – 2021 Without Development: Weekday PM Peak Hour (15:00-16:00)
5.1	Traffic Flows – Proposed Development: Weekday AM Peak Hour (08:00-09:00)
5.2	Traffic Flows – Proposed Development: Weekday PM Peak Hour (15:00-16:00)
6.1	Traffic Flows – 2021 With Development: Weekday AM Peak Hour (08:00-09:00)
6.2	Traffic Flows – 2021 With Development: Weekday PM Peak Hour (15:00-16:00)

6.2.2 The starting point for the spreadsheet model is 2018 Base Year (Scenario 1), based on the observed traffic flows derived from the traffic counts undertaken in 2018. TEMPro traffic growth factors have been applied to derive traffic flows for 2021 without the proposed development (Scenario 2). Traffic associated with the proposed development has then been added to traffic flows for Scenario 2 to derive traffic flows for 2021 with the proposed development (Scenario 3).

6.3 Changes in Traffic Flows

6.3.1 The assessment has examined the impact of the proposed development in terms of the changes in traffic flows at the surveyed junctions in the network. **Tables 6.3** and **6.4** set out the total traffic entering each junction in the 2021 scenarios, the difference and percentage change during the AM and PM peak hours respectively.

Table 6.3: 2021 Junction Inflow Comparison – AM Peak Hour

Junction	2021 Without Development	2021 With Development	Difference	Percentage Change
MDR/PHS access priority junction	682	691	+9	+1%
A4050/MDR roundabout junction	1,867	1,916	+49	+3%
A4050/A4226 roundabout junction	2,285	2,372	+87	+4%
A4050/Barry Hospital and YGBM access signal-controlled junction	1,709	1,911	+202	+12%
Barry Hospital/YGBM priority junction	622	824	+202	+32%
A4050/Barry Road mini-roundabout junction	2,426	2,540	+114	+5%
A4226/entrance to WHS/Barry Fire Station crossroads junction	1,399	1,438	+39	+3%
A4226/exit from WHS/Stirling Road signal-controlled junction	1,478	1,517	+39	+3%

Table 6.4: 2021 Junction Inflow Comparison – PM Peak Hour

Junction	2021 Without Development	2021 With Development	Difference	Percentage Change
MDR/PHS access priority junction	452	460	+8	+2%
A4050/MDR roundabout junction	2,169	2,230	+61	+3%
A4050/A4226 roundabout junction	2,588	2,691	+102	+4%
A4050/Barry Hospital and YGBM access signal-controlled junction	1,744	1,945	+202	+12%
Barry Hospital/YGBM priority junction	464	666	+202	+43%
A4050/Barry Road mini-roundabout junction	2,746	2,845	+99	+4%
A4226/entrance to WHS/Barry Fire Station crossroads junction	1,359	1,400	+41	+3%
A4226/exit from WHS/Stirling Road signal-controlled junction	1,643	1,684	+41	+3%

Note: Summation errors due to rounding.

6.3.2 **Tables 6.3** and **6.4** show that the proposed development will generally result in increases in traffic flows entering the junctions in the network of no more than 5%, with the exception of the A4050/Barry Hospital and YGBM access signal-controlled junction and the Barry Hospital/YGBM priority junction. In the case of the former, this will experience an increase of 12% during the AM and PM peak hours. Whilst this increase is not insignificant, it should be viewed in the context of part of the proposed additional pupil population already being within consented capacity (equating to 228 of the assessed additional 527 pupils). Potential measures associated with restricting parking on the approach to the junction have been identified to ensure its operational capacity is realised. In the case of the latter, this will experience increases of 32% and 43% during the AM and PM peak hours respectively.

6.3.3 The proposals for YGBM will result in buses relocated to and sharing with WHS and utilising the WHS access instead of the YGBM access. There are currently 14 buses to/from YGBM; this equates to the removal of 28 vehicle movements at the YGBM access and the signal-controlled junction during the AM and PM peak hours.

6.3.4 When removed from the values in **Tables 6.3** and **6.4**, the proposed development will result in a reduction in the level of increase in traffic flows entering the A4050/Barry Hospital and YGBM access signal-controlled junction to 10% during the AM and PM peak hours, and a reduction in the level of increases in traffic flows entering the Barry Hospital/YGBM priority junction to 28% and 38% during the AM and PM peak hours respectively.

6.3.5 Whilst these increases are not insignificant, they should be viewed in the context of the actual increase in pupils over the existing consent. Furthermore, queuing associated with the increase would likely be limited to the YGBM site access arm, i.e. contained within the site.

6.4 Summary

6.4.1 The traffic impact assessment has considered three assessment scenarios; 2018 Base Year, 2021 Without Development and 2021 With Development; 2021 is expected to be the opening year of the proposed development. The future year forecasts include traffic growth.

6.4.2 An assessment has been undertaken of the impact of the proposed development in terms of the changes in traffic flows at the surveyed junctions in the network. This has identified that the proposed development will generally result in increases in traffic of no more than 5%, with the exception of the A4050/Barry Hospital and YGBM access signal-controlled junction and the Barry Hospital/YGBM priority junction. Whilst the increases at these junctions are not insignificant they should be viewed in the context of the actual increase in pupils over the existing consent. Furthermore, potential measures associated with restricting parking on the approach to the junction have been identified to ensure its operational capacity is realised.

6.4.3 It should be acknowledged that this work is being carried out in combination with other schools proposals in the immediate local area (PHS and WHS). Whilst each application will be made separately and will not depend on each other's outcome, consideration has been given to the overall changes in pupil numbers as a result of these proposals coming forward. Table 6.5 provides a comparison of the existing permitted capacity at the schools concerned, and the proposed pupil numbers.

Table 6.5: Comparison of Consented and Proposed Pupil Numbers

School	Consented	Proposed	Difference
PHS	1,331	1,100	-231
WHS	1,423	1,100	-323
YGBM	1,361	1,660	+299
Total	**4,115**	**3,860**	**-255**

6.4.4 **Table 6.5** shows that both PHS and WHS will experience a net reduction in pupil population from what is currently consented on site, while YGBM will experience a net increase. Overall, there will be a net reduction in pupil population when compared with what the total consent across all the sites.

7. Transport Implementation Strategy (TIS)

7.1 Introduction

7.1.1 TAN 18 requires any TA document to provide the information necessary to assess the suitability of an application in travel demand and traffic impact terms. It recommends that a Transport Implementation Strategy (TIS) should be included within the TA. The TIS is intended to set objectives and targets in managing travel demand, whilst detailing the infrastructure and measures necessary to achieve them. The TIS should also set up a framework for monitoring the targets including modal travel choice.

7.1.2 A TIS shares many of the same goals as a STP; therefore the modal information, targets and measures set out in this section will inform the STP, which is provided as part of the planning application and supplements this TA. The implementation of the STP and associated monitoring and reporting of performance will be undertaken by a School Travel Plan Co-ordinator (STPC).

7.2 Mode Share and Targets

7.2.1 Mode share targets are used to evaluate the success of the TIS and to identify areas on which further measures should be focused in order to help to drive travel behaviour change. To enable the setting of valid and realistic targets, a valid baseline first needs to be established.

7.2.2 **Section 5** of the TA sets out the forecast mode share of the school with the development proposals. The staff and pupil mode share which has been calculated as part of the assessments is summarised in **Table 7.1**.

Table 7.1: Forecast Mode Share

Mode	Mode Share	
	Staff	Pupils
Walk	11%	32%
Cycle	2%	0%
Public Transport/School Bus	5%	38%
Car	83%	29%
Total	**100%**	**100%**

7.2.3 The target will be to reduce the 'car' mode share by 6% (from 29% to 23% for pupils, from 83% to 77% for staff) over five years, consistent with Smarter Choices' report *Changing the way we travel* (2004). Following the baseline travel survey this target can be confirmed or adjusted as appropriate, following discussion between the VoG and the STPC.

7.3 Monitoring and Evaluation

7.3.1 The point at which baseline travel surveys are required will be subject to agreement with the VoG. A minimum response rate to the travel surveys will be required to be set and agreed to ensure that the data is representative.

7.3.2 The format of the baseline and monitoring surveys will need to be agreed with the VoG. In general, these will seek to establish the actual travel patterns, the reasons for travel choice and potential measures to encourage consideration of alternatives. For staff, it is envisaged that the surveys will be primarily online-based, but paper copies will also be made available to staff should they prefer. For pupils and staff at the schools, a combination of survey methods could be utilised, and is likely to include the following:

- Hands-up surveys of pupils;
- Manual counts at school drop-off/pick-up periods; and
- Pupil/parent and staff questionnaires.

7.3.3 The results of the baseline travel surveys will be analysed and the factors influencing travel behaviour will be investigated. It will then be necessary for the STPC to review and update the respective STP to include additional details and the need for any other measures not already included that require further investigation. Specific objectives and targets will need to be identified, separated into short/medium/long term targets, and will need to be SMART (Specific, Measurable, Achievable, Realistic, and Timed). Specific actions and measures to encourage sustainable modes of travel will be identified. For the on-going management of the STP to be successful and to deliver the desired outcomes, it is important that the parties involved in the delivery of the STP, which means the STPC, and the VoG, work effectively in partnership to achieve the desired results.

7.3.4 Monitoring of the STP will be required for a five year period from the date of the baseline travel surveys. They will be undertaken at one, three and five years after the date (or close to the date) of the baseline travel surveys. The STPC will aim to coordinate the baseline travel surveys and subsequent monitoring surveys to ensure consistency between the collection of data for the STP. Surveys will avoid sustained periods of inclement weather or when there is significant disruption to the local road or public transport network.

7.3.5 A monitoring report will be prepared by the STPC for each monitoring survey. These will identify the results of the surveys and success of the measures implemented in achieving the targets. The reports will be submitted to the VoG for comment. If the targets are not met then it will be necessary to review what remedial measures need to be implemented to mitigate the impact of any under achievement.

7.3.6 At the end of the formal monitoring period (five years), if the target for reduction in single occupancy vehicle use has not been achieved, the TPC will liaise with VoG to extend the period of monitoring or agree that the actual level of reduction achieved is satisfactory..

7.4 Measures and Interventions

7.4.1 In order to achieve the reduction in single occupancy car use and encourage a modal shift to more sustainable forms of travel, a number of measures will be implemented. These will include a combination of physical infrastructure in the design of the development and also STP measures.

Physical Infrastructure

7.4.2 The site has been designed to ensure safe access for pedestrians via the A4050, a pedestrian link via the YGBM bus drop off / pick up area for those using the school bus, and via a new pedestrian access via Greenbanks Drive.

7.4.3 Cycle parking will be provided for the comprehensive school site, focusing on their location near the school entrances.

7.4.4 **Table 7.2** replicates **Table 3.1** in **section 3.4** and has been included in this section for ease of reference. The table indicates a number of points observed during the site walkover and resultant recommended mitigation measures.

