REPORT N^{O} 70033398-001

Ysgol y Graig, Cefn Coed, Merthyr Tydfil

TRANSPORT OPTIONS APPRAISAL

CONSULTATION REPORT

WSP | PARSONS BRINCKERHOFF

YSGOL Y GRAIG, CEFN COED, MERTHYR TYDFIL

TRANSPORT OPTIONS ASSESSMENT

Blaenau Gwent County Borough Council

CONSULTATION REPORT

Project no: 70033398
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WSP | Parsons Brinckerhoff
1 Capital Quarter
Tyndall Street
Cardiff
CF10 4BZ

Tel: +44 (0) 2920 769 200

www.wsp-pb.com

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Checked by	Lisa Goddard Steve Hayward	Lisa Goddard Steve Hayward	Lisa Goddard Steve Hayward	
Signature			Goddard, Lisa Goddard, Lisa 2017.06.12 16:17:44 +01'00'	
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PRODUCTION TEAM

WSP | PARSONS BRINCKERHOFF

Rhian Sheady	Graduate Transport Planner
Josh Burkin	Graduate Transport Planner
Neil Taylor	Principal Transport Planner

SUB CONSULTANTS

Tracsis	Traffic Surveys / Parking Beat Surveys

TABLE OF CONTENTS

1 INTRODUCTION

1.1 OVERVIEW

WSP | Parsons Brinckerhoff (WSP | PB) have been commissioned by Blaenau Gwent County Borough Council (BGCBC) on behalf of Merthyr Tydfil County Borough Council (MTCBC) to undertake a Transport Options Appraisal for two sites.

The two sites are being considered for the potential relocation of the Ysgol-y-Graig Primary School, Cefn Coed, Merthyr Tydfil. This appraisal will help to identify the most suitable access arrangements to each site.

MTCBC's decision to build a new primary school is part of the Welsh Government's 21st Century Schools and Education Programme investment period ending in 2018/19.

A brief document history relating to the relocation of the school is as follows:

- **April 2010:** Capita Symonds assessed the access options for the relocation of the school to the nearby Former Vaynor School Site *(Former Vaynor School Site Transport Access Study)*.
- **April 2011:** Austin-Smith Lord produced a feasibility study for the proposed new primary school. The report included:
  - A report by Mott MacDonald which reviewed access opportunities for the Godre'r Coed Fields Site (*Playing Field Site Transport Access Study*).
  - A report by Mott MacDonald which reviewed Capita Symonds study of the Former Vaynor School Site (*Former Vaynor Schools Site Transport Access Study Review).*
- **April 2016:** WSP | PB were commissioned to undertake a Transport Options Assessment of the Former Vaynor School Site. A working draft of the report was provided to the client following confirmation that work on this project was to be halted.

1.2 SCOPE

WSP | PB have been commissioned to undertake a Transport Options Appraisal which:

- Identifies existing highway provision surrounding both sites and constraints for movement by all modes;
- Establishes operation of the existing highway network;
- Identifies potential access options to both sites with supporting interventions and highway improvements; and,
- Investigates whether these access options are feasible in terms of providing safe and appropriate access to each site.

This report has been informed by site visits undertaken on Tuesday 25th April 2017, Tuesday 19th and Tuesday 26th April 2016.

1.3 STRUCTURE OF REPORT

This report is structured as follows:

Section 2 describes the existing conditions at each of the sites and the surrounding highway network. It includes a review of the Personal Injury Collisions recorded nearby;

Section 3 provides a review of accessibility for pedestrians, cyclists and public transport users to both sites;

Section 4 provides an estimate of the expected trip generation/reassignment.

Section 5 presents potential access options to each site and the transport planning objectives which they are measured against;

Section 6 provides the findings of the junction capacity assessments;

Section 7 presents the appraisal of the access options; and,

Section 8 summarises the main outcomes of the appraisal.

1.4 DEVELOPMENT PROPOSALS

The two sites being considered for the relocation of Ysgol y Graig Primary School are the Former Vaynor School Site and the Godre'r Coed Fields Site.

The existing primary school has 211 pupils on the school roll and is accessed via Brewery Lane in Cefn Coed.

It is proposed to develop one of the sites to provide the following:

- A school building to accommodate 240 primary school pupils including a nursery class
- Land allocated for outdoor activities for school pupils
- Parking provision and drop-off/pick-up facilities

As part of the development proposals it is intended to retain or provide substitute open recreational space for use by the community.

Figure 1.1 shows the existing catchment area for the Ysgol y Graig primary school and the postcodes of pupils at the existing school. The catchment largely comprises the village of Cefn Coed and other settlements to the north of the A465 Heads of the Valleys road on the fringes of the Brecon Beacons national park. As shown, the catchment area is predominately rural in nature, being on the edge of the main urban settlement of Merthyr Tydfil.

The figure demonstrates that the majority of the pupils are from within Cefn Coed, Trefechan and the main urban settlement of Merthyr Tydfil. It shows that many pupils travel from outside the schools catchment area.

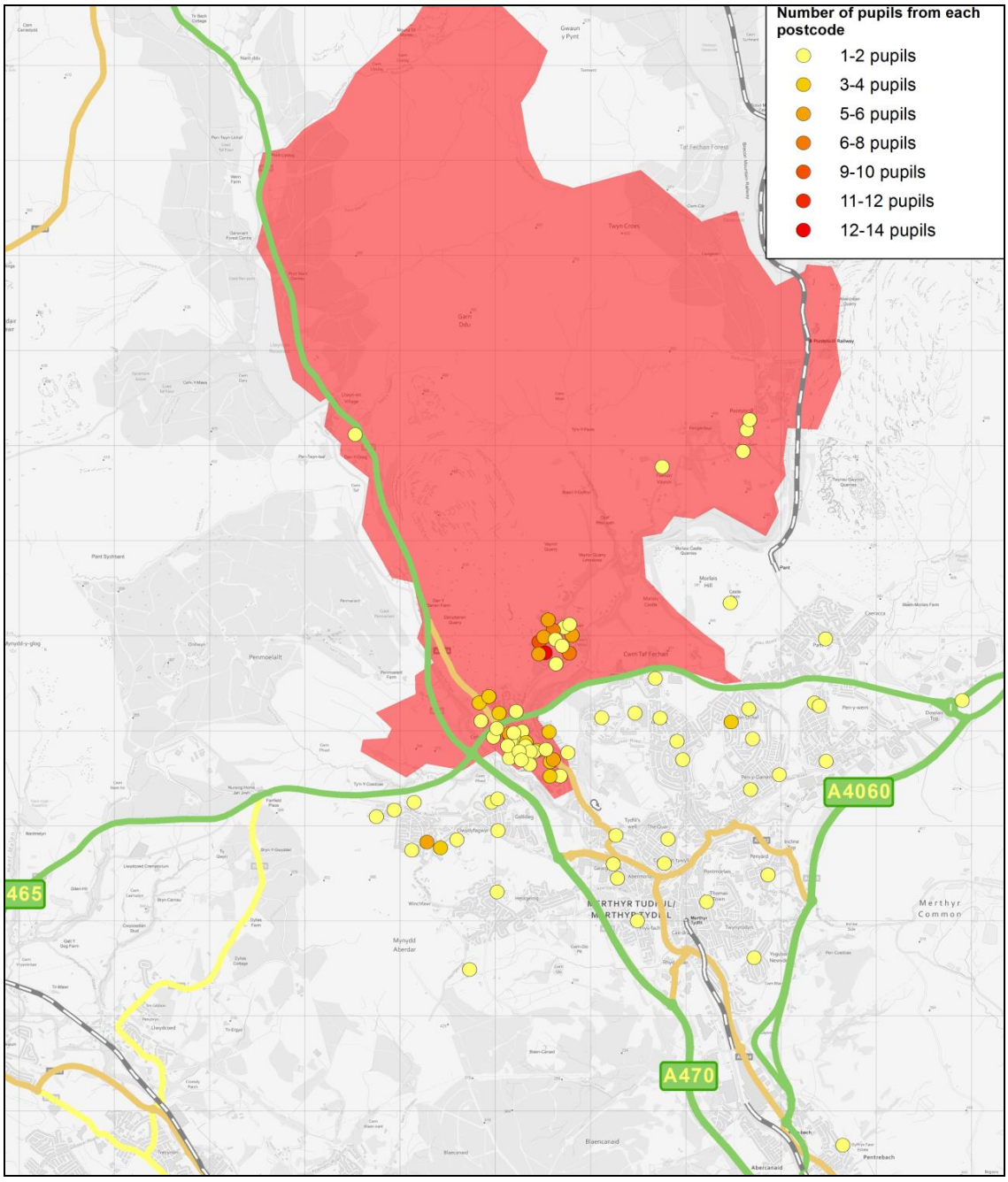


Figure 1.1 – Extent of school catchment area for Ysgol y Graig, shown in red and pupil postcodes

2 EXISTING CONDITIONS

2.1 OVERVIEW

This section of the report describes the existing condition of the site and the existing access points for vehicles and non-motorised-users (NMUs). It also describes the local highway surrounding the site identifying any existing safety or capacity constraints.

2.2 SITE DESCRIPTION

The locations of the two potential sites and the existing school are shown in **Figure 2.1** below.

Figure 2.1 – Location of potential development sites

2.2.1 FORMER VAYNOR SCHOOL SITE

The Former Vaynor School Site is in Cefn Coed, Merthyr Tydfil located approximately 200m south of the existing school. The site is approximately 0.71ha in size and is heavily constrained in terms of access. This is due to the residential properties that surround the site to the east, north and west.

Full topographical survey drawings were provided by BGCBC. This confirmed the presence of level differences across the site and the immediate surrounding area. The maximum level difference between the northern and southern boundaries is approximately 5.6m over a distance of approximately 133m. This equates to a 4% downhill gradient from the north to the south. **Figure 2.2** demonstrates the level difference across the site.

Figure 2.2 – Photographs showing gradient across Former Vaynor School Site.

EXISTING ACCESS

The Former Vaynor School Site has four existing access points, shown in **Figure 2.3** and **Figure 2.4** Two of these are considered to be suitable for vehicular access to the site; although these are constrained by the alignments and widths of the surrounding highways.

The access points currently suitable for use by vehicles are from Pontycapel Road to the south of the site, and South Terrace to the west of the site. Further access for NMUs can be gained to the east from Old Church Street and from the north from Holford Street.

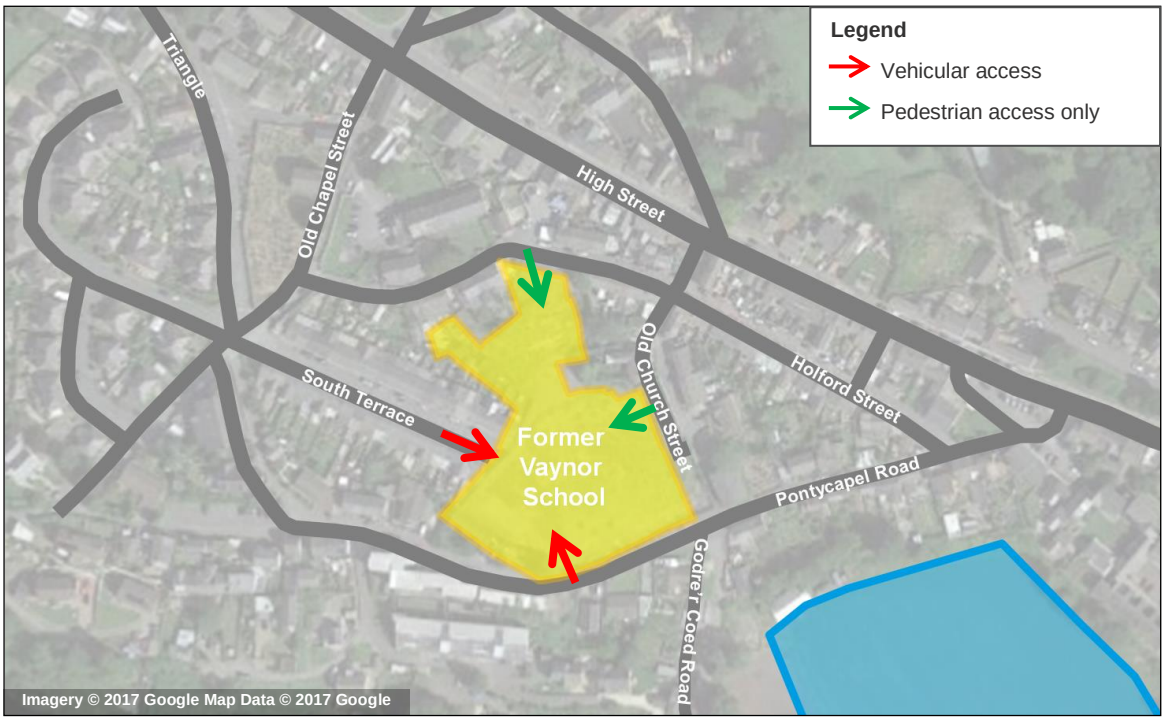


Figure 2.3. Location of existing access points to Former Vaynor School Site.

Figure 2.4 – Existing access gates to the Former Vaynor School Site.

2.2.2 GODRE'R COED FIELDS SITE

The Godre'r Coed Fields site is situated approximately 300m south of the existing school and accessed from Godre'r Coed Road via Pontycapel Road. The site is comprised of a rugby playing field, changing facility building and two parking areas, as shown in **Figure 2.5**.

The Godre'r Coed Fields site is currently used for recreational purposes including Cefn Coed Rugby Club as well as local residents for dog walking.

The site is approximately 2.15ha and is bounded by residential areas to the north, east and south. The western edge of the site is bounded by Godre'r Coed Road and shrub woodland.

Figure 2.5 - Photographs taken on existing site.

EXISTING ACCESS

The site has one existing vehicle access point which is from Godre'r Coed Road as shown in **Figure 2.6**. Godre'r Coed Road is constrained in width and is on an incline with the highest point at the junction with Pontycapel Road. Discontinuous sections of footway are provided on the western side of the carriageway whilst no footway is provided on the eastern edge.

On the south-eastern corner of the site, an informal gated access is situated off Cyfarthfa Gardens which is suitable for pedestrian access only. The access points to site are identified in **Figure 2.7**

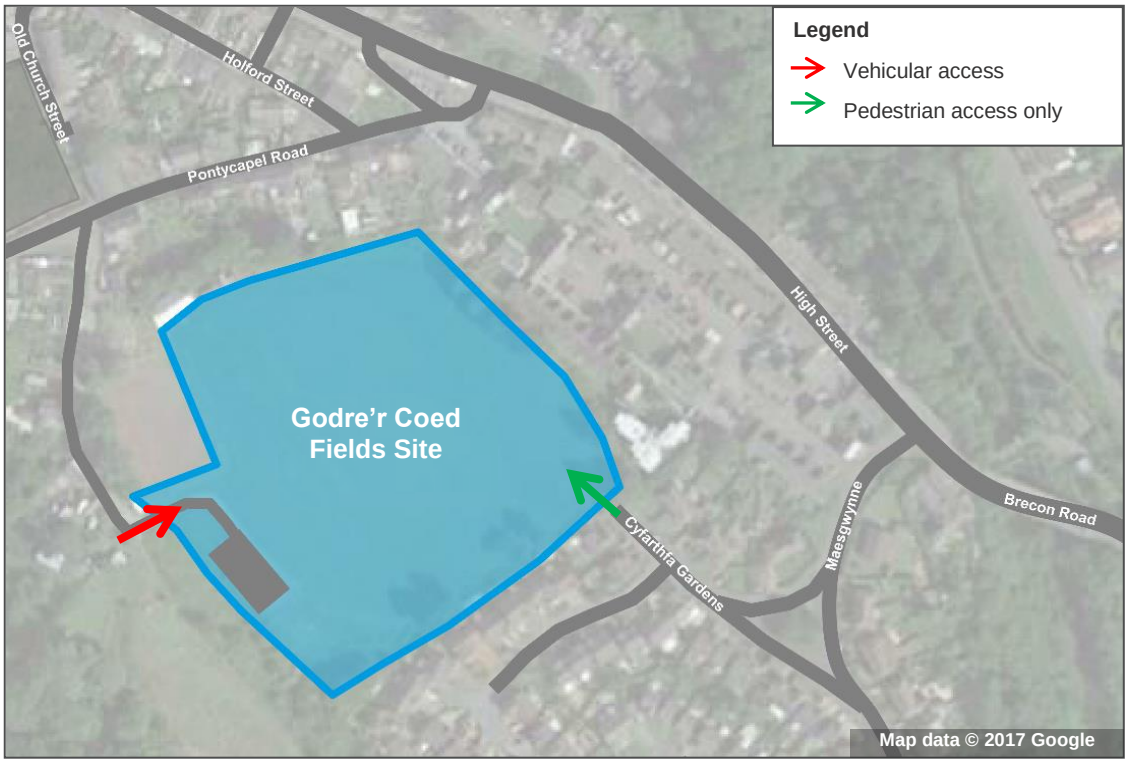


Figure 2.6 - Location of current access points to proposed site.

Figure 2.7 - Access gates off Godre'r Coed Road, facing west

2.3 LOCAL HIGHWAYS

The highway network surrounding the site is shown in **Figure 2.8,** identifying the various local highway names referred to throughout the report.

Figure 2.8 shows the locations at which junction turning count surveys have been carried out. The junction surveys at Sites 1, 2, 3, 4A and 4B were undertaken by Tracsis on Tuesday 19th April 2016 between 07:30 and 09:30, and between 14:30 and 16:30. These surveys were undertaken as part of the Transport Options Assessment for the Former Vaynor School Site commissioned by WSP PB in April 2016.

The additional junction surveys at Sites 5 and 6 were undertaken by Tracsis on Wednesday 25th April 2017 between 07:30 and 09:30, and between 14:30 and 16:30.

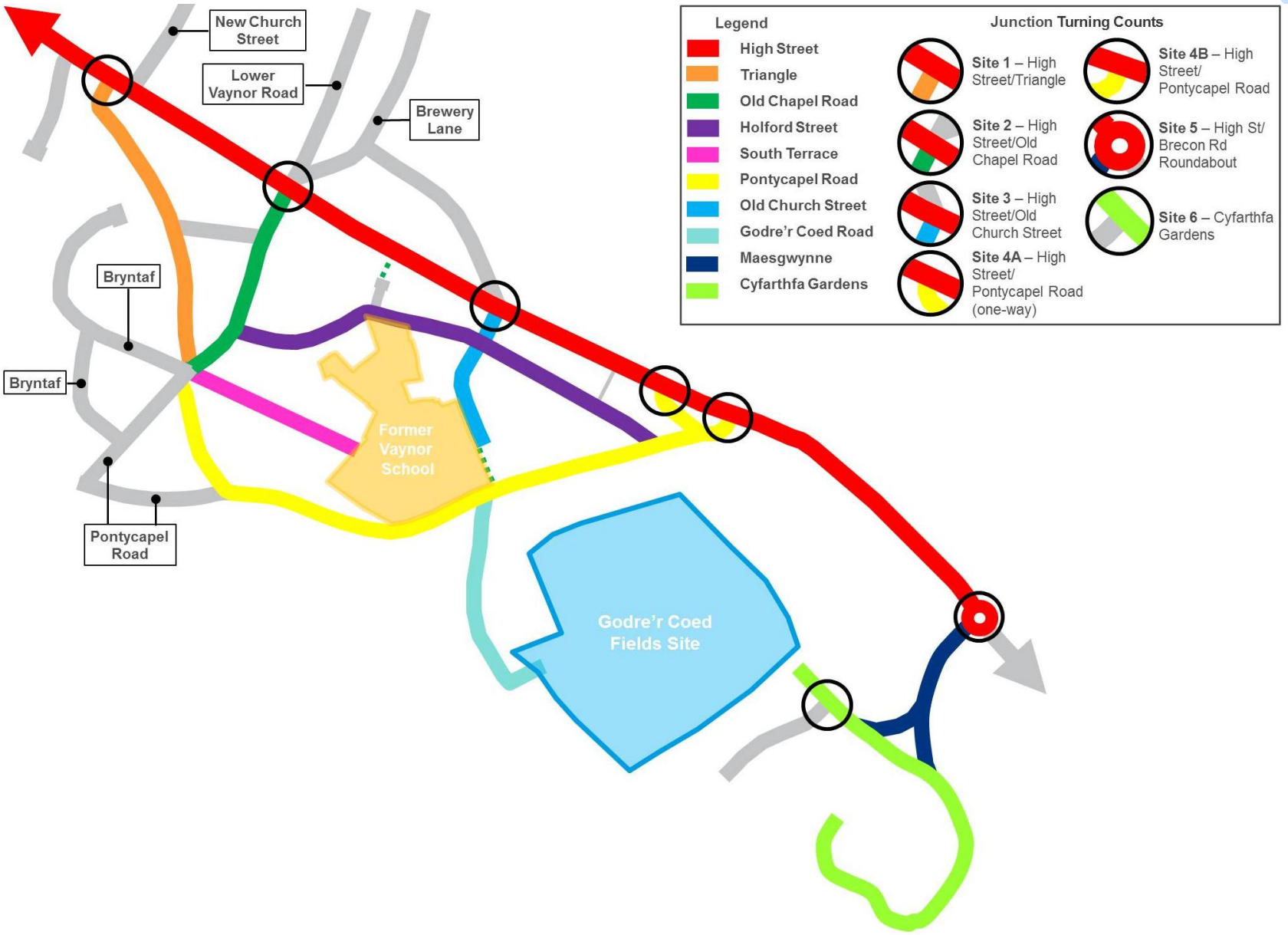


Figure 2.8 - Local Highway Network and Location of Junction Turning Count Surveys

HIGH STREET A5054

High Street A4054 is aligned north-west to south-east and connects to the A470 to the north of both sites. High Street continues as Brecon Road A4054 from the roundabout with Maesgwynne.

The road has full road markings. Through Cefn-Coed-y-Cymmer the road is subject to a 30mph speed limit and is single carriageway. The road has parking restrictions along sections, in the form of double yellow lines. Other sections through Cefn-Coed-y-Cymmer have formal on-street parking bays with parking restrictions. High Street is well covered by lighting provision with street lighting mounted on columns along footways on both sides of the road. The road condition and layout is shown in **Figure 2.9**.

Figure 2.9 - High Street A4054

The average two-way flow observed through the junction turning count surveys in April 2016 was 632 in the hour between 08:00 and 09:00. This equates to approximately 11 vehicles per minute travelling in either direction along High Street in the AM peak. The average two-way flow in the PM peak was 577. This equates to approximately 10 vehicles per minute passing High Street between 15:30 and 16:30.

MAESGWYNNE ROUNDABOUT

Maesgwynne Roundabout is a three arm mini roundabout that connects High Street, Brecon Road and Maesgwynne. The roundabout is shown in **Figure 2.10.**

No pedestrian crossing facilities are provided at Maesgwynne Roundabout. The nearest pedestrian crossing facility across High Street is located c.500m north on High Street.

The following observations were identified in the Mott MacDonald Report[1] which should be taken into consideration;

- *'There is no deflection on the northbound approach to the roundabout. This results in traffic speeds not reducing on the approach from the south…*
- *The deflection on the southbound approach is poorly designed, and observations suggest that the kerb and central island are regularly struck by vehicles…*

[1] *Playing Field Site Transport Access Study* produced by Mott MacDonald in April 2011.

→ *No pedestrian facilities are incorporated within the roundabout design. Furthermore, there are no other crossing facilities provided on this section of the A4054 High Street.'*

Figure 2.10 - Maesgwynne Roundabout, Facing North

BRECON ROAD A4054

Brecon Road A4054 is aligned north-west to south-east and begins from Maesgwynne Roundabout. Brecon Road A4054 continues south to a roundabout with Brecon Road and Cyfarthfa Road A4054.

Directly south of Maesgwynne Roundabout footways are provided on both sides of the carriageway. Approximately 30m south of Maesgwynne Roundabout Brecon Road crosses the River Taf Fechan at which point the footway provision on the west side of the carriageway ends.

Brecon Road is subject to a 30mph speed limit and traffic calming measures are present on the boundary of Cefn-Coed-y-Cymmer as shown in **Figure 2.11** and **Figure 2.12.**

Figure 2.11 - Brecon Road Bridge over River Taf Fechan

Figure 2.12 - Brecon Road traffic calming measures, facing north

It is subject to parking restrictions in the form of double yellow lines for 30m south of Maesgwynne Roundabout. Continuous street lighting is provided on the eastern side of the carriageway.

MAESGWYNNE

Maesgwynne is a residential street accessed from the roundabout with High Street and Brecon Road. Maesgwynne is aligned north-east to south-west and connects to Cyfarthfa Gardens at its south-western end. Footway provision and street lighting mounted on columns are provided on both sides of the street. Dropped kerbs are provided for vehicular accesses to driveways of residential properties. There are no on-street parking restrictions. The highway layout is shown in **Figure 2.13** and **2.14.**

Figure 2.13 - Maesgwynne facing south-west

Figure 2.14 - Maesgwynne facing north-east

CYFARTHFA GARDENS

Cyfarthfa Gardens is a residential street accessed from Maesgwynne and provides access to the Godre'r Coed Fields Site through the south-eastern boundary. Dropped kerbs are provided for vehicular access to driveways of residential properties. There are no on-street parking restrictions. The highway layout is shown in **Figures 2.15** and **Figure 2.16.**

Figure 2.15 - Cyfarthfa Gardens

Figure 2.16 - Access gate to site off Cyfarthfa Gardens

GODRE'R COED ROAD

Godre'r Coed Road is aligned north to south and connects to Pontycapel Road in the north. To the south Godre'r Coed Road provides direct access to the Godre'r Coed Fields Site and onto a paved car parking area near the south-western edge of the site.

The road is restricted in width making it difficult for vehicles to pass over the majority of the road length. The road is inclined with the highest point at the northern end. The road borders the western edge of the proposed site.

A footway of c.35m length is provided on the eastern side of Godre'r Coed Road at the approach to Pontycapel Road. A footway of c.15m is provided on the western side. The highway arrangement is shown in **Figures 2.17**.

Figure 2.17 - Godre'r Coed Road

OLD CHURCH STREET

Old Church Street is aligned north to south and connects from High Street to Pontycapel Road. The street forms the eastern boundary of the Former Vaynor School Site, as shown in **Figure 2.18**.

Figure 2.18 - Old Church Street, (left) with Former Vaynor School boundary wall on the left, facing northwards, (right) at junction with Holford Street, facing north.

Figure 2.19 - Old Church Street at junction with Holford Street, facing north

Old Church Street is restricted in width, making it difficult for two vehicles to pass. A vehicle turning head is provided at the southern end. The approach of Old Church Street to High Street is constrained with limited visibility due to the properties bounding the carriageway and footway, as shown in **Figure 2.19**.

A narrow footway is provided on the eastern side of the carriageway, as shown in **Figure 2.18**, which is not of adequate width for use by pedestrians.

The southernmost section of Old Church Street is a pedestrian only footway for approximately 30m, as shown in **Figure 2.20.**

Figure 2.20 - Pedestrian footway on Old Church Street, facing southwards

PONTYCAPEL ROAD

Pontycapel Road is aligned east to west and connects to High Street in the east. To the western end of Pontycapel Road the carriageway bends towards a north-south alignment to connect to a six-arm junction with Bryntaf, Triangle, Old Chapel Road and South Terrace.

Pontycapel Road forms the southern boundary of the Former Vaynor School Site. It is partially covered by street lighting along its length. Due to limited street space, lighting appears to be fixed on the frontages of some properties and on columns where possible.

Dropped kerbs are provided for vehicular access to driveways of residential properties. There are no on-street parking restrictions. Pontycapel Road is narrow along most of its length. The road is unmarked with only limited places suitable for vehicles to pass due to a restricted highway boundary and surrounding residential properties. This is shown in the left image of **Figure 2.21.**

Figure 2.21 - Pontycapel Road, left: facing west, right: facing west at junction with Godre'r Coed Road

The vehicle movements observed entering and exiting Pontycapel Road to/from High Street are shown in **Table 2.1**. The table shows that a vehicle is expected to pass in each direction less than every two minutes during the AM and PM peak periods.

Table 2.1 - Approximate frequency of vehicle movements entering and exiting Pontycapel Road from High Street

Time Period	Number of Vehicles		Approximate Frequency of Vehicles	
	Exiting Pontycapel Road	Entering Pontycapel Road	Exiting Pontycapel Road	Entering Pontycapel Road
AM Peak 08:00 – 09:00	34	17	1 vehicle every 2 minutes	1 vehicle every 4 minutes
PM Peak 15:30 – 16:30	37	33	1 vehicle every 2 minutes	1 vehicle every 2 minutes

SIX-ARM PRIORITY JUNCTION

At the western end of Pontycapel Road is a six arm priority junction. The major arms are formed by Pontycapel Road (south) and Old Chapel Road. All other arms have give -way markings which are clear and visible. The junction arrangement and priorities are shown in **Figure 2.22**.

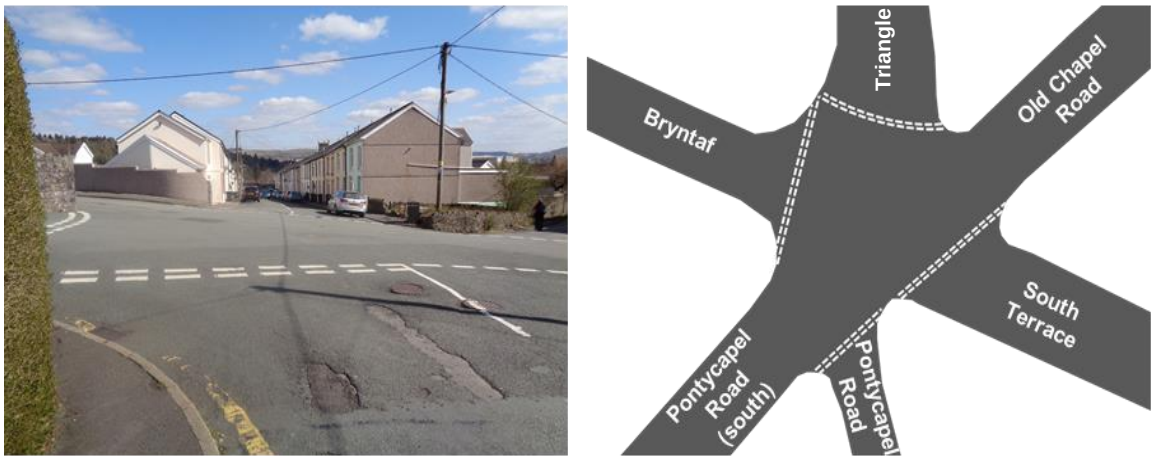


Figure 2.22 - Six-arm priority junction, left: facing east towards south terrace and right: schematic of junction

The junction has limited visibility due to the walls and hedges bounding the carriageway and the constrained road alignments, this limits opportunities for hard improvement measures. **Figure 2.23** shows a boundary wall restricting visibility at the junction.

Given the visibility restrictions at the six-arm junction it is considered undesirable to greatly increase traffic movements through this junction.

Figure 2.23 - Restricted visibility for movements at six-arm priority junction

SOUTH TERRACE

South Terrace is aligned east to west and links the six-arm junction with an entrance to the Former Vaynor School Site.

Figure 2.24 - South Terrace, facing south-east

Terraced properties are located on both sides of South Terrace along its length, as shown in **Figure 2.24**. Footways are provided on both sides of the carriageway.

On-street parking results in a narrowing of the road making it difficult for two vehicles to pass and potentially requiring some weaving into vacant space. South Terrace is covered by lighting, with lights fixed on columns along the northern footway.

As South Terrace does not link with any other routes, usage is likely to be limited to residential access. There is no formal turning head provided at the eastern end of the road, which may require some reversing movements when there is insufficient space for vehicles to turn due to on-street parking demand.

OLD CHAPEL ROAD

Old Chapel Road is aligned north to south and connects High Street and Lower Vaynor Road with the six arm priority junction. Old Chapel Road is unmarked and very narrow, with property boundaries directly adjacent to the road. Old Chapel Road is adequately covered by street lighting.

The junction turning count surveys recorded 47 vehicle movements exiting Old Chapel Road and 18 vehicles entering Old Chapel Road in the AM period between 08:00 and 09:00. In the PM period 38 vehicles were observed exiting Old Chapel Road and 29 vehicles were seen entering.

The highway layout is shown in **Figure 2.25.**

Figure 2.25 - Old Chapel Road.

TRIANGLE

Triangle is aligned north to south and connects High Street with the six-arm junction to the north-west of the site. Triangle is unmarked with the exception of give-way lines at either end. The road is slightly wider than other roads in the vicinity of the site. The road does narrow at one point where vehicles would be required to give way to oncoming traffic, as shown in **Figure 2.26**. Triangle is adequately covered by lighting provision.

The property boundaries surrounding Triangle limit opportunities for hard improvement measures.

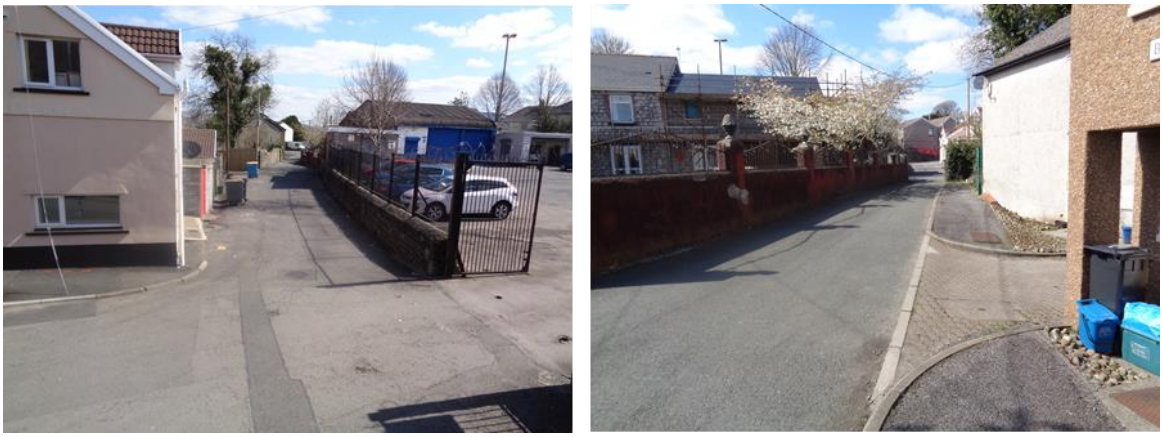


Figure 2.26 - Triangle

2.4 PARKING DEMAND

2.4.1 PARKING NEAR FORMER VAYNOR SCHOOL

In April 2016 WSP | Parsons Brinckerhoff commissioned Tracsis to carry out parking beat surveys on the following streets surrounding the Former Vaynor School Site:

- Triangle
- Old Chapel Road
- South Terrace
- Pontycapel Road
- Old Church Road
- Holford Street

The parking beat surveys were carried out on Thursday 19 May 2016 with parking by occupancy being recorded on the various streets from 07:30 to 09:30, and 14:30 to 16:30. The survey occurred during school term time on a neutral weekday. Prior to the survey the on-street parking capacity was estimated by Tracsis. This involved measuring the potential on-street parking capacity and dividing this by a 5m length parking space.

The total on-street parking capacity surrounding the Former Vaynor School Site was estimated to be 212 spaces on this basis. Whilst the standard car length would enable vehicles to park this close together, when formalised marked parallel parking bays are provided, the length of this provision is normally 6m. If a 6m spacing is used, the actual capacity would be for 177 vehicles.

At commencement of the surveys 27 vehicles were observed parking on-street within the survey area. A small number of off-street parking locations are also available in the areas surrounding the site. Vehicles parked in these areas were recorded separately and have not been represented in the capacity and demand analysis.

Figure 2.27 shows the combined on-street parking demand on in the survey area over the AM and PM periods.

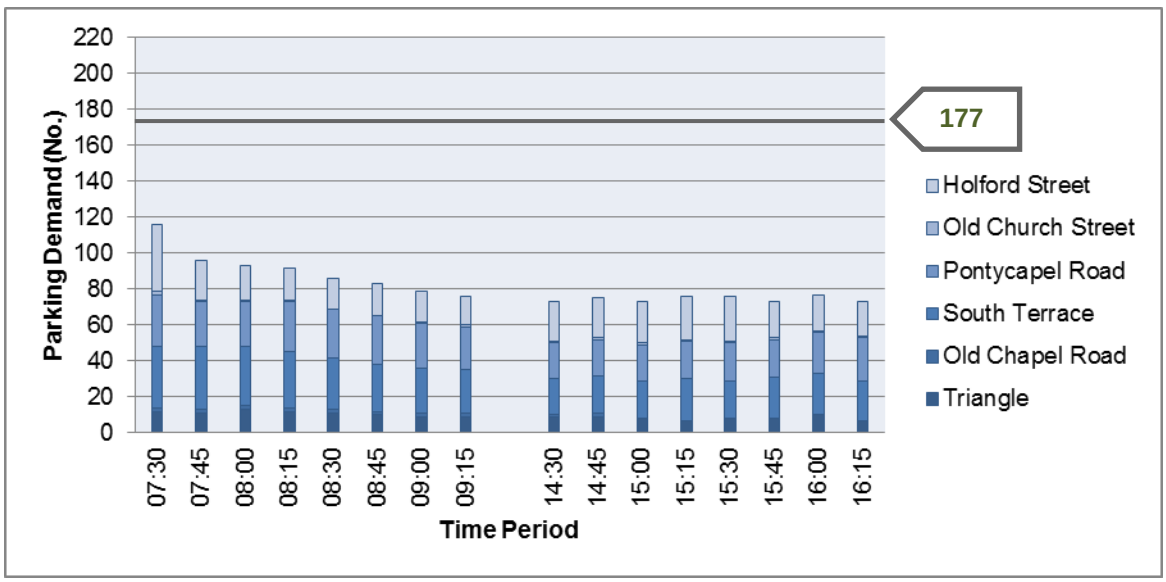


Figure 2.27 - Total on-street parking demand surrounding Former Vaynor School site.

On-street parking demand was recorded as 116 at 07:30. The number of vehicles parked on-street steadily dropped over the two-hour period with the number of vehicles parked on-street recorded as 76 at 09:15.

At 14:30, 73 vehicles were parked on-street. The number of vehicles parked on-street rose and fell over the two-hour PM period; the lowest number of vehicles was recorded as 73 and the highest was 77. This suggests that there is relatively high levels of parking provision on local roads between 14:30 and 16:30 when the new school would generate additional parking demand.

PONTYCAPEL ROAD

On-street parking demand on Pontycapel Road over the AM and PM periods is shown in **Figure 2.28.**

On-street parking demand on Pontycapel Road varied between 20 and 27 vehicles over the AM and PM periods. The parking capacity on Pontycapel Road was determined to be 60. The average number of vehicles parked on-street over the survey period was 24 vehicles; this would suggest that capacity remains for a further 47 vehicles.

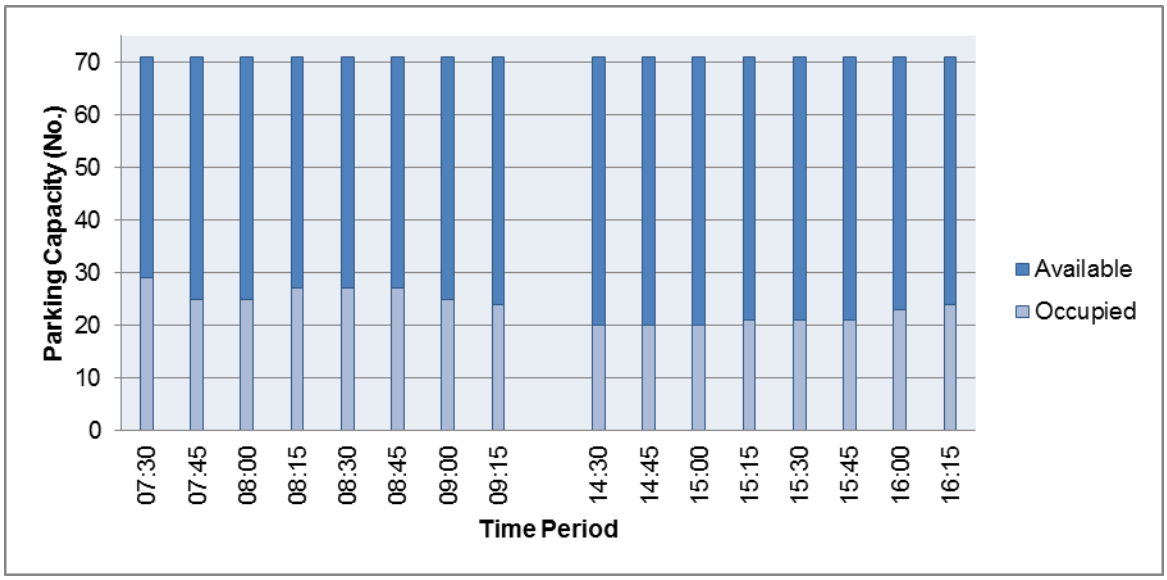


Figure 2.28 – On-street parking demand and capacity on Pontycapel Road.

HOLFORD STREET

Figure 2.29 shows the on-street parking demand and capacity for Holford Street.

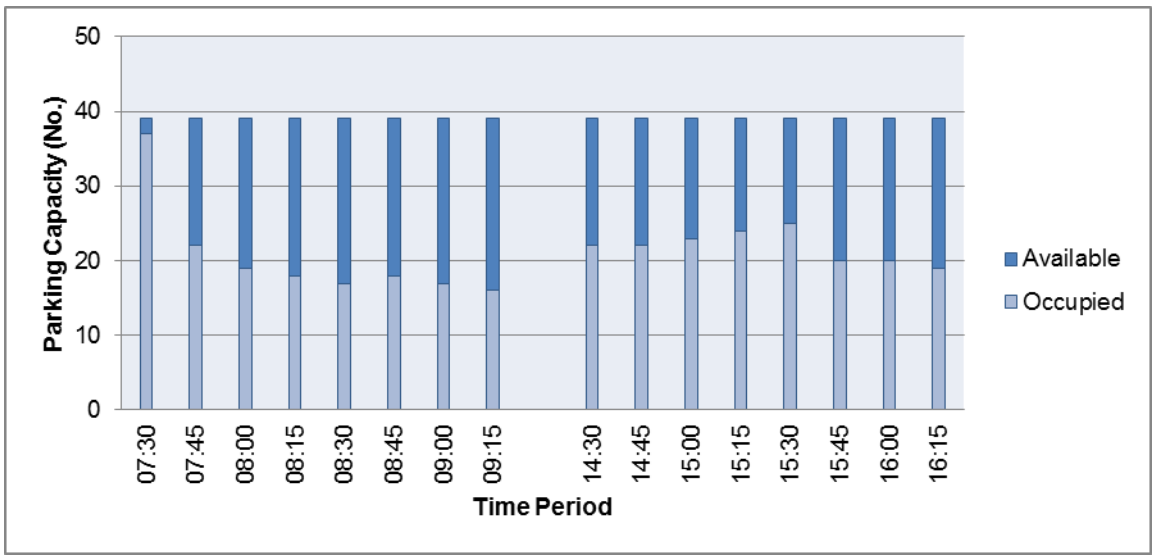


Figure 2.29 - On-street parking demand and capacity on Holford Street.

The on-street parking demand on Holford Street varies between 16 and 37 vehicles over the AM and PM periods with the maximum demand of 37 vehicles observed at 07:30. The parking capacity on Holford Street was estimated to be 39 vehicles.

OLD CHURCH STREET

The on-street parking demand and capacity on Old Church Street is shown in **Figure 2.30.**

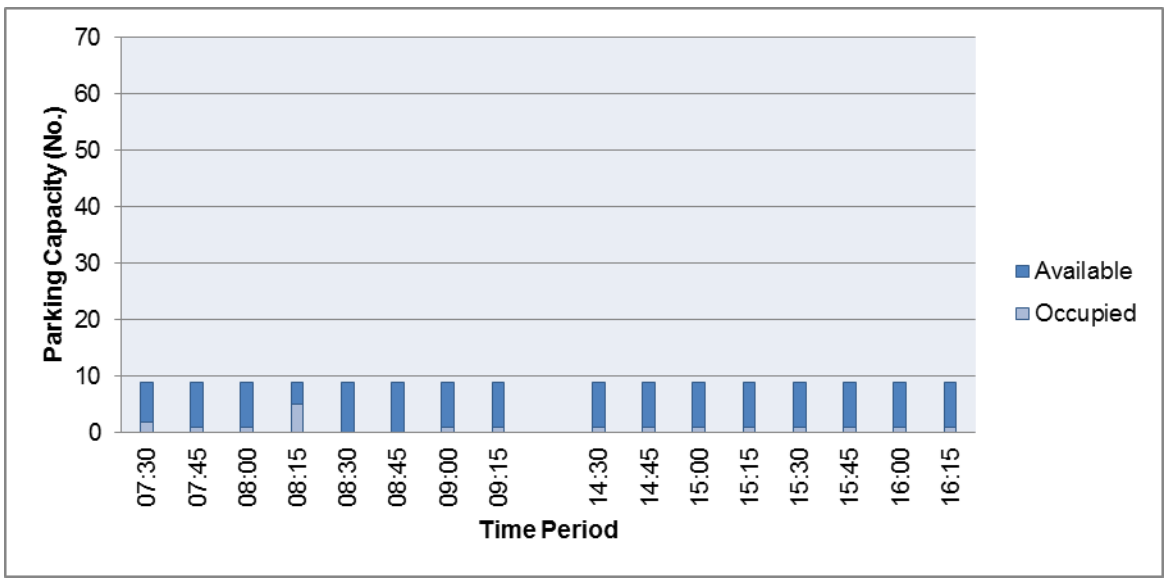


Figure 2.30 - On-street parking demand and capacity on Old Church Street.

On-street parking demand on Old Church Street remained between 0 and 2 vehicles over the AM and 2 PM periods. The parking capacity on Old Church Street was identified to be 7 vehicles.

SOUTH TERRACE

The on-street parking demand and capacity on South Terrace is shown in **Figure 2.31.**

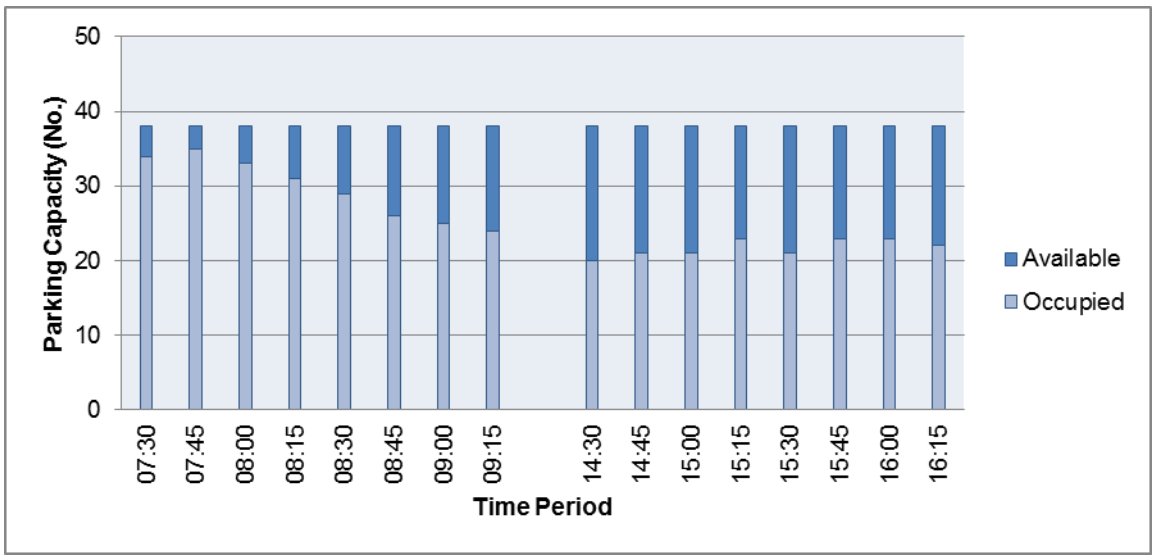


Figure 2.31 - On-street parking demand and capacity on South Terrace.

On-street parking demand on South Terrace varied between 24 and 35 vehicles in the AM period and 20 to 23 vehicles in the PM period. The parking capacity on South Terrace was estimated to be 38 vehicles.

TRIANGLE

The on-street parking demand and capacity on Triangle is shown in **Figure 2.32.**

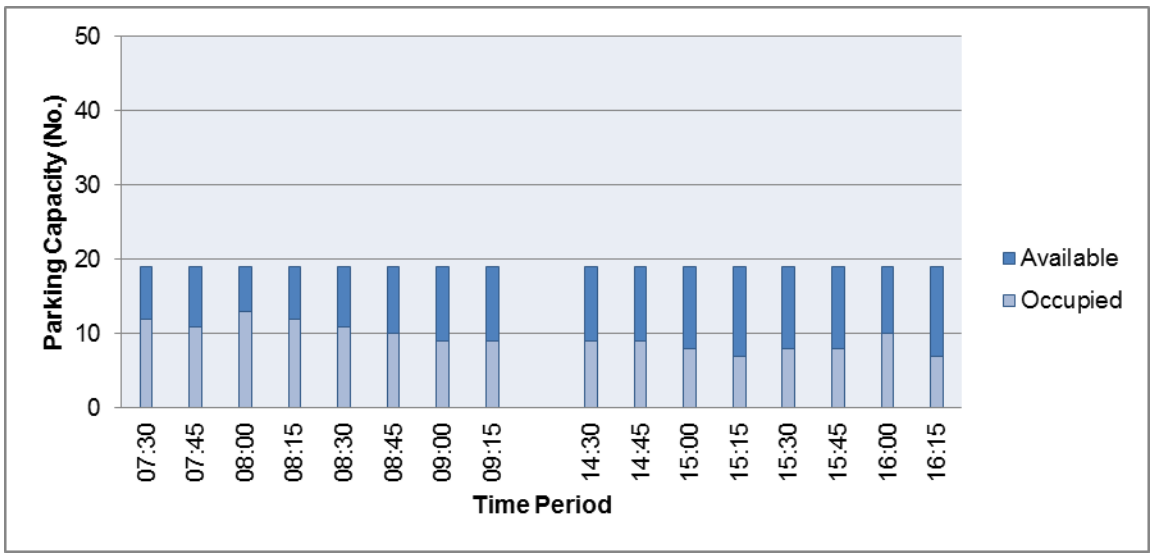


Figure 2.32 - On-street parking demand and capacity on Triangle

On-street parking demand on Triangle varies between 7 and 13 over the AM and PM periods. The parking capacity on Triangle is estimated to be 19 vehicles.

OLD CHAPEL ROAD

The on-street parking demand and capacity on Old Chapel Road is shown in **Figure 2.33.**

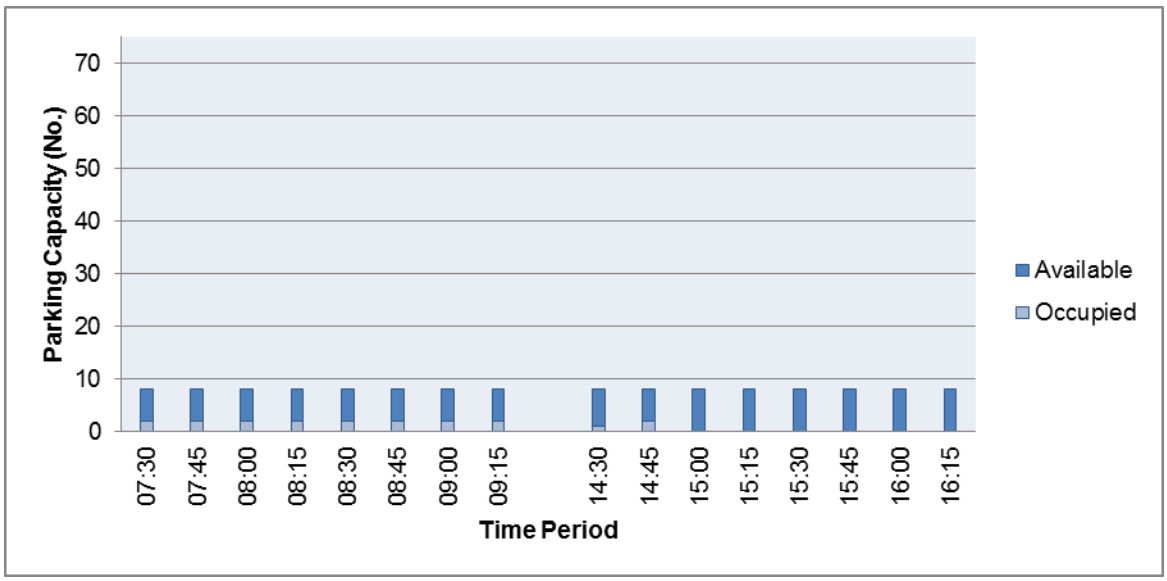


Figure 2.33 - On-street parking demand on Old Chapel Road.

On-street parking demand on Old Chapel Road remained at 2 vehicles for the AM period. For the PM period the on-street parking demand varied between 0 to 2 vehicles. The parking capacity on Old Chapel Road was estimated to be 6 vehicles.

2.4.2 PARKING NEAR GODRE'R COED FIELDS SITE

In order to assess the parking demand on the highways surrounding the Godre'r Coed Fields Site in April 2017 WSP | Parsons Brinckerhoff commissioned Tracsis to carry out parking beat surveys on the following routes:

- Route 1: Heol Y Cae and Maesgwynne
- Route 2: Cyfarthfa Garden and Maesgwynne
- Route 3: Godre'r Coed Road

Figure 2.34 illustrates the routes considered for the parking beat survey.

The parking beat surveys were carried out on Wednesday 26th April 2017 with parking by occupancy being recorded on the various streets from 07:30 to 09:30, and 14:30 to 16:30. The survey occurred during school term time on a neutral weekday.

It was estimated that the total on-street parking capacity for each route is as follows:

- Route 1 approximately 93 spaces
- Route 2 approximately 116 spaces
- Route 3 approximately 79 spaces

Figure 2.34 – Location of routes considered for 2017 parking beat survey

ROUTE 1: HEOL Y CAE AND MAESGWYNNE

Figure 2.35 shows the total on-street parking demand for Route 1.

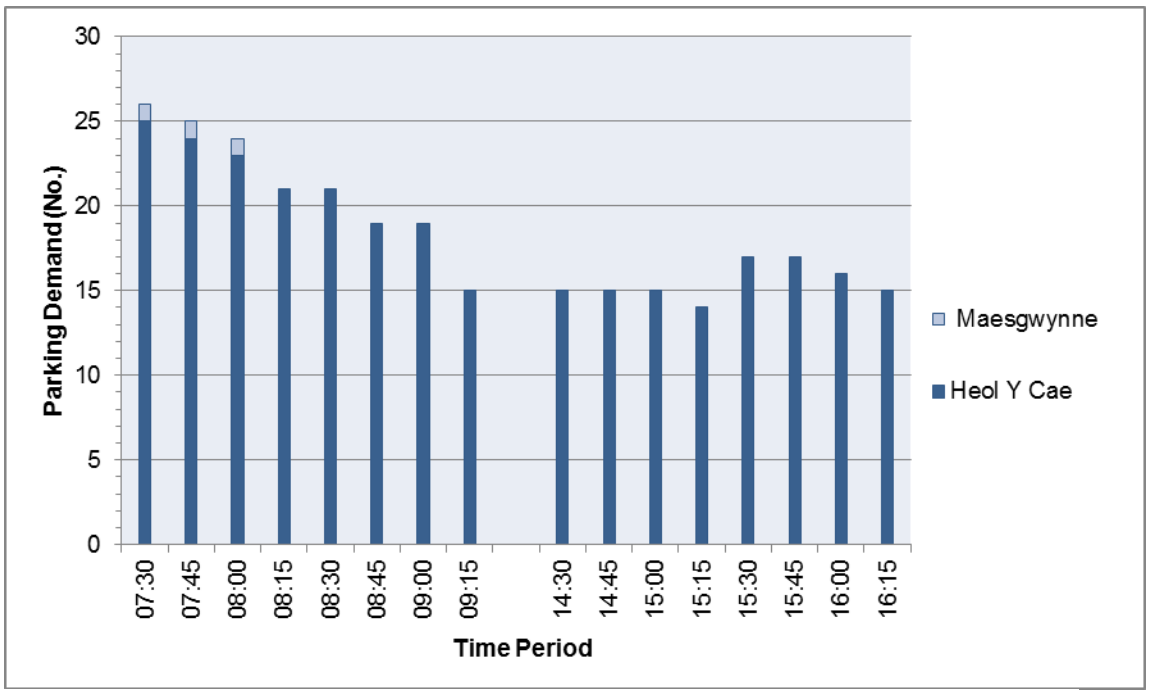


Figure 2.35 – Total on-street parking demand for Route 1.

On-street parking demand on Route 1 was 26 vehicles at 07:30. The number of vehicles parked on-street steadily dropped over the two-hour period with the number of vehicles parked on-street recorded as 15 at 09:15. At 14:30 15 vehicles were parked on-street. The number of vehicles parked on-street did not change much over the two hour period and the highest was 17.

The data suggests that between 07:30 and 09:15 only 23% of spaces are occupied and between 14:30 and 16:15 only 17% of the spaces are occupied. Out of all 3 routes, route 1 has the highest occupancy rate of parking spaces.

Figure 2.36 and **Figure 2.37** show the on street parking demand over the AM and PM periods for Maesgwynne and Heol y Cae, respectively.

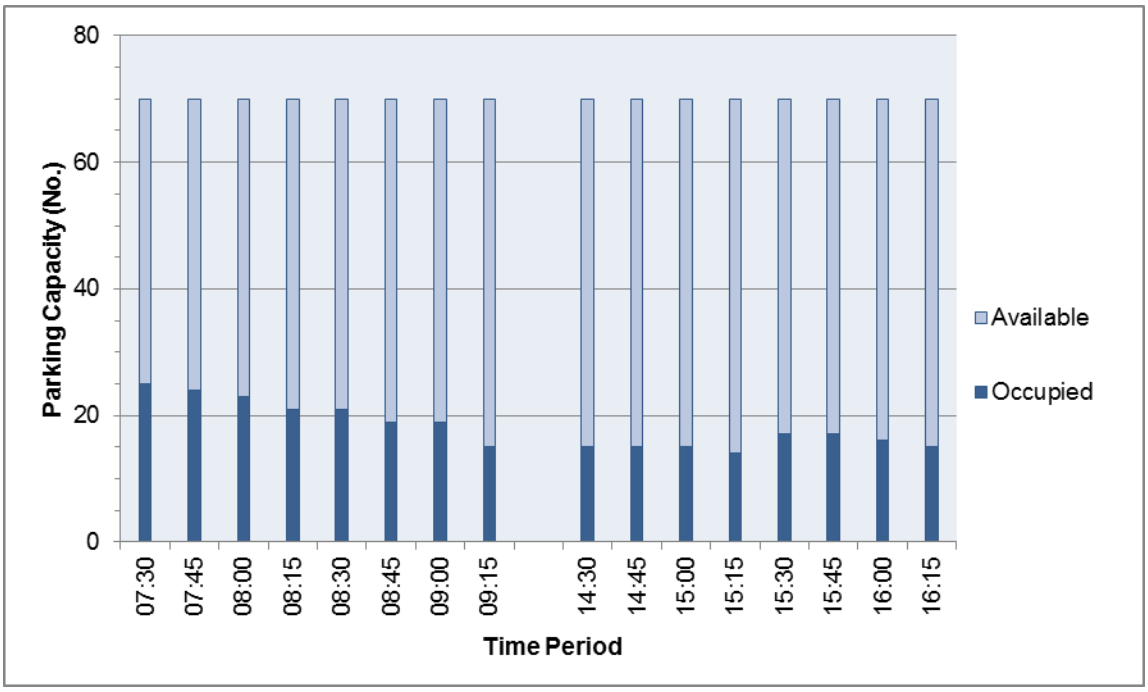


Figure 2.36 – On-street parking demand and capacity for Heol y Cae.

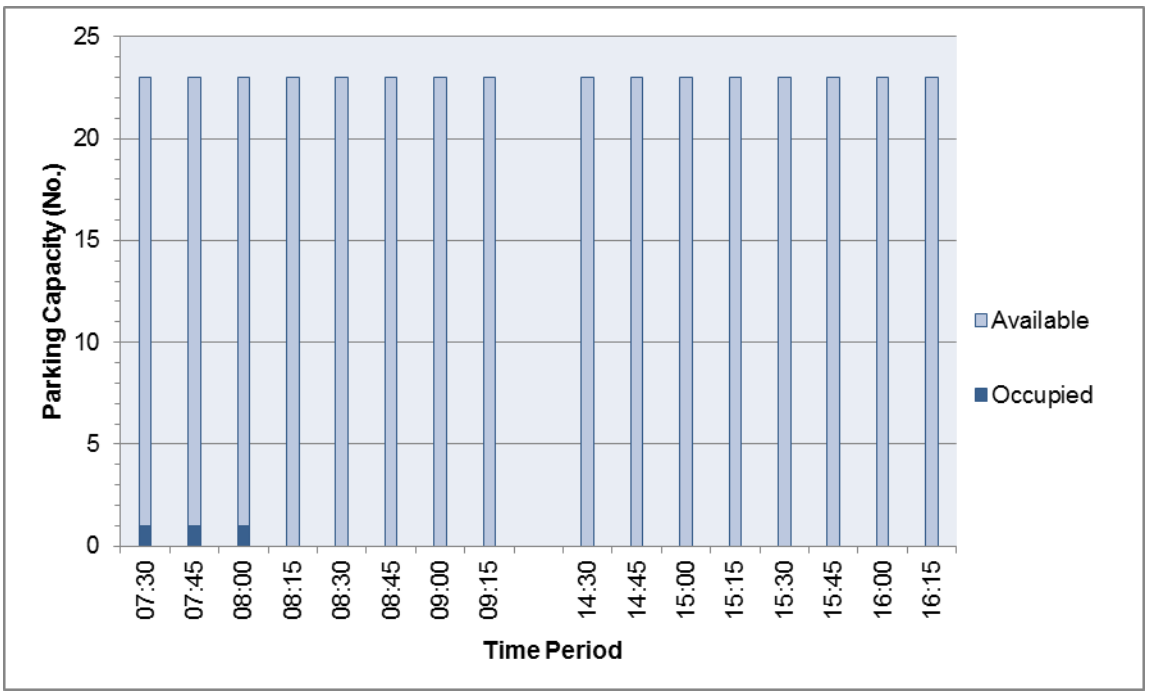


Figure 2.37 – On-street parking demand and capacity for Maesgwynne.

ROUTE 2: CYFARTHFA GARDENS AND MAESGWYNNE

Figure 2.38 shows the combined on-street parking demand for Route 2 over the AM and PM periods.

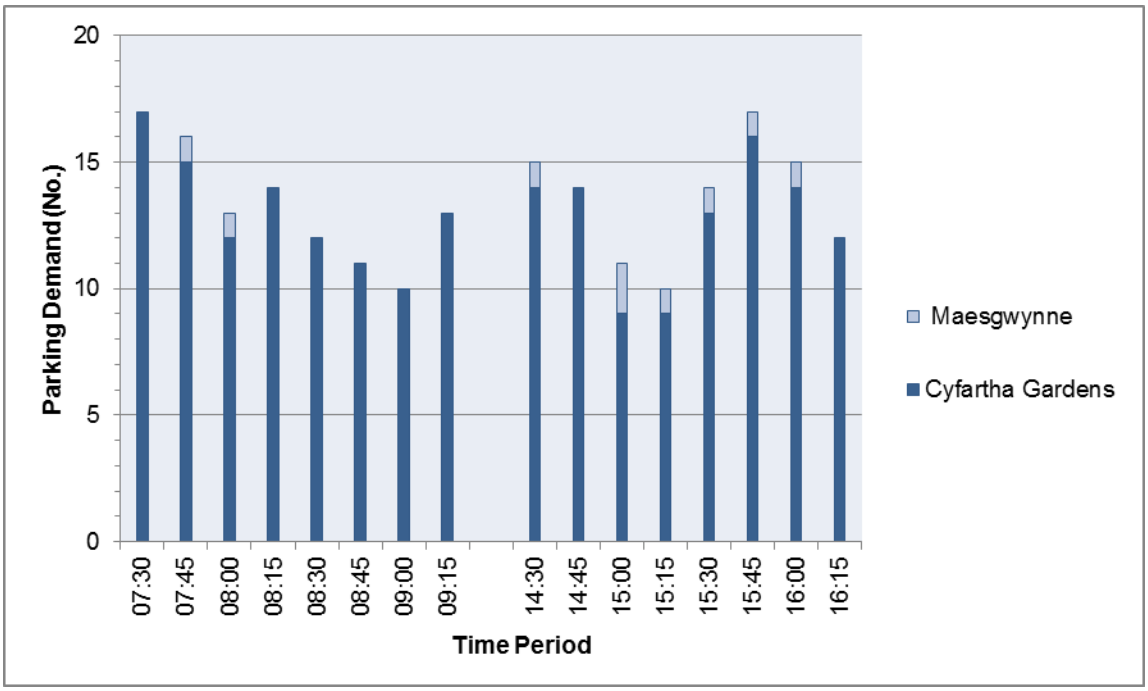


Figure 2.38 – Total on-street parking demand for Route 2: Cyfarthfa Gardens and Maesgwynne.

On-street parking demand was recorded at 17 vehicles at 07:30. The number of vehicles parked on-street dropped over the two hour period with the number of vehicles being parked on-street recorded at 13 at 09:15.

At 14:30 15 vehicles were parked on-street. The number of vehicles parked on-street rose and fell over the two-hour period. The lowest number of vehicles was recorded at 10 and the highest was 17 at 15:45.

Figure 2.39 and **Figure 2.40** show the on street parking demand over the AM and PM periods for Cyfarthfa Gardens and Maesgwynne, respectively.

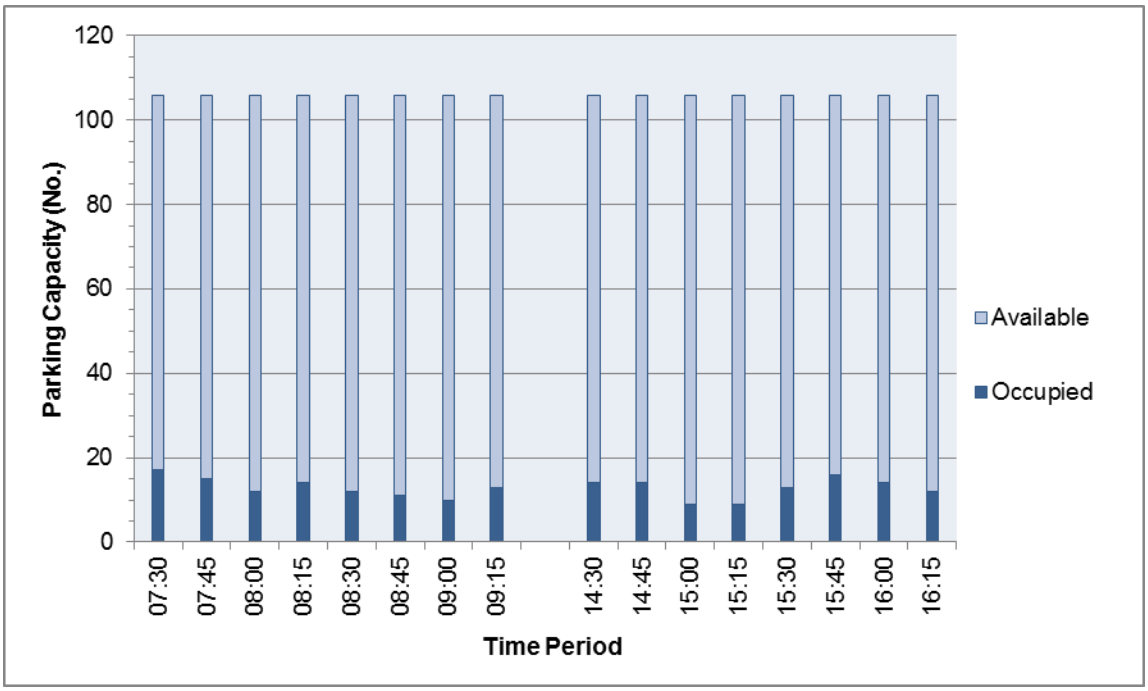


Figure 2.39 – On-street parking demand and capacity for Cyfarthfa Gardens

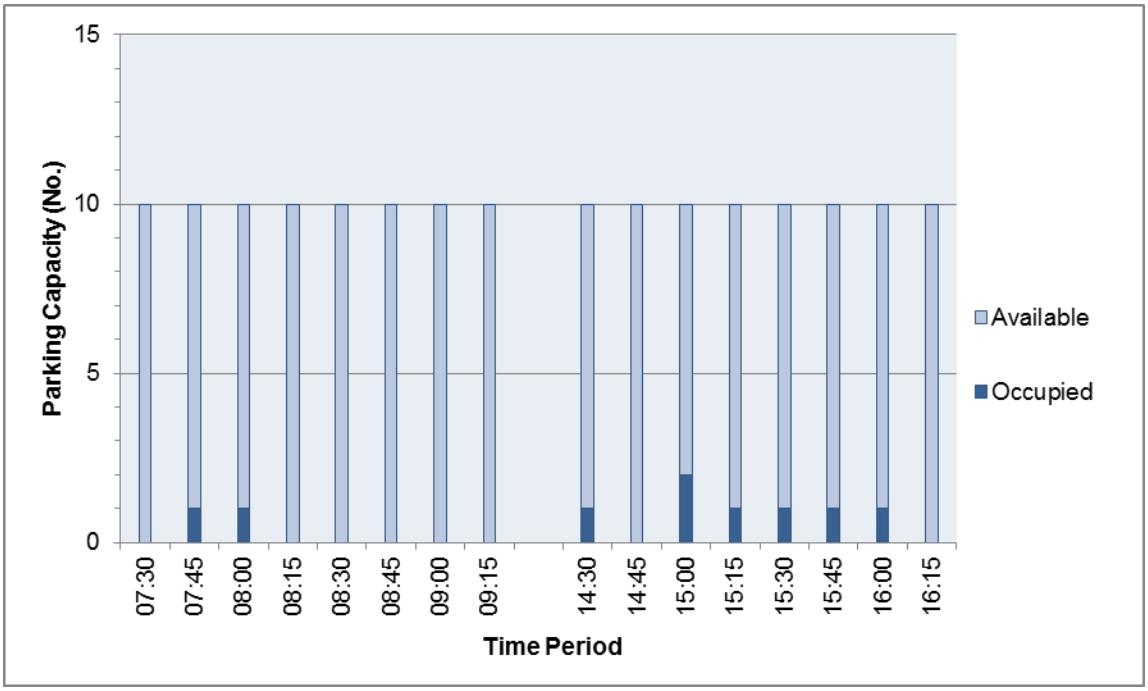


Figure 2.40 – On-street parking demand and capacity for Maesgwynne.

ROUTE 3: GODRE'R COED ROAD

Figure 2.41 and **Figure 2.42** show the on-street parking demand for Route 3 over the AM and PM periods.

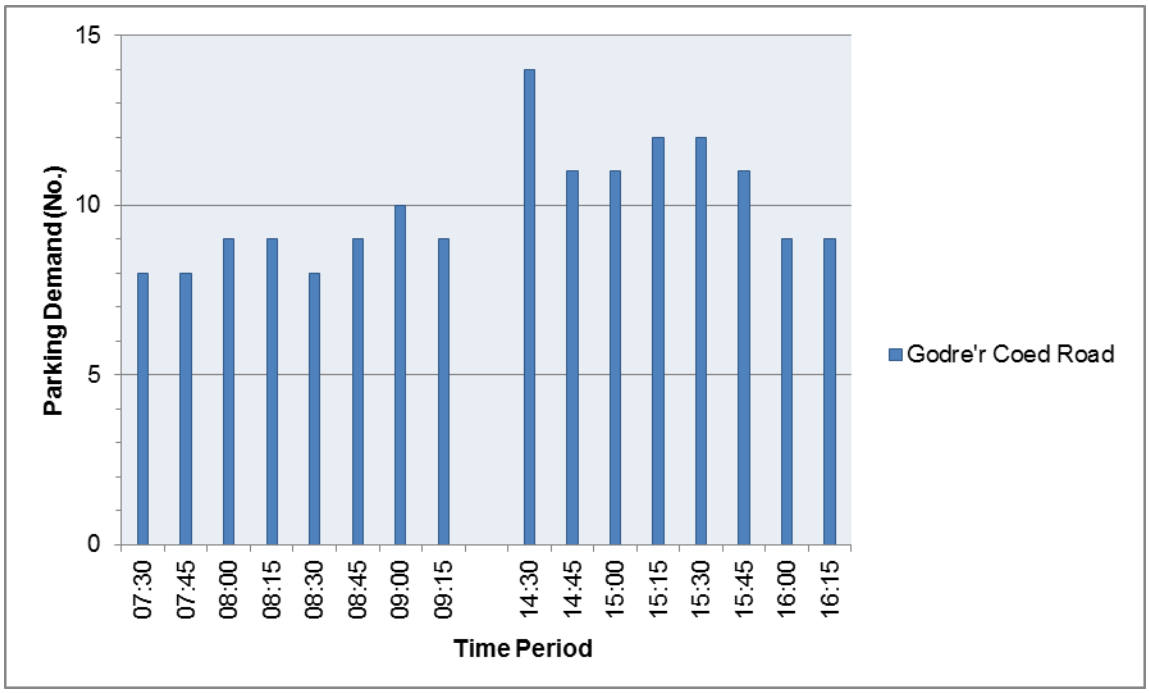


Figure 2.41 – Total on-street parking demand for Godre'r Coed Road.

On-street parking demand was recorded at 8 at 07:30. The number of vehicles parked on-street rose and fell over the two-hour period and the highest was 10. The number of vehicles parked on-street recorded as 9 at 09:15.At 14:30 14 vehicles were parked on-street. The number of vehicles parked on-street dropped over the two hour period with the lowest being 9 at 16:30.

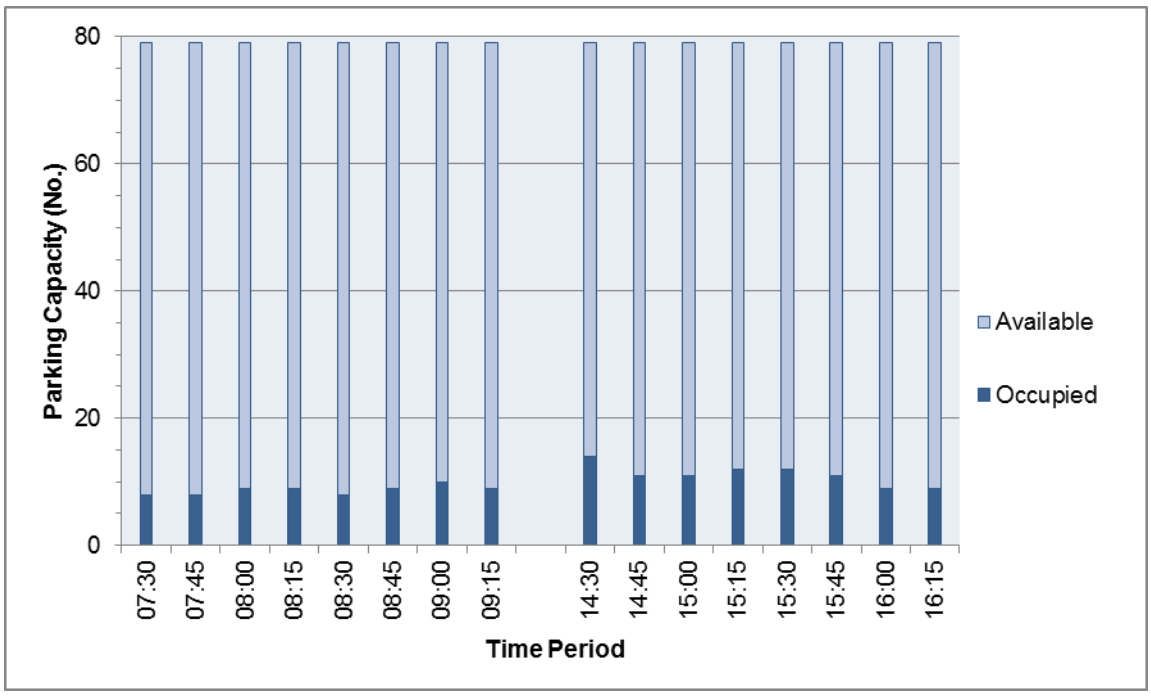


Figure 2.42 – On-street parking demand and capacity for Cyfarthfa Gardens

2.5 HIGHWAY SAFETY

Personal Injury Collision (PIC) data was obtained from BGCBC for a five-year period from January 2011 to December 2015 for the local highway surrounding the site.

The PIC data from BGCBC shows that seven collisions occurred during a 60 month period, this equates to an average of 1.4 PICs per annum.

From observation of collision data available on *www.crashmap.co.uk* it was noted that following the five-year period, one further collision which occurred on 01.05.2016 has been recorded near the site. The approximate locations of the eight collisions identified are shown in **Figure 2.43** and summarised in **Table 2.2**

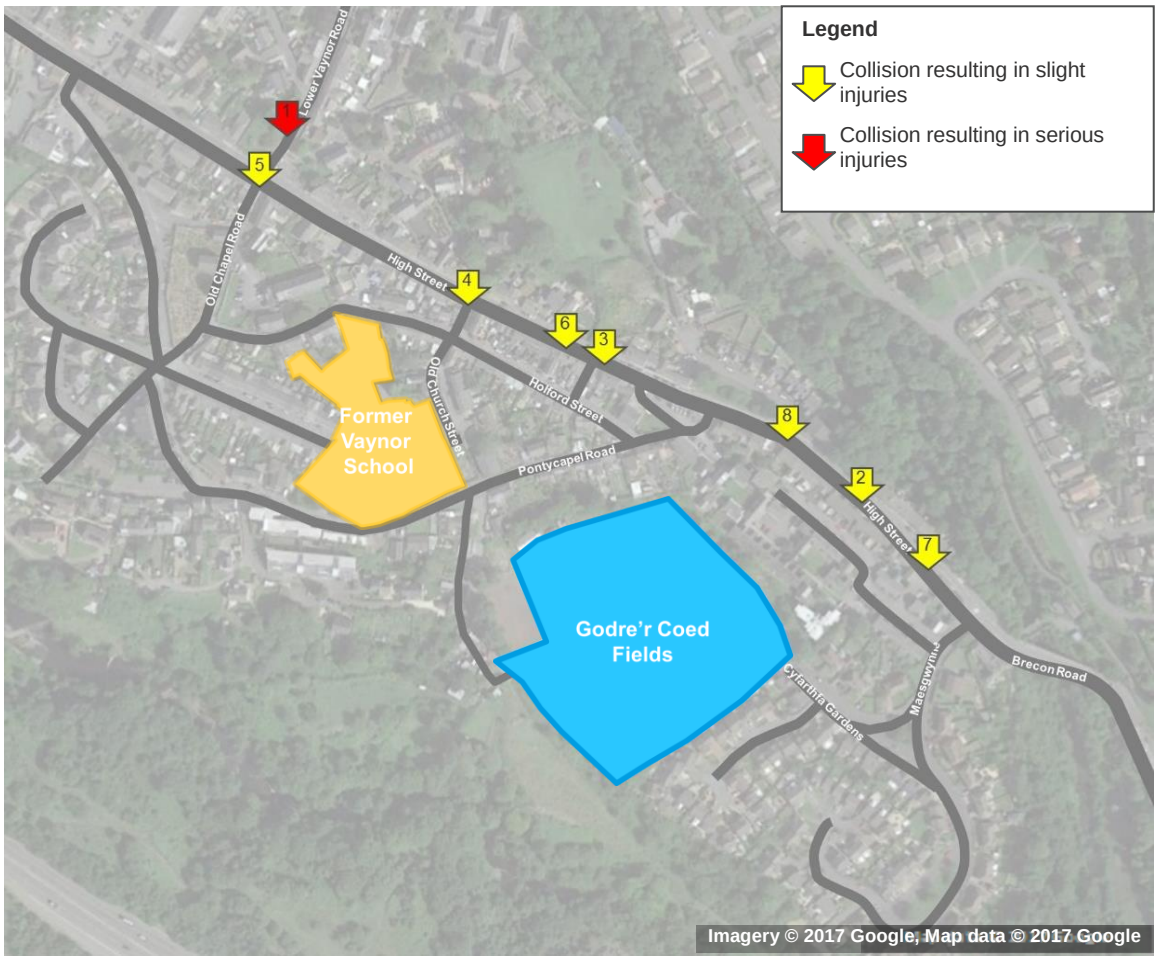


Figure 2.43 - Approximate location of collisions recorded near the Godre'r Coed Fields site

Table 2.2 - Summary of severity and date of collisions near the site

REF.	DATE OF COLLISION	CASUALTY	SEVERITY
1	19.01.2011	Adult Pedestrian	Serious
2	13.02.2012	Driver	Slight
3	20.01.2013	Driver and passenger	Slight
4	26.07.2013	Passenger	Slight
5	18.03.2014	Driver	Slight
6	04.04.2015	Passenger	Slight
7	28.06.2015	Passenger	Slight
8	01.05.2016	Child pedestrian	Slight

ANALYSIS OF COLLISION DATA

Figure 2.43 shows that seven of the collisions occurred on A4054 High Street and one on Lower Vaynor Road, both are within a 30mph speed limit. Seven of the collisions resulted in slight injuries and one resulted in serious injuries.

Two of the collisions involved pedestrian casualties. One collision (Ref. 1) involved an adult pedestrian crossing Lower Vaynor Road when he was struck by a vehicle resulting in serious injury. The other collision (Ref. 8) occurred on High Street and involved one child pedestrian and one vehicle.

One collision (Ref. 3) involved a vehicle attempting to overtake another vehicle on High Street.

Three collisions (Ref. 4, 5 and 7) involved vehicles making turning movements at junctions on High Street. Collision Ref. 7 occurred at 02:32 hours and the data provided suggests that impairment by alcohol was likely to be a factor.

One collision (Ref. 6) was reported to have occurred when a motorcyclist swerved to avoid another bike in the carriageway.

COLLISION SUMMARY

The analysis found that 1.4 PICs per annum have occurred on the highway network surrounding the proposed site. All bar one of the collisions occurred on High Street, the major route through Cefn-Coed-y-Cymmer. The records do not suggest that the recorded collisions occurred as a result of a highway safety design issue.

It is recognised that the historic nature of the area results in constrained highway width making it difficult or impossible for two vehicles to pass in many areas. The historic nature also results in limited footway provision and restricted visibility at junctions due to the boundary walls of many properties bordering the highway boundary.

Any changes to the distribution of existing trips and/or addition of new trips are likely to alter the severity and frequency of potential conflict.