Table 7.2: Vehicular and pedestrian-related observations and subsequent recommendations

Observation	Recommendation
Congestion at the traffic signals causing tailbacks and queuing in both directions along the A4050: A4050 (southbound): Queuing to A4050/A4226 roundabout; A4050 (northbound): Queuing beyond the College access.	Reduction and potential removal of all school buses from the school access (included as part of the development proposals). Introduce travel interventions via a School Travel Plan (STP) to encourage more staff and pupils to travel to school via alternative modes to the private car.
A4050 (southbound) – Vehicles parked on approach to the signals, forcing vehicles to merge and queue single file while over taken the vehicle(s).	A4050 (southbound) – Provision of informal and temporary parking restrictions by placing traffic control cones on a daily basis restricting parking along the eastern side of the carriageway to ensure vehicles can utilise both lanes approaching the signal-controlled junction (during school AM/PM peaks). All dwellings have ample off-road parking and vehicles are still able to park along the western side of the carriageway.
A4050 (northbound) – Vehicles parked on unrestricted highway causing obstruction to queuing traffic.	A4050 (northbound) – As above, introduce informal and temporary parking restrictions along the highway (in the form of traffic control cones, on a daily basis) to the extent of the two lane provision approaching the signals (during school AM/PM peaks)..
Queuing back to the traffic signals as vehicles entering the school wait for pedestrians to cross the zebra crossing at the car park entrance.	Introduce travel interventions via a STP to encourage more staff and pupils to travel to school via alternative modes to the private car.
Vehicle speed reduction measures along the access road. The access road currently has a 5 mph speed limit; measures should be introduced to ensure that this is followed.	Provide signage along the school access road, with the inclusion of physical speed reduction measures. This would complement the proposed zebra crossing at the entrance to the school access road.
Pedestrians are using the northern footway to access the school. There is no safe provision to access this footway, with the school gates providing a barrier to pedestrians on this side, with some pedestrians forced into the carriageway.	Provide a controlled (zebra) crossing, potentially with the inclusion of a raised plateau) at the entrance to the school, inside the gates. This will facilitate pedestrian movements across the carriageway to the southern, more appropriate footway, to continue their journey to the signalised junction. The inclusion of guard rail extension at the Hospital access; to extend along the footway of the Hospital access as far as the zebra crossing. This will discourage the crossing of pupils at the Hospital access

STP Measures

7.4.5 A STP will be prepared and a STPC will be appointed who will be responsible in ensuring the success of the TP and its targets and objectives. The STP will contain a range of measures additional to those that will be provided as part of the development to enhance the attractiveness of sustainable travel and to encourage the use of the walking, cycling and public transport infrastructure. Such additional measures could include:

- Newsletters;
- Noticeboards advertising sustainable transport information;
- Promotion of national sustainable transport initiatives such as national walk to school day and bike to school week, etc; and
- School walking bus initiatives (for primary pupils).

7.5 Summary

7.5.1 Targets have been set for the reduction of private car use and a commitment to a STP and monitoring programme has been made.

7.5.2 The TIS has set out the measures that will be implemented as part of the development proposals to help to achieve the targets and objectives set. The TP measures will add another layer of interventions which will continue to promote and encourage the range of facilities available and improve awareness or provision wherever possible.

8. Conclusions

8.1.1 This TA was prepared by AECOM on behalf of the VoG to provide transport planning and highways advice to inform a planning application for the expansion and refurbishment of the existing YGBM site. It has been prepared following pre-application discussions with the VoG, in its role as LHA and LEA.

8.1.2 The proposals for expansion and refurbishment are solely for the comprehensive element of the school, including the erection of a new teaching block and improvement to the sports facilities. The existing school currently has 1,133 pupils enrolled with a permitted capacity of 1,361 pupils. It is proposed to enrol 1,660 pupils, of which 250 are sixth form. The existing staff numbers are a total of 109; of which 91 are connected with the secondary component (74 of those are teaching staff), these are proposed to remain the same.

8.1.3 A detailed review of the existing highway network and baseline situation has been carried out. The site benefits from existing provision for pedestrians and cyclists in the locality, including footways on both sides of the majority of roads surrounding the site. Residential areas and a range of local facilities are located within walking and cycling distance of the site. Frequent weekday bus services to numerous residential areas and key destinations within Barry are accessible from bus stops within the IHT's suggested 'acceptable' walking distance. Rail services are available from numerous railway stations in Barry, the nearest being Barry. This provides accesses to high/reasonable frequency services to/from Cardiff Central and Bridgend.

8.1.4 PIC data has been requested from the WG, but has not yet been supplied at the time of writing. An initial review of PIC data has been undertaken using the 'Crashmap' online resource. This has identified that 24 PICs have been recorded in the study area during the five-year period from 1st January 2013 to 31st December 2017. Further analysis of PIC data will be undertaken once the data requested from the WG has been received. This will be issued as an addendum to this TA.

8.1.5 The school is accessed off the A4050 and shares its access with Barry Hospital. As part of the WHS site masterplan, it is proposed to develop shared school bus drop-off facilities with YGBM. This is being progressed in anticipation that the YGBM proposals will follow a similar application timeline and to benefit the wider highway network by removing large PSV movements from the shared hospital and school access. The masterplan includes a safe and convenient network of footways into and within the school grounds. Pedestrian access will be via the existing main pedestrian access off the A4050.

8.1.6 The total number of parking spaces proposed for the secondary school is 122 spaces, this will replace the existing 140 spaces currently provided. The parking proposals as part of the secondary school expansion result in an overall reduction of 18 car parking spaces. The existing 7 motorcycle spaces will remain as part of the proposals.

8.1.7 The VoG Parking Standards 2015 has been used to assess disabled parking at the proposed school. Parking provision advice for disabled blue badge holders does not specifically mention the school land planning use class. Instead the requirement is set out as 5% for employment parking and one space (minimum) plus 6% for parking open to the general public. On this basis the requirement for 5% would be most appropriate for these proposals, which equates to six spaces. It is therefore suggested that the proposals allow for this.

8.1.8 Based on the parking standards, it is recommended that cycle parking stands are provided for parking a total of 72 bicycles as part of the proposed development. It may be suitable to distribute these stands in a number of suitable locations, particularly located in close proximity to school entrances.

8.1.9 The development proposals align with existing and emerging planning and transport policy at both a national and local level. The proposals will facilitate sustainable travel through a number of measures including the implementation of a STP, which has been prepared as part of the planning application and supplements this TA.

8.1.10 The TA has utilised a combination of data sources to establish the existing mode share of the pupil and staff population and the forecast mode share of the proposed development. This will be used to inform initial mode share targets in the STP.

8.1.11 The additional pupils at the school (on what are currently on site) will generate an additional 202 vehicle movements during the AM and PM weekday peak hours. An assessment has been undertaken of the impact of this increase on surveyed junctions in the study area in 2021, the expected opening year of the development. This has identified that the proposed development will generally result in increases in traffic of no more than 5%, with the exception of the A4050/Barry Hospital and YGBM access signal-controlled junction and the Barry Hospital/YGBM priority junction. Whilst the increases at these junctions are not insignificant, they should be viewed ibn the context of the actual increase in pupils over the existing consent. Furthermore, potential measures associated with restricting parking on the approach to the junction have been identified to ensure its operational capacity is realised.

8.1.12 This TA has been carried out in combination with other schools proposals in the immediate local area (PHS and WHS). Whilst each application will be made separately and will not depend on each other's outcome, consideration has been given to the overall changes in pupil numbers as a result of these proposals coming forward. Overall, there will be a net reduction in pupil population when compared with what the total consent across all the sites.

8.1.13 Further to the findings of this TA, it can be concluded that there are no transport reasons why the proposed development should not be granted planning permission.

Figures

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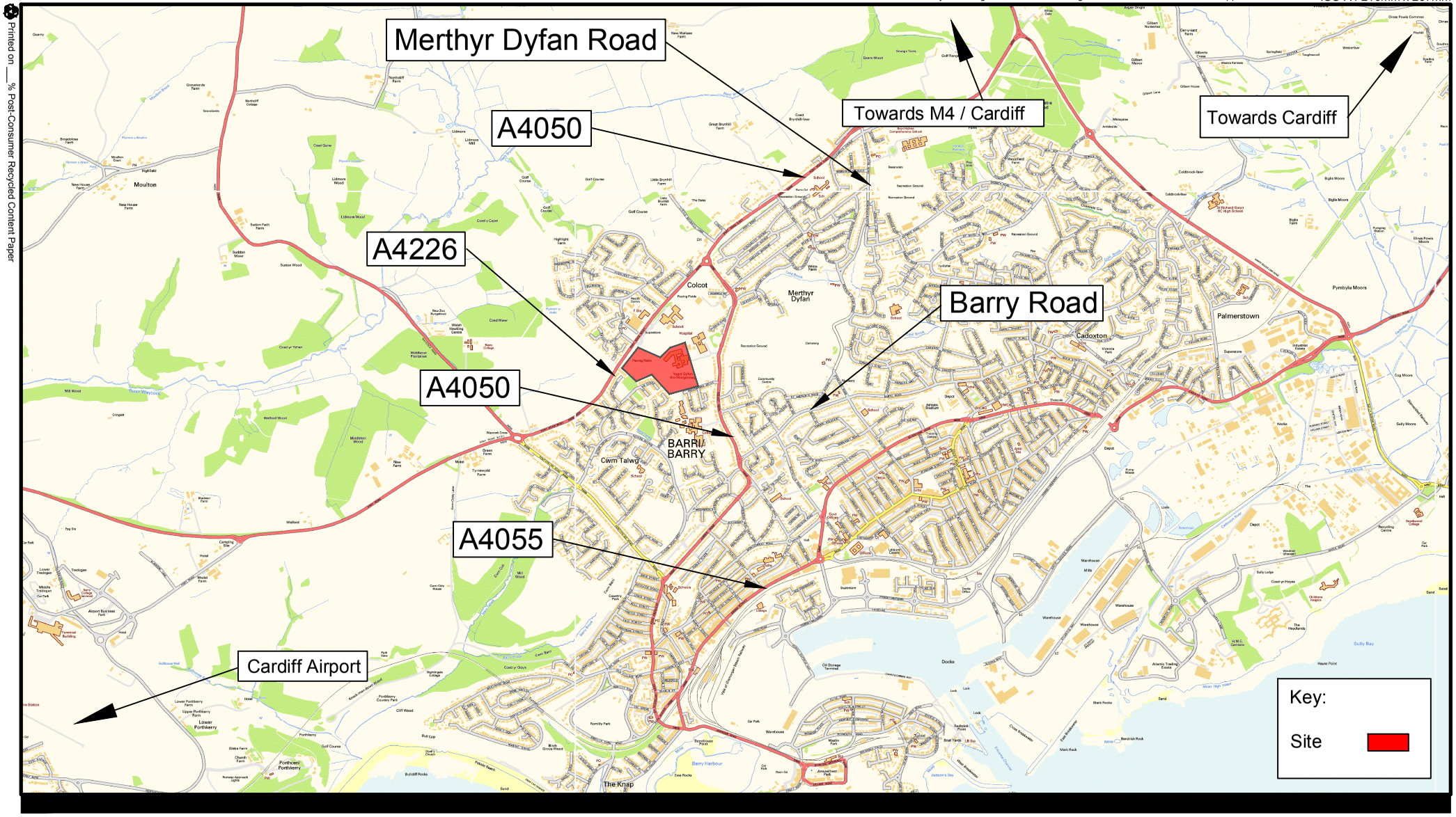