Any substantial additional traffic flow expected to travel on the network is likely to generate conflicts on the junctions. It is recommended that highway safety improvement measures such as 20mph speed restriction zones be implemented.

3 ACCESSIBILITY

3.1 OVERVIEW

This section reviews of the accessibility of the site for non-motorised users and by public transport.

3.2 PROVISION FOR NMUS

The footways and formal cycle routes available for movement by NMUs are shown in **Figure 3.1**. There is one pedestrian crossing facility provided over High Street near to the junction with Old Chapel Road.

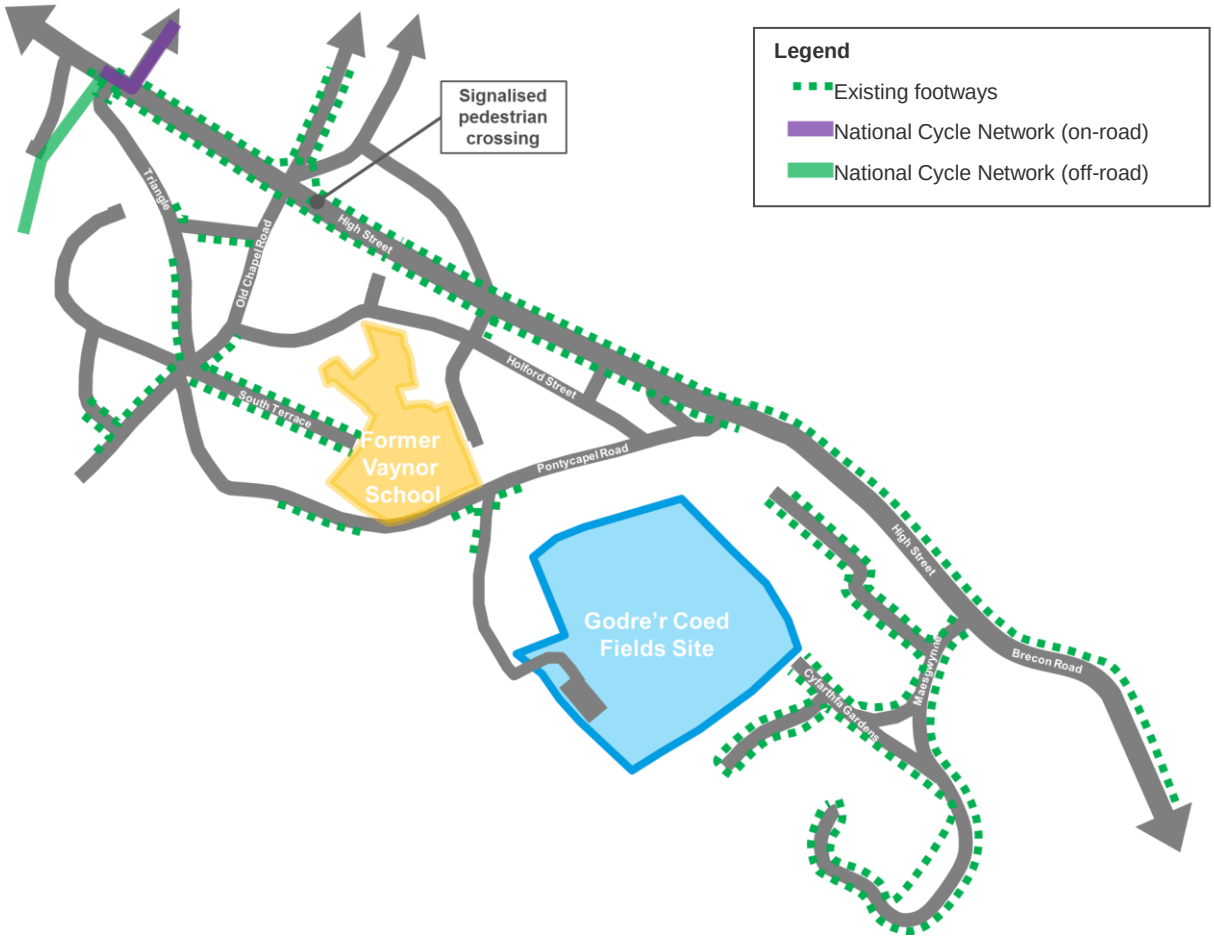


Figure 3.1 – Provision for NMUs

The streets to the north of the proposed sites are narrow with limited space for adequate footway provision. The residential area to the south of the site is a more recent development and provides wider carriageways with adequate footway provision; dropped kerbs for driveway access; and adequate lighting provision.

On the network to the north of the site, the historic nature of the area results in a limited highway boundary and high number of vehicles parked on street. The pedestrian facilities are poor, with limited footway provision and gaps in the continuity of footways. There are also areas where on-street parking can create a requirement for vehicles to mount the footway in order to pass parked vehicles.

The footways are regularly obstructed by refuse bins and do not provide any dropped kerbs and tactile paving where pedestrians are likely to want to cross. It is likely that bins are left on street permanently. This is likely to cause difficulties for some pedestrians attempting to access the site from the north, particularly any pedestrians with mobility impairments or parents/guardians with children in pushchairs.

3.3 PUBLIC TRANSPORT ACCESSIBILITY

The proposed site is in a suitable location to be accessed by bus. Guidance[2] recommends that the maximum walking distance to a bus stop should be 400m, equivalent to an approximate five minutes' walk. Additional guidance[3] states that for people without a mobility impairment 400m is a desirable walking distance whilst 800m is an acceptable walking distance.

Access to frequent public transport services within an acceptable walking distance of the site can encourage and promote public transport use amongst staff and visitors accessing and using the school. There are four bus stops located on High Street which are within 400m walking distance of the proposed sites, as shown in **Figure 3.2** and **Table 3.1**.

Table 3.1 - Bus stops accessible from proposed sites

BUS STOP NAME	BUS ROUTES	BUS STOP FACILITIES
Cefn Bridge, NW-bound	25, 26, 89	Waiting shelter, no seats
Cefn Bridge, SE-bound	25, 26, 89	Waiting shelter, no seats
Cefn Coed War Memorial, NW-bound	25, 26, 89	Waiting shelter, no seats
Cefn Coed War Memorial, SE-bound	25, 26, 89	Waiting shelter, no seats

[2] Guidance document '*Guidelines for Planning for Public Transport in Development'* published by the Chartered Institution of Highways and Transportation in March 1999.

[3] Guidance document '*Providing for Journeys on Foot'* published by the Chartered Institute of Highways and Transportation in 2000.

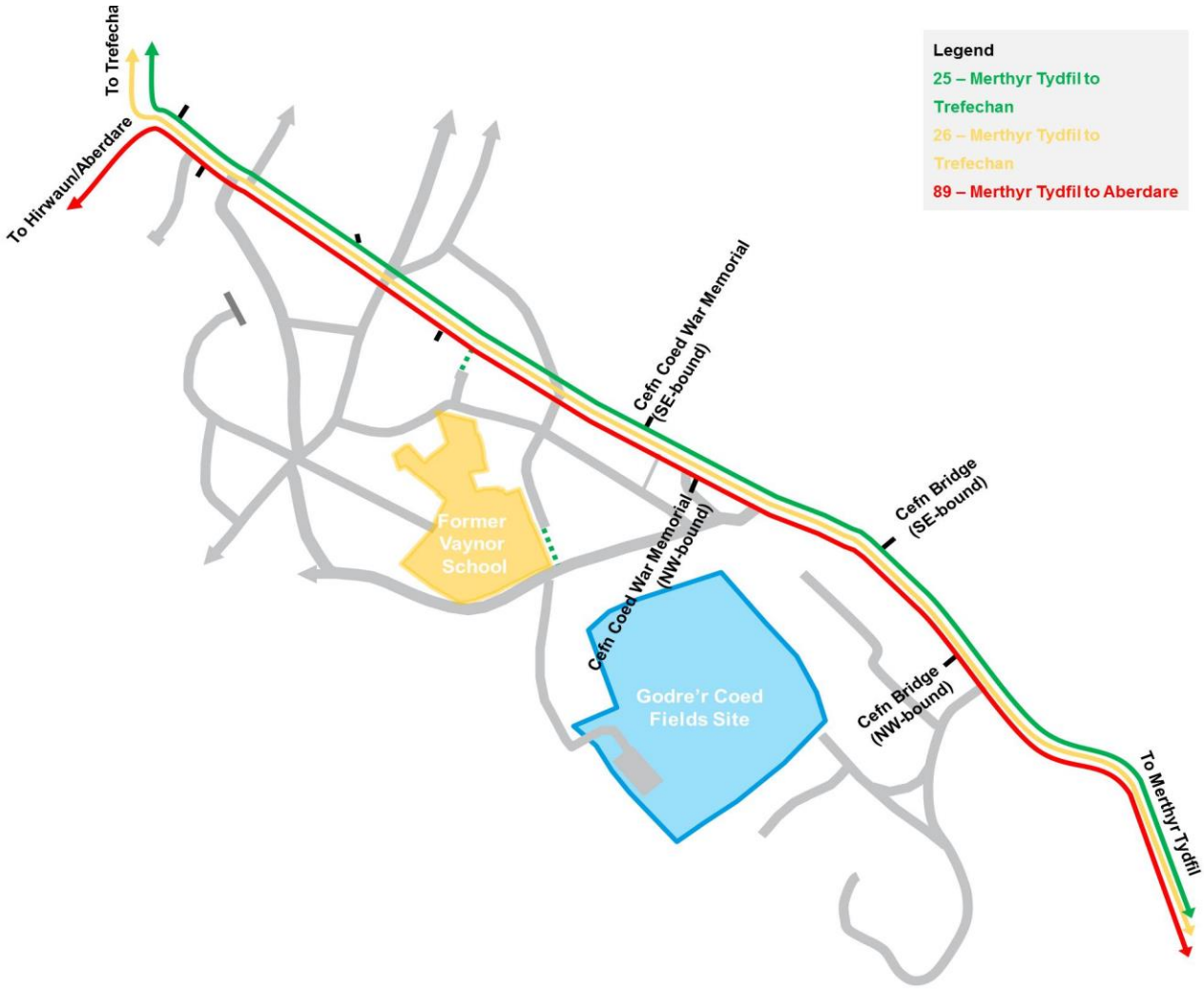


Figure 3.2 – Bus Services Accessible from the Site

Table 3.2 summarises the bus services which serve the bus stops on High Street.

Table 3.2 - Frequency of bus services accessible from the proposed sites

Service	Route	Frequency		
		Monday to Friday	Saturday	Sunday
25	Merthyr Tydfil to Trefechan	2 per hour	2 per hour	-
26	Merthyr Tydfil to Trefechan	2 per hour	2 per hour	-
89	Merthyr Tydfil to Aberdare	-	-	3 per day

Table 3.2 shows that bus number 25 and 26 provide services on High Street on weekdays and bus number 89 provides services on Sundays only. Information on bus service provision outside of school hours has been provided as it is expected for the site to provide a playing field to be used by the community.

Between 07:00 and 09:00 on Mondays to Fridays, six services are scheduled to arrive at Cefn-Coed-y-Cymmer from Merthyr Tydfil and six services from Trefechan. Between 16:00 and 18:00

on Mondays to Fridays, seven services are scheduled to arrive at Cefn-Coed-y-Cymmer from Merthyr Tydfil and eight services from Trefechan.

Trefechan is within the catchment area of Ysgol y Graig and is well served by buses with regular services at the start and end of the school day.

4 TRAVEL DEMAND OF PROPOSALS

4.1 OVERVIEW

This section sets out the expected trip generation to the Godre'r Coed Fields Site if it were used for the relocation of the existing Ysgol y Graig School.

4.2 SCHOOL PUPIL TRIPS

TRAVEL MODE OF PUPIL TRIPS

The travel mode split to the existing school is shown in **Table 4.1**, this shows that 41% of pupils walk to school, 3% travel by bike and 50% of pupils travel to school by private car or taxi. Similarly, the National Survey for Wales[4] found that 41% of pupils in Wales walk to primary school, 2% cycle and 49% travel by car or taxi.

Table 4.1 Travel mode split of pupils to existing school and expected split to proposed school

Travel Mode	Modal Split to Existing School		Average Modal Split for Travel to Primary Schools in Wales	Modal Split to Proposed School (number of pupils)
	Number of Pupils	% Mode Split		
Walk	79	41%	41%	98
Bicycle	5	3%	2%	6
Bus/minibus	13	7%	8%	16
Private car/taxi	96	50%	49%	120
Total	193	100%[5]	100%	240

Given the close proximity of the existing school to the proposed alternative sites, it is expected that the trip generation to the proposed school would follow the same modal split to the existing school. For a 240 pupil school this would result in approximately 98 pupils walking to school and 120 pupils travelling to school by car, as set out in **Table 4.1**.

The travel mode survey at the existing school did not differentiate between travel to and from school, as such for the analysis it has been assumed that pupils travel to and from school by the same travel mode.

An average ratio of 1.2 pupils per vehicle has been estimated based on a travel survey carried out at the school[6]. For the 96 pupils at the existing school who travel by car/taxi this ratio would result

[4] National Survey for Wales, April 2013 – March 2014, https://statswales.gov.wales/Download/File?fileId=485
[5] Mode splits shown to the nearest whole number so does not total to 100%.
[6] Playing Field Site Transport Access Study, Mott MacDonald, April 2011.

in 80 two-way vehicle trips in the morning peak and 80 two-way vehicle trips in the afternoon peak.

For the proposed school of 240 pupils, assuming 50% arrive at school by car and a pupil to car ratio of 1.2, this would result in 100 two-way vehicle trips in the AM and PM peak.

4.3 STAFF TRIPS

TRAVEL MODE OF STAFF TRIPS

The travel mode of staff to the existing school is shown in **Table 4.2**. The table shows that 21% of staff walk to work and 73% of staff travel by private car/taxi. Similarly, the National Survey for Wales[6] found that 14% of people in Wales walk to work and 73% travel by car/taxi.

Given the proximity of the proposed sites to the existing school it is expected that the trip generation by staff would follow the same mode split.

The new school is expected to employ 37 staff, including an additional 4 staff for nursery classes[7].

Table 4.2 - Travel mode split of staff to existing school and expected split to proposed school.

Travel Mode	Mode Split to Existing School		Average Mode Split for Travel to Work in Wales	Mode Split to Proposed School (number of staff)
	Number of Staff	% Mode Split		
Walk	7	21%	14%	8
Bicycle	0	0%	4%	0
Public transport	2	6%	9%	2
Private car/taxi	24	73%	73%	27
Total	33	100%	100%	37

Based on the existing travel mode split, it is expected that 27 of the 37 staff would travel to work by car. **This would result in 27 one-way vehicle trips to the proposed school in the AM peak and 27 one-way vehicle trips from the school in the PM peak.**

[6] National Survey for Wales 2014-2015, https://statswales.gov.wales/Download/File?fileId=484
[7] Amount of additional staff based upon guidance in Statutory framework for the early years foundation stage published in March 2017, http://www.foundationyears.org.uk/eyfs-statutory-framework/

4.4 COMBINED VEHICLE TRIPS

Table 4.3 sets out the expected vehicle trip generation to the site based upon the mode share data in **Tables 4.1** and **Table 4.2**.

This trip generation would need to be accommodated on the local highway network. Junction capacity assessments have been undertaken to identify the impact of the development traffic on the junctions.

The vehicular trip generation shown in **Table 4.3** also provides an indication of the level of parking demand at the start and the end of the school day.

Table 4.3 - Expected approximate vehicle trip generation to site with proposed development.

TIME PERIOD	START OF SCHOOL DAY	END OF SCHOOL DAY
School pupil (two-way trips)	100	100
Staff (one-way trips)	27	27

5 ACCESS OPTIONS

5.1 OVERVIEW

This section sets out the Transport Planning Objectives (TPOs) which were identified to appraise the access options. This section outlines a set of potential access options for each proposed site.

The vehicle access options have been initially sifted and those which are deemed viable are presented separately for each site followed by accompanying pedestrian access options.

5.2 PROBLEMS, CONSTRAINTS AND UNCERTAINTIES OF HIGHWAY NETWORK

The identified and perceived problems and potential opportunities within the network surrounding the proposed site were identified during site visits. The problems and opportunities were used to develop the TPOs, in order to make the access options measurable against each other within the appraisal process.

The identified transport issues and potential opportunities identified within this study are shown in **Table 5.1.**

Table 5.1 - Summary of transport issues and opportunities on the local highway network

REF.	TRANSPORT ISSUE	OPPORTUNITY
P1	Lack of provision for NMUs to north of sites	Enhance provision for NMUs
P2	Conflict between vehicles and NMUs to north of sites	Improve perceived safety of NMUs by enhancing NMU provision and rationalising vehicle movements
P3	On-street parking to north of sites	Improve parking provision to north and south by accommodating development related parking on-site
P4	Two-way vehicle flow causing conflict on constrained highway widths to north of sites	Rationalise traffic flows through introduction of one-way systems
P5	Limited visibility at junctions due to restricted highway boundaries and obstruction from property walls	Rationalise traffic flows through introduction of one-way systems

5.3 TRANSPORT PLANNING OBJECTIVES

The following objectives have been identified based on the current problems and constraints to guide the development and appraisal of access options;

TPO 1. Minimise the impact of school traffic and parking on the local highway network for all users.

TPO 2. Provide pedestrians with legible and safe routes to school.

TPO 3. Provide an access option that minimises the impact on local residents and land-owners.

TPO 4. Provide appropriate access for construction vehicles, service vehicles and emergency vehicles.

TPO 5. Identify an appropriate access strategy which does not compromise the land required for a school building and associated facilities.

5.4 ACCESS TO FORMER VAYNOR SCHOOL

This section presents the vehicle access options to the Former Vaynor School Site.

INITIAL SIFTING OF OPTIONS

Eight potential access options were identified for motorised vehicles to reach the site. Following an initial high level appraisal of these options, three of these were deemed to be not suitable and were sifted out.

Section 2.3 of this report demonstrates the constrained highway conditions exhibited north of the site including issues of narrow highway width, on-street parking and limited visibility at junctions. These constraints have been taken into consideration and formed the basis for the initial sifting of access options.

Detailed diagrams of the three excluded options and an appraisal of the constraints, uncertainties and opportunities for each are provided in **Appendix A**.

ACCESS OPTIONS

Following the initial sifting of the potential vehicle access options, five options were shortlisted for further consideration as follows:

Option A4 Vehicles enter by new junction from High Street and exit via Old Church Street. Pedestrian access via South Terrace, Old Church Street and Pontycapel Road.

Option A5 Vehicles enter by new junction from High Street and exit via South Terrace. Pedestrian access via South Terrace, Old Church Street and Pontycapel Road.

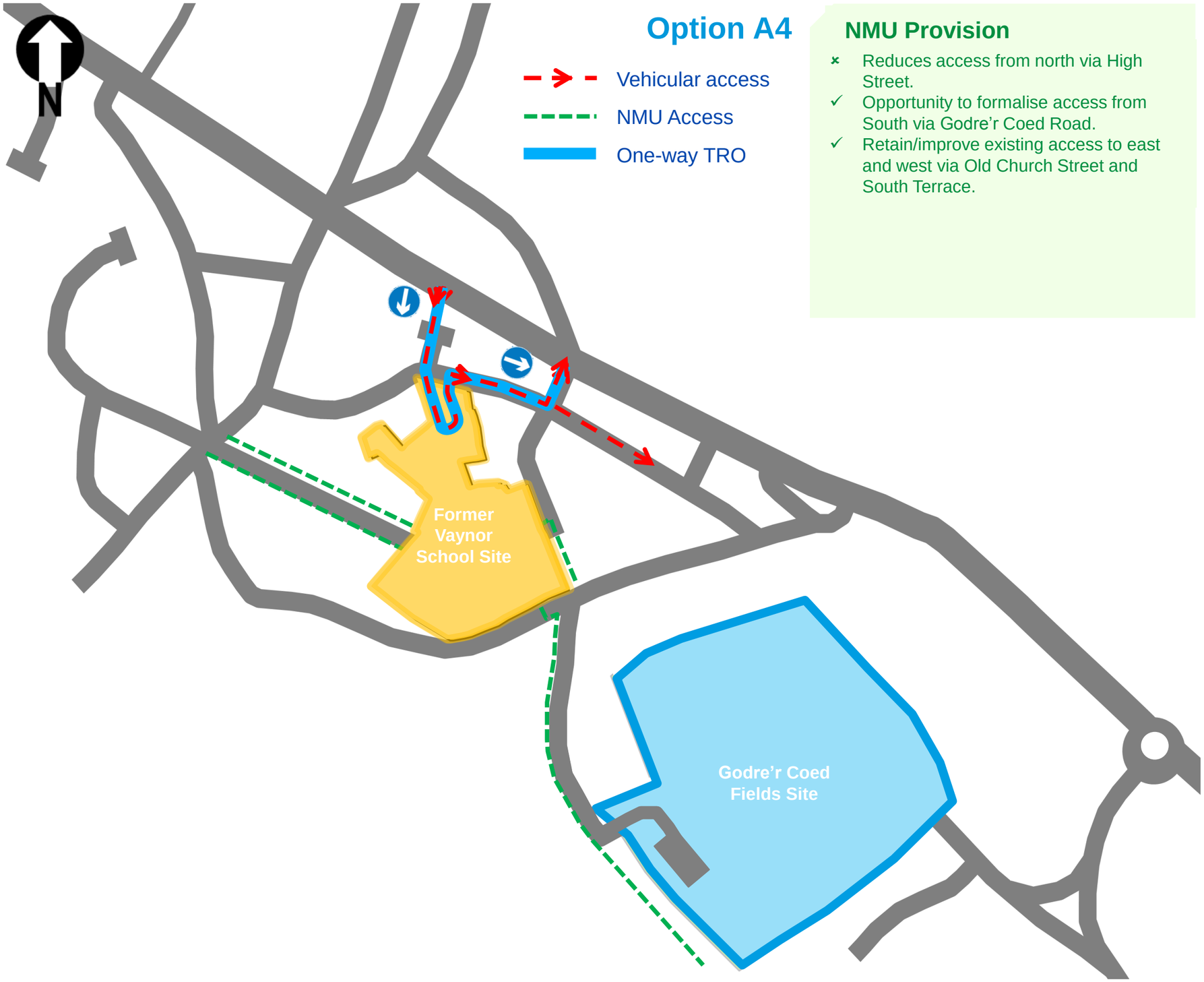
Option A6 Vehicles enter by South Terrace and exit via south of site on to Pontycapel Road. Pedestrian access via Holford Street, South Terrace, Old Church Street and Pontycapel Road.

Option A7 Vehicles enter by new junction with Pontycapel Road via south of site and exit via South Terrace. Pedestrian access via Holford Street, South Terrace, Old Church Street and Pontycapel Road.

Option A8 Vehicles access parking area on Godre'r Coed Fields via Maesgwynne and exit via Godre'r Coed Road onto Pontycapel Road. Pedestrian access via Holford Street, South Terrace, Old Church Street and Pontycapel Road. Pupils and staff parking at Godre'r Coed Fields Site to walk to school via Godre'r Coed Road.

These five access options are presented on the following pages, along with the key opportunities, constraints and uncertainties associated with them.

Option A4



NMU Provision

- × Reduces access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.

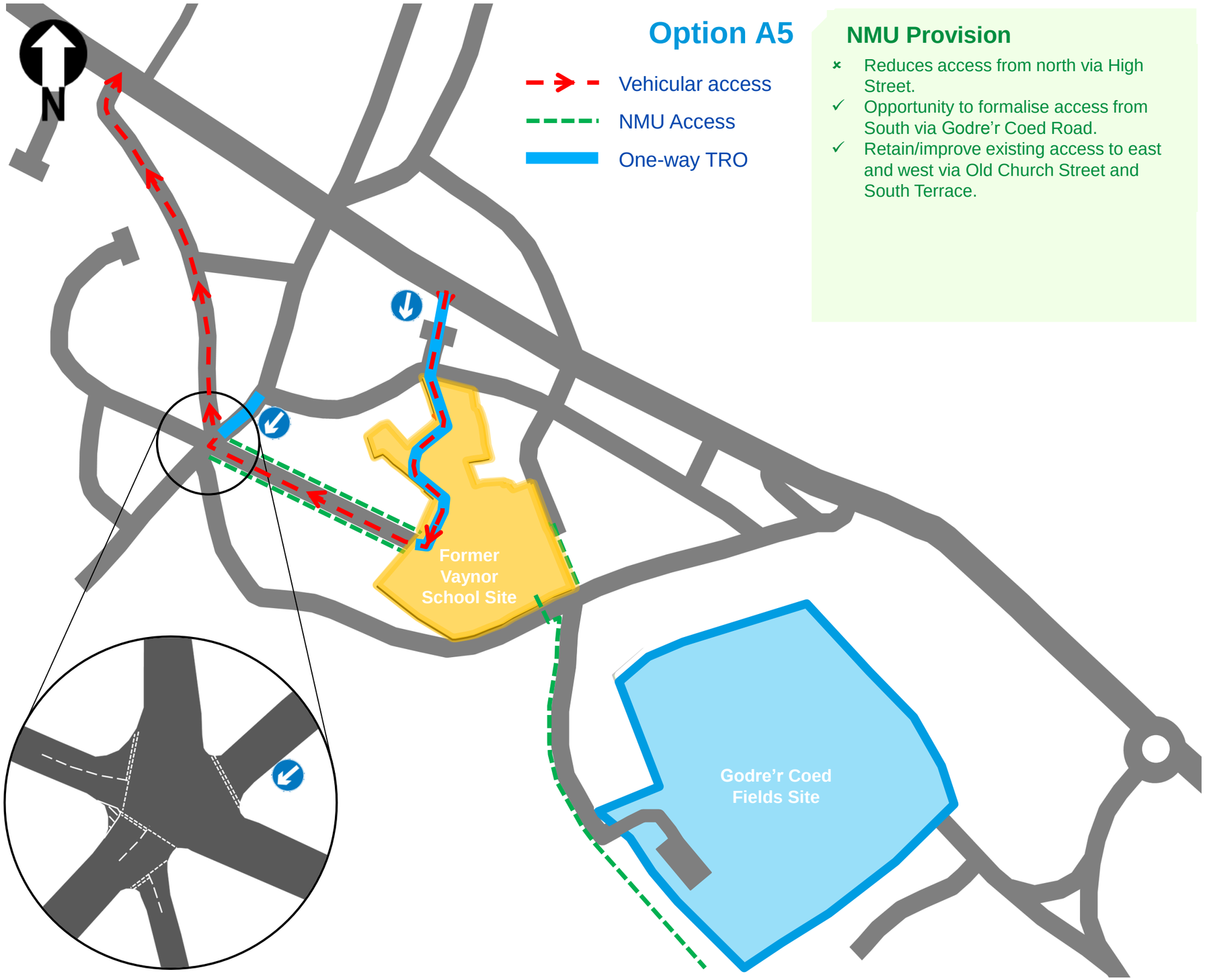
Constraints

- × Requires new access/egress.
- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × On-street parking limiting road space on surrounding network.
- × Requires relocation of bus stop on High Street.
- × Removal of dedicated NMU access to north.
- × Acceptability of increased traffic volumes.
- × Access requirements to private parking and garages.
- × Diversion to access properties on Holford Street.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.
- × Requires acquisition of land outside of site boundary.
- × Restricted area for drop-off/pick-up.
- × Restricted visibility when exiting site onto Holford Street and High Street.
- × Acceptability of one-way Traffic Regulation Order.
- × Land ownership of car parking area north of site.
- × Acceptability of increased traffic volumes.

Uncertainties

- × Acceptability of one-way Traffic Regulation Order.
- × Land ownership of car parking area north of site.
- × Acceptability of increased traffic volumes.

Option A5



NMU Provision

- × Reduces access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Utilise existing site access/egress to west.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve conditions for existing users.

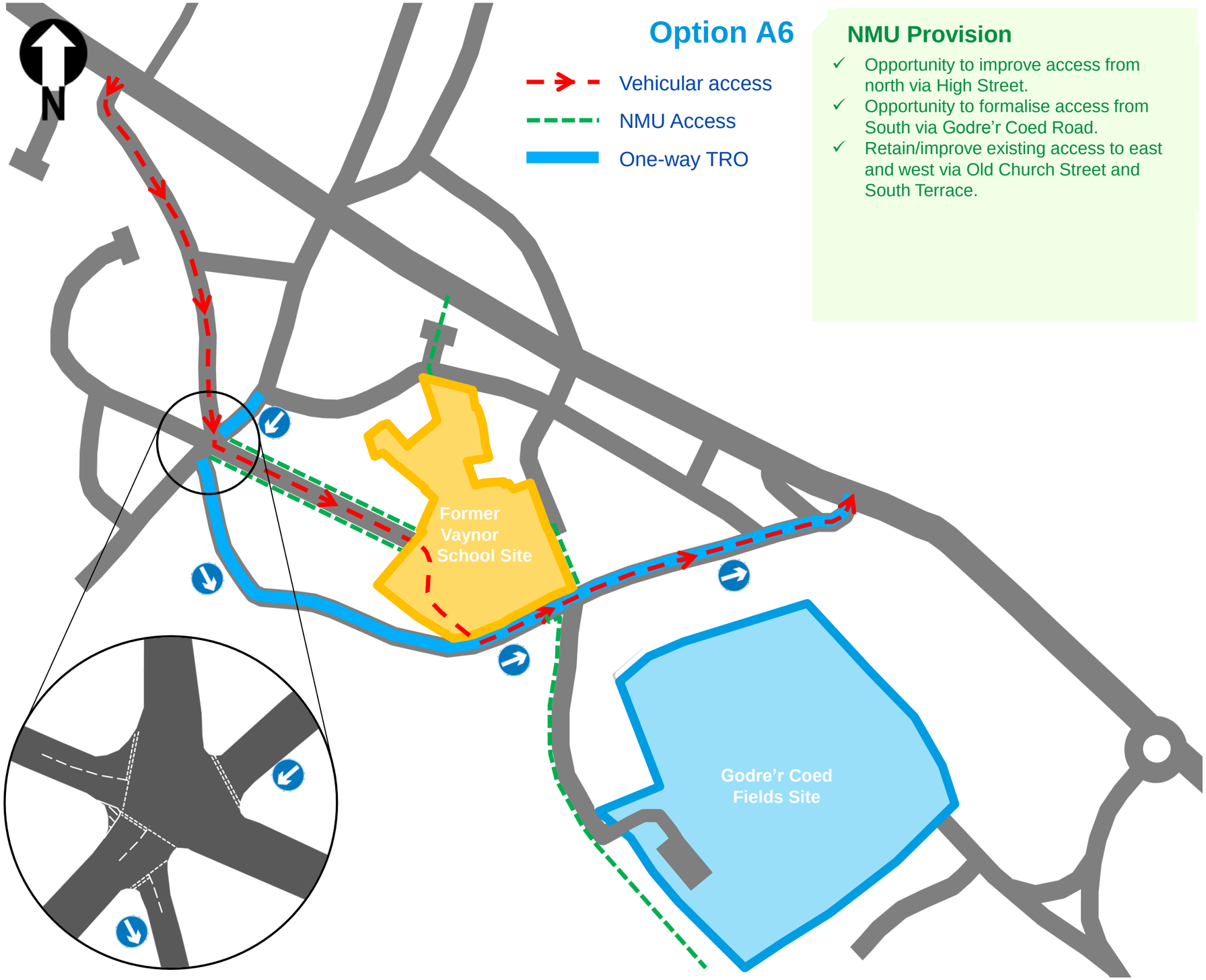
Constraints

- × Requires new access/egress.
- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × On-street parking limiting road space on surrounding network.
- × Requires relocation of bus stop on High Street.
- × Removal of dedicated NMU access to north.
- × Acceptability of increased traffic volumes.
- × Access requirements to private parking and garages.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.
- × Restricted area for drop-off/pick-up.

Uncertainties

- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of rationalising/restricting movements at six-arm junction.
- × Land ownership of car parking area north of site.
- × Acceptability of increased traffic volumes.

Option A6



NMU Provision

- ✓ Opportunity to improve access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Utilise existing site access/egress to south.
- ✓ Utilise existing site access/egress to west.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve conditions for existing users.
- ✓ Potential to widen Pontycapel Road subject to acquiring third party land.

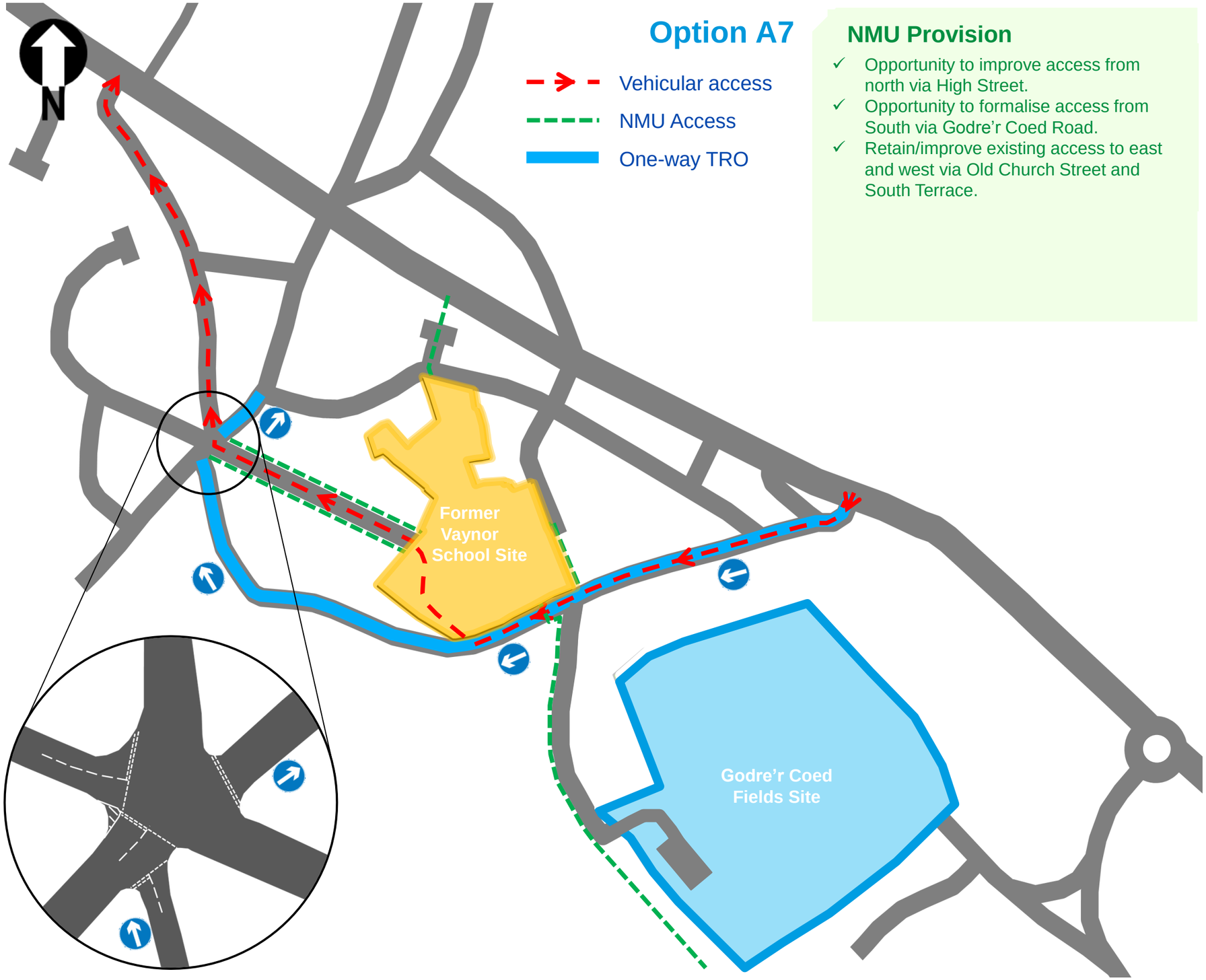
Constraints

- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × On-street parking limiting road space on surrounding network.
- × Acceptability of increased traffic volumes.
- × Diversion to access properties on Pontycapel Road and Godre'r Coed Road.
- × Limited visibility splays for vehicles emerging onto Pontycapel Road.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.

Uncertainties

- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of rationalising/restricting movements at six-arm junction.
- × Acceptability of increased traffic volumes.
- × Uncertainty of potential to remove bounding wall of Former Vaynor School to widen Pontycapel Road.
- × Uncertainty whether option imposes unacceptable limitations of the developable site area.

Option A7



NMU Provision

- ✓ Opportunity to improve access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Utilise existing site access/egress to south.
- ✓ Utilise existing site access/egress to west.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve conditions for existing users.
- ✓ Potential to widen Pontycapel Road subject to acquiring third party land.

Constraints

- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × On-street parking limiting road space on surrounding network.
- × Acceptability of increased traffic volumes.
- × Diversion to access properties on Pontycapel Road and Godre'r Coed Road.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.

Uncertainties

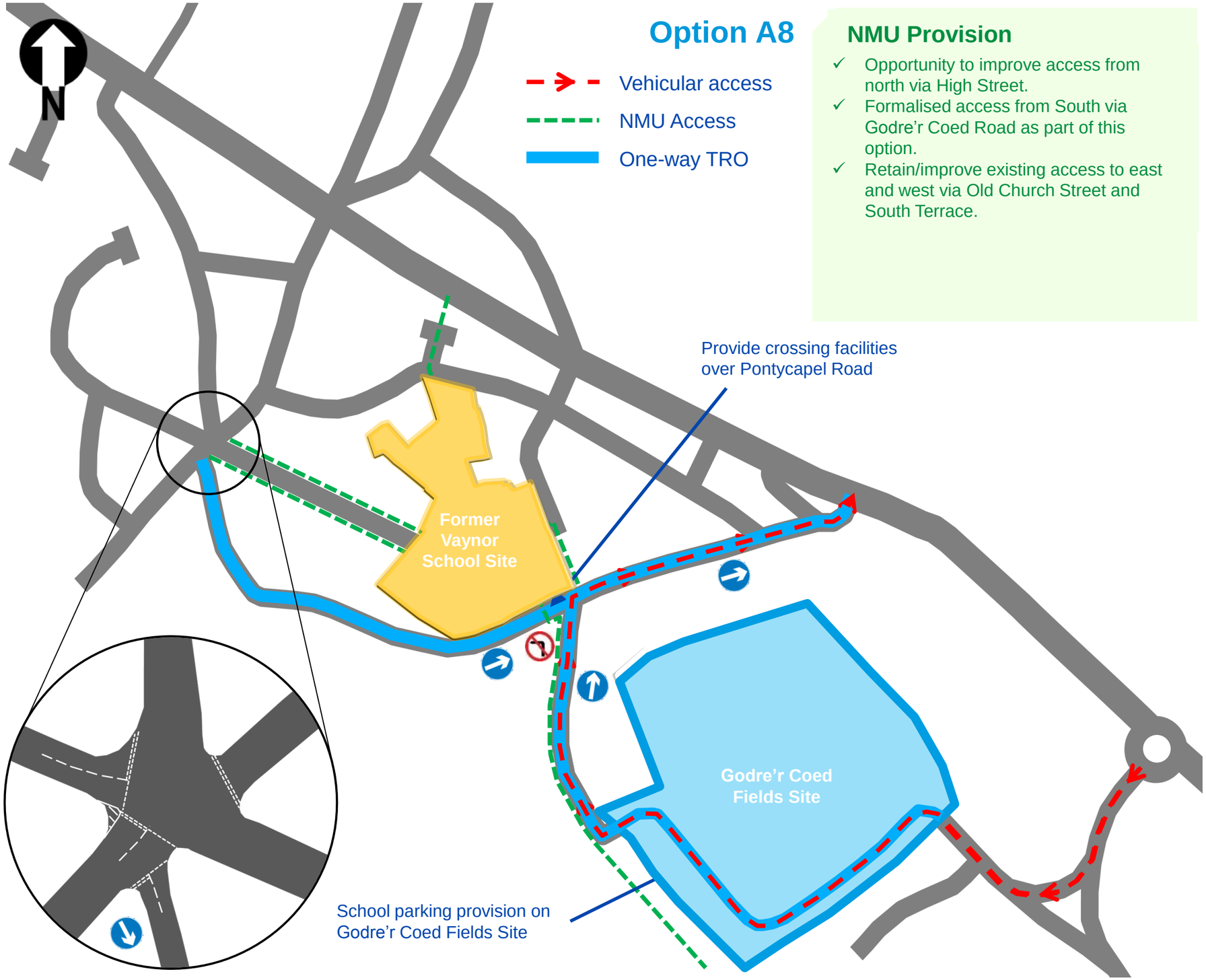
- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of rationalising/restricting movements at six-arm junction.
- × Acceptability of increased traffic volumes.
- × Uncertainty of potential to remove bounding wall of Former Vaynor School to widen Pontycapel Road.
- × Uncertainty whether option imposes unacceptable limitations of the developable site area.

Option A8

Vehicular access

NMU Access

One-way TRO



NMU Provision

- ✓ Opportunity to improve access from north via High Street.
- ✓ Formalised access from South via Godre'r Coed Road as part of this option.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Reduce potential vehicle conflict on local network.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve pedestrian access to site from south.
- ✓ Improve conditions for existing users.
- ✓ Keep school traffic off school site.
- ✓ Potential to widen Pontycapel Road subject to acquiring third party land.

Constraints

- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × On-street parking limiting road space on surrounding network.
- × Acceptability of increased traffic volumes.
- × Cost of construction of new highway and improved car park on rugby fields.
- × Diversion to access properties on Pontycapel Road and Godre'r Coed Road.
- × Parking provision provided away from school grounds.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.

Uncertainties

- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of land take from rugby fields.
- × Acceptability of new junction from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.

ONE-WAY WORKING CONSIDERATIONS

Some options include for the introduction of one-way restrictions which would require a Traffic Regulation Order (TRO).

BUS AND COACH ACCESS

It is expected that there will be a need to accommodate bus and coach access to the site for the purpose of school trips. The existing road widths, alignments and presence of parked cars on Holford Street, Triangle, Pontycapel Road do not lend themselves to access by coaches. It is likely that children would need to be directed to High Street to access the bus or coach for school trips.

CONSTRUCTION AND SERVICE VEHICLE ACCESS

Option A4 proposes access and egress to the site via Holford Street for pupil and staff vehicle trips. If service vehicles were to access the school building from the north this would impact the internal usable site area as the building would need to be constructed on the southern part of the site.

For this option the access strategy for service vehicles will be determined depending on the building location on site. There is potential for service access to be made via Pontycapel Road or South Terrace. Vehicular tracking of a 10m rigid vehicle has been undertaken using the existing site access on Pontycapel Road. The exit track is tight with some encroachment onto private highway and little room for error.

FIRE SERVICE VEHICLE ACCESS

Guidance on fire safety for schools is given in the Building Bulletin (BB) 100[8]. BB 100 advises that fire service vehicle access routes should have a '*minimum carriageway width of 3.7m between kerbs'* and '*fire service vehicles should not have to reverse more than 20m.'* A fire appliance has been tracked entering and exiting the site using the existing site access. Pontycapel Road is 3.7m at its narrowest point as measured from Ordnance Survey mapping.

DISABLED USERS

Option A8 proposes a parking area on Godre'r Coed Fields Site for use by staff and students. For this option dedicated parking provision would need to be provided for disabled users closer to the school building.

A parking area for disabled users could be provided on site; depending on the location of the school building this could be accessed via Pontycapel Road or South Terrace. There is also potential for a parking area to be provided on land of the Ebenezer Chapel access via Pontycapel Road or Old Church Street.

The ground level change across the site will need to be taken into consideration when designing links between parking for disabled users and the school building and compliant ramp gradients achieved.

[8] Published by the Department for Education and Skills in March 2014, accessed via https://www.gov.uk/government/publications/building-bulletin-100-design-for-fire-safety-in-schools

PEDESTRIAN ACCESS OPTIONS

For options A4 to A8 it is proposed for pedestrians to access the Former Vaynor School Site via the following routes:

- From the north via Holford Street
- From the east via Old Church Street
- From the west via South Terrace
- From the south via Pontycapel Road

As identified in **Section 2.3** there is limited footway provision on Pontycapel Road, Old Church Street and Holford Street with potential for pedestrians needing to walk on the carriageway with vehicle traffic. There is limited potential to improve footway provision on these streets due to narrow carriageway widths and properties bounding the carriageway.

Footway provision is provided on both sides of South Terrace.

5.5 ACCESS TO GODRE'R COED FIELD SITE

This section presents the vehicle access options to the Godre'r Coed Playing Fields site.

INITIAL SIFTING OF OPTIONS

Eleven potential access options were devised for motorised vehicles to reach the site. Following an initial high level appraisal of these options, six of these were deemed to be not suitable and were sifted out.

Detailed diagrams of the six excluded options and an appraisal of the constraints, uncertainties and opportunities for each are provided in **Appendix B** along with the reasons for sifting.

ACCESS OPTIONS

Following the initial sifting of the potential vehicle access options, five options were shortlisted as follows:

Option B7 Vehicular access via Maesgwynne and Cyfarthfa Gardens.
Egress via Godre'r Coed Road and Pontycapel Road. One-way restriction on Pontycapel Road.

Option B8 Vehicular access via Maesgwynne and Cyfarthfa Gardens.
Egress via Godre'r Coed Road and Pontycapel Road. One-way restriction on Pontycapel Road east of Godre'r Coed Road junction.

Option B9 Vehicular access via Maesgwynne and Cyfarthfa Gardens.
Egress via Godre'r Coed Road and Pontycapel Road. No one-way restrictions on Pontycapel Road.

Option B10 Two-way vehicular access via Maesgwynne and Cyfarthfa Gardens.

Option B11 Two-way vehicular access via Maesgwynne and Cyfarthfa Gardens for school pupil drop-off/pick-up only.
Two-way vehicular access via Pontycapel Road and Godre'r Coed Road for staff parking.

The remaining five access options are presented on the following pages, along with the key opportunities, constraints and uncertainties associated with them. These are preliminary options and have not been subject to any further investigation.

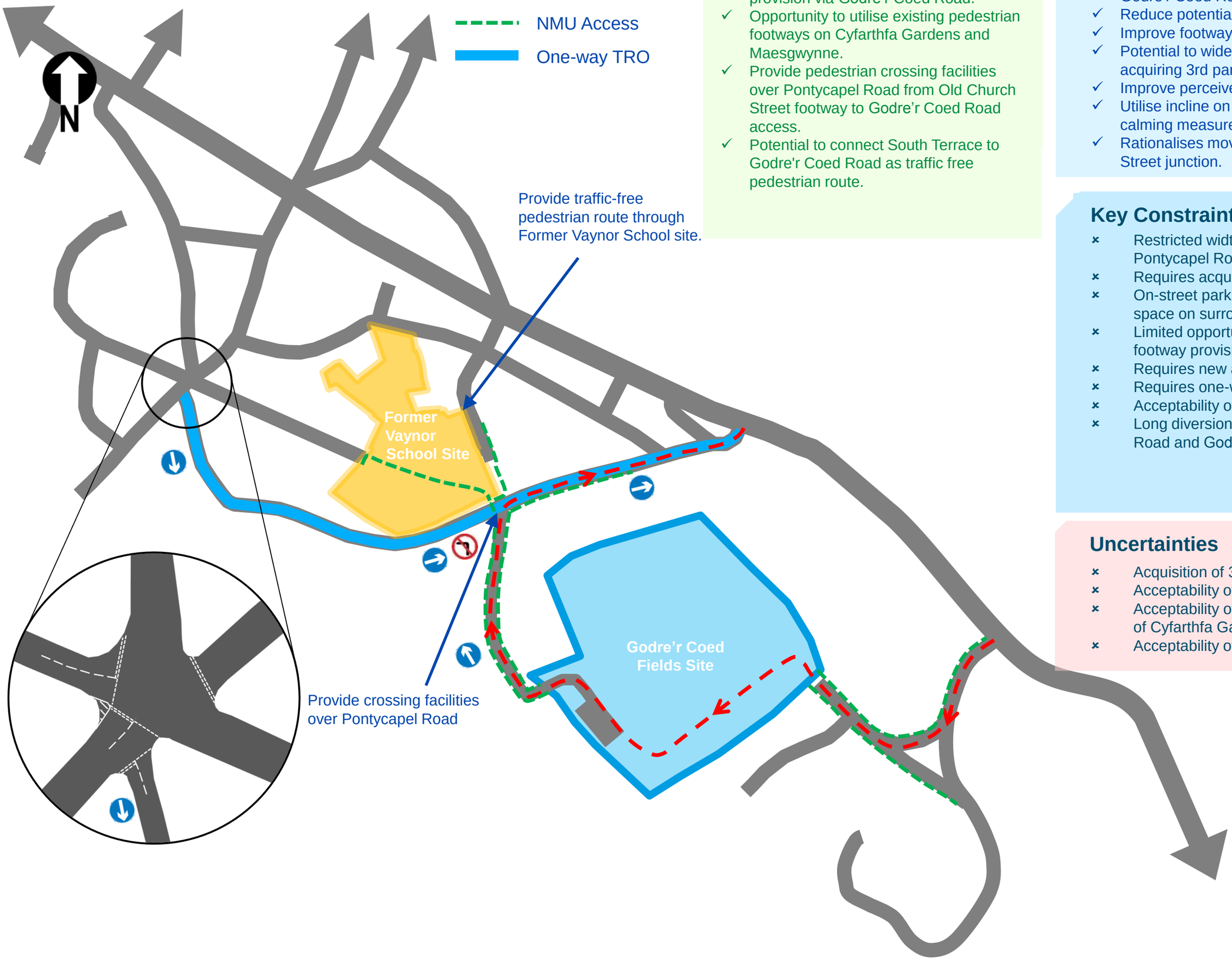
The five vehicle access options would be accompanied by the access arrangements for NMUs described in detail in the next section. An indication of the pedestrian access routes to site are shown on each option.

Option B7

Vehicular access

NMU Access

One-way TRO



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre'r Coed Road access.
- ✓ Potential to connect South Terrace to Godre'r Coed Road as traffic free pedestrian route.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Improve footway network surrounding site.
- ✓ Potential to widen Pontycapel Road subject to acquiring 3rd party land
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.
- ✓ Rationalises movements at Pontycapel Road / High Street junction.

Key Constraints

- × Restricted width of highway boundary on Pontycapel Road and Godre'r Coed Road.
- × Requires acquisition of 3rd party land.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Limited opportunity to widen and/or improve footway provision.
- × Requires new access/egress.
- × Requires one-way Traffic Regulation Order.
- × Acceptability of increased traffic volumes.
- × Long diversion to access properties on Pontycapel Road and Godre'r Coed Road.

Uncertainties

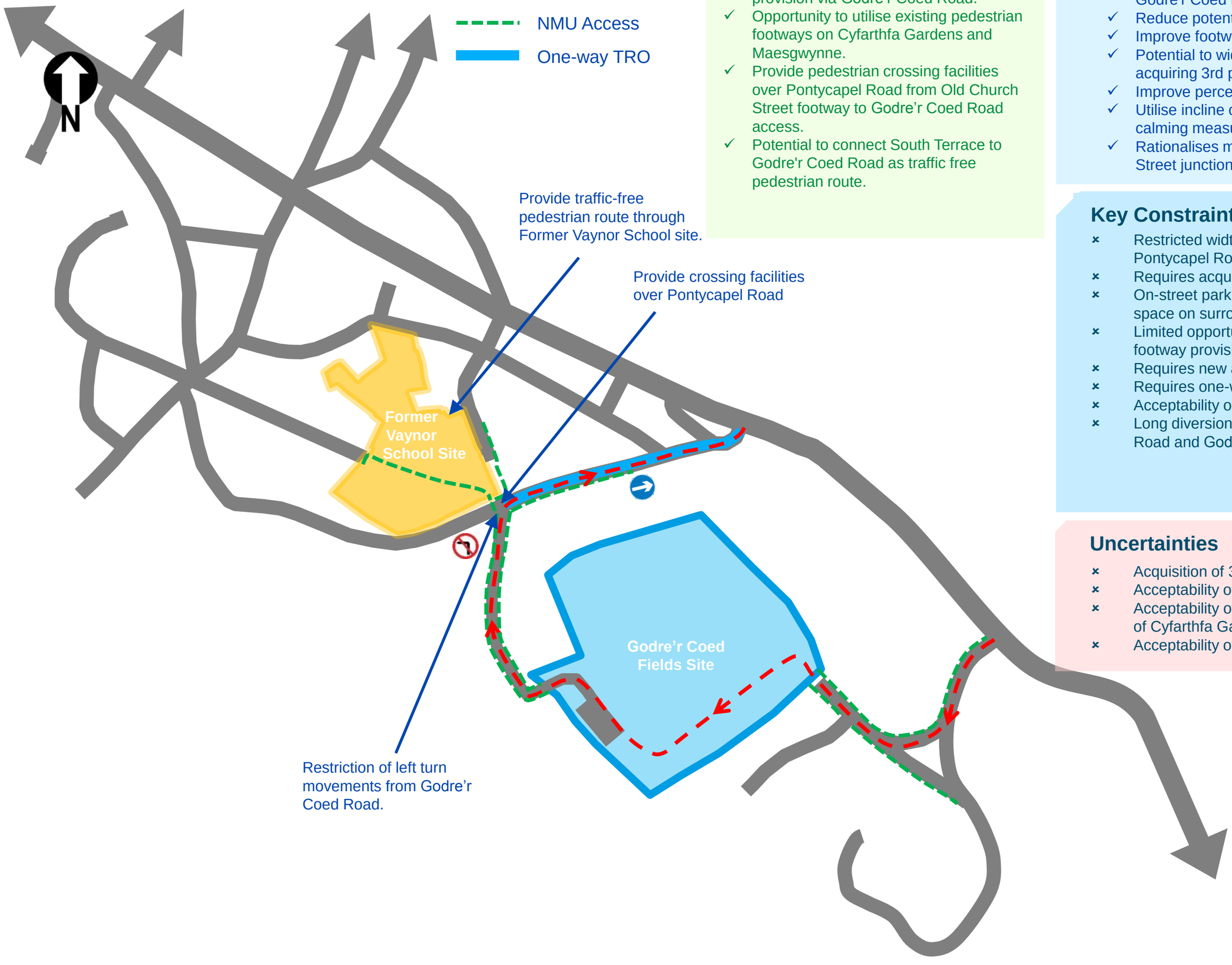
- × Acquisition of 3rd party land.
- × Acceptability of one-way TRO.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.

Option B8

Vehicular access

NMU Access

One-way TRO



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre'r Coed Road access.
- ✓ Potential to connect South Terrace to Godre'r Coed Road as traffic free pedestrian route.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Improve footway network surrounding site.
- ✓ Potential to widen Pontycapel Road subject to acquiring 3rd party land
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.
- ✓ Rationalises movements at Pontycapel Road / High Street junction.

Key Constraints

- × Restricted width of highway boundary on Pontycapel Road and Godre'r Coed Road.
- × Requires acquisition of 3rd party land.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Limited opportunity to widen and/or improve footway provision.
- × Requires new access/egress.
- × Requires one-way Traffic Regulation Order.
- × Acceptability of increased traffic volumes.
- × Long diversion to access properties on Pontycapel Road and Godre'r Coed Road.

Uncertainties

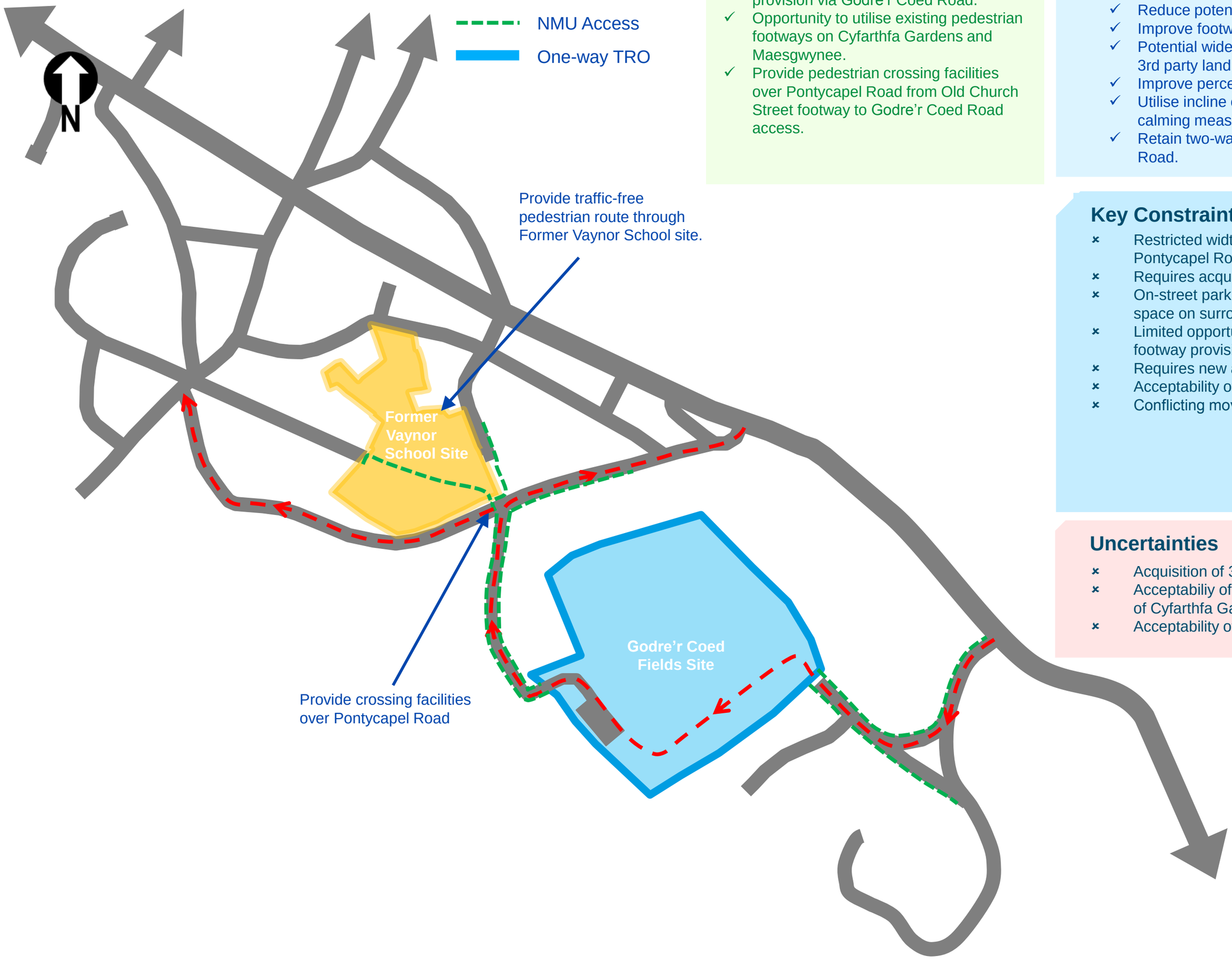
- × Acquisition of 3rd party land.
- × Acceptability of one-way TRO.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.

Option B9

Vehicular access

NMU Access

One-way TRO



NMU Provision

- ✓ Retain/improve existing footway provision via Godre’r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynee.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre’r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Improve footway network surrounding site.
- ✓ Potential widen Pontycapel Road subject to acquiring 3rd party land
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre’r Coed Road as traffic calming measure.
- ✓ Retain two-way access for residents of Pontycapel Road.

Key Constraints

- × Restricted width of highway boundary on Pontycapel Road and Godre'r Coed Road.
- × Requires acquisition of 3rd party land.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Limited opportunity to widen and/or improve footway provision.
- × Requires new access/egress.
- × Acceptability of increased traffic volumes.
- × Conflicting movements on Godre’r Coed Road.

Uncertainties

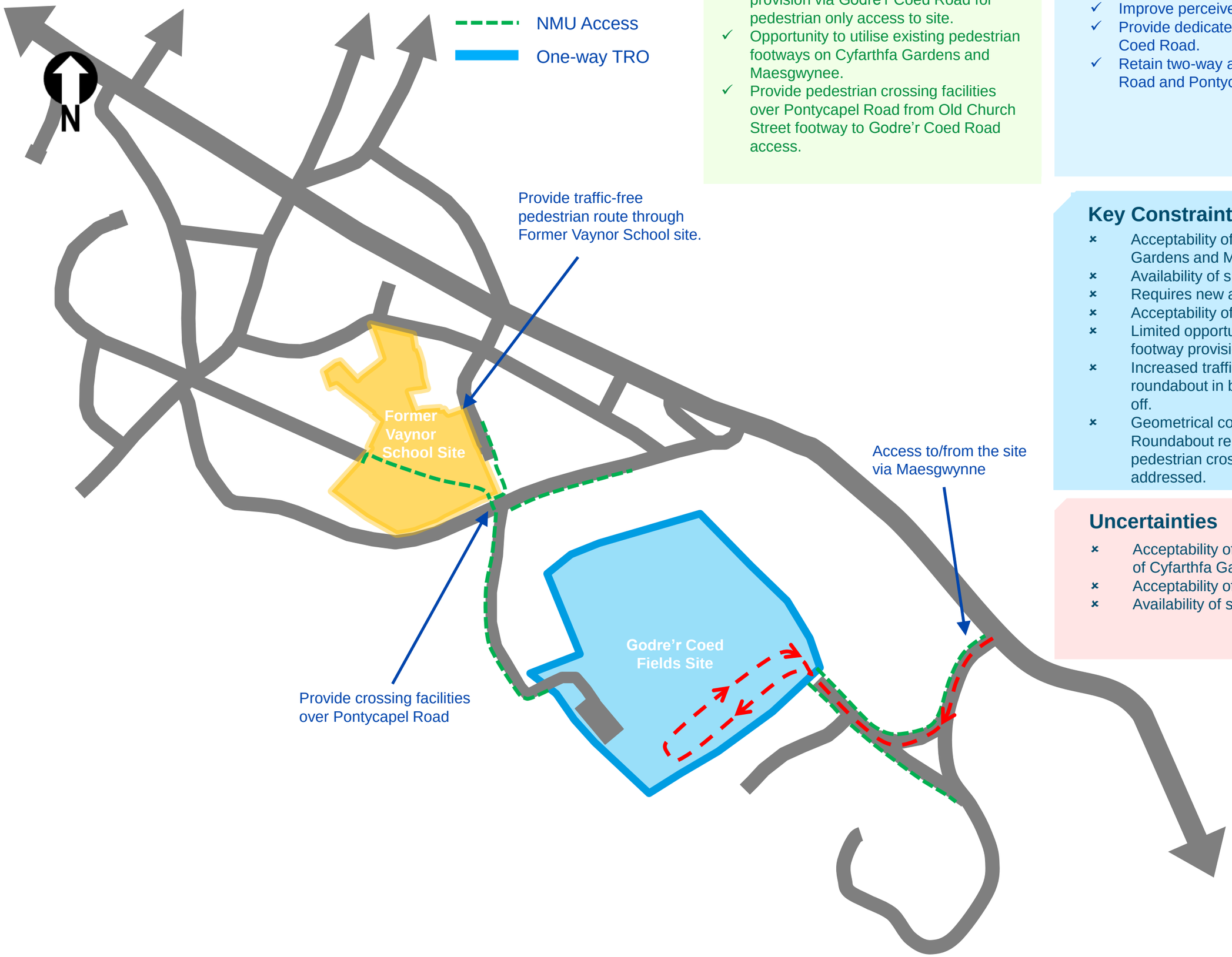
- × Acquisition of 3rd party land.
- × Acceptabiliy of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.

Option B10

Vehicular access

NMU Access

One-way TRO



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road for pedestrian only access to site.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynee.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre'r Coed Road access.

Opportunities

- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated NMU access to site via Godre'r Coed Road.
- ✓ Retain two-way access for residents of Godre'r Coed Road and Pontycapel Road.

Key Constraints

- × Acceptability of additional traffic to Cyfarthfa Gardens and Maesgwynne.
- × Availability of space on proposed site.
- × Requires new access/egress.
- × Acceptability of increased traffic volumes.
- × Limited opportunity to widen and/or improve footway provision.
- × Increased traffic volumes to Maesgwynne roundabout in both directions during pick-up/drop-off.
- × Geometrical constraints of Maesgwynne Roundabout relating to deflection and lack of pedestrian crossing facilities will need to be addressed.

Uncertainties

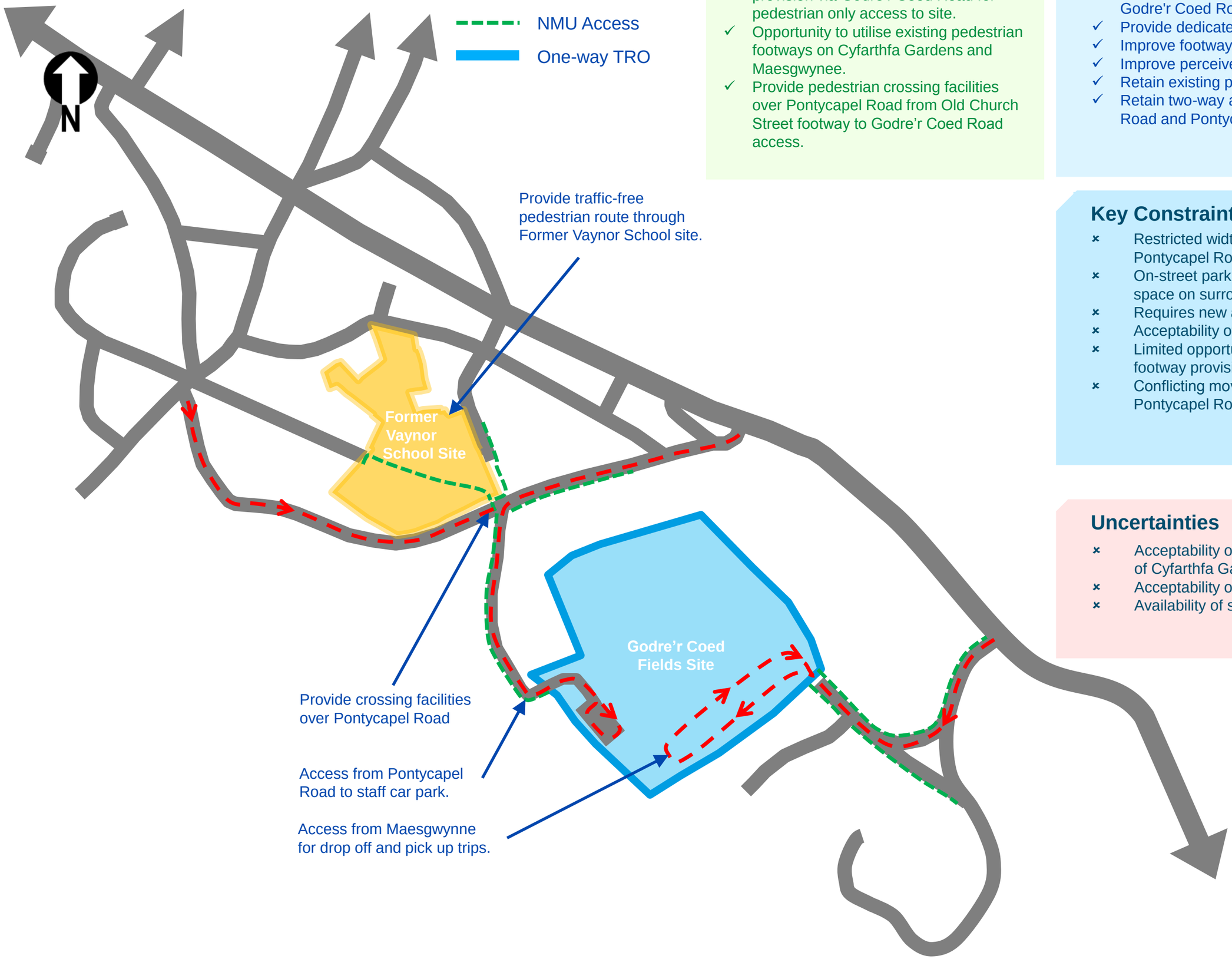
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.
- × Availability of space on proposed site.

Option B11

Vehicular access

NMU Access

One-way TRO



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road for pedestrian only access to site.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynee.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Provide dedicated pick up/drop off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Retain existing parking provision on proposed site.
- ✓ Retain two-way access for residents of Godre'r Coed Road and Pontycapel Road.

Key Constraints

- × Restricted width of highway boundary on Pontycapel Road and Godre'r Coed Road.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Requires new access/egress.
- × Acceptability of increased traffic volumes.
- × Limited opportunity to widen and/or improve footway provision.
- × Conflicting movements on Godre'r Coed Road and Pontycapel Road.

Uncertainties

- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.
- × Availability of space on proposed site.

ONE-WAY WORKING CONSIDERATIONS

It should be noted Option B7 and B8 would require a Traffic Regulation Order (TRO) to be introduced to allow the proposed one-way working on Pontycapel Road.

BUS AND COACH ACCESS

It is expected that there will be a need to accommodate bus and coach access to the site for the purpose of school trips. Should buses or coaches be unable to access the school this would result in the school needing to direct children to High Street to access the bus or coach for school trips.

Swept path analysis for a bus and coach to access the site has been undertaken.

Track runs of these vehicles entering and departing via Cyfarthfa Gardens and Maesgwynne indicated that they would be suitable for 9.8m single deck bus but not for a 15m luxury coach. Improvements to the Maesgwynne roundabout, including amendments the traffic islands will assist access and manoeuvring by larger vehicles.

Swept path analysis of a 9.8m bus and 15m coach exiting the site via Godre'r Coed Road and Pontycapel Road showed the following:

1. Exiting Godre'r Coed Road onto Pontycapel Road would require the vehicle to turn on the spot whilst the vehicle is stationary on the incline of Godre'r Coed Road in order to carry out the manoeuvre.
2. Navigating Pontycapel Road would be very difficult for buses and coaches leaving very little space between the wheels and the kerb or bounding building, assuming the carriageway is free from obstruction. However, as identified in **Section 2.3**, on-street parking often occurs on Pontycapel Road and residents' refuse bins are located in the carriageway.
3. It is necessary for a bus or coach to utilise both sides of the carriageway to turn right from Pontycapel Road onto High Street and turning left is also likely to be a difficult manoeuvre.

Based upon these findings it is not recommended that buses or coaches utilise Godre'r Coed Road or Pontycapel Road to exit the site.

It is recommended that improvements are made to Maesgwynne roundabout to facilitate access by buses, with a turning facility provided on site to enable access and egress in forward gear via Cyfarthfa Gardens and Maesgwynne. These junction improvements should seek to also facilitate access and egress from the site by coaches.

CONSTRUCTION AND SERVICE VEHICLE ACCESS

Given its constraints, it is not recommended that Godre'r Coed Road is utilised for access or egress for construction vehicles or service vehicles. These vehicles should access the site via Maesgwynne and Cyfarthfa Gardens. A Construction Traffic Management Plan will be required to manage movement by construction vehicles to limit any impacts on local residents and the highway network.

FIRE SERVICE VEHICLE ACCESS

Guidance on fire safety for schools is given in the Building Bulletin (BB) 100[9]. BB 100 advises that fire service vehicle access routes should have a '*minimum carriageway width of 3.7m between kerbs'* and '*fire service vehicles should not have to reverse more than 20m.'* The measured OS distance of Pontycapel Road at its narrowest point is 3.7m. Swept path analysis has been undertaken which indicates that site access and egress by a fire appliance can be achieved via Maesgwynne and Cyfarthfa Gardens.

PEDESTRIAN ACCESS OPTIONS

Options B7 to B11 propose two pedestrian access routes to the Godre'r Coed Field Site; (i) via Cyfarthfa Gardens and Maesgwynne and (ii) via Godre'r Coed Road.

As identified in **Section 2.3**, there is appropriate footway provision on both sides of the carriageway on Cyfarthfa Gardens and Maesgwynne making these streets a suitable pedestrian access route.

Existing footway provision on Godre'r Coed Road is limited to short sections of footway on either side of the carriageway at the approach to Pontycapel Road, as identified in **Section 2.3**. Should Godre'r Coed operate as two-way working, it will likely be difficult to provide a footway due to widths within the highway boundary.

It has been identified that there is potential to provide a footpath through the Former Vaynor School Site to connect South Terrace to Godre'r Coed Road. This would provide a traffic free alternative to Pontycapel Road where footway provision is limited. It is proposed the footpath should connect to Pontycapel Road so that pedestrians are able utilise the proposed crossing facilities.

ACCESS FOR DISABLED USERS

There is sufficient space on site to accommodate disabled car parking in close proximity to the proposed school building.

5.6 PREVIOUS ACCESS REVIEW

The 2011 Mott MacDonald report, *Playing Field Site Transport Access Study*, reviewed two access options for to the Godre'r Coed Fields Site for all users, as follows:

Route 1: Via Cyfarthfa Gardens / Maesgwynne

Route 2: Via Godre'r Coed Road

The report identified that following as key issues which will need to be considered for the Godre'r Coed Fields Site:

- *'Route 1. Vehicular access is considered to be feasible;*
- *Route 1. Improvements to the roundabout junction at A4054 High Street / Maesgwynne would be required. This is considered to be technically achievable although the cost implications will need to be identified;*

[9] Published by the Department for Education and Skills in March 2014, accessed via https://www.gov.uk/government/publications/building-bulletin-100-design-for-fire-safety-in-schools

- *Route 2 is not considered to be suitable as the main vehicle access…*
- *Emergency access could be achieved from Cyfarthfa Gardens, with a secondary access taken from Godre'r Coed Road; and*
- *Construction access could be taken from Cyfarthfa Gardens, however, the possible environmental impacts on local residents would need to be managed.'*

The report also identified the following issues which will need to be considered for both proposed sites:

- *'Pedestrian and cycle access to the site on Pontycapel Road would need to be significantly improved;*
- *To reduce impacts on surrounding residential areas the site design may need to include parking for buses, staff and parents;*
- *The impacts of the scheme on local residents will need to be considered throughout the construction and operational phases of the development; and*
- *Although not considered to be the main mode of travel to the site, improved access to public bus services needs to be considered.*

The 2010 Capita Symonds Report, *Former Vaynor School Site Transport Access Study,* was not available for review at the time of completing this report.

5.7 SUMMARY

Eight potential access options were identified for motorised vehicles to reach the Former Vaynor School Site, five of which were deemed viable. Eleven vehicle access options were identified to access the Godre'r Coed Fields Site, five of which are deemed to be viable.

The key opportunities, constraints and uncertainties for each option have been presented for the viable options to each site. Consideration should be given to minimise impact on local residents, including:

- Impacts of one-way TROs resulting in long diversions for residents,
- Acquisition of 3rd party land; and,
- Impact of development traffic on highway network and on-street parking provision.

To improve pedestrian access to the relocation sites it is recommended to provide the following:

- Improved footway provision on surrounding street;
- Crossing facilities at Maesgwynne Roundabout and over Pontycapel Road; and
- 20mph speed restriction zones.

6 JUNCTION CAPACITY ASSESSMENTS

This section provides the findings of the junction capacity assessments undertaken to explore the impacts of the identified options.

6.1 ORIGIN OF TRIPS

PUPIL TRIPS

Postcode data has been provided by MTCBC for 200 school pupils at the existing school. The location of the postcodes and the number of pupils travelling from each postcode is shown in **Figure 6.1**.

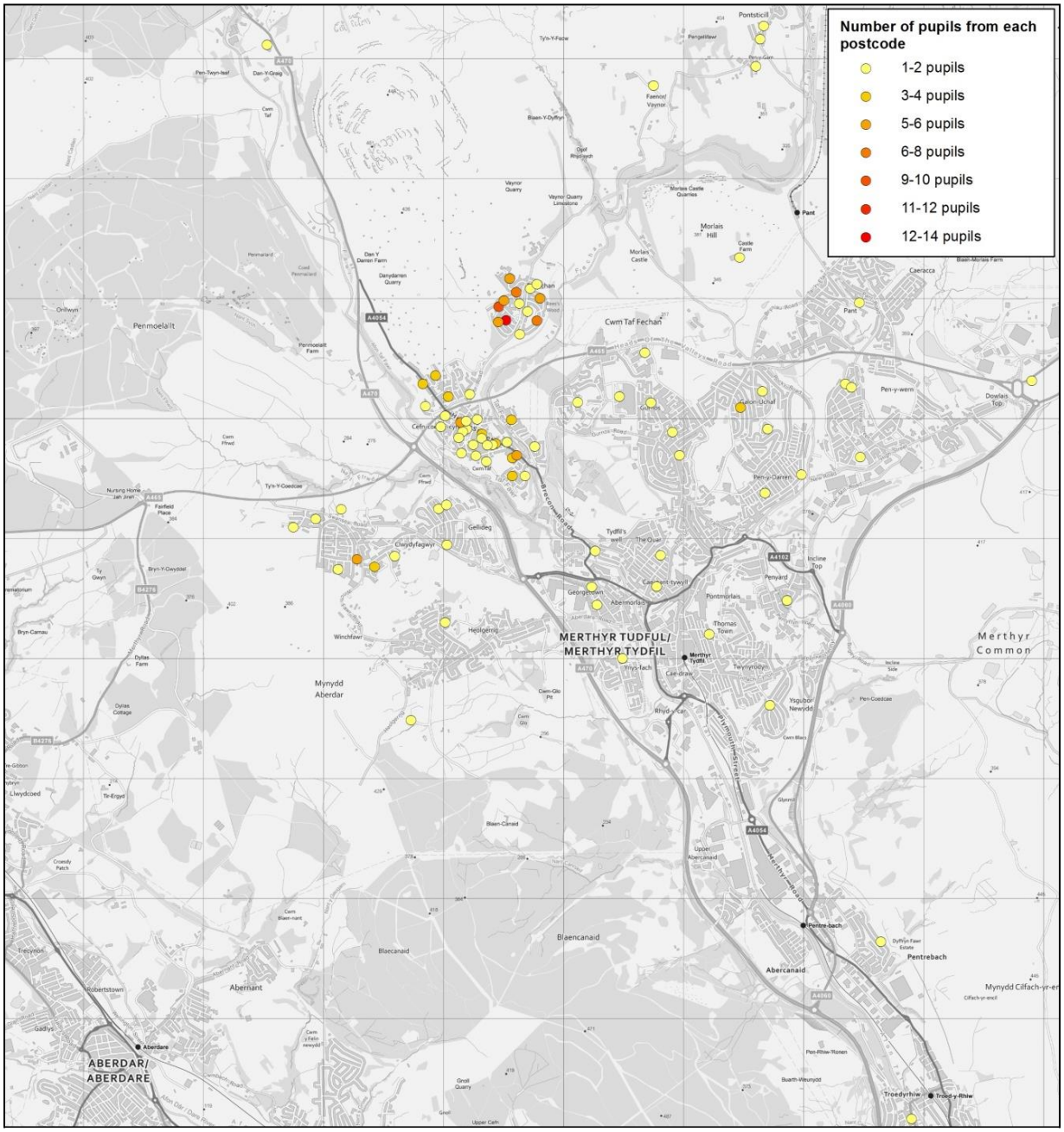


Figure 6.1. Location of postcodes for pupils travelling to the existing school

In order to identify which direction vehicles access the existing school from the travel modal split in **Table 4.1** has been assigned to the 200 postcodes. This involves identifying what travel mode pupils from each postcode are likely to use.

The assumptions made to assign travel modes to postcodes are described below:

- The 44% of pupils who walk or cycle to school live in the nearest postcodes to the existing school. These postcodes are all within a 2km walking distance to the existing school, equivalent to a 25 minute walk or 8 minute cycle[10].
- The 7% of pupils who travel to school by bus live in Trefechan. This is due to regular bus services operating between Cefn Coed High Street and Trefechan, as identified in **Section 3.3**.
- The remaining postcodes form the 50% of pupils travelling to school by private car or taxi.

Based on these assumptions the travel mode of pupils to the existing school by postcode is illustrated in **Figure 6.2**.

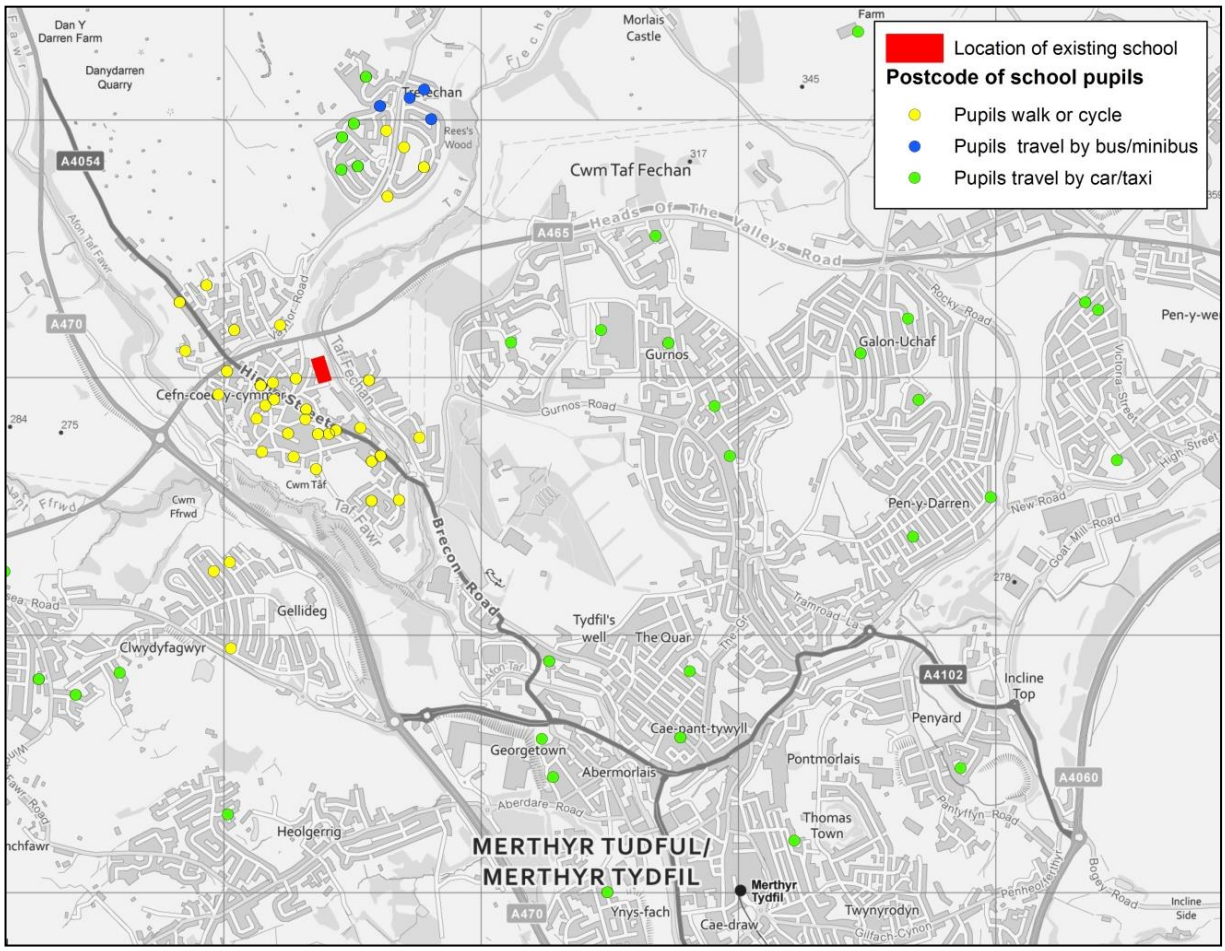


Figure 6.2. Assumed distribution of how pupils travel to school

[10] Based upon DfT recommended average walking speed of 4.8km/hr and cycling speed of 16km/hr.