Ysgol Gymraeg Bro Morgannwg, Barry

Transport Assessment

Figure 1.1: Site Location Plan

AECOM

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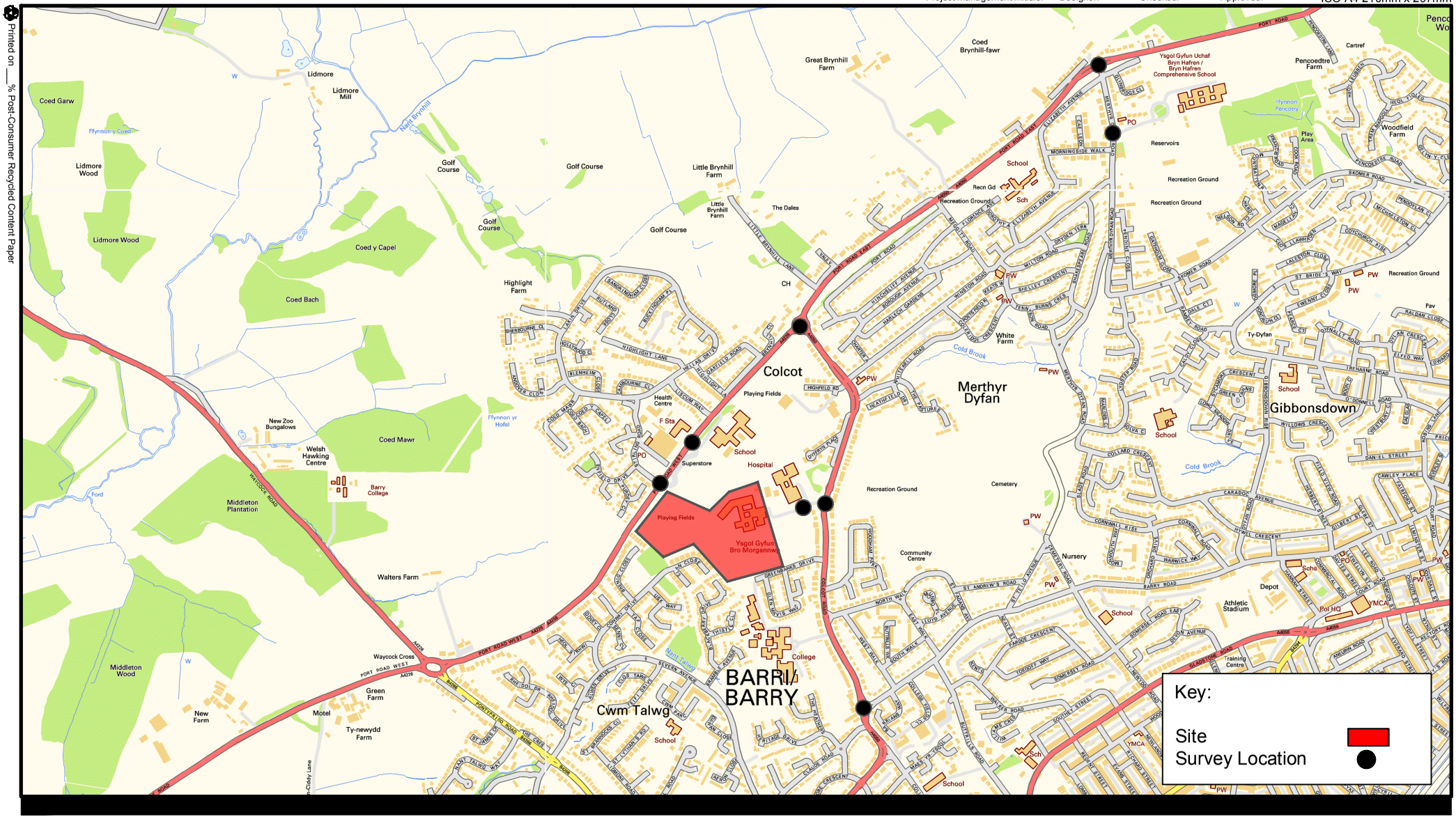


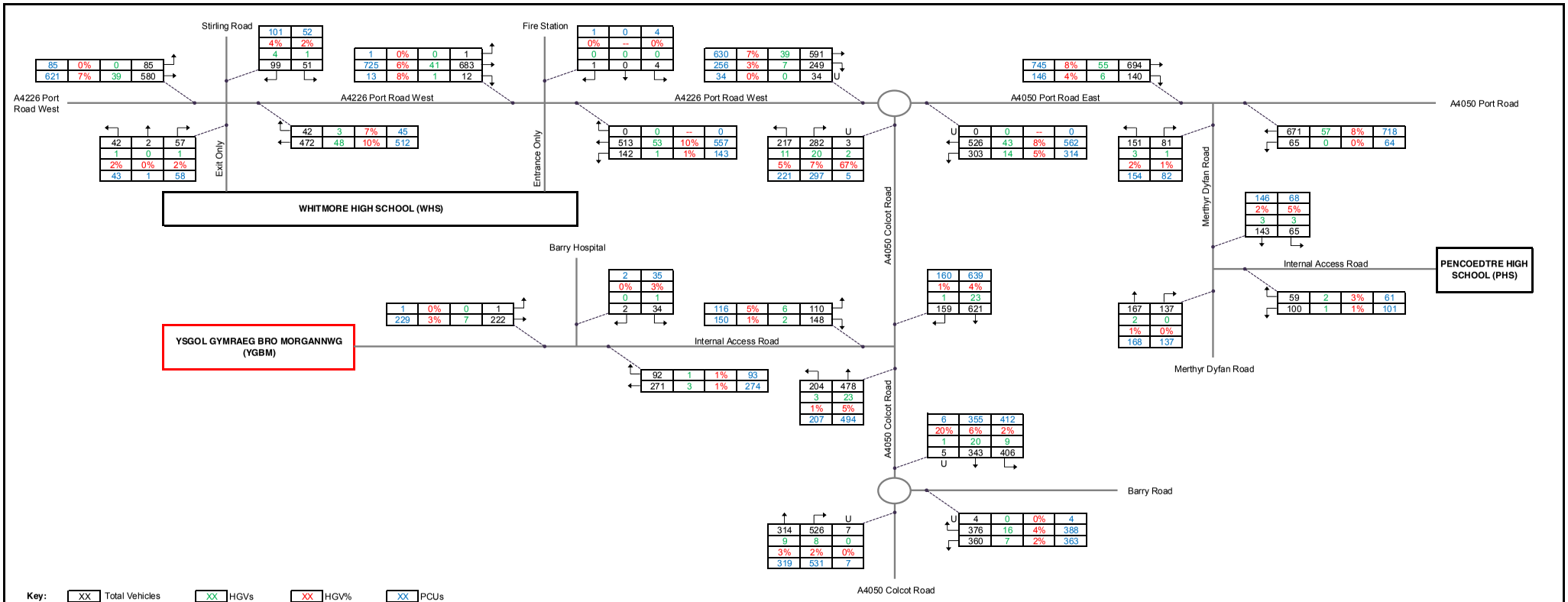
Ysgol Gymraeg Bro Morgannwg, Barry

Transport Assessment

Figure 2.1: Traffic Surveys Plan

AECOM

60571314



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		Title	Traffic Flows - 2018 Base Year: Weekday AM Peak Hour (08:00-09:00)	Checked	SP	
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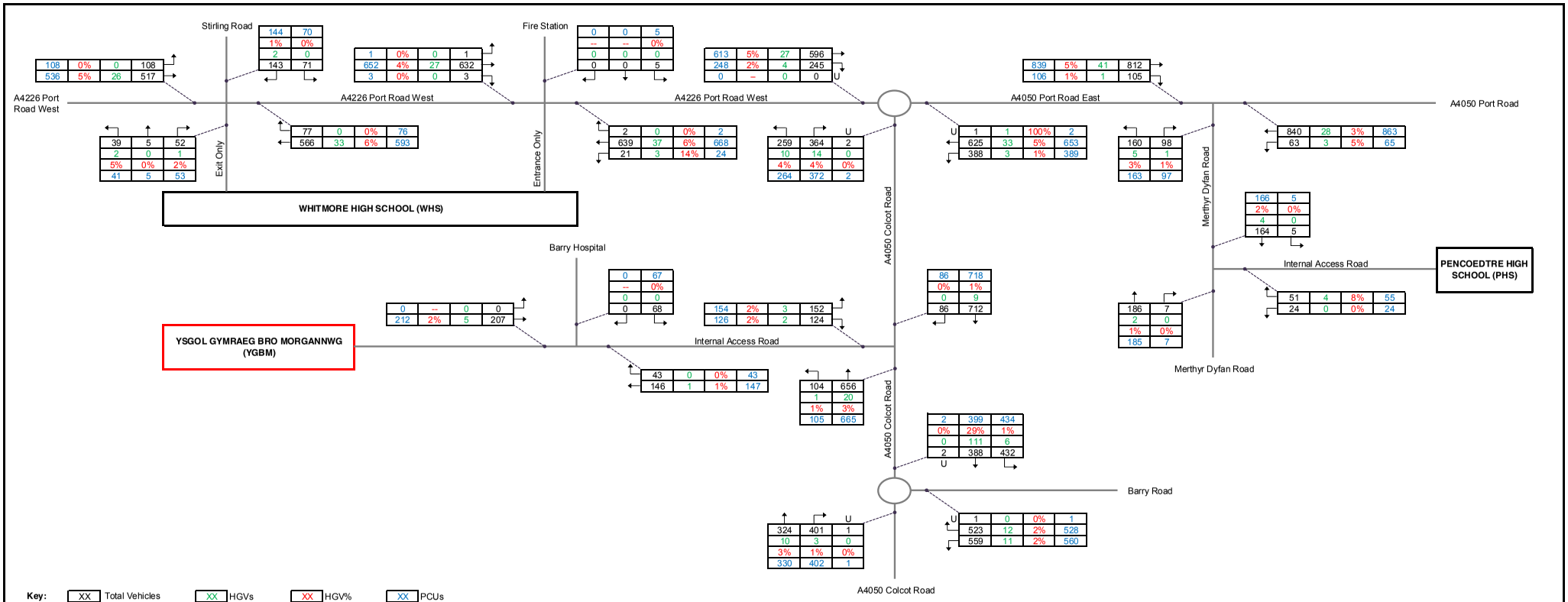
	www.aecom.com	Date	03/12/2018	Scale	NTS	



AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
		Project	Ysgol Gymraeg Bro Morgannwg, Barry	Verified	SP	1. Data is derived from traffic surveys undertaken on Wednesday 27th June 2018. 2. Peak hour is the peak hour of traffic generation of YGBM.
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	www.aecom.com	Date	03/12/2018	Scale	NTS	

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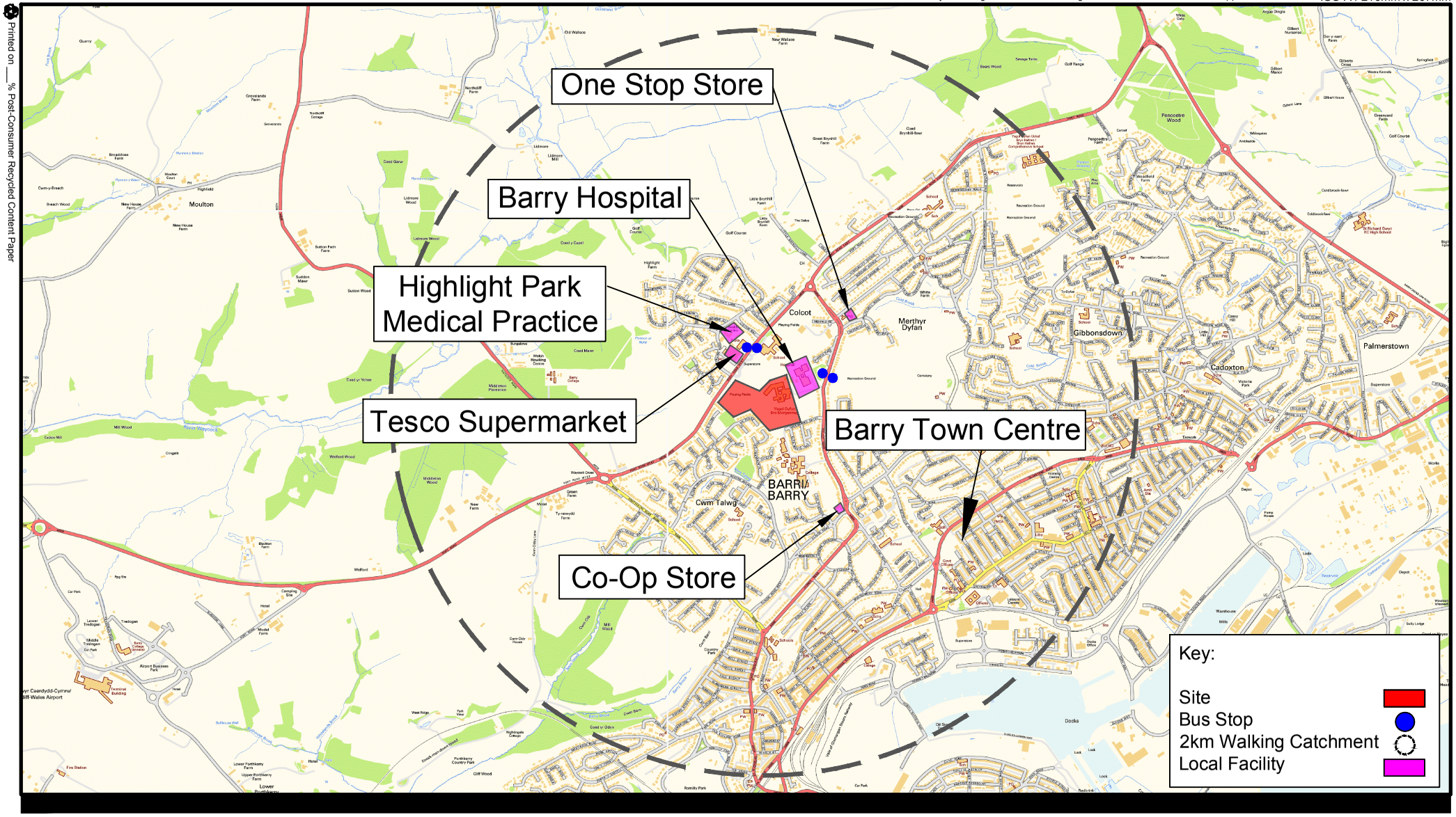

Ysgol Gymraeg Bro Morgannwg, Barry

Transport Assessment

Figure 2.4: Local Facilities Plan

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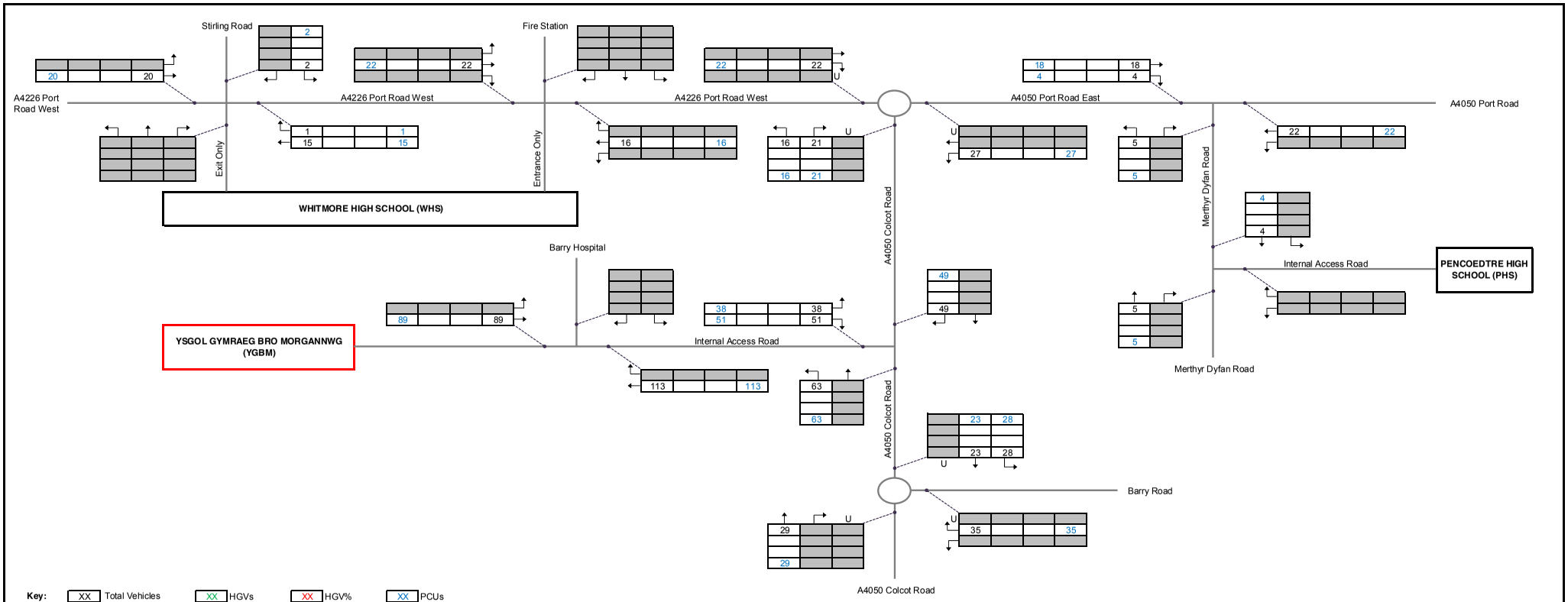

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		Project	Ysgol Gymraeg Bro Morgannwg, Barry	Verified	SP	1. Traffic associated with additional school population. 2. Cells highlighted in grey are not considered to be appropriate turning movements for origin/destination.
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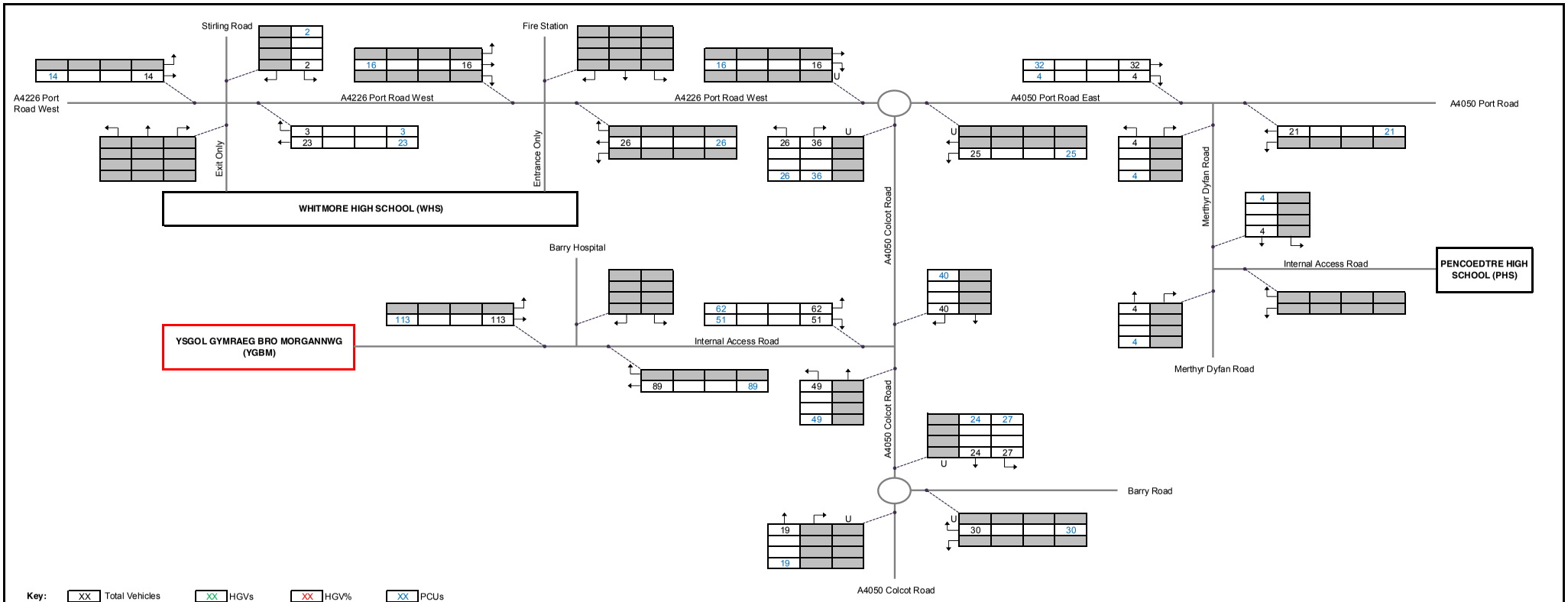

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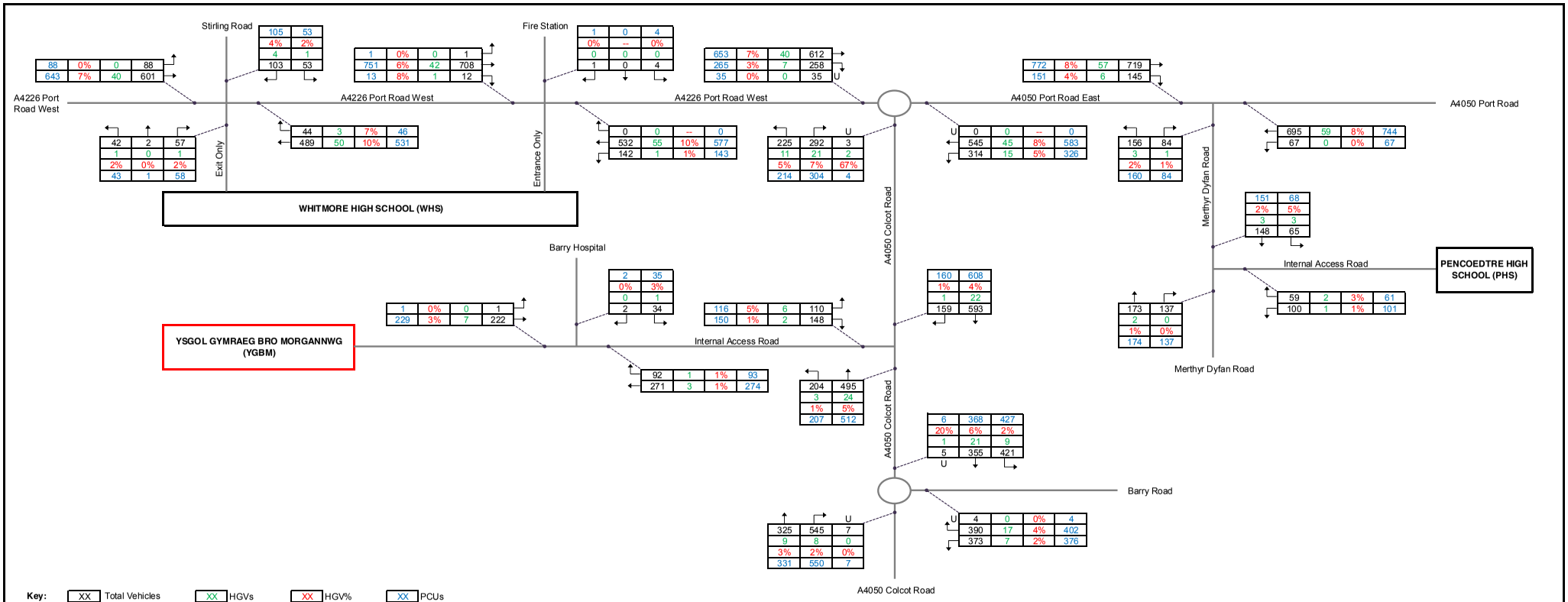