The origins of the existing vehicle trips to the existing school are shown in **Figure 6.2**. Based on these origins and understanding of the local highway network, the direction of the car/taxi trips to the school has been estimated.

The existing school is located off Brewery Lane which can be accessed from High Street.

It is expected that 62% of the trips made by car/taxi would access the existing school travelling from the north-west on High Street; this is illustrated in **Figure 6.3**. The remaining 38% are expected to travel from the south-east via Brecon Road or Gurnos Road.

Figure 6.3 - Approximate percentage of car/taxi trips accessing the existing school from each direction

This distribution would result in 50 vehicle trips to the existing school from the north-west and 30 vehicle trips from the south-west. This distribution is used to understand how trips would be reassigned on the local highway network if the school was replaced by a new school on one of the proposed sites.

STAFF TRIPS

It has been assumed that origin of staff trips would follow a similar distribution to the pupil trips shown in **Figure 6.2** and **Figure 6.3**. This means that 62% of the vehicle trips by staff are expected to be travelling from the north-west on High Street and 38% travelling from the south-east on High Street.

For the expected 27 staff vehicle trips this would result in 18 trips from the north-west and 9 trips from the south east.

6.2 TRIP REASSIGNMENT

For trip reassignment the following assumptions are made:

- The vehicles dropping off and picking up pupils at the existing school depart the site in the same direction from which they arrived.
- Vehicles turning left onto High Street via Pontycapel Road using the one-way section of Pontycapel Road at junction with High Street.
- The 73% of staff which travel by car to school arrive in the AM peak, park at the school and depart in the PM peak.
- The school day starts at 09:00 and finishes at 3:30 with staff arriving during the modelled AM period (07:45-09:15) and leaving after the modelled PM period (14:45-16:15).
- 200 pupils travel to the existing school, based on postcode data provided.

The assumed distribution for vehicle trips to the existing and proposed school are set out in **Table 6.1.**

Table 6.1 - Assumed trip distribution of pupil and staff trips arriving and departing site.

15 Minute Time Period Beginning	Pupil vehicle trips		Staff vehicle trips	
	Arrivals	Departures	Arrivals	Departures
07:30	0%	0%	0%	0%
07:45	0%	0%	0%	0%
08:00	0%	0%	50%	0%
08:15	0%	0%	50%	0%
08:30	50%	50%	0%	0%
08:45	50%	50%	0%	0%
09:00	0%	0%	0%	0%
09:15	0%	0%	0%	0%
AM 2 hours	**100%**	**100%**	**100%**	**0%**
14:30	0%	0%	0%	0%
14:45	0%	0%	0%	0%
15:00	50%	0%	0%	0%
15:15	50%	0%	0%	0%
15:30	0%	100%	0%	0%
15:45	0%	0%	0%	0%
16:00	0%	0%	0%	0%
16:15	0%	0%	0%	0%
PM 2 hours	**100%**	**100%**	**0%**	**0%**

Table 6.2 sets out the expected number vehicle trips to the existing site which travel from the north on High Street and from the south on High Street.

Table 6.2 - Direction of existing vehicle trips to existing school

Type of Trips	Morning Peak (08:00 – 09:00)		Afternoon Peak (15:30 – 16:30)	
	From High St to north	From High St to south	From High St to north	From High St to south
School pupil (two-way trips for drop-off and pick up)	52	32	50	30
Staff (one-way trips)	15	9	0	0

Table 6.3 sets out the expected number of vehicle trips to the proposed site from the north on High Street and from the south on High Street.

Table 6.3 - Direction of vehicle trips to proposed development

Type of Trips	Number of Trips Between 08:00 – 09:00		Number of Trips Between 15:30 – 16:30	
	From High St to north	From High St to south	From High St to north	From High St to south
School pupil (two-way trips for drop-off and pick up)	62	38	62	38
Staff (one-way trips)	17	10	0	0

6.3 MODELLING RESULTS

Junction modelling has been undertaken to identify how nearby junctions will operate for the access options proposed for the new school. Capacity assessments have been undertaken on the following junctions, as labelled on **Figure 6.4.**

Site 5	Maesgwynne Roundabout,
Site 4A and 4B	Junction of Pontycapel Road with High Street
New junction	The proposed new junction with High Street.

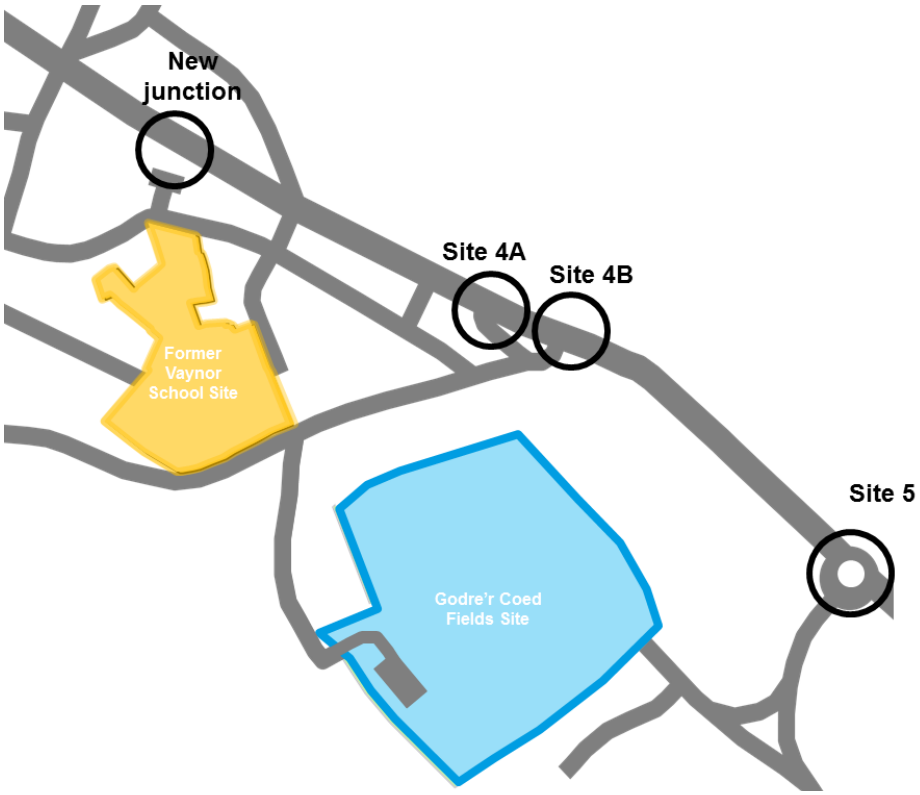


Figure 6.4 - Assumed distribution of how pupils travel to school

The following scenarios have been modelled for each junction:

- Base year 2017, do nothing
- Opening year 2020, do nothing
- Opening year 2020
  - Do Something Scenario A
  - Do Something Scenario B
  - Do Something Scenario C
  - Do Something Scenario D

The Do Something Scenarios have been identified to represent the key access options set out in **Section 5.** The four scenarios are explained in **Table 6.4** and illustrated in **Figure 6.5.**

Table 6.4 Do something scenarios modelled for each junction and the access options they represent.

Do Something Scenario	Direction of Development Trips
Do something A	All development traffic in via Maesgwynne Roundabout and all development traffic out via Pontycapel Road onto High Street
Do something B	All development traffic in and out via Maesgwynne Roundabout
Do something C	All development traffic in via Pontycapel Road
Do something D	All traffic in via new junction with High Street

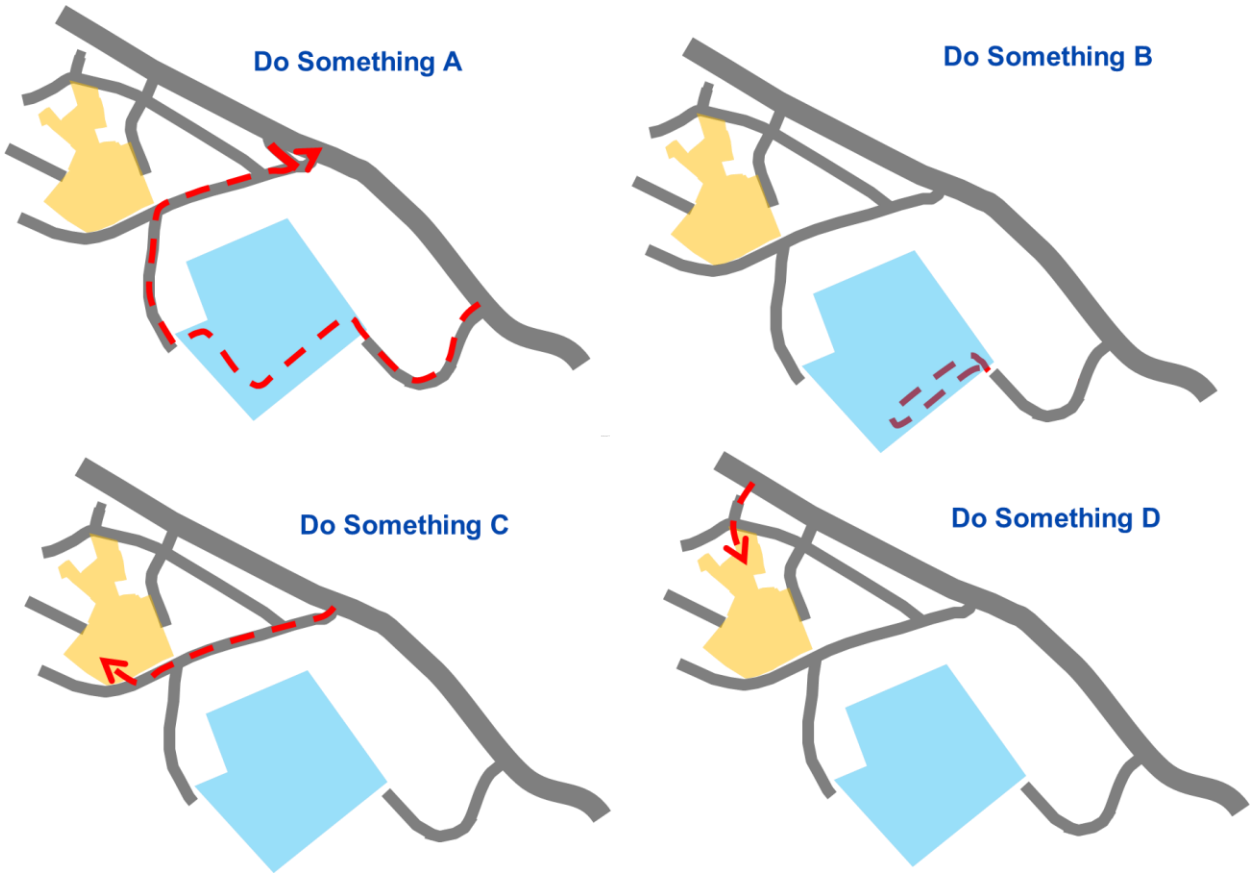


Figure 6.5 – Illustration of modelling Do something scenarios A to D.

All scenarios are modelled for an AM peak period (07:45 – 09:15) and PM peak period (14:45 – 16:15).

The modelling is confined to the junction capacity under the future scenarios. Congestion on the local highway may also be caused by link capacity constraints resulting from parking, queuing and narrow carriageway widths which are not reflected in modelling outputs.

MAESGWYNNE ROUNDABOUT – SITE 5

Table 6.5 presents the expected queue lengths and Ratio of Flow to Capacity (RFC) for all scenarios on Maesgwynne Roundabout. The models provide results for each 15 minute segment within the peak. The values shown in **Table 6.5** are the maximum values observed in a 15 minute segments.

Table 6.5 - Modelling results of all scenarios for Maesgwynne Roundabout.

Scenario	Time Period	Brecon Road		Maesgwynne		High Street	
		Queue (PCUs)	RFC	Queue (PCUs)	RFC	Queue (PCUs)	RFC
Base Year 2017	AM Peak	0.45	0.31	0.14	0.12	1.26	0.56
	PM Peak	1.06	0.51	0.12	0.10	0.76	0.43
Opening Year 2020, Do nothing	AM Peak	0.48	0.32	0.14	0.12	1.34	0.57
	PM Peak	1.15	0.53	0.12	0.10	0.80	0.44
2020, Do something A	**AM Peak**	**0.59**	**0.37**	**0.14**	**0.12**	**2.96**	**0.76**
	PM Peak	**1.50**	**0.60**	**0.12**	**0.10**	**1.51**	**0.60**
2020, Do something B	**AM Peak**	**0.59**	**0.37**	**0.55**	**0.35**	**2.22**	**0.69**
	PM Peak	**1.50**	**0.60**	**2.78**	**0.74**	**1.51**	**0.60**
2020, Do something C	AM Peak	0.51	0.34	0.14	0.12	1.46	0.59
	PM Peak	1.22	0.55	0.12	0.10	0.81	0.44
2020, Do something D	AM Peak	1.22	0.55	0.12	0.10	0.81	0.44
	PM Peak	1.22	0.55	0.12	0.10	0.81	0.44

Scenario A for Maesgwynne Roundabout represents access options B7, B8 and B9 where it is proposed for all pupil and staff trips to enter the site via Maesgwynne. Scenario B for Maesgwynne Roundabout represents access options B10 where it is proposed for all pupils and staff to enter and exit the site via Maesgwynne.

An RFC threshold of 0.85 is used as the industry standard to indicate whether a junction is operating within its theoretical capacity, above this value queues will generally begin to form. **Table 6.6** shows that the roundabout performs within this acceptable limit for all scenarios. The highest value of RFC expected is 0.76 on the High Street arm for Scenario A in the AM peak. This corresponds with the maximum queue length of 3 PCUs on High Street for Scenario A in the AM peak.

PONTYCAPEL ROAD WITH HIGH STREET – SITE 4A AND 4B

Table 6.6 presents the expected queue lengths and RFC values for all scenarios on Site 4A, the one-way section of Pontycapel Road forming a junction with High Street. It shows that the junction is forecast to operate within its theoretical capacity in all scenarios.

Table 6.6 – Modelling results of all scenarios for Site 4A.

Scenario	Time Period	Left Turn Onto High Street		Right Turn Onto High Street	
		Queue (PCUs)	RFC	Queue (PCUs)	RFC
Base Year 2017	AM Peak	0.04	0.04	0.04	0.03
	PM Peak	0.03	0.03	0.02	0.02
Opening Year 2020, Do nothing	AM Peak	0.04	0.04	0.04	0.04
	PM Peak	0.03	0.03	0.02	0.02
2020, Do something A	**AM Peak**	**0.26**	**0.21**	**0.04**	**0.04**
	PM Peak	**0.74**	**0.43**	**0.02**	**0.02**
2020, Do something B	AM Peak	0.04	0.04	0.04	0.04
	PM Peak	0.04	0.04	0.02	0.02
2020, Do something C	**AM Peak**	**0.04**	**0.04**	**0.04**	**0.04**
	PM Peak	**0.03**	**0.03**	**0.02**	**0.02**
2020, Do something D	AM Peak	0.04	0.04	0.04	0.04
	PM Peak	0.03	0.03	0.02	0.02

Table 6.7 presents the expected queue lengths and RFC values for all scenarios on Site 4B, the main two-way section of Pontycapel Road forming a junction with High Street. It shows that the junction is forecast to operate within its theoretical capacity in all scenarios.

Table 6.7 – Modelling results for all scenarios for Site 4B.

Scenario	Time Period	Left and Right Turn onto High Street		Right Turn onto Pontycapel Road	
		Queue (PCUs)	RFC	Queue (PCUs)	RFC
Base Year 2017	AM Peak	0.06	0.05	0.06	0.04
	PM Peak	0.08	0.07	0.04	0.03
Opening Year 2020, Do nothing	AM Peak	0.06	0.05	0.06	0.04
	PM Peak	0.08	0.07	0.04	0.03
2020, Do something A	**AM Peak**	**0.26**	**0.20**	**0.06**	**0.04**
	PM Peak	**0.75**	**0.43**	**0.04**	**0.03**
2020, Do something B	AM Peak	0.06	0.05	0.06	0.04
	PM Peak	0.08	0.08	0.04	0.03
2020, Do something C	**AM Peak**	**0.06**	**0.05**	**0.69**	**0.30**
	PM Peak	**0.08**	**0.07**	**0.57**	**0.29**
2020, Do something D	AM Peak	0.06	0.05	0.06	0.04
	PM Peak	0.08	0.07	0.04	0.03

The base year and opening year generate RFC values which are within the acceptable limit; the low RFC values reflect the existing low flow rates on High Street.

Scenario A for Site 4A and 4B represents access options B7 and B8 where it is proposed for vehicles to exit the site via Pontycapel Road on to High Street. Scenario C for Site 4A and 4B represents access Options A7 where it is proposed for vehicles to enter the Former Vaynor School Site via Pontycapel Road.

The maximum RFC value for Site 4A and 4B is 0.43 for Scenario A which is within the acceptable limit.

NEW JUNCTION WITH HIGH STREET

Scenario D represents Options A4 and A5 which propose accessing the Former Vaynor School Site via a new junction with High Street. As such modelling of this junction has been undertaken only for Scenario D.

Table 6.8 presents the expected queue lengths and RFC values for Scenario D at the new junction which shows that the maximum RFC expected is 0.23.

Table 6.8 – Modelling results for all scenarios for New Junction

Scenario	Time Period	Right Turning Traffic Into New Access	
		Queue (PCUs)	RFC
2020, Do something D	AM Peak	0.45	0.23
	PM Peak	0.40	0.22

6.4 SUMMARY

The junction capacity modelling has forecast that junctions will operate within capacity in all future year scenarios. The modelling has been confined to study junctions. Some congestion on local highway links may still result from on-street parking, traffic queuing to access/egress site and the constrained highway widths surrounding the site.

7 ACCESS OPTIONS APPRAISAL

7.1 OVERVIEW

This section of the report provides an appraisal of each of the vehicle access options identified in **Section 5.5** of this report.

An Appraisal Summary Table (AST), outlining the findings of this appraisal, is presented in this section of the report which summarises the scores of each option against the TPOs.

7.2 METHODOLOGY

All the access options that emerged following the sifting process were appraised using a ten point scale from -5 (major negative impact), to +5 (major benefit) against the scheme TPOs. The impact of the access options has been appraised against the current situation (i.e. the existing school location and layout). The material condition of the existing school means that a *Do Nothing* scenario where the school is not relocated is not a viable option but it can be used as a baseline.

The scheme TPOs are as follows:

TPO 1. Minimise the impact of school traffic and parking on the local highway network for all users.

TPO 2. Provide pedestrian users with legible and safe routes to school.

TPO 3. Identify an appropriate access strategy which does not compromise the land required for a school building and associated facilities.

TPO. 4 Provide an access option that minimises the impact on local residents and land-owners.

TPO 5. Provide appropriate access for construction vehicles, service vehicles and emergency vehicles.

7.3 APPRAISAL FOR FORMER VAYNOR SCHOOL OPTIONS

Due to the topography of this site it would be much more practical for the school building to be constructed in an east-west orientation across the southern area of the site. This requirement has been taken into consideration when accessing the options against TPO 3.

OPTION A4

Vehicular access from north, via a new vehicular link and an eastbound one-way arrangement back to High Street.

TPO 1. Likely for drivers to drop off on surrounding streets due to limited parking and highway capacity on site. Limited visibility for drivers exiting the site. Potential for queuing back onto High Street. (**-4**)

TPO 2. Opportunities to provide pedestrian access to east, south, and west although limited connecting footway provision. (**+1**)

TPO 3. Minimal impact on site for provision of school building orientated east-west. Significant access constraints with limited area for drop-off/pick up. (**-1**)

TPO 4. Requires new junction from High Street and relocation of existing bus stop. Impact of one-way TRO on local residents, and increased flows on Holford Street and Old Church Street. (**-4**)

TPO 5. Necessary to provide sufficient turning area for service vehicles. Exit from site is constrained and potential for blocking from parked vehicles. (**-2**)

OPTION A5

Vehicular access from north, via a new vehicular link and egress to South Terrace.

TPO 1. Likely for drivers to drop off on surrounding streets due to limited parking and highway capacity on site. Increased flows on six-arm junction. Potential for conflict with vehicles on South Terrace. Potential for queuing back onto High Street. (**-4**)

TPO 2. Opportunities to improve pedestrian provision to east and south although limited connecting footway provision. (**+1**)

TPO 3. Land required to north and west of site for vehicle access. Potential for east-west orientated building. (**-3**)

TPO 4. Requires new junction from High Street and relocation of existing bus stop. Impact of one-way TRO, and increased flows on South Terrace and Triangle. (**-3**)

TPO 5. Constrained alignment for manoeuvres by large vehicles. (**-2**)

OPTION A6

Vehicular access from west, via South Terrace and egress to the south onto Pontycapel Road.

TPO 1. Likely for drivers to drop off on surrounding streets due to limited parking and highway capacity on site. Limited visibility for vehicles exiting the site onto Pontycapel Road. (**-5**)

TPO 2. Opportunities to improve pedestrian provision to north, east, and south. Although limited connecting footway provision. (**+1**)

TPO 3. To achieve an east-west orientated school building the through route will be squeezed to the edge of the site. (**-4**)

TPO 4. Impact of one-way TRO and increased flows on Pontycapel Road, South Terrace, and Triangle. (**-4**)

TPO 5. Constrained alignment for manoeuvres by large vehicles, limited visibility when egressing site. (**-4**)

OPTION A7

Vehicular access from south via Pontycapel Road and egress to South Terrace.

TPO 1. Likely for drivers to drop off on surrounding streets due to limited parking and highway capacity on site. (**-2**)

TPO 2. Opportunities to improve pedestrian provision to north, east, and south although limited connecting footway provision. (**+1**)

TPO 3. To achieve an east-west orientated school building the through route will be squeezed to the edge of the site. (**-4**)

TPO 4. Impact of one-way TRO and increased flows on Pontycapel Road, South Terrace, and Triangle. (**-4**)

TPO 5. Constrained alignment for manoeuvres by large vehicles. (**-2**)

OPTION A8

Access via rugby fields (new drop-off facility to the south of the site) and egress on Pontycapel Road supported by eastbound one-way restriction.

TPO 1. Provides dedicated parking provision although some on-street parking still likely to occur. (**+3**)

TPO 2. Opportunities to improve pedestrian provision to north, east, south, and west. Drop-off/pick-up area is remote from school. (**-1**)

TPO 3. No land-take on development site for staff and pupil parking provision. Requirement to provide dedicated parking facilities for disabled users close to school building. Requires service access. (**+3**)

TPO 4. Requires one-way TRO on Pontycapel Road and diversion to access properties on Pontycapel Road and Godre'r Coed Road. Requires new access/egress. (**-4**)

TPO 5. Necessary to provide access to site for service and emergency vehicles. (**0**)

APPRAISAL SUMMARY

The scorings of the appraisal are shown in **Table 7.1.**

Table 7.1: Appraisal Summary Table Former Vaynor School Access Options

ACCESS OPTION	TPO1	TPO2	TPO3	TPO4	TPO5	TOTAL
A4	-4	+1	-1	-4	-2	**-10**
A5	-4	+1	-3	-3	-2	**-11**
A6	-5	+1	-4	-4	-4	**-16**
A7	-2	+1	-4	-4	-2	**-11**
A8	+3	-1	+3	-4	0	**+1**

Access Option A8 scored the highest of the options to the Former Vaynor School Site with the remainder resulting in a negative impact.

7.4 APPRAISAL FOR GODRE'R COED FIELDS OPTIONS

OPTION B7

Vehicle access via Maesgwynne and Cyfarthfa Gardens, egress via Godre'r Coed Road and Pontycapel Road. One-way restriction on Pontycapel Road.

TPO 1. Potential for drivers to drop off on surrounding streets to avoid entering site or if no spaces are available on site. (**+3**)

TPO 2. Provides traffic free route to school through Former Vaynor School Site and crossing facilities over Pontycapel Road. (**+3**)

TPO 3. Land take on development site will not compromise land required for a school building and associated facilities. (**+5**)

TPO 4. Requires one-way TRO on Pontycapel Road and diversion to access properties on Pontycapel Road and Godre'r Coed Road. Requires new access/egress. Increased flows on local highways. (**-3**)

TPO 5. Necessary to make provisions on site for turning facility for larger vehicles to enter and exit via Cyfarthfa Gardens. (**+2**)

OPTION B8

Vehicle access via Maesgwynne and Cyfarthfa Gardens, egress via Godre'r Coed Road and Pontycapel Road. One-way restriction on Pontycapel Road east of Godre'r Coed Road junction.

TPO 1. Potential for drivers to drop off on surrounding streets to avoid entering site or if no spaces are available on site. (**+3**)

TPO 2. Provides traffic free route to school through Former Vaynor School Site and crossing facilities over Pontycapel Road. (**+3**)

TPO 3. Land take on development site will not compromise land required for a school building and associated facilities. (**+5**)

TPO 4. Requires one-way TRO on east of Pontycapel Road and diversion to access properties on Pontycapel Road and Godre'r Coed Road. Requires new access/egress. Increased flows on local highways. (**-2**)

TPO 5. Necessary to make provisions on site for turning facility for larger vehicles to enter and exit via Cyfarthfa Gardens. (**+2**)

OPTION B9

Vehicle access via Maesgwynne and Cyfarthfa Gardens, egress via Godre'r Coed Road and Pontycapel Road. No one-way restrictions on Pontycapel Road.

TPO 1. Potential for drivers to drop off on surrounding streets to avoid entering site or if no spaces are available on site.(**+2**)

TPO 2. Provides traffic free route to school through Former Vaynor School Site and new crossing facilities over Pontycapel Road. (**+3**)

TPO 3. Land take on development site will not compromise land required for a school building and associated facilities. (**+5**)

TPO 4. Requires new access/egress. Increased flows on local highways. (**-1**)

TPO 5. Necessary to make provisions on site for turning facility for larger vehicles to enter and exit via Cyfarthfa Gardens. (**+2**)

OPTION B10

Two-way vehicle access via Maesgwynne and Cyfarthfa Gardens.

TPO 1. Potential for drivers to drop off on surrounding streets to avoid entering site. (**+1**)

TPO 2. Provides traffic free route to school through Former Vaynor School Site and new crossing facilities over Pontycapel Road. (**+4**)

TPO 3. Land take on development site will not compromise land required for a school building and associated facilities. (**+5**)

TPO 4. Requires new access/egress. Increased flows on Maesgwynne and Cyfarthfa Gardens.(**-1**)

TPO 5. Necessary to make provisions on site for turning facility for larger vehicles to enter and exit via Cyfarthfa Gardens. (**+5**)

OPTION B11

Two-way vehicle access via Maesgwynne and Cyfarthfa Gardens for school pupil drop-off/pick-up only. Two-way vehicle access via Pontycapel Road and Godre'r Coed Road for staff parking.

TPO 1. Potential for drivers to drop off on surrounding streets to avoid entering site. (**+1**)

TPO 2. Provides traffic free route to school through Former Vaynor School Site and new crossing facilities over Pontycapel Road. Two way traffic on Godre'r Coed Road. (**+3**)

TPO 3. Land take on development site will not compromise land required for a school building and associated facilities. (**+5**)

TPO 4. Requires new access/egress. Increased flows on Maesgwynne and Cyfarthfa Gardens. (**-1**)

TPO 5. Necessary to make provisions on site for turning facility for larger vehicles to enter and exit via Cyfarthfa Gardens. (**+5**)

APPRAISAL SUMMARY

The scorings of the appraisal for the access options to the Godre'r Coed Playing Fields site are shown in **Table 7.2.**

Table 7.2 Appraisal Summary Table Godre'r Coed Playing Fields Site Access Options

ACCESS OPTION	TPO1	TPO2	TPO3	TPO4	TPO5	TOTAL
B7	+3	+3	+5	-3	+2	**+10**
B8	+3	+3	+5	-2	+2	**+11**
B9	+2	+3	+5	-1	+2	**+11**
B10	+1	+4	+5	-1	+5	**+14**
B11	+1	+3	+5	-1	+5	**+13**

Access option B10 scored the highest of the options to the Godre'r Coed Fields Site scoring 14. The appraisal shows that all access options to the Godre'r Coed Fields Site are expected to result in a positive impact compared to the existing situation.

8 SUMMARY AND CONCLUSIONS

This report has set out a combined appraisal of access options related to two potential sites for the relocation of Ysgol y Graig primary school in Cefn Coed. An audit of existing highway conditions and personal injury collision records have been undertaken. It identified;

- Significant highway constraints on roads to the north of Godre'r Coed Playing Fields linked to road alignments, widths, visibilities and on-street parking,
- No common causal factors or spatial grouping of recorded personal injury collisions on the local highway network in the vicinity of the proposed development sites; and,
- Existing geometrical constraints relating to deflection of Maesgwynne Roundabout.

Analysis of existing parking demand and capacity on the highways surrounding the sites show that there is spare capacity at the start and end of the school day. However, congestion is likely to occur if the new school only provides on-street parking provision in the vicinity of the development sites.

For some access options it will be necessary to consider TROs to manage additional traffic on narrow streets. This will impact vehicular access to some existing properties which would inconvenience local residents.

The existing school benefits from a high usage of active travel modes for journeys to school. At present 41% of pupils walk and 3% travel by bike. There is potential to sustain high active travel usage if appropriate NMU provision is provided as part of the development. There is limited potential to improve footway provision on streets to the north of the Godre'r Coed Fields site given available highway widths between adjacent residential properties. There are several locations where pedestrians are required to walk on the carriageway with vehicular traffic.

The following supporting measures are recommended to improve safe and legible access by pedestrians:

- A 20mph speed restriction zone on the streets surrounding the chosen relocation site;
- Improvement to footways on the surrounding streets including providing continuous footway provision on Godre'r Coed Road if Godre'r Coed Fields Site is to be used;
- New crossing facilities across Pontycapel Road;
- New crossing facilities across High Street near Maesgwynne Roundabout to provide access to existing bus stop on High Street
- Potential for new traffic free NMU routes to be provided through the Former Vaynor School site if designated for community use; and,
- Improvements to pedestrian crossing provision at Maesgwynne Roundabout if it is to be used as access route.

Any improvement schemes for Maesgwynne roundabout for pedestrians should also seek to address other existing geometrical constraints relating to deflection and manoeuvrability by large vehicles (such as 15m coaches)

The junction capacity assessment shows no existing junction capacity issues for the junctions modelled. The assessments show that there are no junction capacity issues expected in the future scenarios.

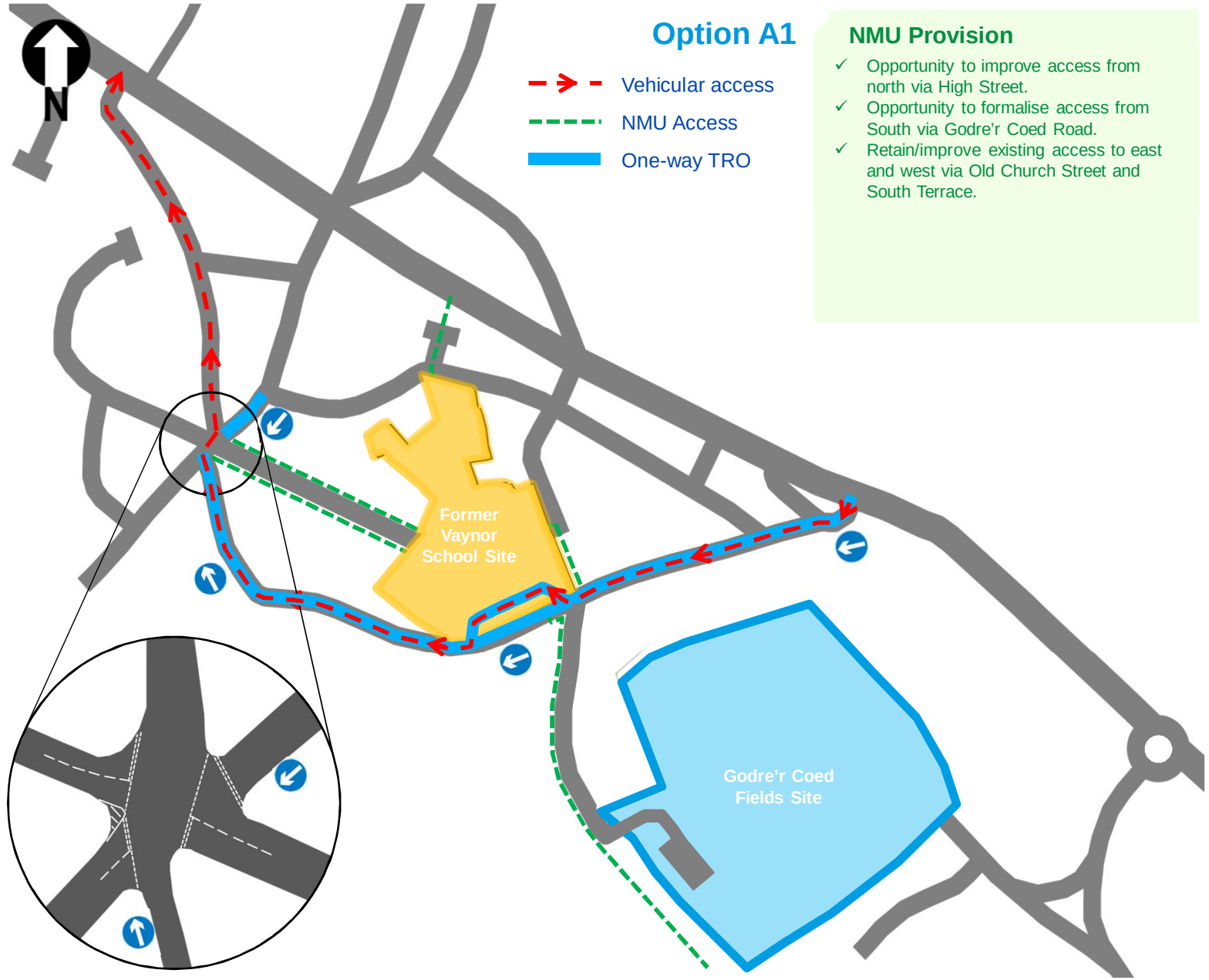
Five viable options were presented for access to the Former Vaynor School Site and five options to the Godre'r Coed Fields Site.

The access options appraisal shows that the Godre'r Coed Site Options score more highly in relation to transport access by all modes. Access option A8 scored highest for the Former Vaynor School Site and Option B10 scored highest for the Godre'r Coed Fields Site.

The appraisal has been prepared in support of the consultation and the appraisal is constrained to considering access arrangement by all modes.

Appendix A

Option A1



NMU Provision

- ✓ Opportunity to improve access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Utilise existing site access/egress to south.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve conditions for existing users.
- ✓ Potential to widen Pontycapel Road subject to acquiring third party land.

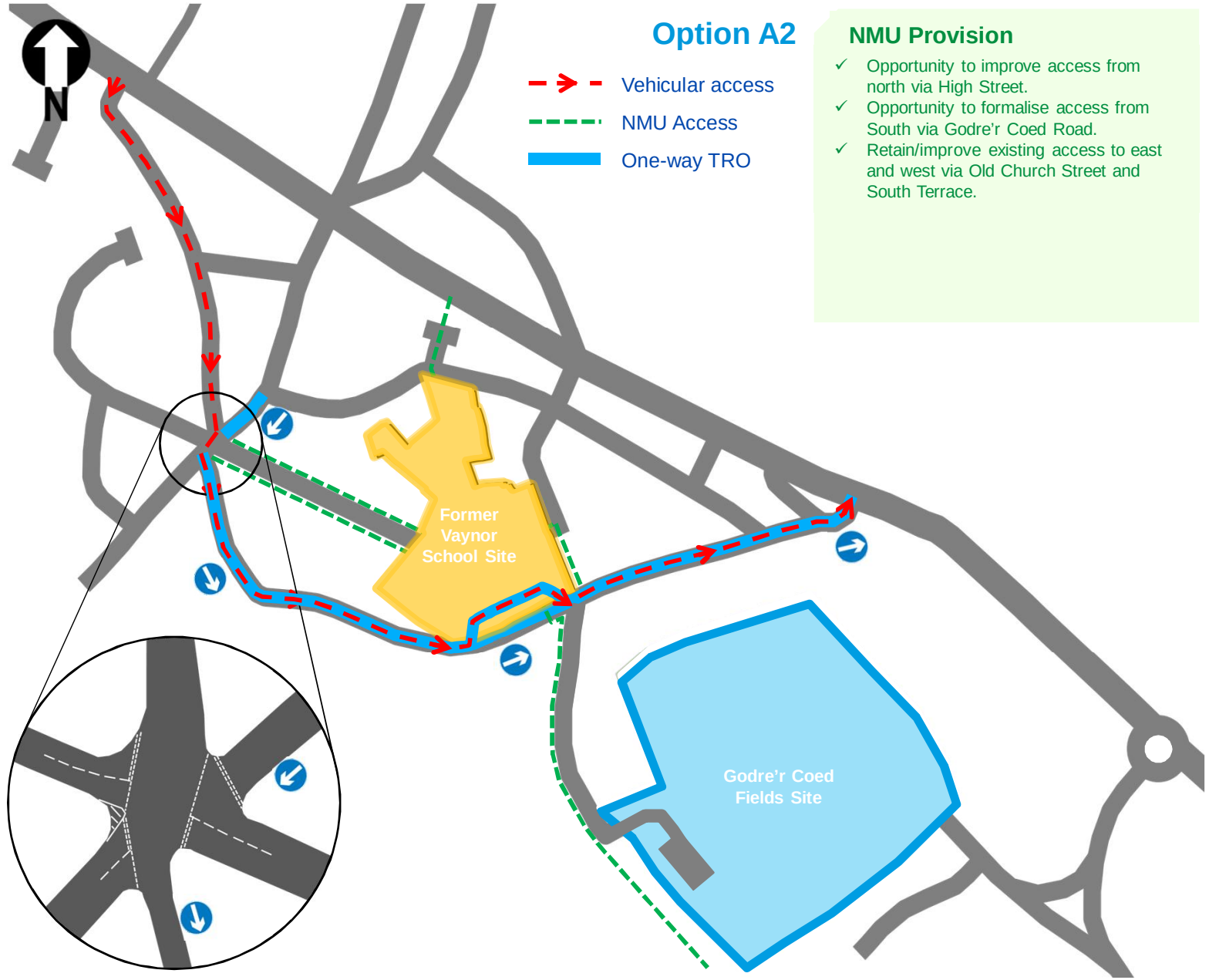
Constraints

- × Requires new access/egress.
- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × Limited opportunity for new site egress to the south due to topography of site.
- × On-street parking limiting road space on surrounding network.
- × Acceptability of increased traffic volumes.
- × Diversion to access properties on Pontycapel Road and Godre'r Coed Road.
- × Restricted visibility when exiting site onto Pontycapel Road.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.

Uncertainties

- × Topographical limitations to provide new access/egress to south of site.
- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of rationalising/restricting movements at six-arm junction.
- × Acceptability of increased traffic volumes.
- × Uncertainty of potential to remove bounding wall of Former Vaynor School to widen Pontycapel Road.

Option A2



NMU Provision

- ✓ Opportunity to improve access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Utilise existing site access/egress to south.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve conditions for existing users.
- ✓ Potential to widen Pontycapel Road subject to acquiring third party land.