AECOM		Client	Vale of Glamorgan Council	Drawn	MD	**Notes:**
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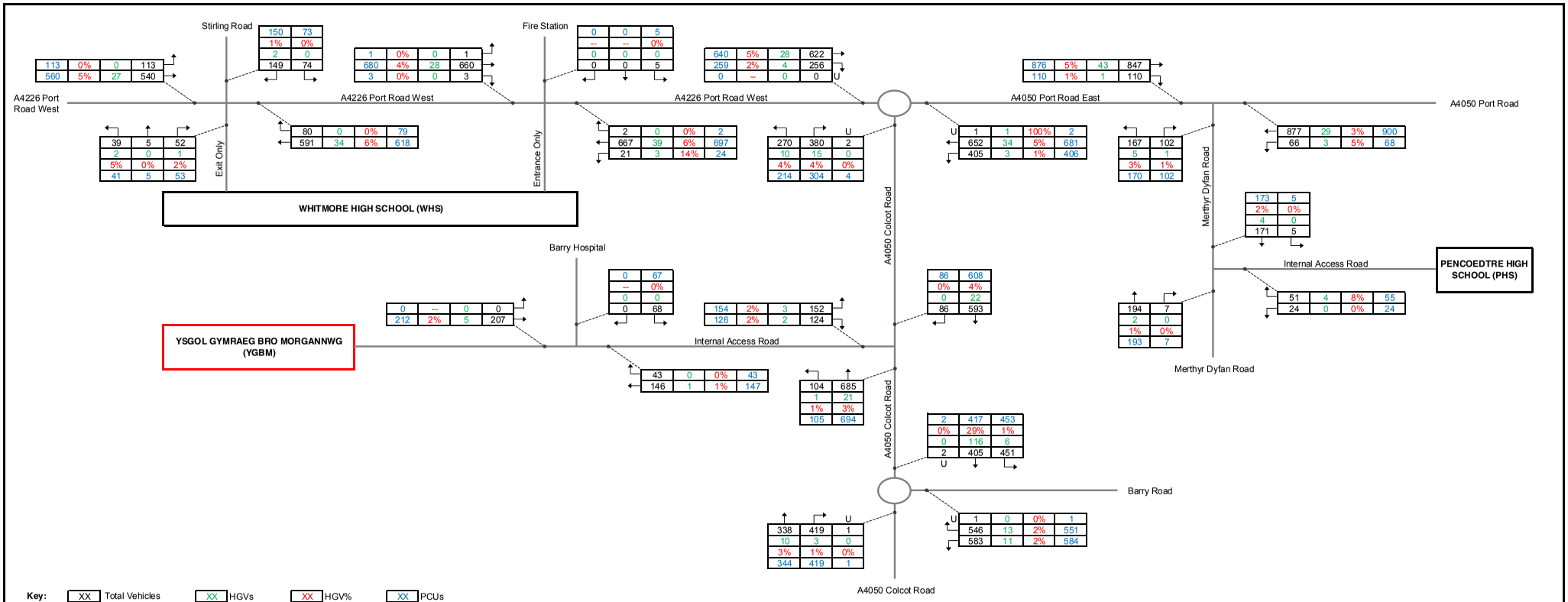

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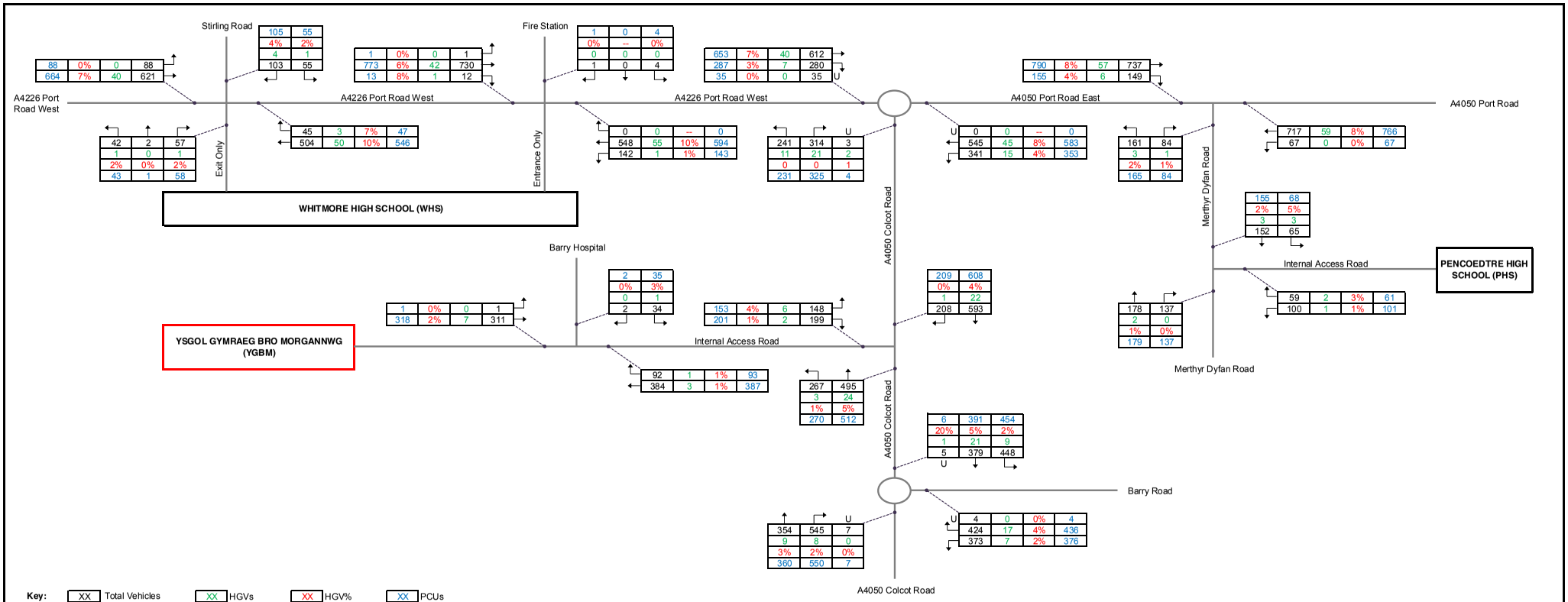

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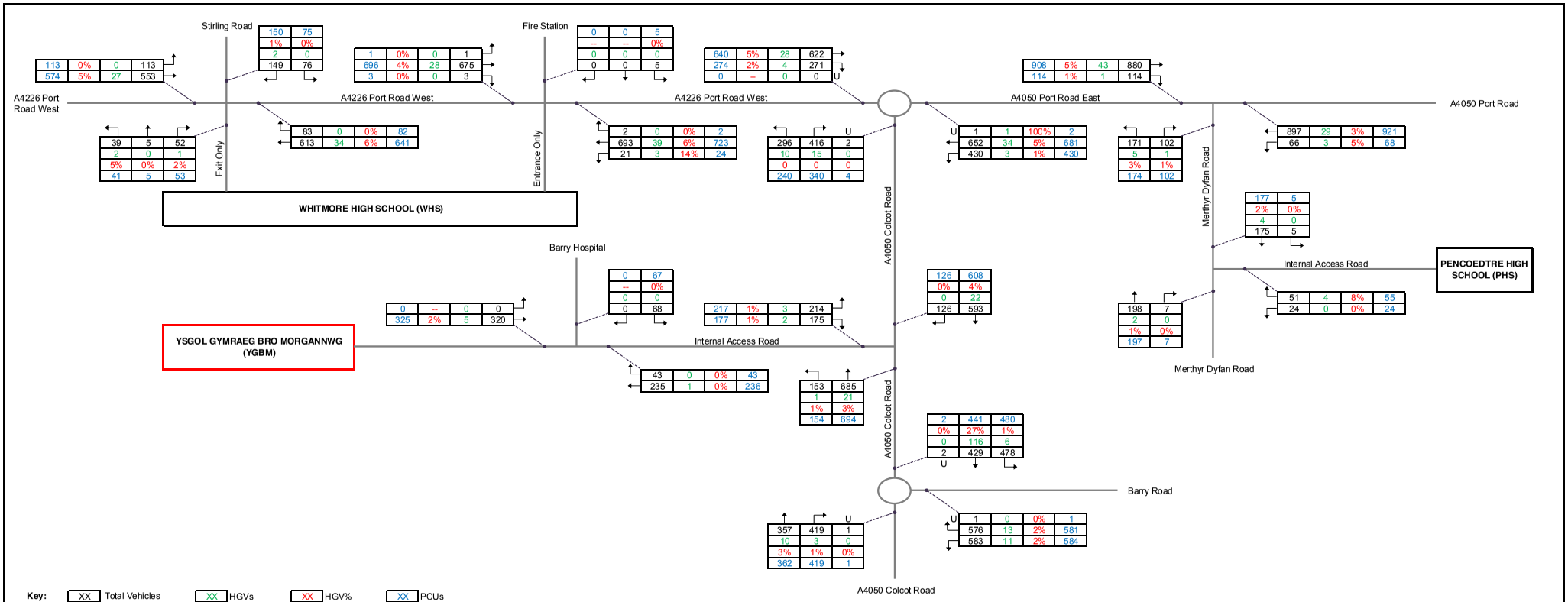

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		Project	Ysgol Gymraeg Bro Morgannwg, Barry	Verified	SP	1. Includes traffic growth derived from TEMPro (applied to all movements with the exceptions of movements to/from schools, Barry Hospital and Fire Station at respective site accesses) and the proposed development.
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Appendix 1.1

Transport Assessment Scoping Note & LHA Correspondence

Technical Note

AECOM

Project:	**Ysgol Gymraeg Bro Morgannwg, Barry**	Job No:	**60571314**
Subject:	**Transport Assessment Scoping Note**		
Prepared by:	**Kirsty Cox (Principal Consultant)**	Date:	**21/11/2018**
Checked by:	**Spiro Panagi (Associate Director)**	Date:	**21/11/2018**
Approved by:	**Spiro Panagi (Associate Director)**	Date:	**21/11/2018**

Scoping Note Revision A following Local Highway Authority Requested Additions 21/11/2018

The following Table sets out the proposed scope of a Transport Assessment (TA) in respect of the proposed redevelopment of Ysgol Gymraeg Bro Morgannwg in Barry, Wales.

1	Site Location and Existing Land Use	Ysgol Gymraeg Bro Morgannwg (YGBM) is one of three schools within close proximity of each other seeking planning permission for redevelopment, albeit all on different scales. The other two schools are Whitmore High School and Pencoedre High School. A plan indicating the locations of all three schools is attached in **Appendix A**. YGBM is a co-educational welsh medium school with both primary and secondary facilities. It is accessed via the A4050 Calcot Road, which connects Barry to Cardiff International Airport (CWL) via A4226 Port Road West and Cardiff City Centre via A4226 Port Road East. The site is approximately 10 miles from Cardiff, to the northeast, and approximately 13 miles to Cowbridge in the west. The location of Whitmore High School is immediately north/northwest of YGBM. Barry Hospital is situated east of the site location and shares its site access with YGBM. Pencoetre High School is approximately 2 miles northeast of Pencoedtre High School.
2	Planning History	The development site is located in Barry, in the Vale of Glamorgan and takes the form of a school renovation on the existing site. AECOM hashas been providing advice on this scheme up to RIBA Stage 2; this includes scoping discussions and baseline desk studies. We have assessed the current highway network and have also commissioned traffic surveys across the network for three local school proposals.
3	Development Proposal	The school currently has 1,135 pupils enrolled, with the new school site proposed to enrol 1,450 pupils, 250 of which are Sixth Form. The proposals for expansion are solely for the comprehensive element of the school. Proposals include the renovation of the existing site, including the erection of a new teaching block and improvement to the sports facilities. Whitmore High School, the neighbouring site, is also undergoing development in line with 21st Century Schools. There is potential for these bodies (Sports Centre and School) to merge links and possibly utilise facilities around a timetabled agreement. This could result in a sharing of knowledge and land - expansion could occur such as the swapping of land between the two sites, although this is not currently deemed the preferred option. The sharing of the school bus and coach access (via Whitmore High School's current access off Port Road West) to minimise the impact on the existing shared access with Barry Hospital, would be particularly beneficial.

		Further details will be provided in the TA. The TA will include the following: ▪ details of the access arrangements; ▪ internal transport layout for the site (including consideration of the potential for bus stops, layovers and circulation; parents drop off points and pedestrian circulation), consideration will be given to the Risk Assessment undertaken by officer of the Vale Council (November 2015); ▪ Cycle and car parking provision (staff and visitor); and ▪ Swept Path Analysis (SPA) to demonstrate that larger vehicles (school buses, refuse, delivery and emergency) can be accommodated.
4	Planning Policy Review	The context of the development proposals will be considered in relation to the following policy and guidance: ▪ Planning Policy Wales (PPW); ▪ Technical Advice Note (TAN) 18: Transport, published in March 2007; ▪ The Wales Transport Strategy, published in April 2008; ▪ National Transport Finance Plan, published in September 2015; ▪ Active Travel (Wales) Act 2013; ▪ Wellbeing of Future Generations (Wales) Act 2015;Vale of Glamorgan Local Development Plan (LDP) 2011-2026 [adopted June 2017]; ▪ Vale of Glamorgan Local Transport Plan (LTP) 2015-2030; and ▪ Supplementary Planning Guidance (SPG) to the LDP, including LDP 5 – Parking Standards. ▪ The TA will clearly demonstrate the development's compliance to the above policies and corresponding objectives. This is will be demonstrated within the policy chapter (following the setting out of the development proposals), linking specific development proposals to the the policies and their objectives. A summary will be provided within the TA conclusions.
5	Existing Situation and Site Accessibility	The TA will include the following: ▪ Description of the site location and existing usage; ▪ Description of the local highway network, including carriageway widths, speed limits, street lighting, etc; ▪ Description of the existing highway operational conditions with reference to traffic survey data, along with queuing conditions at key junctions; ▪ Analysis of Personal Injury Collision (PIC) data; ▪ Description of existing walking/cycling facilities; ▪ Description of public transport services; and ▪ Identification of key local facilities and their accessibility by sustainable modes.
6	Data Collection	PIC data will be obtained from the Welsh Government for the latest five year period, covering an appropriate study area. Traffic surveys have been undertaken on the local highway network surrounding the development to identify the existing traffic generation of the school and highway operational conditions. The traffic surveys included manual classified counts of extended weekday peak hour traffic (07:00-10:00hrs and 14:00-18:00hrs), to ensure that school start and finish times

		were captured. The locations of the surveys are shown on the plan at **Appendix B**. These locations are specifically: 1. A4050 Port Road E / Merthyr Dyfan Road (signal-controlled junction); 2. Merthyr Dyfan Road / Ysgol Gyfun Bryn Hafren School (priority junction with ghost island right-turn lane); 3. A4050 Port Road E / A4226 Port Road W / A4050 Colcot Road (roundabout junction); 4. A4226 Port Road W / Barry Comprehensive School access in only (priority junction); 5. A4226 Port Road W / Barry Comprehensive School exit / Sterling Road (signal-controlled junction); 6. Internal access road serving Hospital / Internal access road serving Ysgol Gymraeg Bro Morgannwg (priority junction); 7. A4050 Colcot Road / Access road to school and hospital (signal-controlled junction); and 8. A4050 Colcot Road / Barry Road (roundabout junction). The traffic surveys were commissioned and undertaken on Wednesday 27th June 2018 which is confirmed, by national guidelines, as a neutral day and month. AECOM has performed checks to ensure that the data is complete and with no obvious errors. The junction traffic data has been used to develop a network study area; this will be used to assess and forecast traffic impact of the proposals and to inform junction capacity assessments.
7	Trip Generation	The traffic surveys will be used to establish the traffic generation of the existing school. From this information, it will then be possible to apply pro-rata growth to forecast the traffic generation of the proposed school.
8	Trip Distribution	The distribution of school development traffic will be based on the existing school traffic distributions derived from the traffic surveys.
9	Traffic Impact Assessment	Assessment Scenarios: ▪ The TA will assess the impact of the development proposals for the school opening year, (2021) both without and with the development proposals. ▪ The 'without development' scenario will include traffic growth (based on growth factors derived from TEMPro), the existing school situation with associated traffic patterns and traffic from neighbouring committed development. This is considered the future baseline. ▪ The 'with development' scenario will be as the 'without development', but with the existing school traffic replaced by the proposed school traffic. These flows will be factored up by applying a factor to the flows based on the growth in pupil numbers and the resulting impact on the network will be assessed. ▪ The morning and evening weekday drop-off/pick-up hours will be considered. The peak hours for development traffic generation will be consistent with the peak hours selected for assessment. ▪ Traffic growth factors derived from TEMPro (Version 7.2) will be applied to the traffic data to establish traffic flows in the opening and forecast years. Impact Assessment: ▪ The assessment will identify the percentage impact of the proposed development in terms of traffic flows at the principal access junctions identified in Section 6. ▪ Should the increase in traffic at these junctions be considered to warrant capacity assessment, this will be undertaken using the industry-standard

		TRL software program 'Junctions 9' (for priority and roundabout junctions) and JCT Consultancy software program 'LinSig'.
10	Transport Implementation Strategy (TIS)	The TA will include a TIS, which will consider potential measures, and appraise those already being implemented by the wider site, to increase the mode share of sustainable travel modes by staff and pupils at the school. In particular, the following will be considered: ▪ Feasibility of walking and cycling routes in the surrounding areas including consideration for potential improvements; ▪ Cycle parking within the school grounds; ▪ Bus drop off points and circulation within the site; Determine if a Travel Plan exists for the current site, the outcome of this will be considered in the production of a draft travel plan for the proposed site with appropriate recommendations and actions.
11	Construction Traffic	The TA will include discussion of potential routeing arrangements and estimates of construction traffic.

Appendix A - Location Plans


Pencoedtre High School
Coastlands
Vale of Glamorgan Flying Start
The Colcot Arms
Whitmore High School
Oak Field Primary School
YGG Bro Morgannwg
Jenner Park
Buttrills Community Association


Highlight Park
Medical Practice
Tesco Superstore
Barry comprehensive school
The Barry Hospital
Ysgol Gymraeg
Bro Morgannwg
Cardiff & Vale
College - Colcot Road
A4226
Port Rd W
Highlight Ln
Camborne Cl
Lakin Dr
Liscum Way
Stirling Rd
Enfield Dr
Purdey Cl
Highfield Rd
Colcot Rd
Dyffryn Pl
Greenbanks Dr
Woodham Park
Elan Cl
Conway Dr
Usk Way
Thistle Cl
Clos Cefni
W Walk


A4050
Port Rd
Port Rd E
Glyntendge Cl
Bryn Hafren
Comprehensive School
Merthyr Dyfan
Sub Post Office
Wheelz
Cook Rd

Appendix B – Traffic Surveys

Location Plan – Barry, Vale of Glamorgan

Junction Turning Count and Queue Length Surveys – Survey Specification

Locations:

1. A4050 Port Road E / Merthyr Dyfan Road (signal-controlled junction)
2. Merthyr Dyfan Road / Ysgol Gyfun Bryn Hafren School (priority junction with ghost island right-turn lane)
3. A4050 Port Road E / A4226 Port Road W / A4050 Colcot Road (roundabout junction)
4. A4226 Port Road W / Barry Comprehensive School access in only (priority junction)
5. A4226 Port Road W / Barry Comprehensive School exit / Sterling Road (signal-controlled junction)
6. Internal access road serving Hospital / Internal access road serving Ysgol Gymraeg Bro Morgannwg (priority junction)
7. A4050 Colcot Road / Access road to school and hospital (signal-controlled junction)
8. A4050 Colcot Road / Barry Road (roundabout junction)

Date: Undertaken on Wednesday 27th June 2018.

Duration: 07:00–10:00 and 14:00–18:00.

Data to be recorded:

- Classified turning counts, with data split into 15 minute intervals (including a breakdown for vehicle types).
- Queue lengths, recorded during 5 minute intervals (the maximum queue during each interval).

Good afternoon [redacted],

Thank you for providing us with your observations and requests for additional input to our TA scoping report.

We apologise for not replying sooner, in the time which has passed since our exchange the projects have progressed through business case and contractor tender process, we are now preparing the TA document for submission. We have reviewed the input and can confirm that overall we have covered, or have now adjusted our approach to meet with your requests.

We have attached updated scoping reports to which consider the points raised, for ease of reference we have also responded directly to the points you raised in your email (see the red text entries below).

I trust that this meets with your approval and we look forward to speaking with you again soon.

Many Thanks,

[redacted]

From: [redacted]
Sent: [redacted]
To: [redacted]
Cc: [redacted]
Subject: FW: Vale of Glamorgan Schools Scoping Notes - AE Response

Morning [redacted]. I have been asked to have a quick look at the attached TA scoping notes that you have proposed and would make the following comments in conjunction with my Passenger Transport Manager which we feel should be included.

1 No mention of how active travel measures / routes will be incorporated into the school and surrounding areas to encourage to walk / cycle to school rather than be brought by car (part of the Active Travel Act 2013 and Well-being of Future Generations (Wales) Act 2015 and probably in the new PPW10

The Wellbeing of Future Generations (Wales) Act 2015 has now been added to the list of policy documents in the scoping notes. All policies will be reviewed with regards to sustainable travel and the incorporation of active travel measures to encourage those modes of travel to school, with a focus on how the development complies with such policies and objectives.