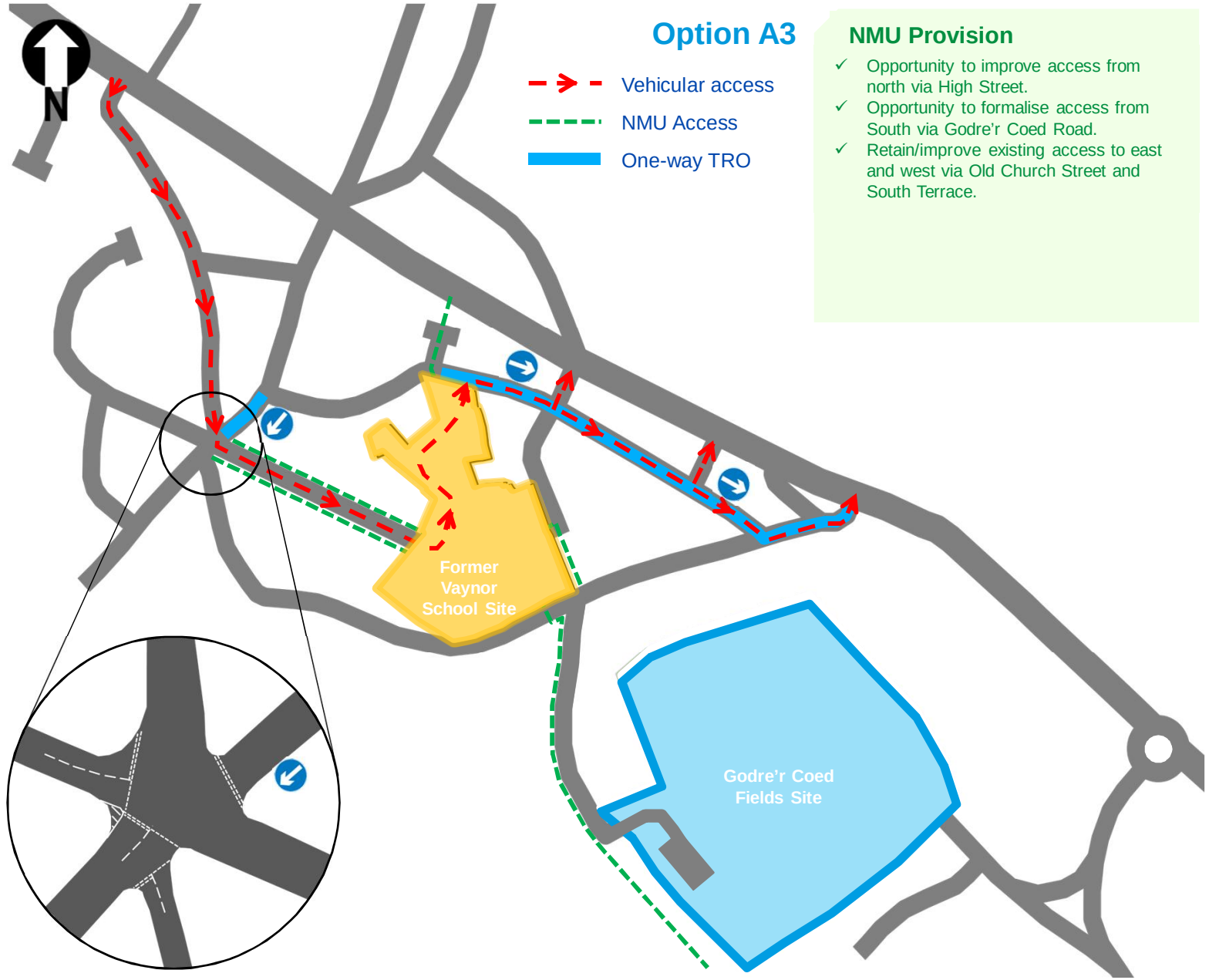
Constraints

- × Requires new access/egress.
- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × Limited opportunity for new site egress to the south due to topography of site.
- × On-street parking limiting road space on surrounding network.
- × Acceptability of increased traffic volumes.
- × Diversion to access properties on Pontycapel Road and Godre'r Coed Road.
- × Restricted visibility when exiting site onto Pontycapel Road.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.

Uncertainties

- × Topographical limitations to provide new access/egress to south of site.
- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of rationalising/restricting movements at six-arm junction.
- × Acceptability of increased traffic volumes.
- × Uncertainty of potential to remove bounding wall of Former Vaynor School to widen Pontycapel Road.

Option A3



NMU Provision

- ✓ Opportunity to improve access from north via High Street.
- ✓ Opportunity to formalise access from South via Godre'r Coed Road.
- ✓ Retain/improve existing access to east and west via Old Church Street and South Terrace.

Opportunities

- ✓ Utilise existing site access/egress to west.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Provide dedicated NMU access to site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Provide dedicated pick-up/drop-off area.
- ✓ Improve footway network surrounding site.
- ✓ Improve conditions for existing users.
- ✓ Potential to widen Pontycapel Road subject to acquiring third party land.

Constraints

- × Requires new access/egress.
- × Restricted width of highway boundary.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × On-street parking limiting road space on surrounding network.
- × Acceptability of increased traffic volumes.
- × Diversion to access properties on Holford Street.
- × Potential for queuing and increased parking demand on South Terrace and Holford Street during drop-off/pick up.
- × Restricted visibility when exiting site onto Holford Street.
- × Potential for queuing and increased parking demand on surrounding streets during drop-off/pick-up.

Uncertainties

- × Acceptability of one-way Traffic Regulation Order.
- × Acceptability of rationalising/restricting movements at six-arm junction.
- × Acceptability of increased traffic volumes.

Appendix B

Option B1

NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.

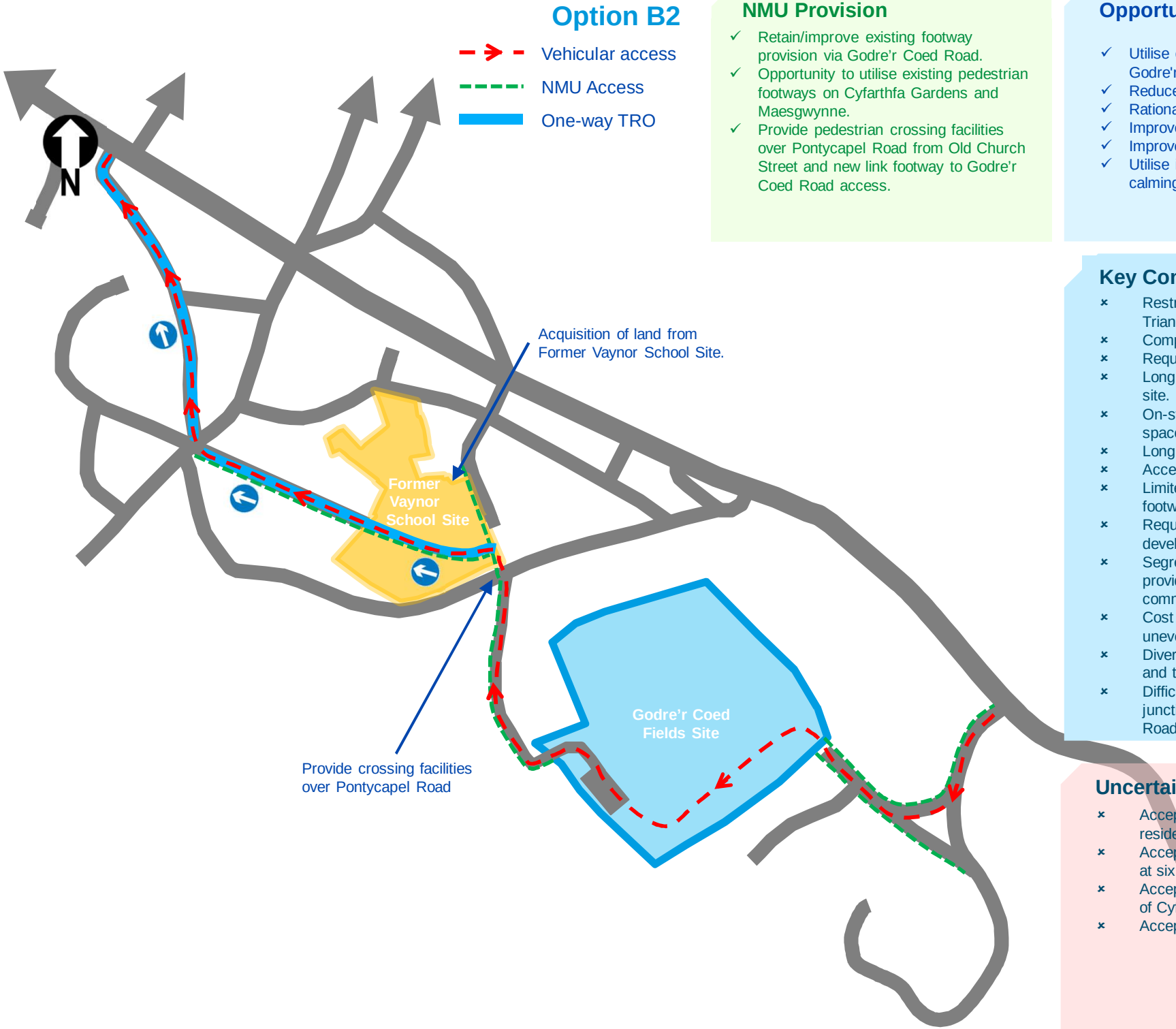
Key Constraints

- × Restricted width of highway boundary on the Triangle, Pontycapel Road and Godre'r Coed Road.
- × Complex six-arm junction arrangement
- × Requires one-way Traffic Regulation Order
- × Long and indirect diversion to access proposed site.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Long and indirect route to site.
- × Acceptability of increased traffic volumes.
- × Limited opportunity to widen and/or improve footway provision.
- × Diversion to access properties on Pontycapel Road and the Triangle.
- × One-way Traffic Regulation Order on Godre'r Coed Road would cause long diversion for access to residential properties.
- × Difficulty in restricting right turn movements at junction of Godre'r Coed Road with Pontycapel Road.

Uncertainties

- × Acceptability of one-way TRO, particularly for residents of Pontycapel Road and the Triangle.
- × Acceptability of rationalising/restricting movements at six arm junction.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.
- × Uncertainty of potential to remove bounding wall of Former Vaynor School to widen Pontycapel Road.

Option B2



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street and new link footway to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.

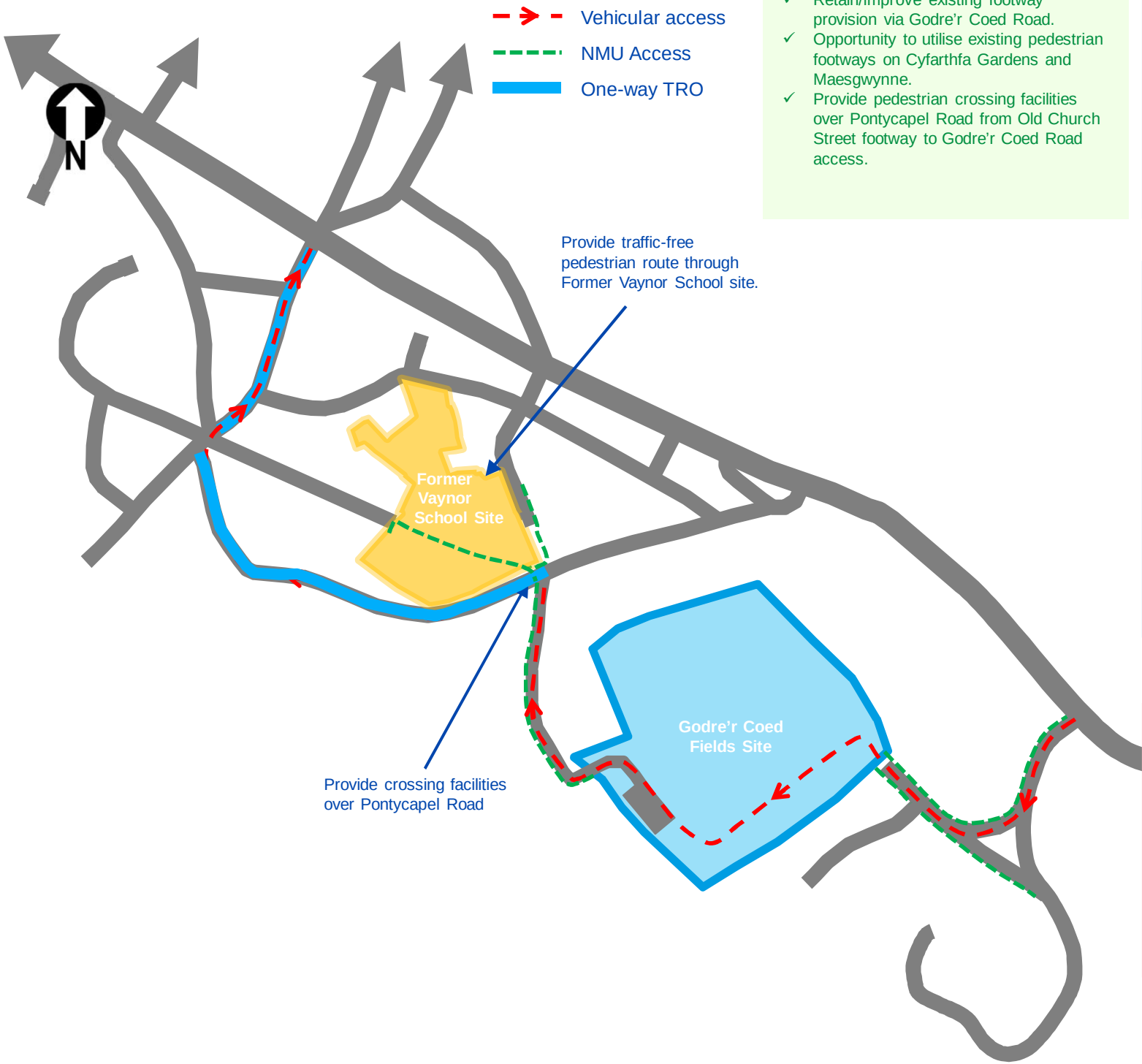
Key Constraints

- × Restricted width of highway boundary on the Triangle, South Terrace and Godre'r Coed Road.
- × Complex six-arm junction arrangement
- × Requires one-way Traffic Regulation Order
- × Long and indirect diversion to access proposed site.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Long and indirect route to site.
- × Acceptability of increased traffic volumes.
- × Limited opportunity to widen and/or improve footway provision.
- × Requires acquisition of land outside of development boundary.
- × Segregation of Former School Site which could be provided as alternative recreational green space for community.
- × Cost of construction of new highway through given uneven topography of former Vaynor School site.
- × Diversion to access to properties on South Terrace and the Triangle.
- × Difficulty in restricting turning movements at junction of Godre'r Coed Road with Pontycapel Road.

Uncertainties

- × Acceptability of one-way TRO, particularly for residents of South Terrace and the Triangle,
- × Acceptability of rationalising/restricting movements at six arm junction.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.

Option B3



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.

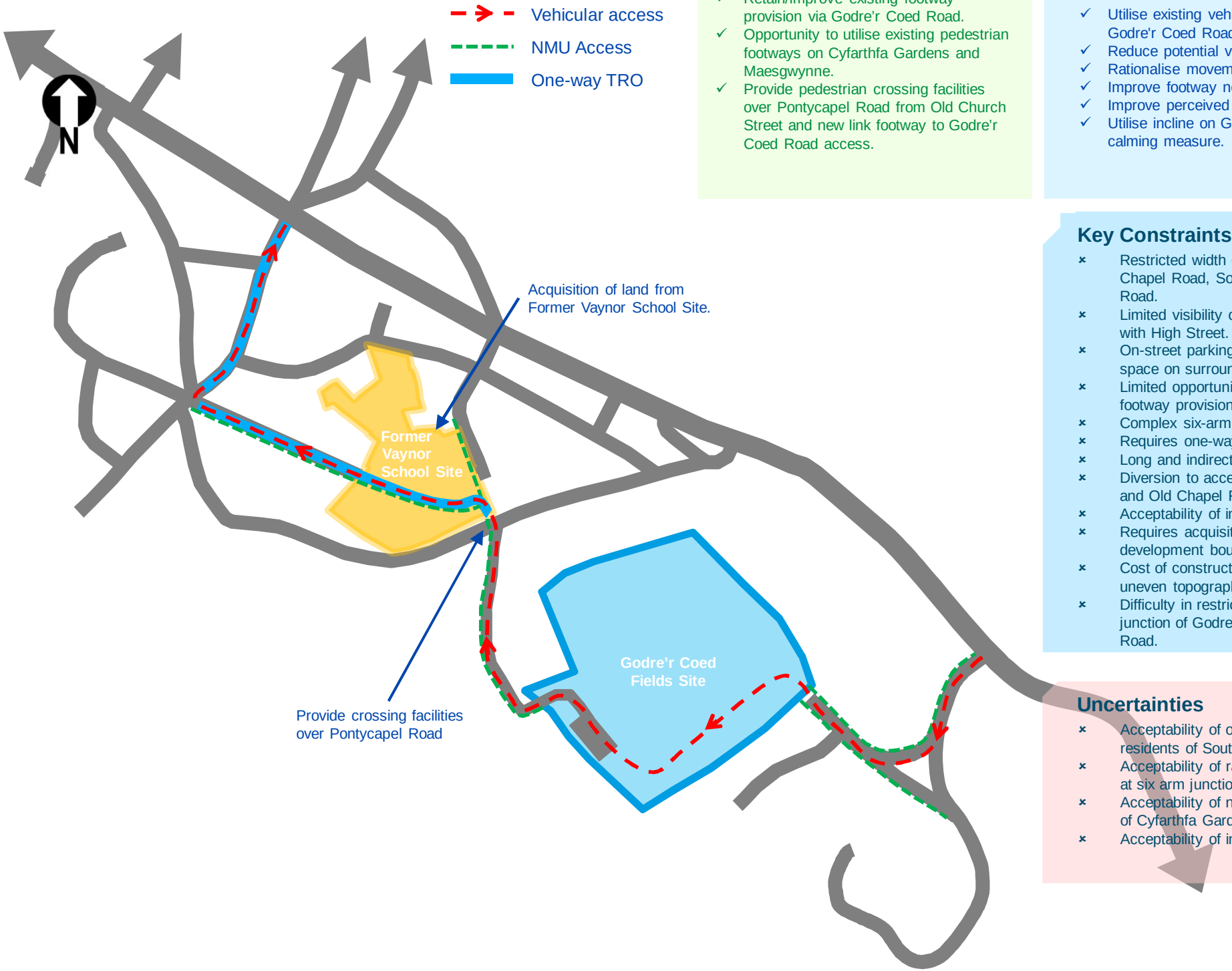
Key Constraints

- × Restricted width of highway boundary on Old Chapel Road, Pontycapel Road and Godre'r Coed Road.
- × Limited visibility on Old Chapel Road at junction with High Street.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × Requires one-way Traffic Regulation Order.
- × Long and indirect route to/from site.
- × Diversion for residents of Pontycapel Road and Old Chapel Road.
- × Acceptability of increased traffic volumes.
- × Difficulty in restricting right turn movements at junction of Godre'r Coed Road with Pontycapel Road.

Uncertainties

- × Acceptability of one-way TRO, particularly for residents on Pontycapel Road and Old Chapel Road.
- × Acceptability of rationalising/restricting movements at six arm junction.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.
- × Uncertainty of potential to remove bounding wall of Former Vaynor School to widen Pontycapel Road.

Option B4



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street and new link footway to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Reduce potential vehicle conflict on local network.
- ✓ Rationalise movements at six-arm junction.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.

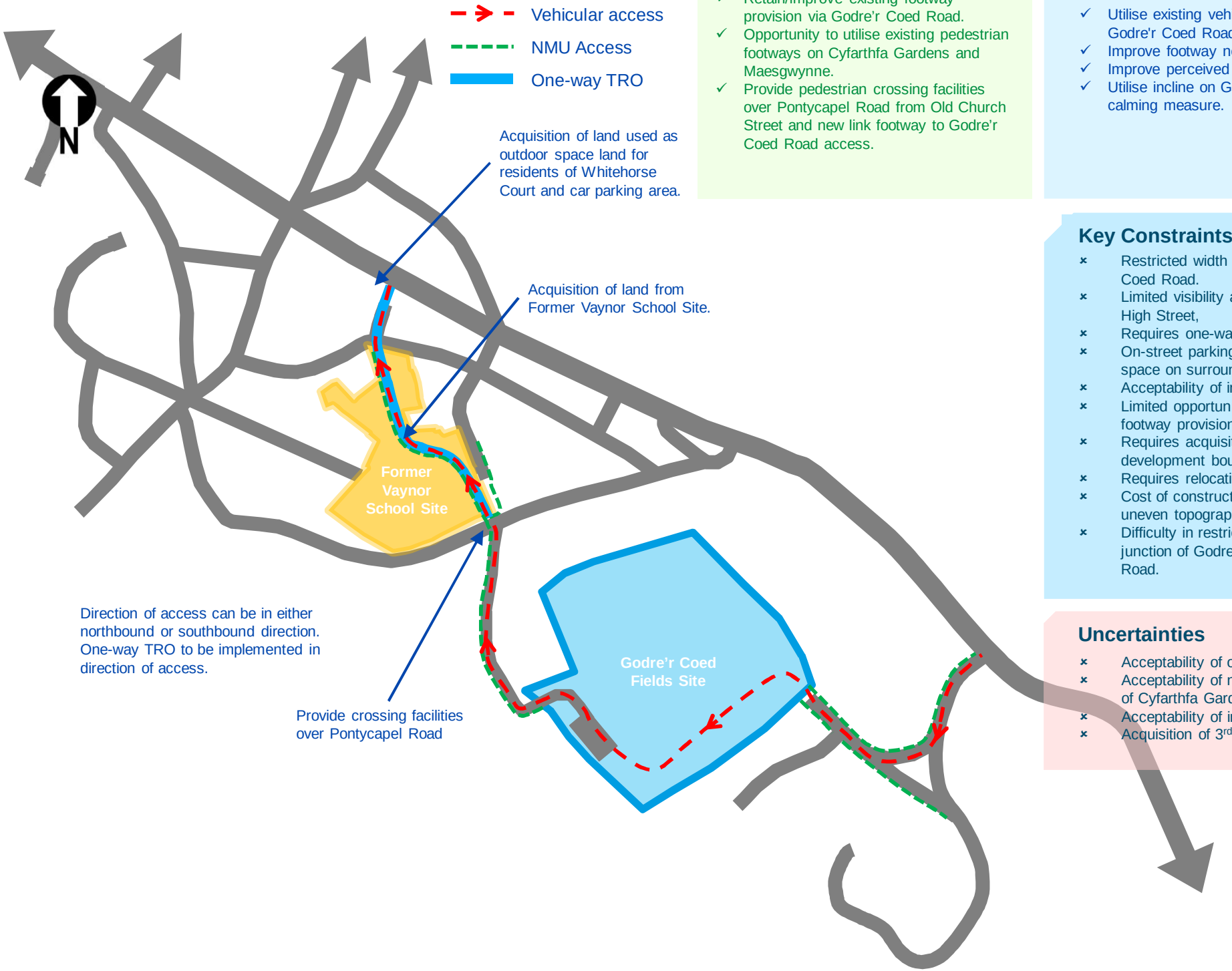
Key Constraints

- × Restricted width of highway boundary on Old Chapel Road, South Terrace, and Godre'r Coed Road.
- × Limited visibility on Old Chapel Road at junction with High Street.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Limited opportunity to widen and/or improve footway provision.
- × Complex six-arm junction arrangement.
- × Requires one-way Traffic Regulation Order
- × Long and indirect route to/from site.
- × Diversion to access to properties on South Terrace and Old Chapel Road.
- × Acceptability of increased traffic volumes.
- × Requires acquisition of land outside of development boundary.
- × Cost of construction of new highway through given uneven topography of former Vaynor School site.
- × Difficulty in restricting turning movements at junction of Godre'r Coed Road with Pontycapel Road.

Uncertainties

- × Acceptability of one-way TRO, particularly for residents of South Terrace and Old Chapel Road.
- × Acceptability of rationalising/restricting movements at six arm junction.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.

Option B5



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street and new link footway to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.

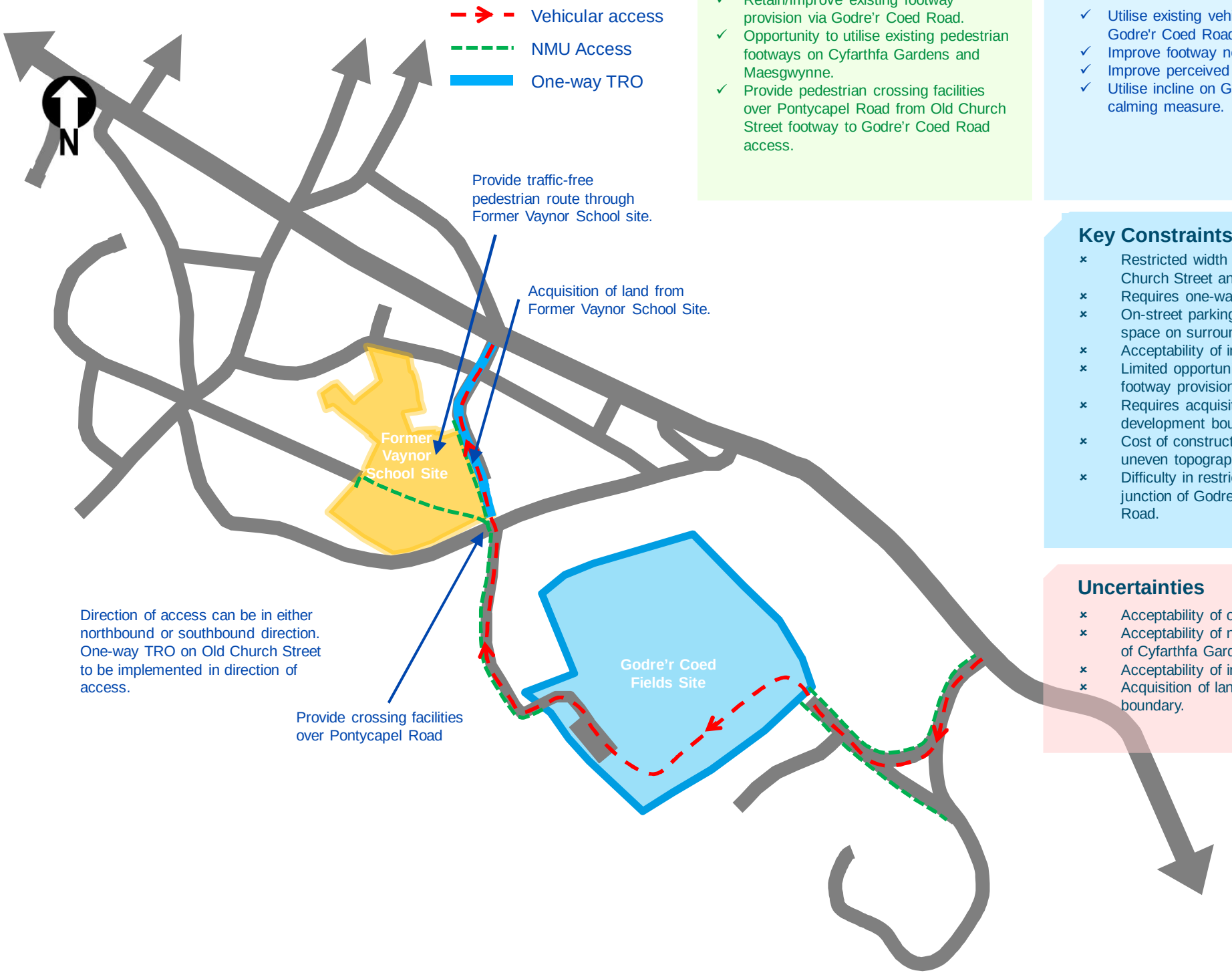
Key Constraints

- × Restricted width of highway boundary on Godre'r Coed Road.
- × Limited visibility at junction with Holford Street and High Street,
- × Requires one-way Traffic Regulation Order.
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Acceptability of increased traffic volumes.
- × Limited opportunity to widen and/or improve footway provision.
- × Requires acquisition of land outside of development boundary.
- × Requires relocation of bus stop on High Street.
- × Cost of construction of new highway through given uneven topography of former Vaynor School site.
- × Difficulty in restricting turning movements at junction of Godre'r Coed Road with Pontycapel Road.

Uncertainties

- × Acceptability of one-way TRO.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.
- × Acquisition of 3rd party land.

Option B6



NMU Provision

- ✓ Retain/improve existing footway provision via Godre'r Coed Road.
- ✓ Opportunity to utilise existing pedestrian footways on Cyfarthfa Gardens and Maesgwynne.
- ✓ Provide pedestrian crossing facilities over Pontycapel Road from Old Church Street footway to Godre'r Coed Road access.

Opportunities

- ✓ Utilise existing vehicle site access/egress from Godre'r Coed Road.
- ✓ Improve footway network surrounding site.
- ✓ Improve perceived safety of pedestrians.
- ✓ Utilise incline on Godre'r Coed Road as traffic calming measure.

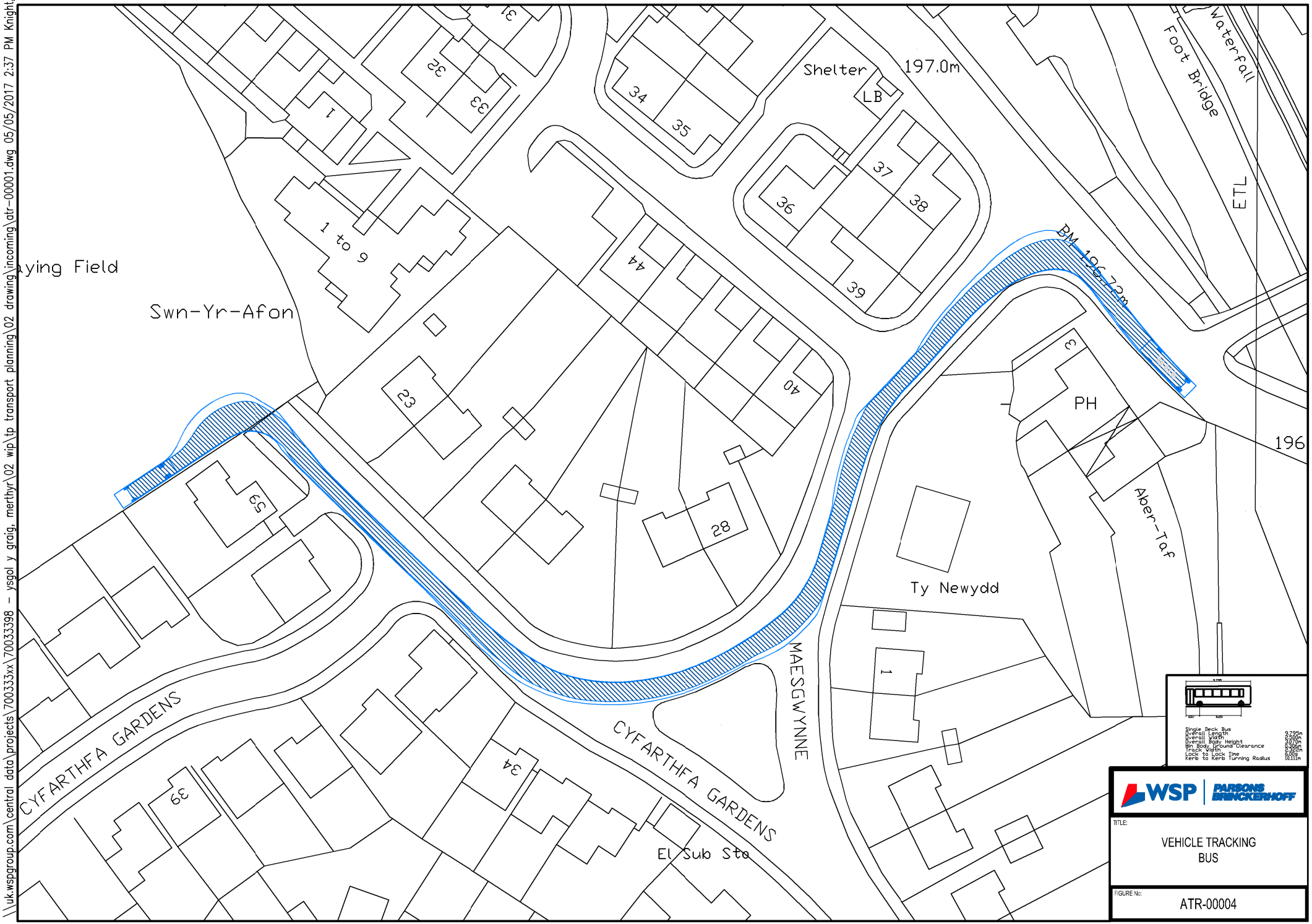
Key Constraints

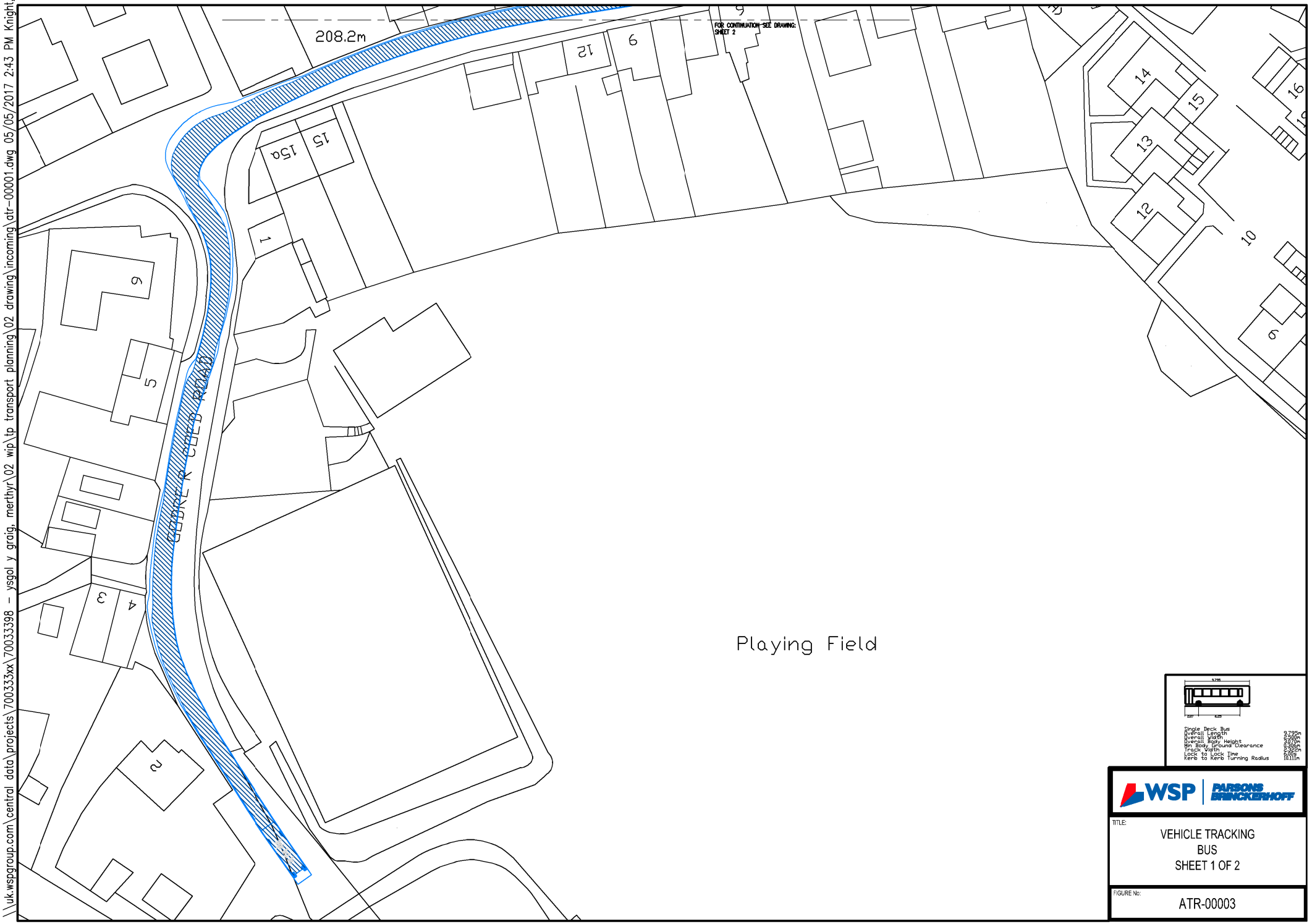
- × Restricted width of highway boundary on Old Church Street and Godre'r Coed Road.
- × Requires one-way Traffic Regulation Order
- × On-street parking and refuse bins limiting road space on surrounding road network.
- × Acceptability of increased traffic volumes.
- × Limited opportunity to widen and/or improve footway provision.
- × Requires acquisition of land outside of development boundary.
- × Cost of construction of new highway through given uneven topography of former Vaynor School site.
- × Difficulty in restricting turning movements at junction of Godre'r Coed Road with Pontycapel Road.

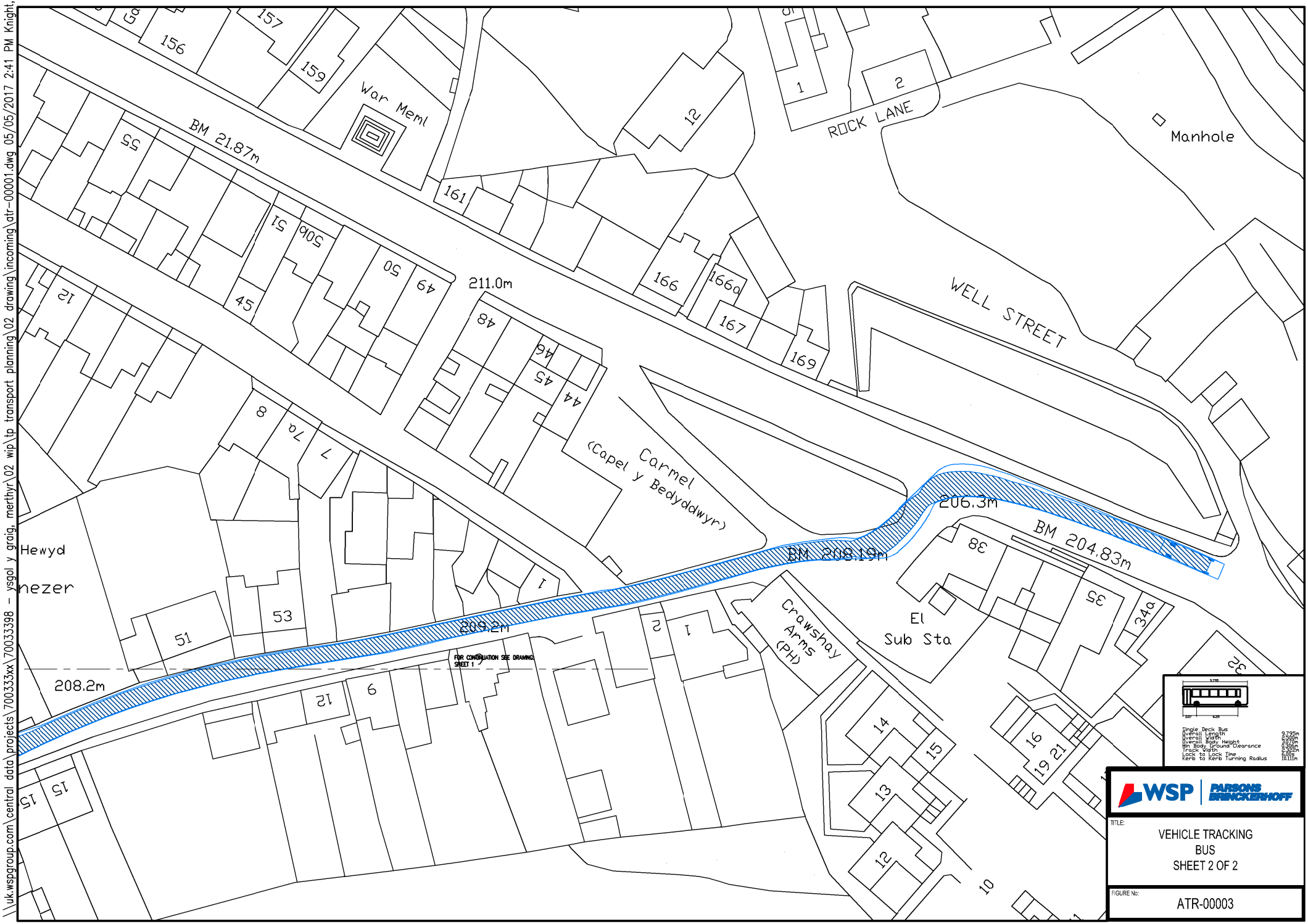
Uncertainties

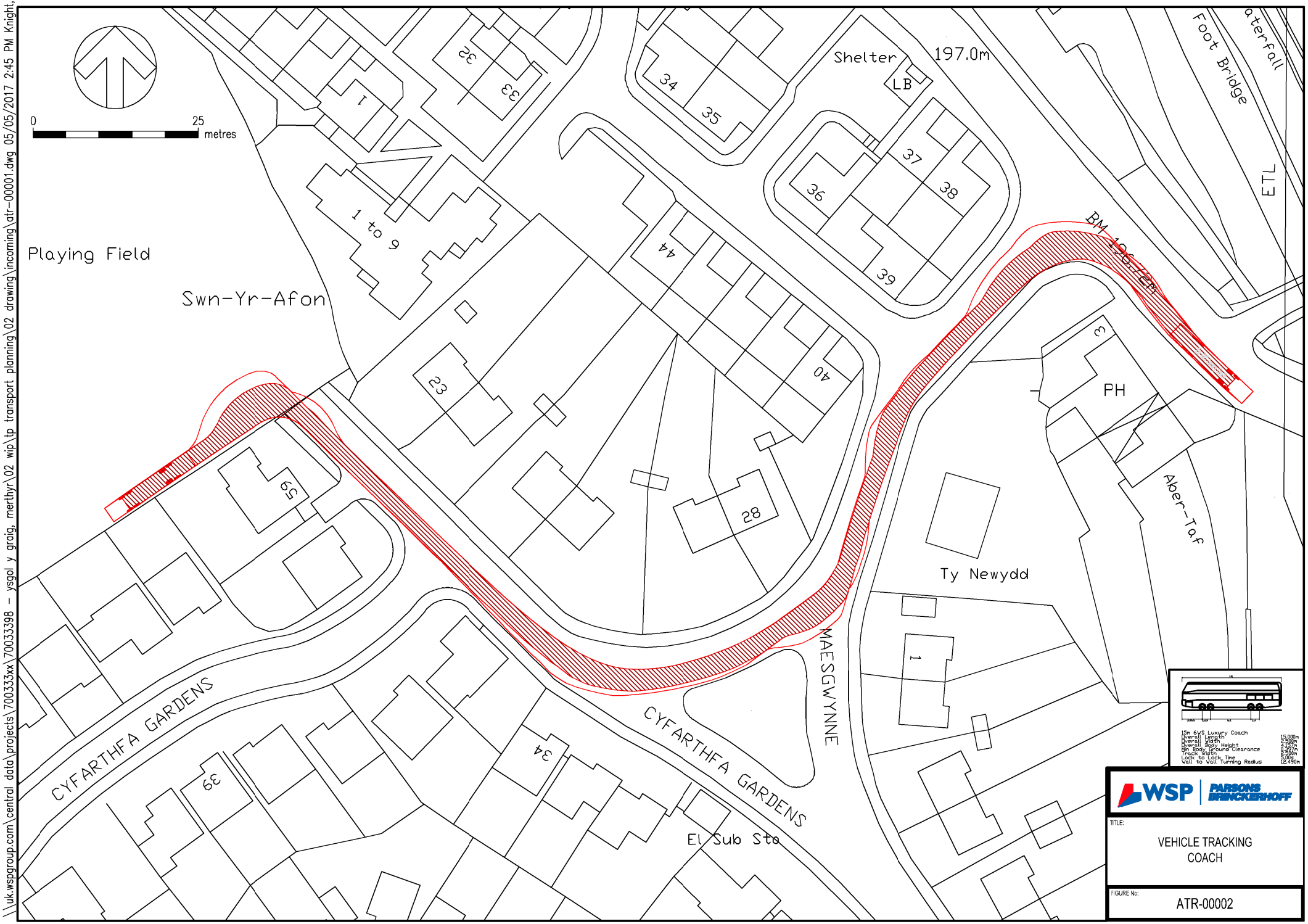
- × Acceptability of one-way TRO.
- × Acceptability of new access/egress from residents of Cyfarthfa Gardens and Maesgwynne.
- × Acceptability of increased traffic volumes.
- × Acquisition of land outside of development boundary.

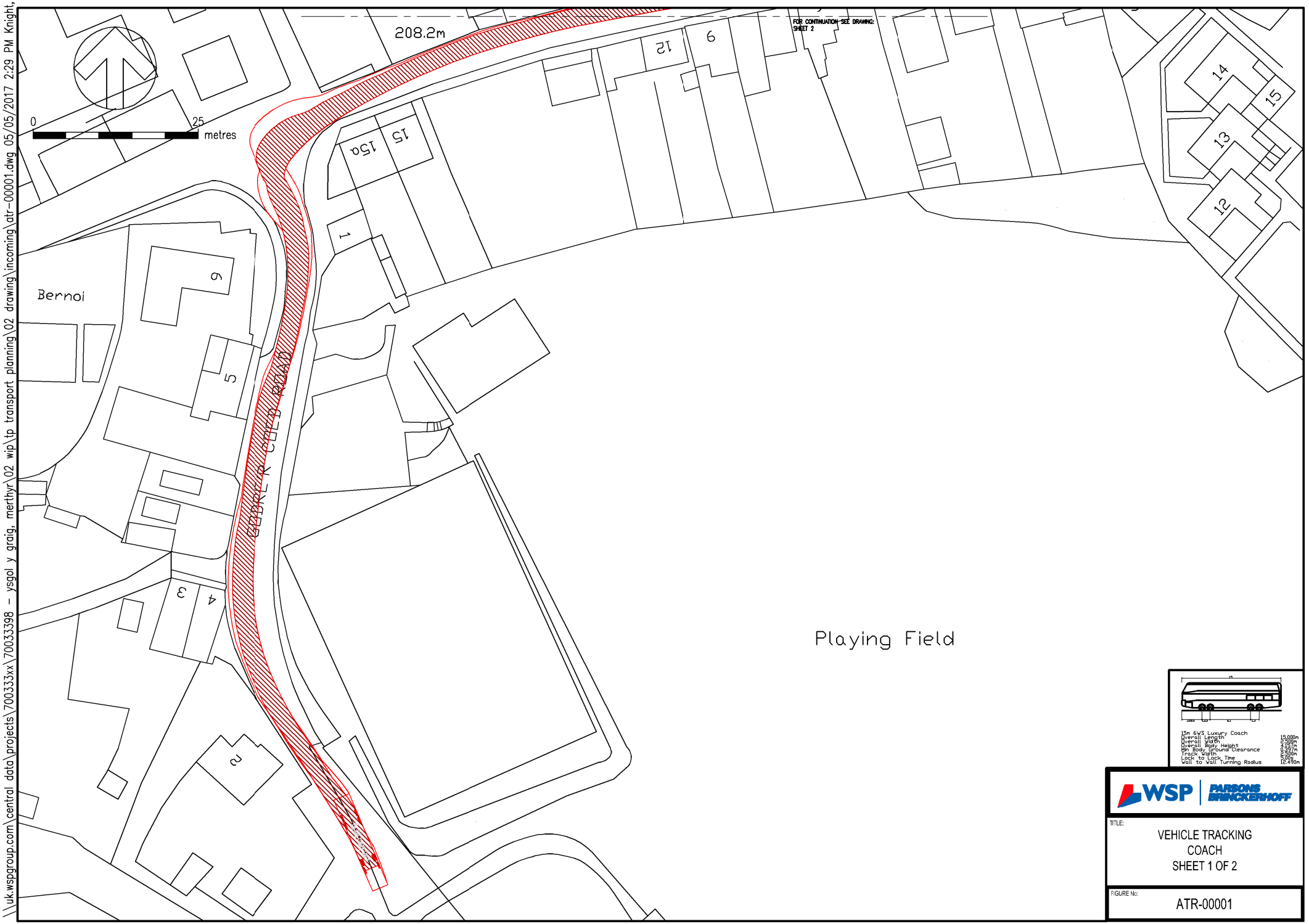
Appendix C

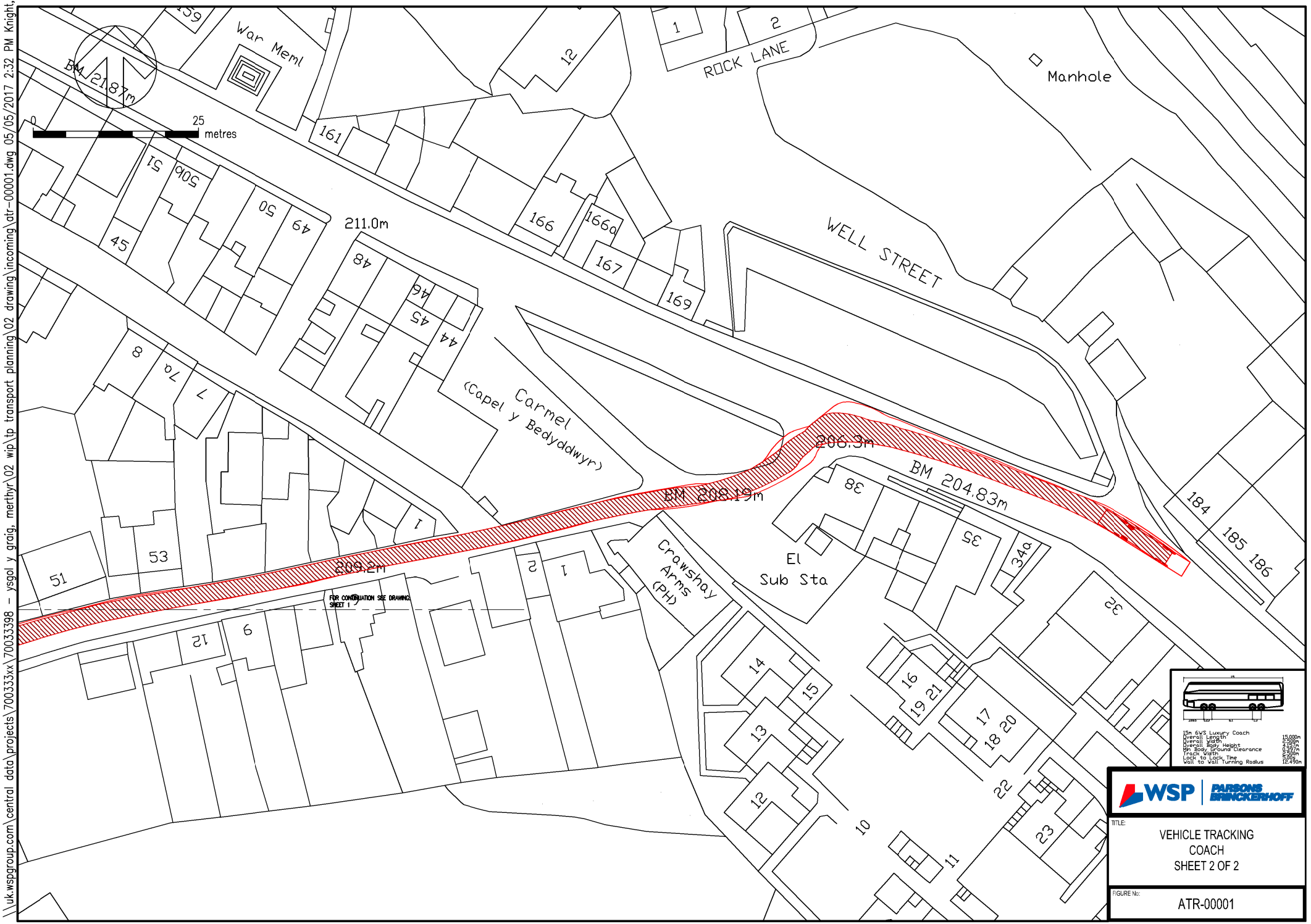


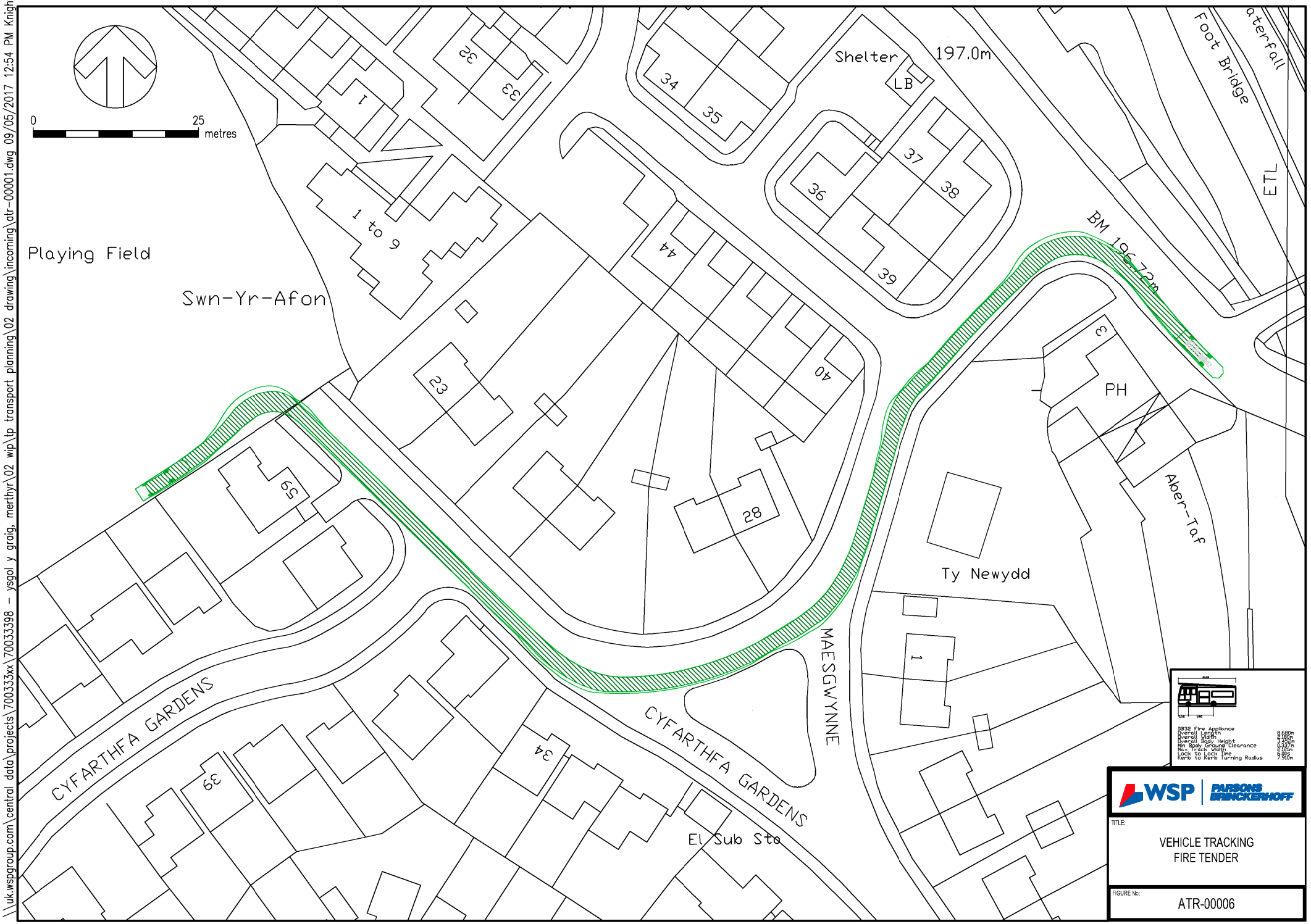












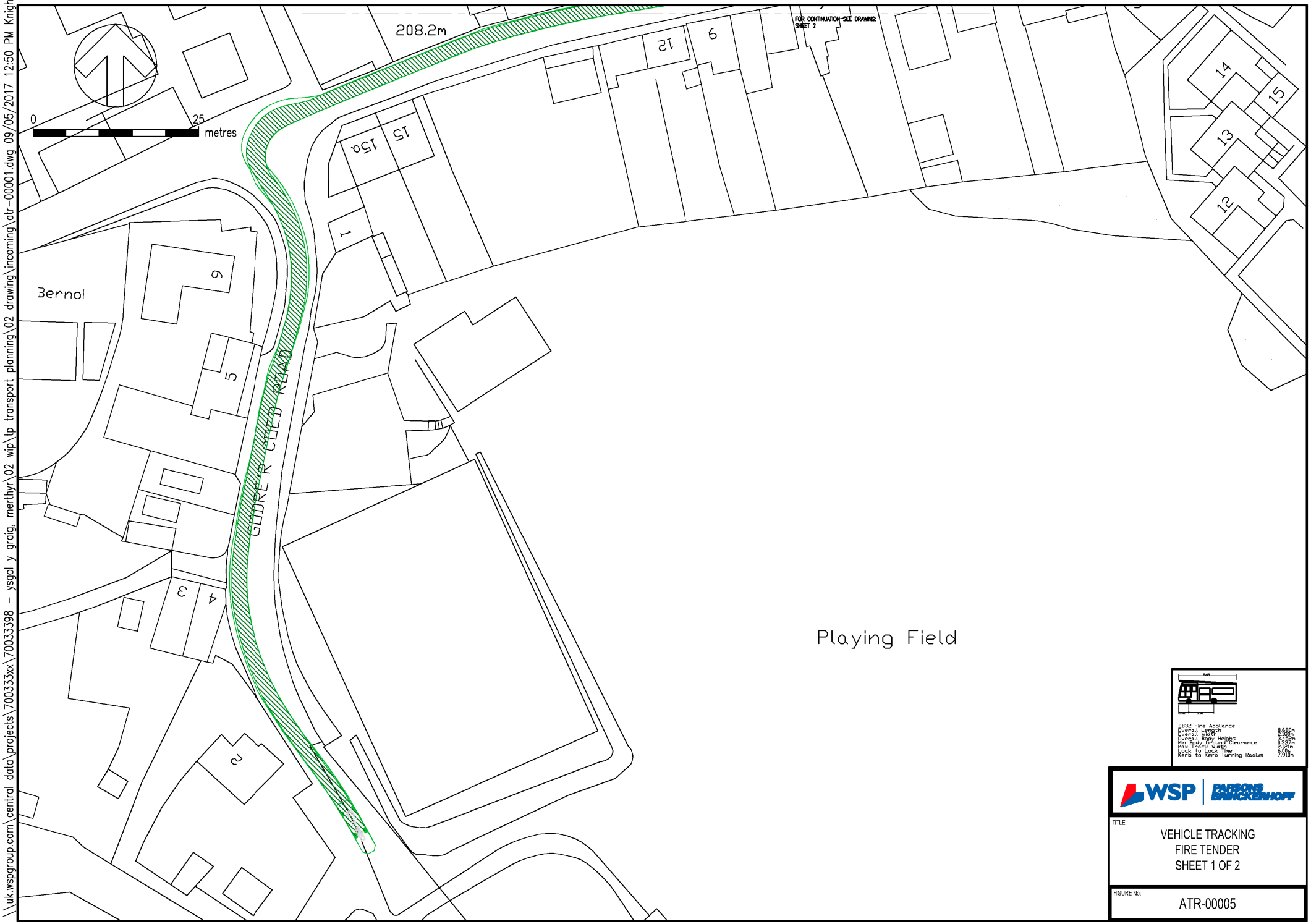
WSP | PARSONS BRINCKERHOFF

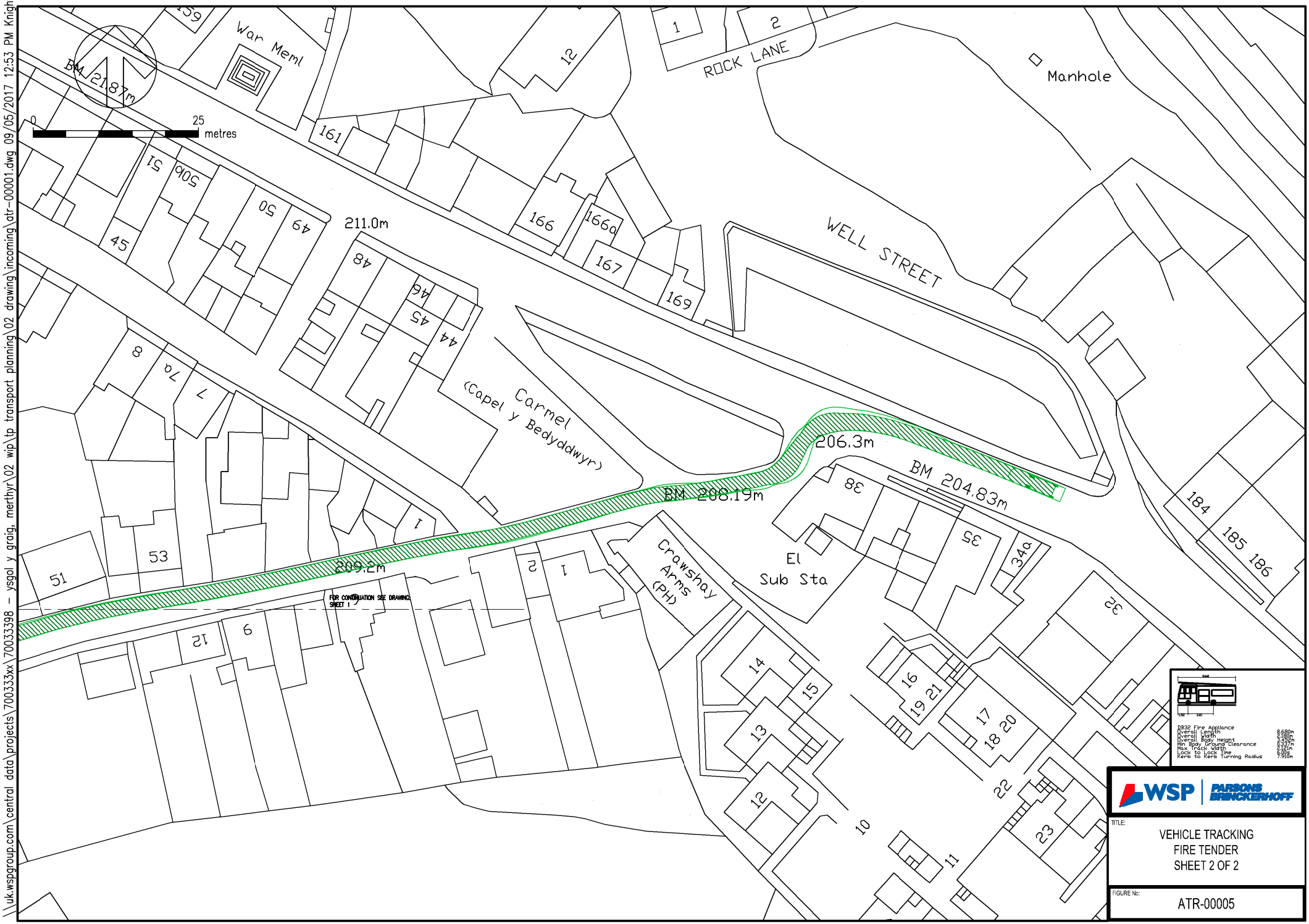
TITLE:

VEHICLE TRACKING
FIRE TENDER

FIGURE No:

ATR-00006

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0
25
metres
BM 218.7m
War Meml
159
161
12
1
2
ROCK LANE
Manhole
WELL STREET
211.0m
166
166a
167
169
45
49
50
50a
51
48
46
45
44
Carmel
(Capel y Bedyddwyr)
206.3m
BM 208.19m
BM 204.83m
209.2m
8
7a
7
1
53
51
FOR CONTINUATION SEE DRAWING SHEET 1
2
1
Crawshay Arms (PH)
El Sub Sta
38
35
34a
32
184
185
186
12
9
14
15
13
12
10
11
16
19
21
17
18
20
22
23
DB32 Fire Appliance
Overall Length 8.680m
Overall Width 2.150m
Overall Body Height 3.340m
Min Body Ground Clearance 0.277m
Max Track Width 2.151m
Lock to Lock Time 6.00s
Kerb to Kerb Turning Radius 7.910m
WSP
PARSONS BRINCKERHOFF
TITLE:
VEHICLE TRACKING
FIRE TENDER
SHEET 2 OF 2
FIGURE No:
ATR-00005

0 10 metres

212.2m

209.8m

21 to 34

209.8m

Bernoi

DB32 Fire Appliance
Overall Length 8.680m
Overall Width 2.180m
Overall Body Height 3.432m
Min Body Ground Clearance 0.237m
Max Track Width 2.181m
Lock to Lock Time 6.00s
Kerb to Kerb Turning Radius 7.910m

WSP | PARSONS BRINCKERHOFF

TITLE:

VEHICLE TRACKING
FIRE TENDER

FIGURE No:

ATR-00007

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0
10
metres

212.2m

209.8m

21 to 34

209.8m

Bernoi

DB32 Refuse Vehicle

Overall Length	7.900m
Overall Width	2.400m
Overall Body Height	3.183m
Min Body Ground Clearance	0.388m
Max Track Width	2.400m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	9.625m

WSP | PARSONS BRINCKERHOFF

TITLE:

VEHICLE TRACKING
REFUSE VEHICLE

FIGURE No:

ATR-00008

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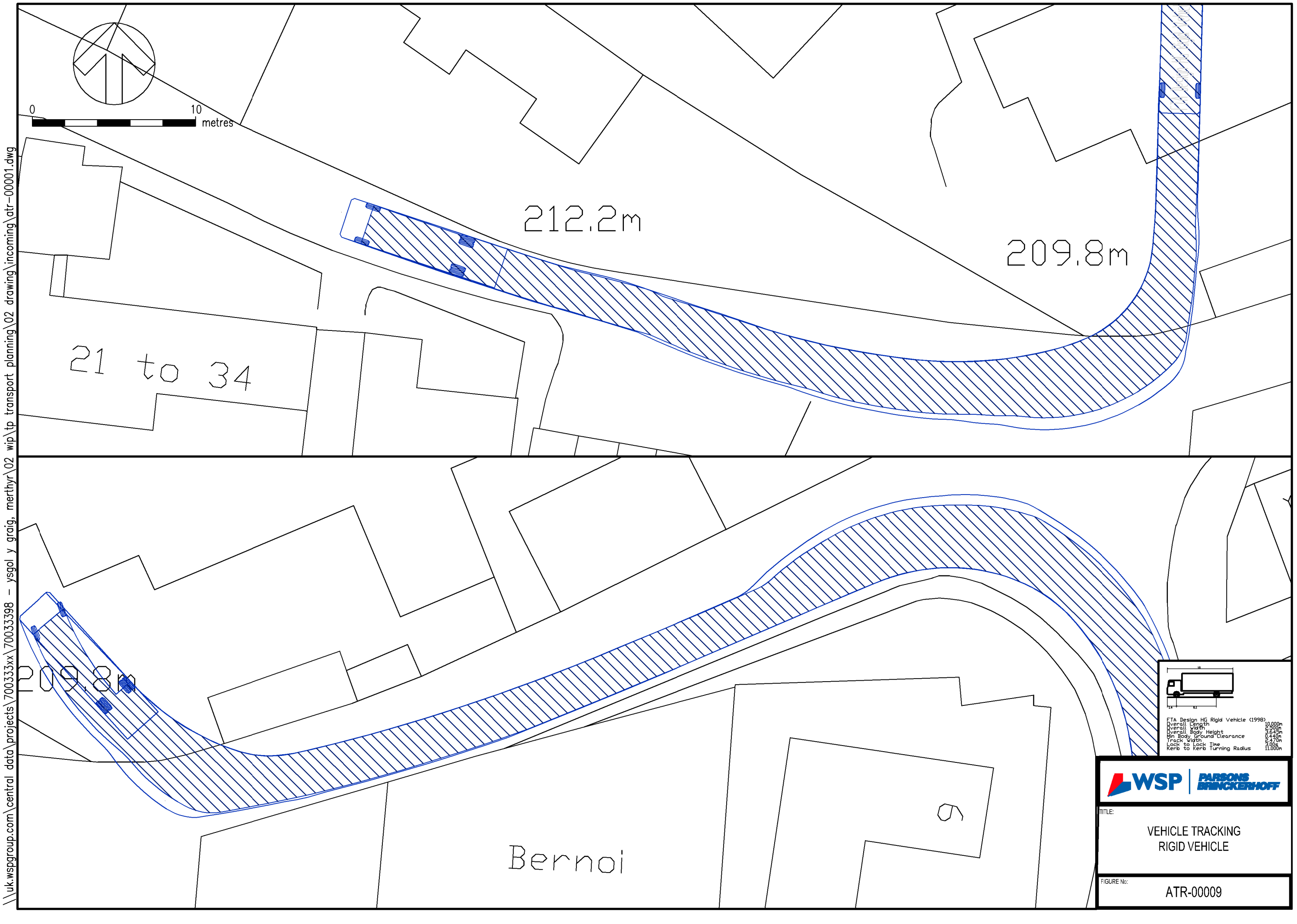

0
10
metres
212.2m
209.8m
21 to 34
209.8m
Bernoi
FTA Design HG Rigid Vehicle (1998)
Overall Length 10.000m
Overall Width 2.500m
Overall Body Height 2.845m
Min Body Ground Clearance 0.440m
Track Width 2.470m
Lock to Lock Time 3.00s
Kerb to Kerb Turning Radius 11.000m
WSP
PARSONS BRINCKERHOFF
TITLE:
VEHICLE TRACKING
RIGID VEHICLE
FIGURE No:
ATR-00009
\\uk.wspgroup.com\central data\projects\700333xx\70033398 - ysgol y graig, merthyr\02 wip\tp transport planning\02 drawing\incoming\atr-00001.dwg

0 25 metres

Playing Field

Swn-Yr-Afon

Shelter

LB

197.0m

Foot Bridge

Waterfall

ETL

BM 196.72m

PH

Aber-Taf

Ty Newydd

CYFARTHFA GARDENS

MAESGWYNNE

El Sub Sto

1 to 9

1

23

28

32

33

34

35

36

37

38

39

40

44

59

15m 6WS Luxury Coach

Overall Length	15.000m
Overall Width	2.500m
Overall Body Height	4.197m
Min Body Ground Clearance	0.397m
Track Width	2.500m
Lock to Lock Time	8.00s
Wall to Wall Turning Radius	12.490m

WSP | PARSONS BRINCKERHOFF

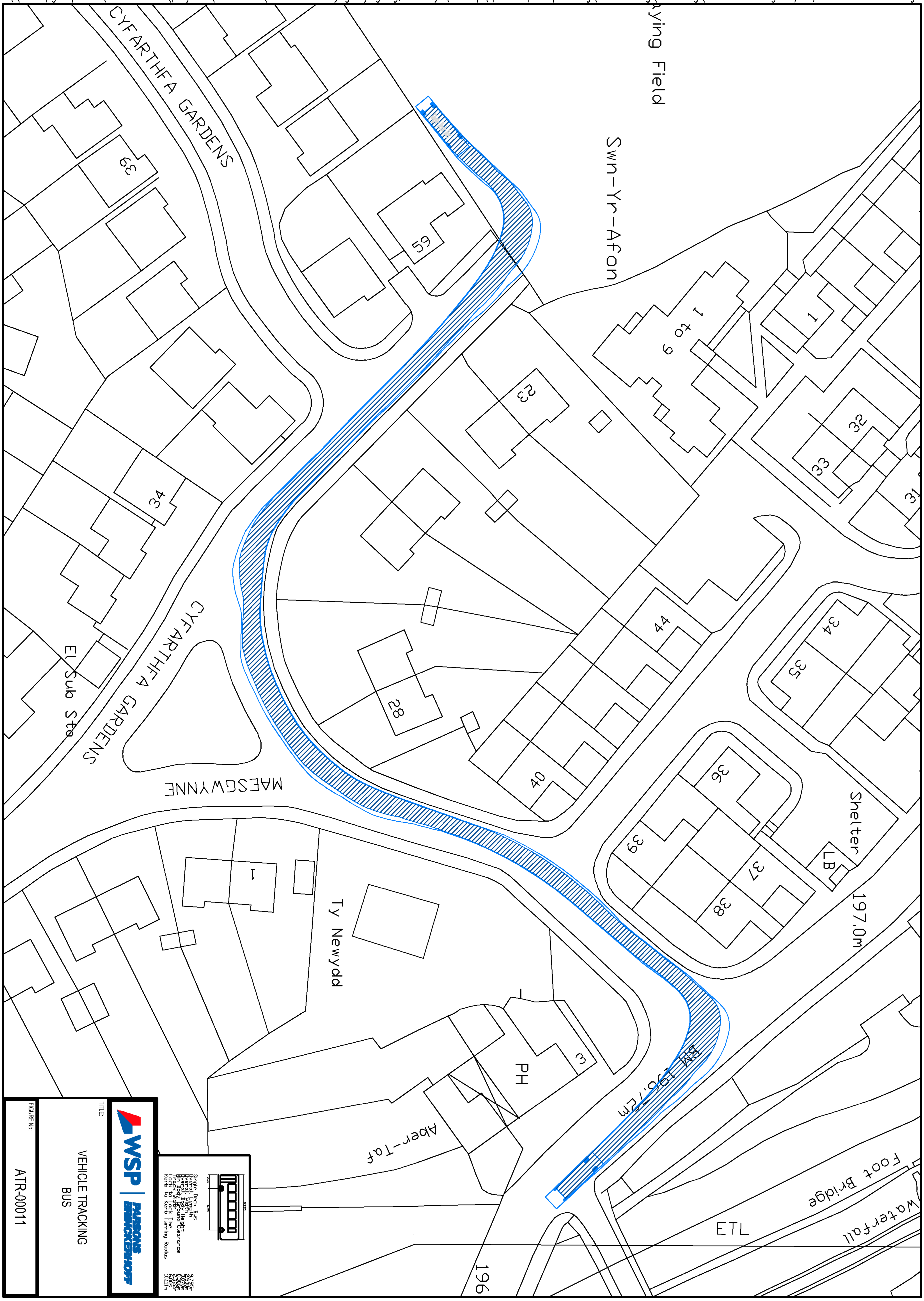
TITLE:

VEHICLE TRACKING
COACH

FIGURE No:

ATR-00010

\\uk.wspgroup.com\central data\projects\700333xx\70033398 – ysgol y graig, merthyr\02 wip\tp transport planning\02 drawing\incoming\atr-00001.dwg 09/06/2017 3:59 PM Knight, Jor



WSP | PARSONS BRINCKERHOFF

TITLE: VEHICLE TRACKING BUS

FIGURE No: ATR-00011

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0 25 metres

Playing Field

Swn-Yr-Afon

1 to 9

1

32

33

34

35

Shelter

LB

197.0m

36

37

38

39

44

40

23

59

28

Foot Bridge

aterfall

ETL

BM 196.72m

3

PH

Aber-Taf

Ty Newydd

1

MAESGWYNNE

CYFARTHFA GARDENS

CYFARTHFA GARDENS

39

34

El Sub Sta

11B32 Fire Appliance

Overall Length	8.680m
Overall Width	2.180m
Overall Body Height	3.432m
Min Body Ground Clearance	0.237m
Max Track Width	2.161m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	7.910m

WSP | PARSONS BRINCKERHOFF

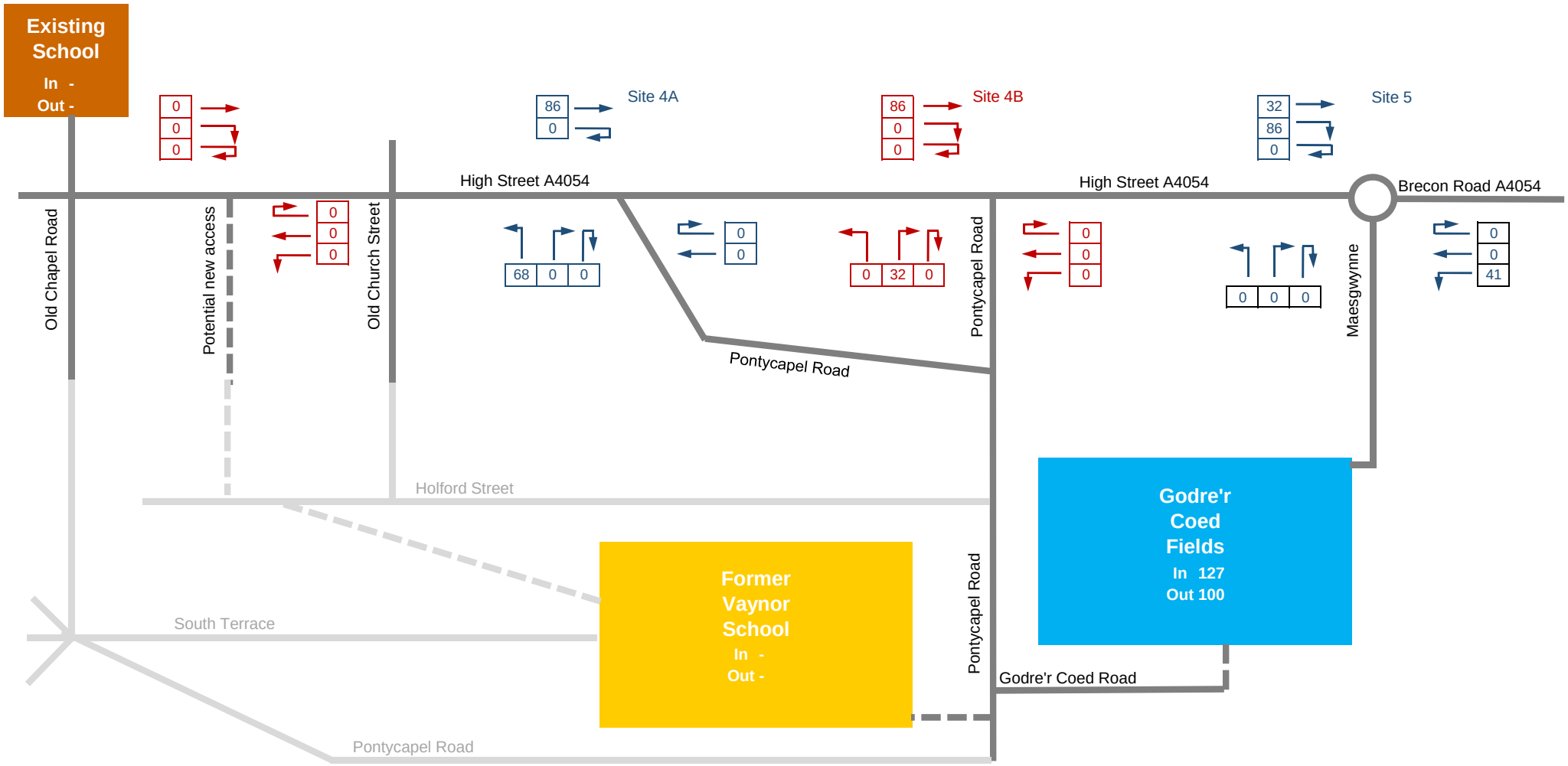
TITLE:

VEHICLE TRACKING
FIRE TENDER

FIGURE No:

ATR-00012

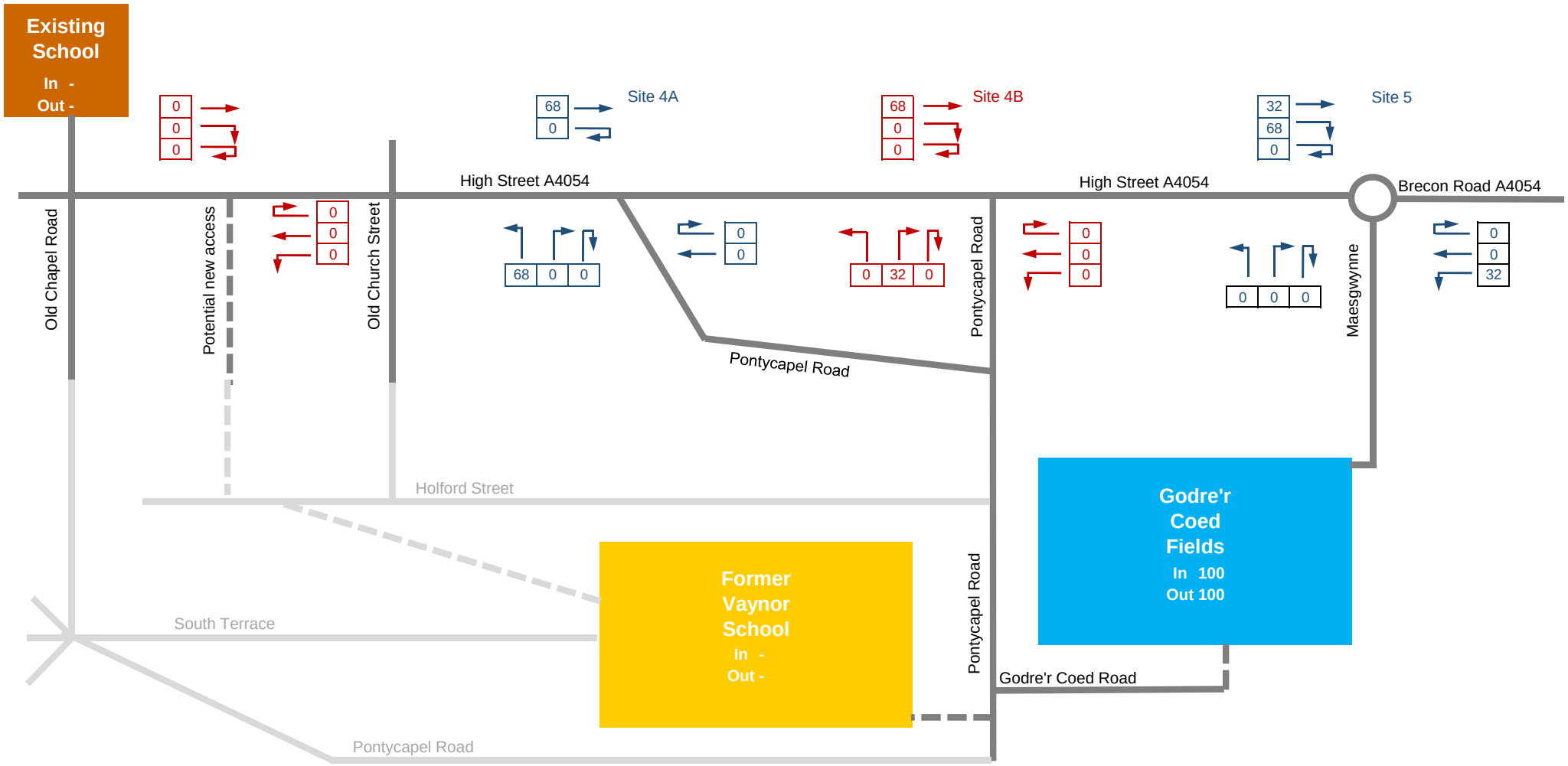
Appendix D



Scenario: **2020, Do something A - development traffic only**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