2 No mention of cycle parking within the school

Cycle parking is a standard item inherent within a TA, however, for reassurance a sentence has been added into the scoping note to be clear that parking will be addressed as part of the TA.

3 No mention of home to school transport usage and possible layover areas and turning facilities for busses

We would assume from this relates to school bus services? This will be considered for all schools. In the case of Pencoedtre, it is noted that the Vale undertook a risk assessment (Nov 2015) and produced a proposed bus layby design for the existing Pencoedtre HS and recommends the restriction of parents dropping off pupils due to congestion and safety issues. We will ensure that this is addressed with the TA and it will lead to further discussions with the LHA to ensure concerns are ameliorated, resulting in agreed measures that are realistic and appropriate for the school.

4 No mention of staff parking facilities

As with cycle parking, this is a standard inherent TA item and will be addressed as part of the TA. To provide further comfort the Scoping note has been updated to reflect this.

5 No mention of dropping off points for parents and how this will affect the surrounding streets / roads and if there is a need for Traffic Regulation Orders

There will be a full walkover site audit carried out and the findings will be included as part of the TA. This will include the consideration for drop off points for parents and existing TROs (and whether more will be required as part of the proposals)

6 Is speeding an issue within the vicinity which would discourage walking and cycling

Site observations will be undertaken as part of the TA with findings reported.

7 No mention of risk assessments when walking to school in accordance with the Learner Travel Statutory Provision and Operational Guidance June 2014 where authorities Chapter 5 where Local authorities are under a legal duty to assess the travel needs of learner who walk to school

This appears to be specifically related to the Local Authority although it can be picked up with the education department, but it is currently outside of our brief.

8 Any offsite improvements needed to facilitate walking and cycling to school to facilitate the above

This will be included as standard within the Transport Implementation Strategy (TIS) chapter of the TA (this has been updated in the scoping documents for clarity).

9 If there are existing Travel Plans in each of the schools then they should be reviewed for future use (if appropriate) or development and adoption (i.e. if no existing plan is in place).

This will be confirmed with the education department for each school, the outcome of this will be considered in the production of the TA and appropriate action recommended. The scoping note has been updated to reflect this to be provided reassurance.

[redacted]

[redacted]

From: [redacted]
Sent: [redacted]
To: [redacted]
Cc: [redacted]
Subject: FW: Vale of Glamorgan Schools Scoping Notes

Hi [redacted]

As per my previous email, please see attached Transport Assessment Scoping Notes for Whitmore High School, Ysgol Gymraeg Bro Morgannwg and Pencoedtre High School.

If you have any queries or would like to discuss further, please do not hesitate to contact either myself or [redacted].

Kind Regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Vale of Glamorgan Schools Scoping Notes

Good morning [redacted],

Further to your recent discussions with my colleague [redacted], we are preparing scoping notes for your review for the three school proposals (Whitmore, Bro Morgannwg and Pencoedtre). [redacted] is away on annual leave and we are progressing this work in his absence and thought it would be useful to circulate our email addresses.

As agreed we will prepare a robust scope for each site which will hopefully reduce the consultation time required and minimise the amount of officer input needed.

I aim to get the scoping notes to you within the next couple of days. I hope you find this satisfactory.

Kind Regards,

[redacted]

[redacted]

[redacted]

[redacted]

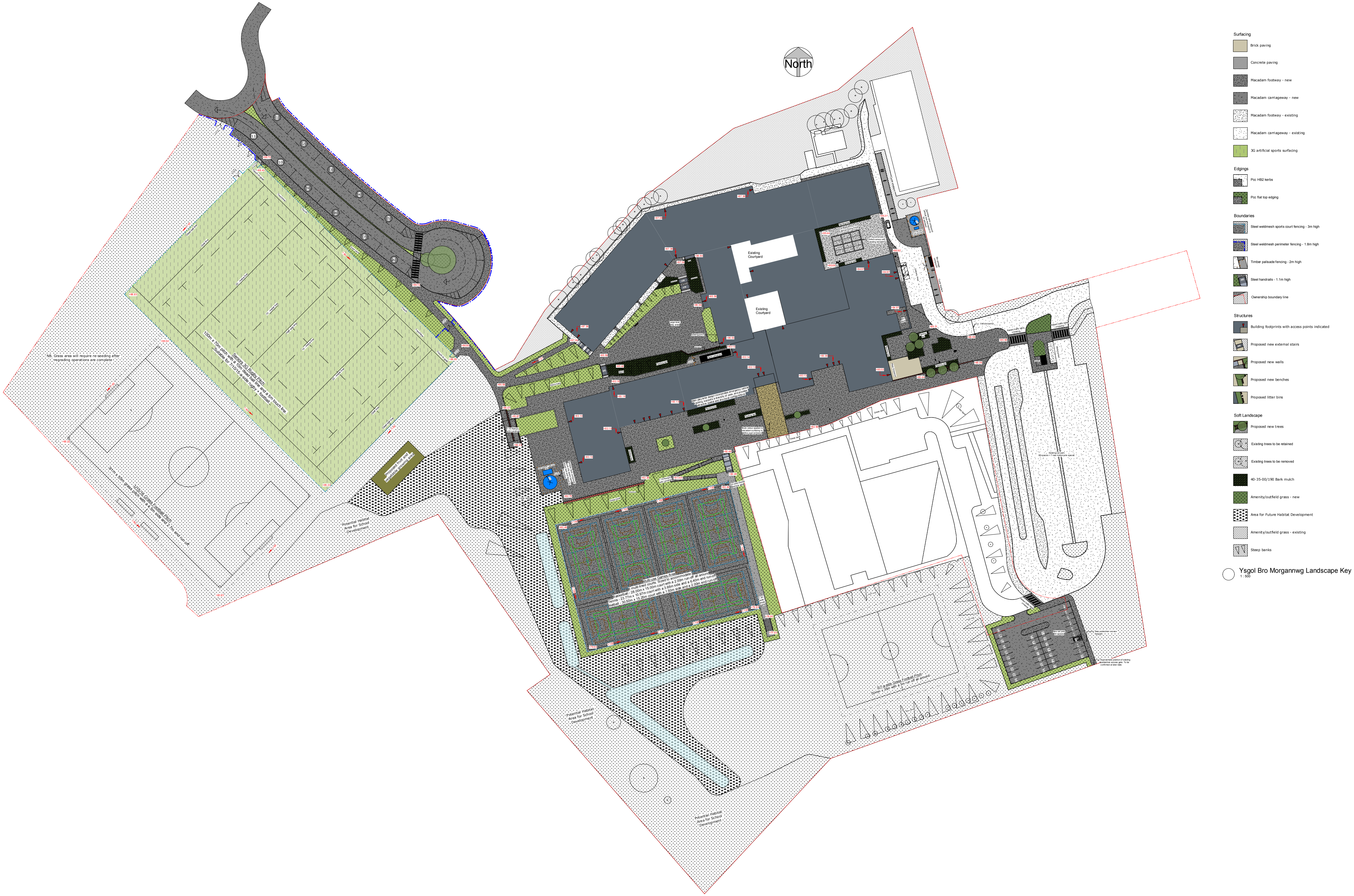
Appendix 2.1

Personal Injury Collision Data – Extract from Crashmap for 2013-2017

Ysgol Gymraeg Bro Morgannwg, Barry
Personal Injury Collision Data – Extract from Crashmap for 2013-2017

Appendix 3.1

Masterplan



1 0900 - External Works General Arrangement - Whole Site
1 : 500

Rev	Description	Drawn	Checked	Date Issued
P1	initial issue	MPM		06/12/18
P2	General WIP design development	MPM		11/01/19
P3	Requested changes made to layout	MPM		16/01/19
P4	General site design development and requested changes.	MPM		18/01/19
P5	General site design development and requested changes.	MPM		22/01/19
P6	General site design development and requested changes.	MPM		24/01/19
P7	PAC Issue	MW		25/01/19

Drawn	Author
Date	Issue Date
Scale @ A0	1 : 500
Status	S2

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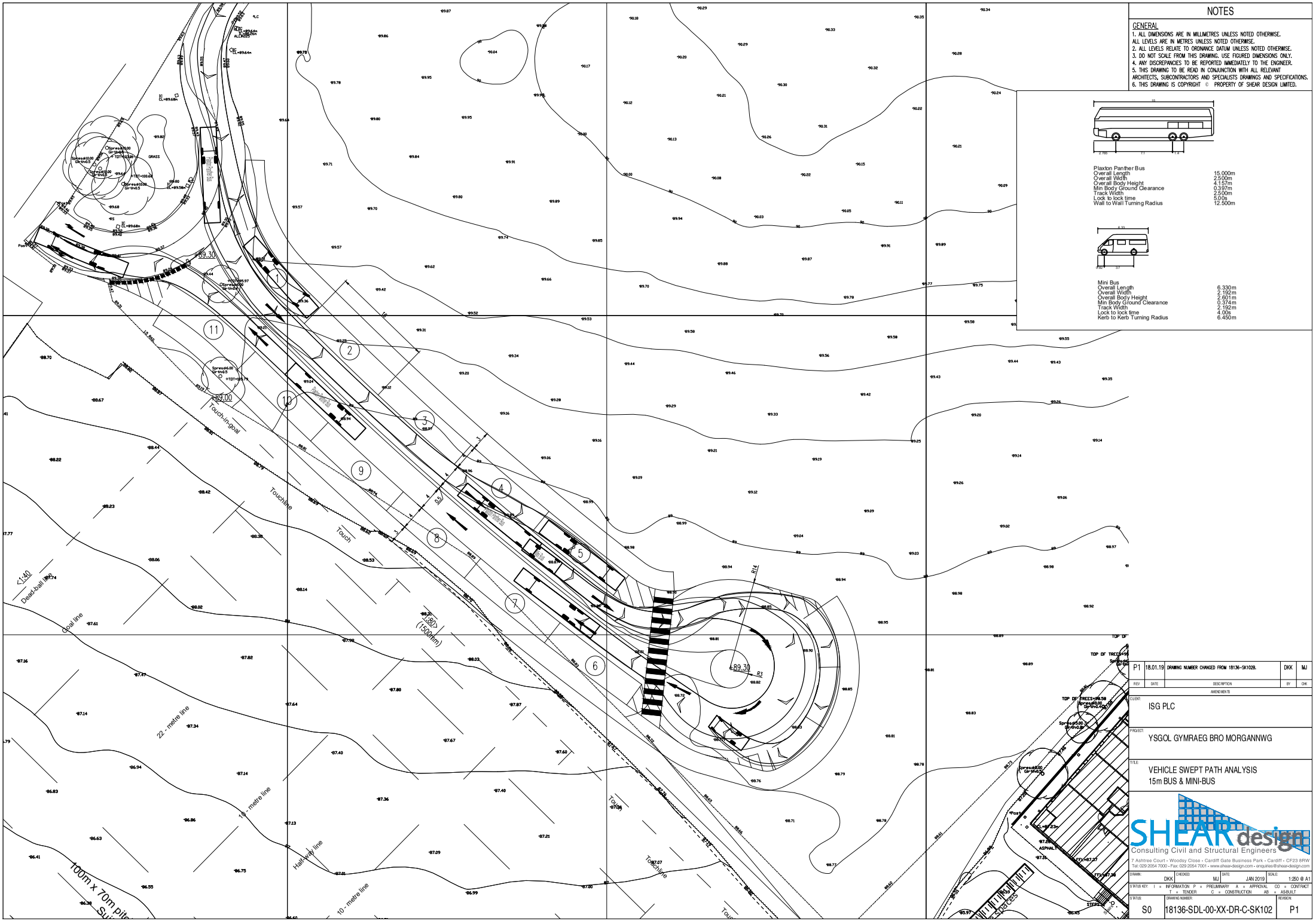
Drawings and models powered by Austin-Smith:Lord LLP BIM using AutoDesk Revit

Austin-Smith:Lord
Project Ysgol Bro Morgannwg
Description External Works General Arrangement - Whole Site

Job No.	Drawing No.	Revision
318052	318052- ASL- 00- ZZ- DR- L- 0900	P6

Appendix 3.2

Swept Path Analysis



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Plaxton Panther Bus

Overall Length	15.000m
Overall Width	2.500m
Overall Body Height	4.157m
Min Body Ground Clearance	0.397m
Track Width	2.500m
Lock to lock time	5.00s
Wall to Wall Turning Radius	12.500m

Mini Bus

Overall Length	6.330m
Overall Width	2.192m
Overall Body Height	2.601m
Min Body Ground Clearance	0.374m
Track Width	2.192m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.450m

REV	DATE	DESCRIPTION	BY	CHK
P1	18.01.19	DRAWING NUMBER CHANGED FROM 18136-SK102B.	DKK	MJ

AMENDMENTS

CLIENT: ISG PLC

PROJECT: YSGOL GYMRAEG BRO MORGANNWG

TITLE: VEHICLE SWEPT PATH ANALYSIS 15m BUS & MINI-BUS

SHEAR design
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DRAWN:	CHECKED:	DATE:	SCALE:
DKK	MJ	JAN 2019	1:250 @ A1

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STATUS:	DRAWING NUMBER:	REVISION
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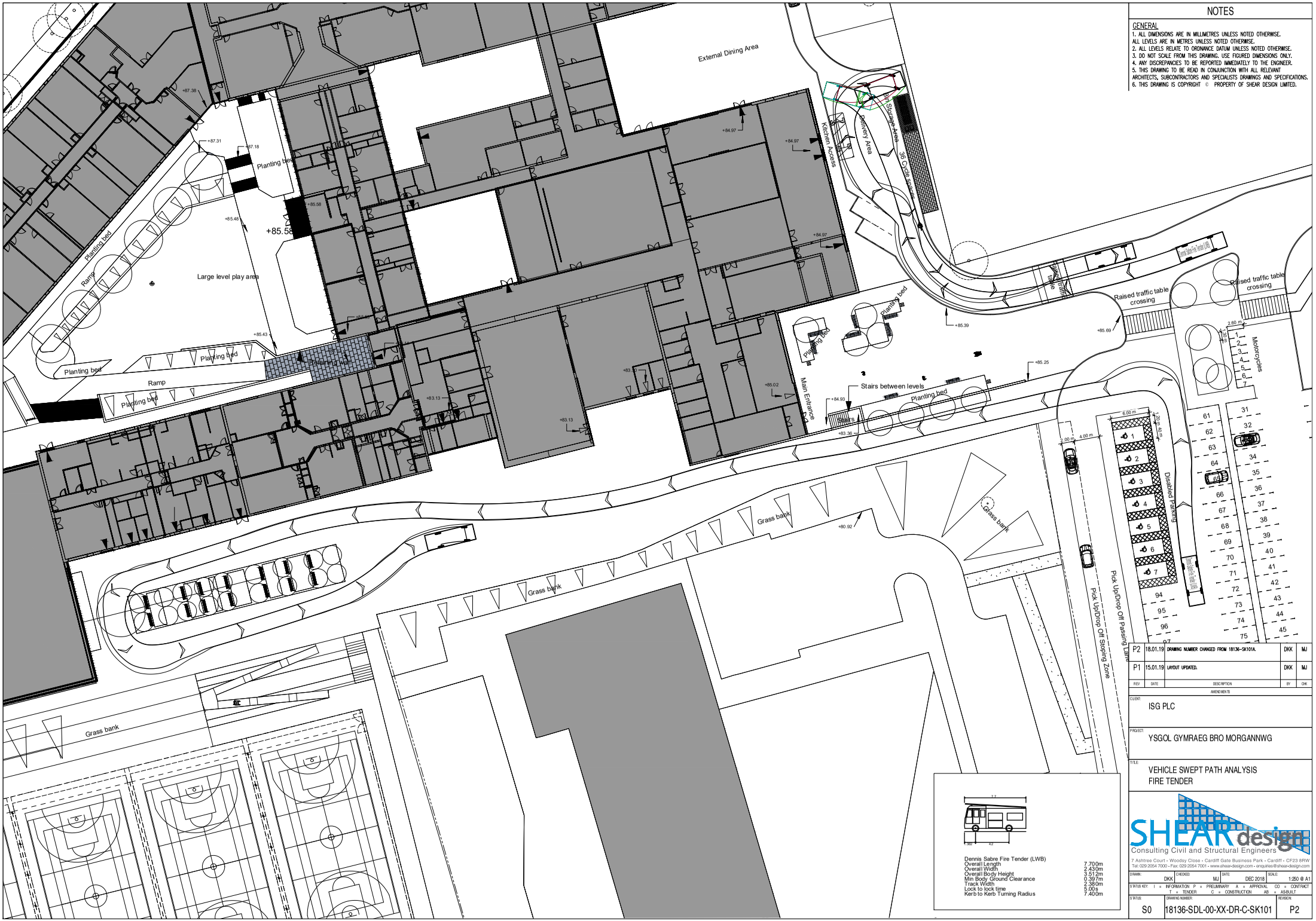

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P2	18.01.19	DRAWING NUMBER CHANGED FROM 18136-SK101A.	DKK	MJ
P1	15.01.19	LAYOUT UPDATED.	DKK	MJ

AMENDMENTS

CLIENT: ISG PLC

PROJECT: YSGOL GYMRAEG BRO MORGANNWG

TITLE: VEHICLE SWEPT PATH ANALYSIS
FIRE TENDER

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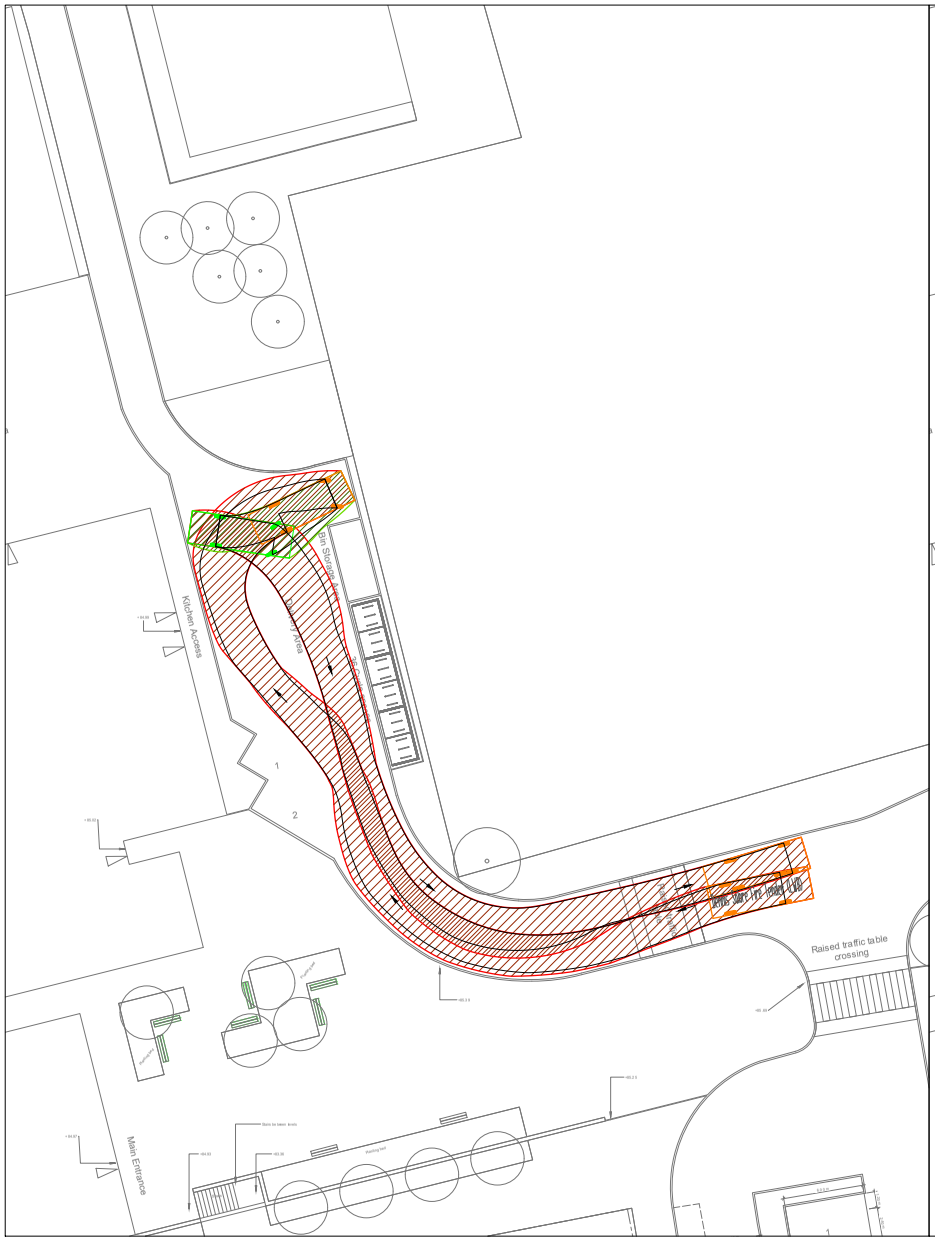

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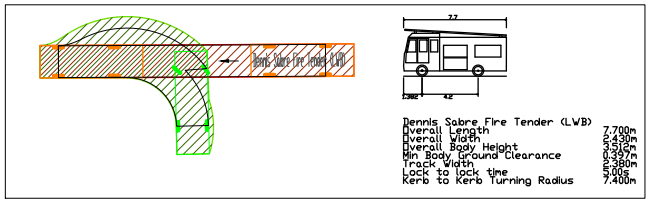

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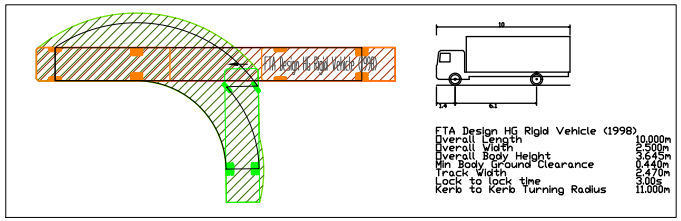

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AMENDMENTS

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PROJECT: YSGOL GYMRAEG BRO MORGANNWG

TITLE: VEHICLE SWEPT PATH ANALYSIS DELIVERY AREA

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