Ysgol y Graig, Cefn Coed, Merthyr Tydfil
Transport Options Assessment
June 2017

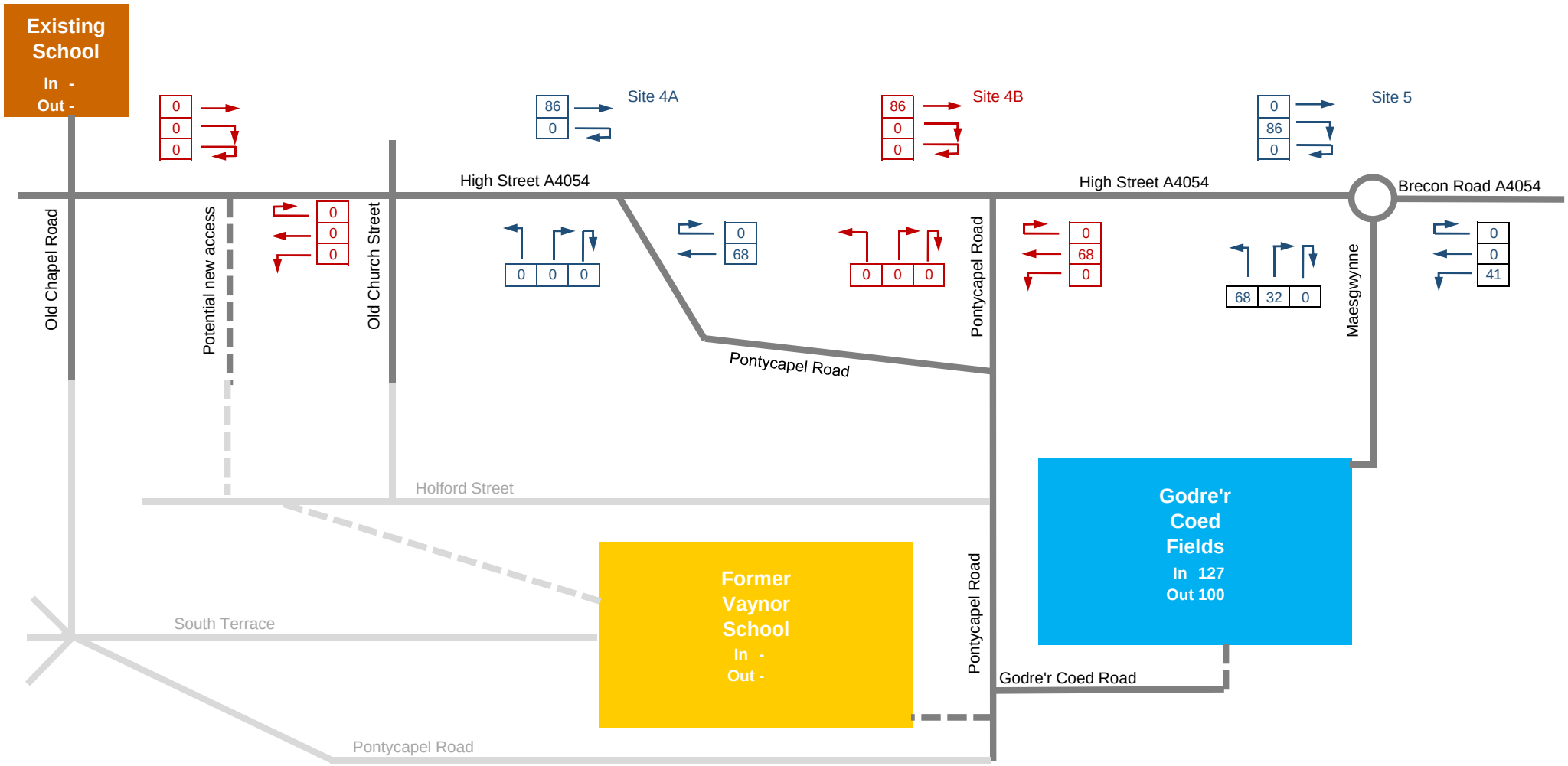
WSP | PARSONS BRINCKERHOFF



Scenario: **2020, Do something A - development traffic only**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

Ysgol y Graig, Cefn Coed, Merthyr Tydfil
Transport Options Assessment
June 2017

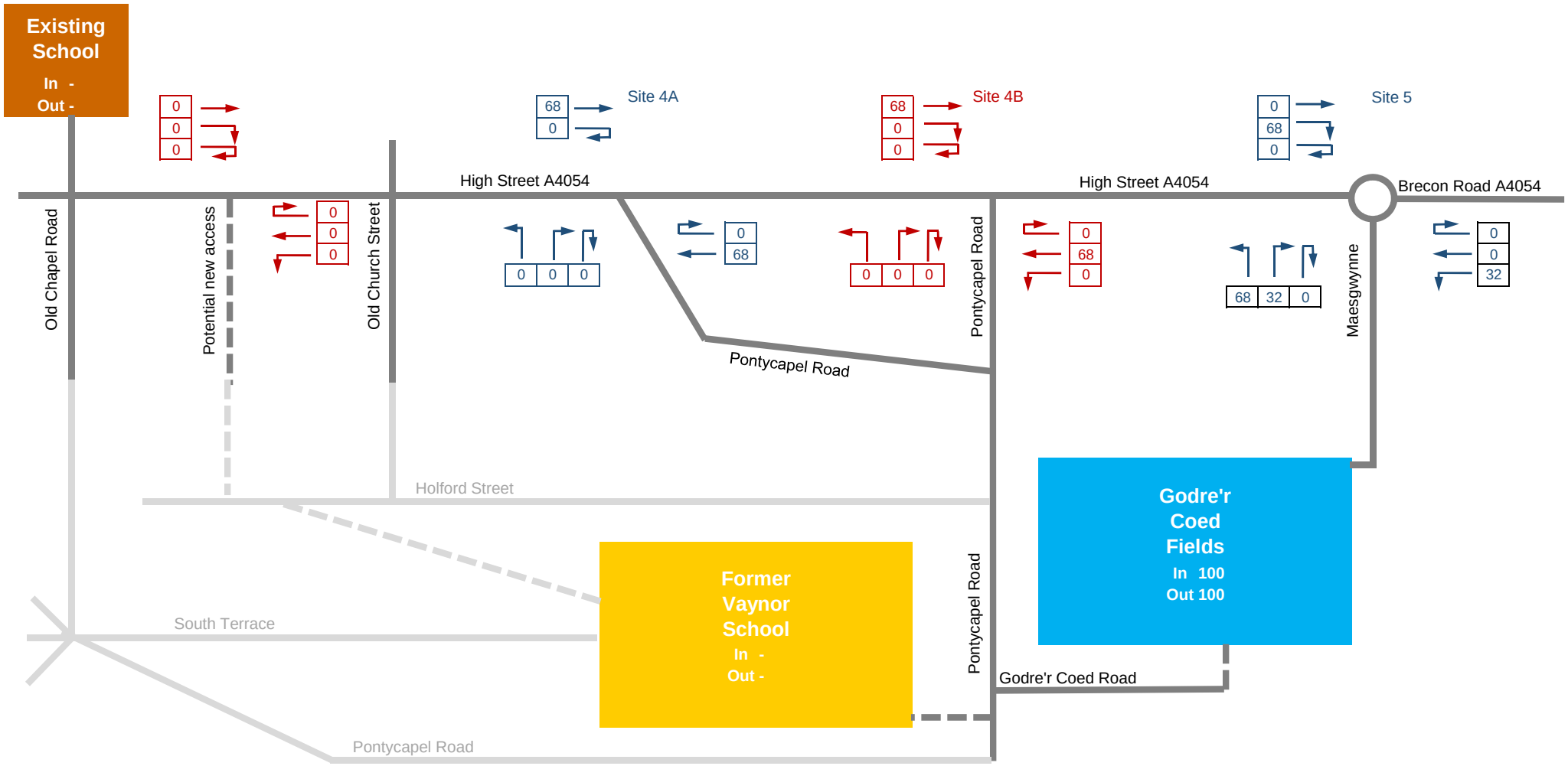
WSP | PARSONS BRINCKERHOFF



Scenario: **2020, Do something B - development traffic only**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

Ysgol y Graig, Cefn Coed, Merthyr Tydfil
Transport Options Assessment
June 2017

WSP | PARSONS BRINCKERHOFF



Scenario: **2020, Do something B - development traffic only**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

Ysgol y Graig, Cefn Coed, Merthyr Tydfil
Transport Options Assessment
June 2017

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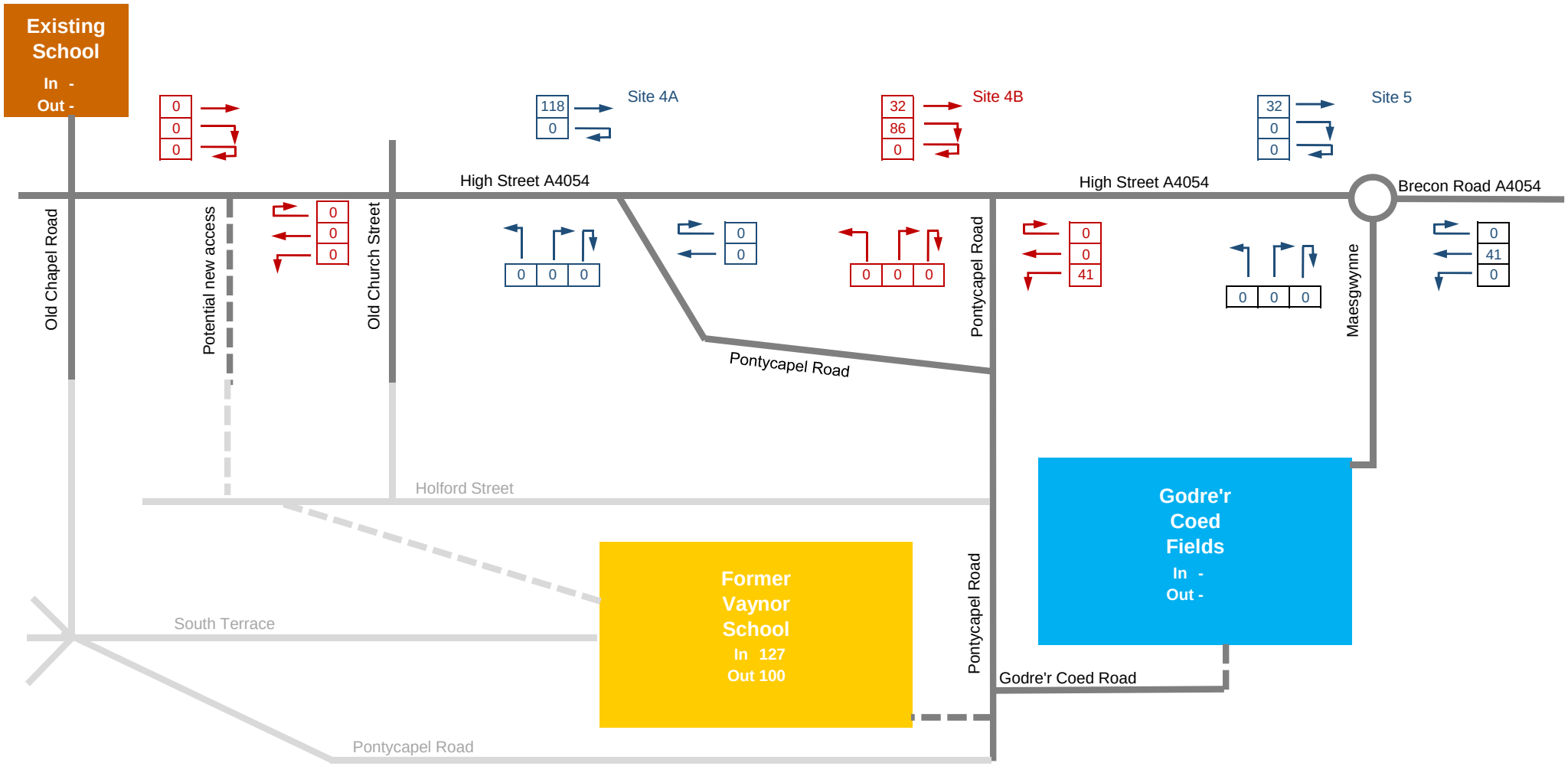

Scenario: **2020, Do something C - development traffic only**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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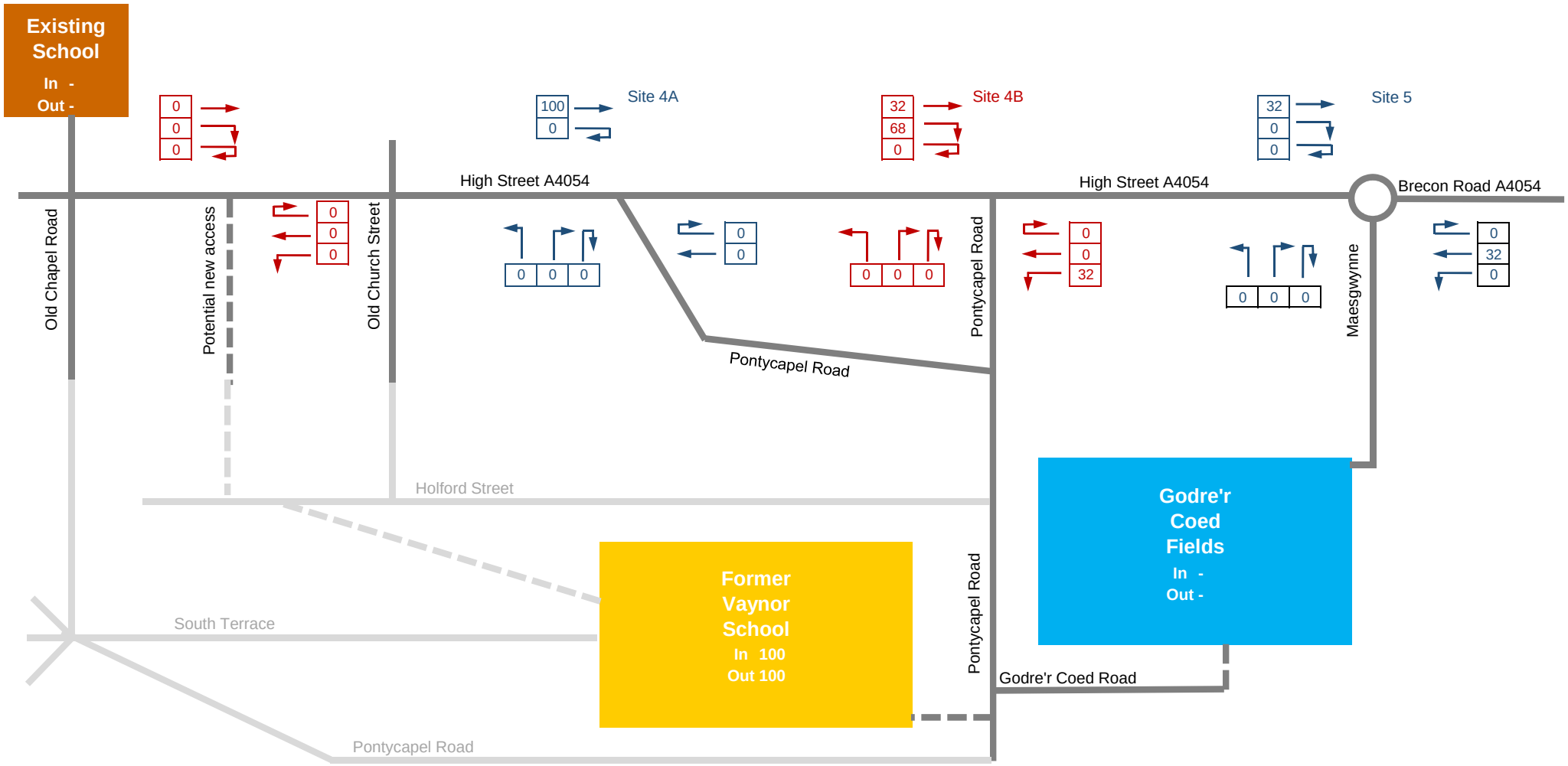

Scenario: **2020, Do something C - development traffic only**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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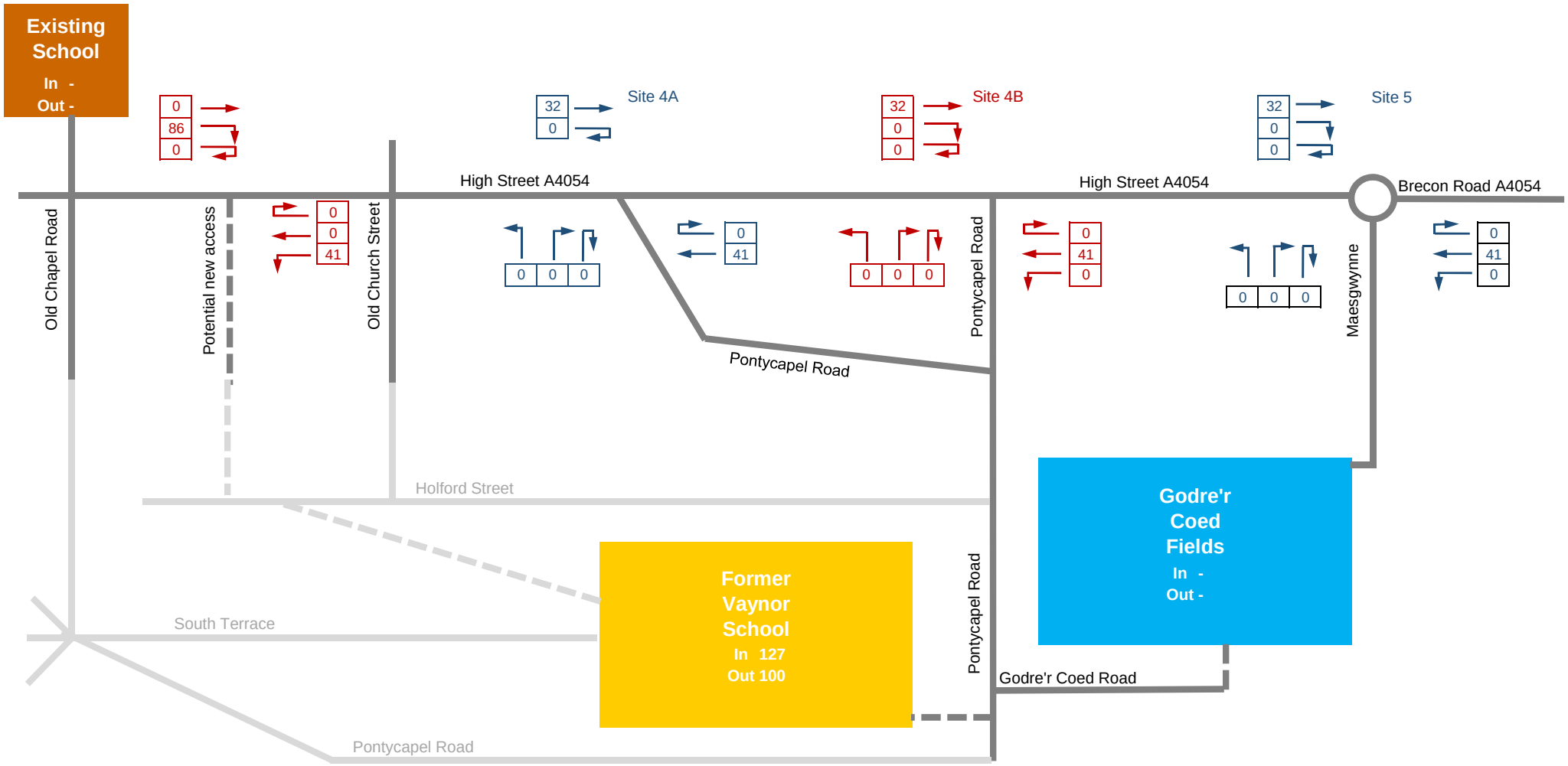

Scenario: **2020, Do something D - development traffic only**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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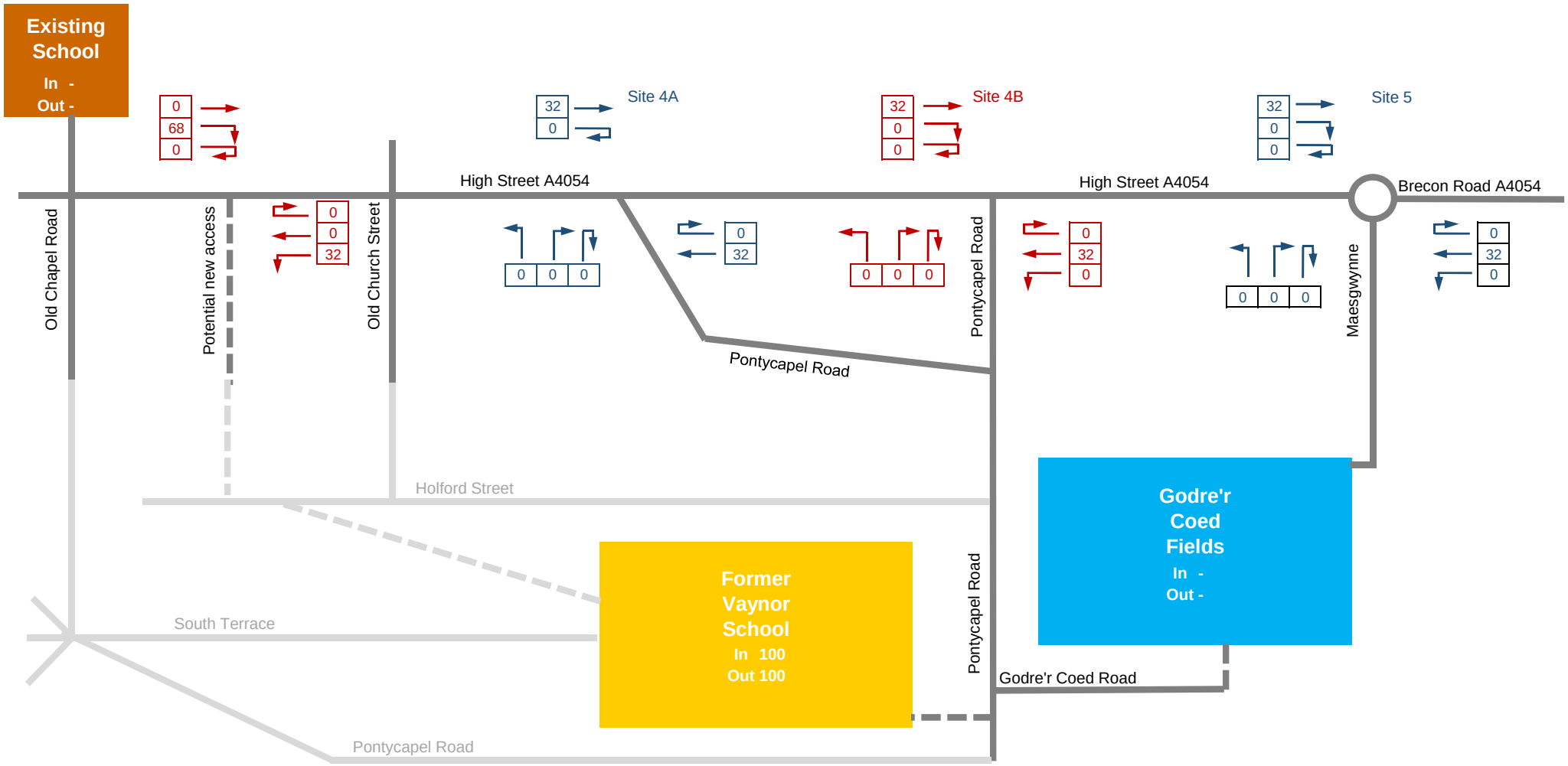

Scenario: **2020, Do something D - development traffic only**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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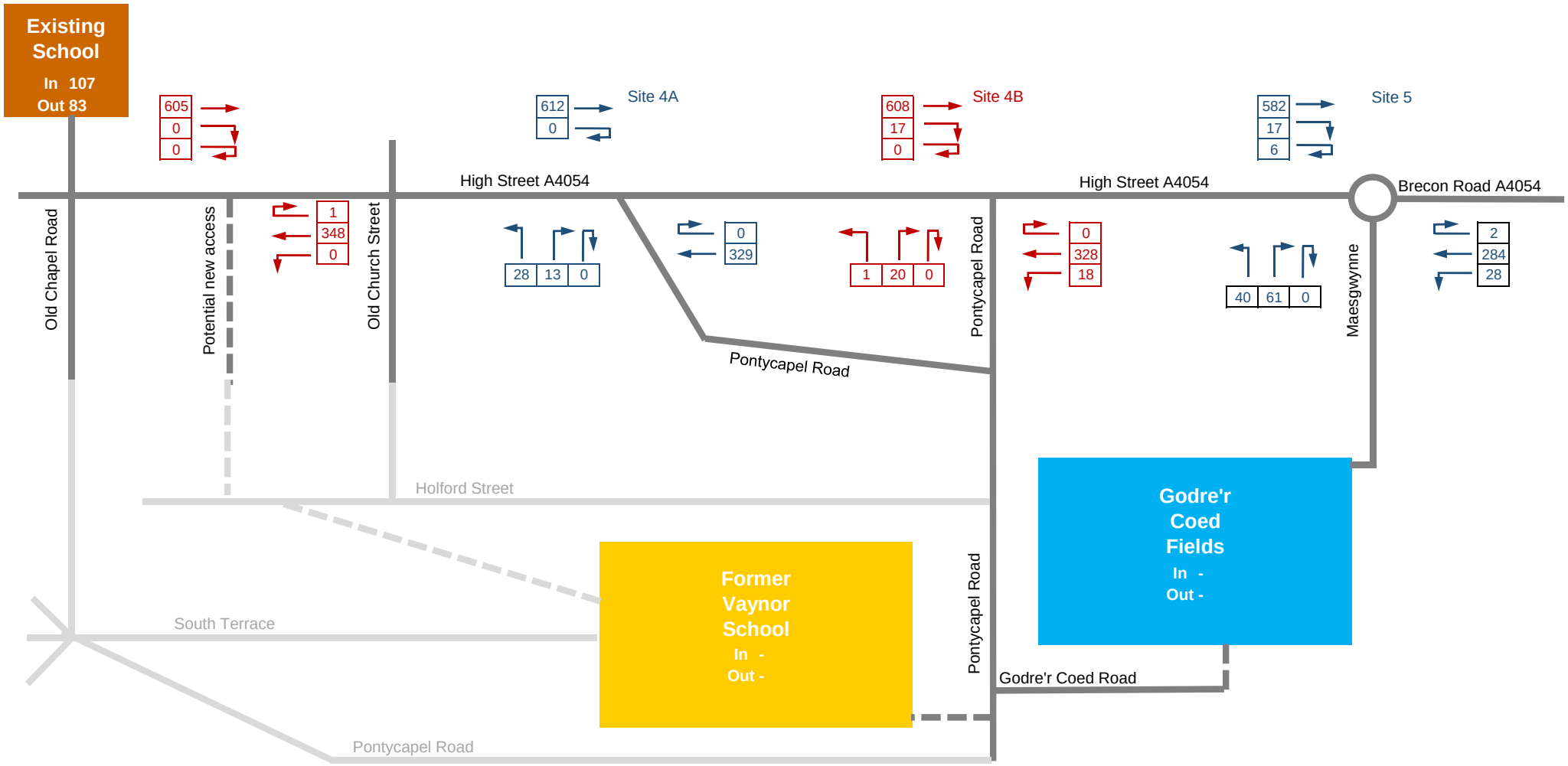

Scenario: **Base Year 2017**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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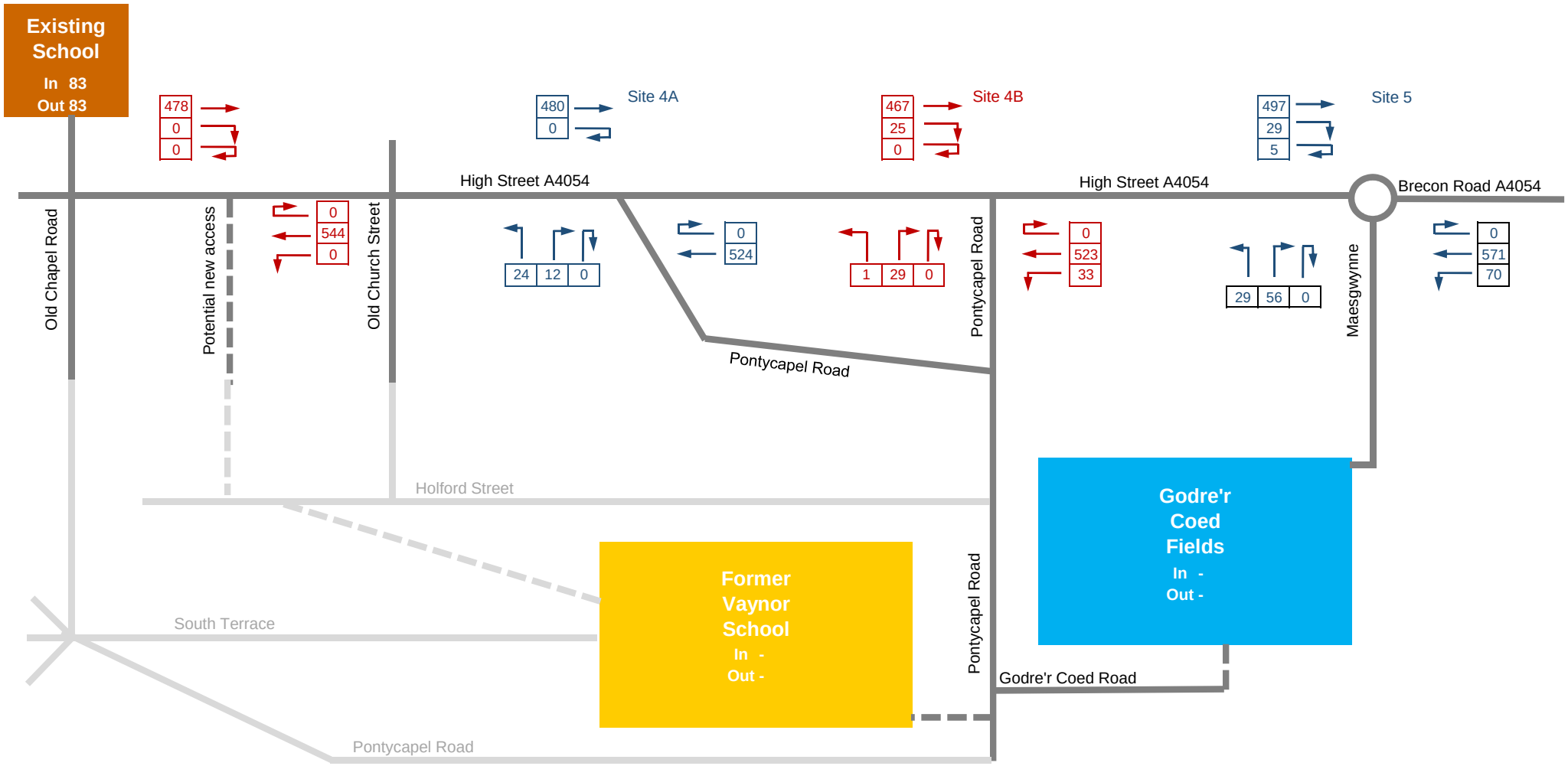

Scenario: **Base Year 2017**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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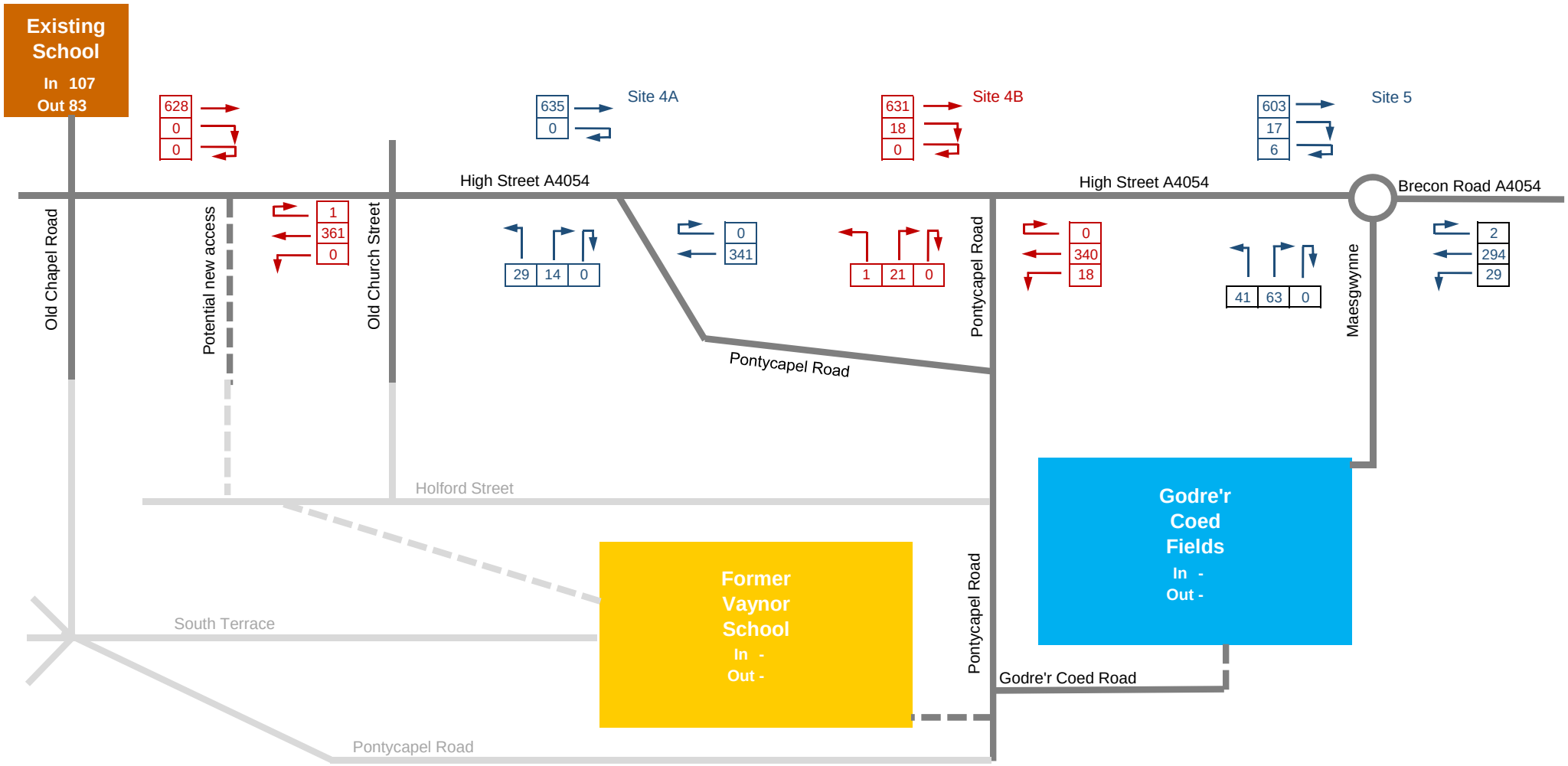

Scenario: **Opening Year 2020**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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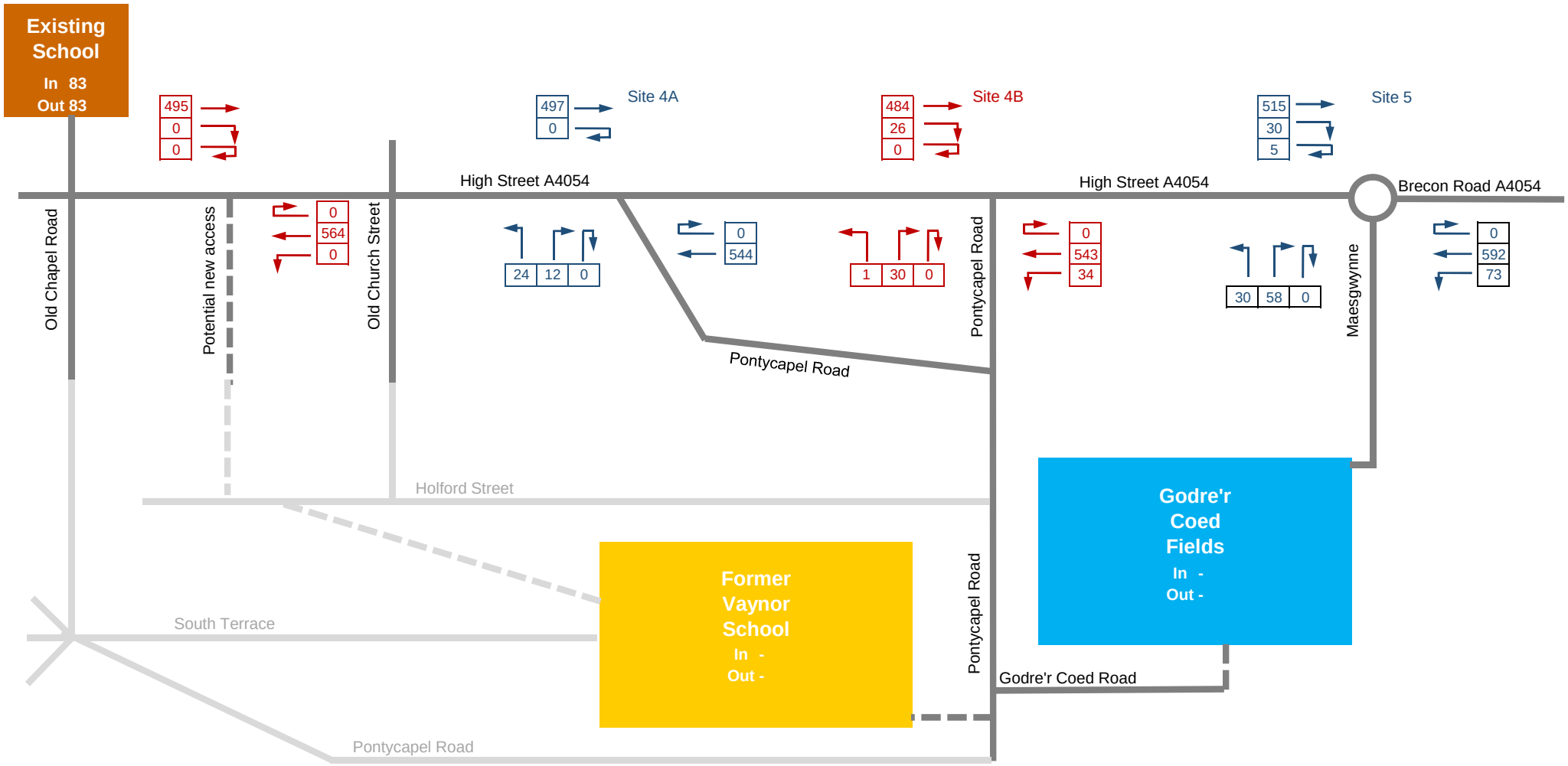

Scenario: **Opening Year 2020**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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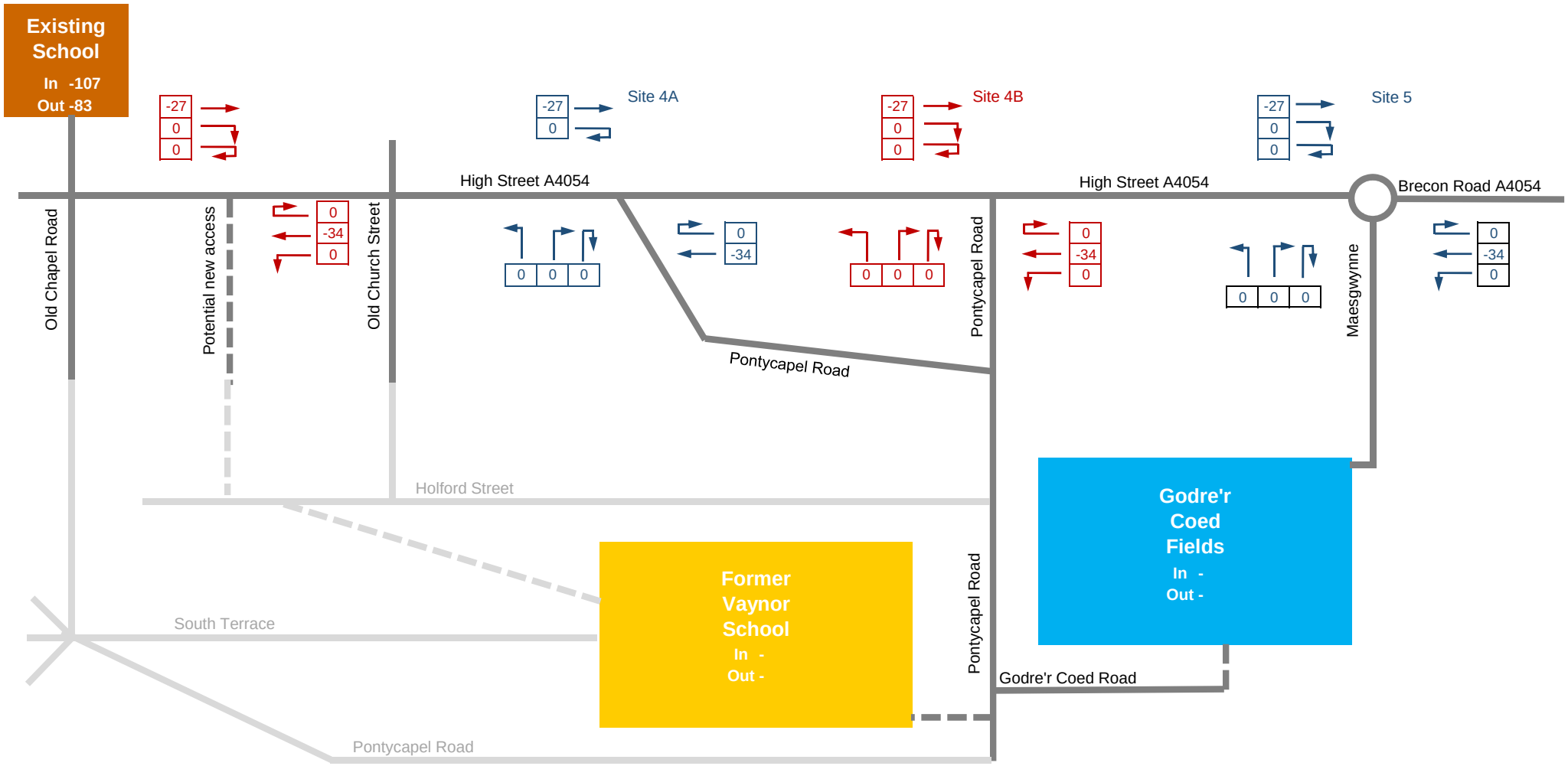

Scenario: **Trips to existing school to be removed from network**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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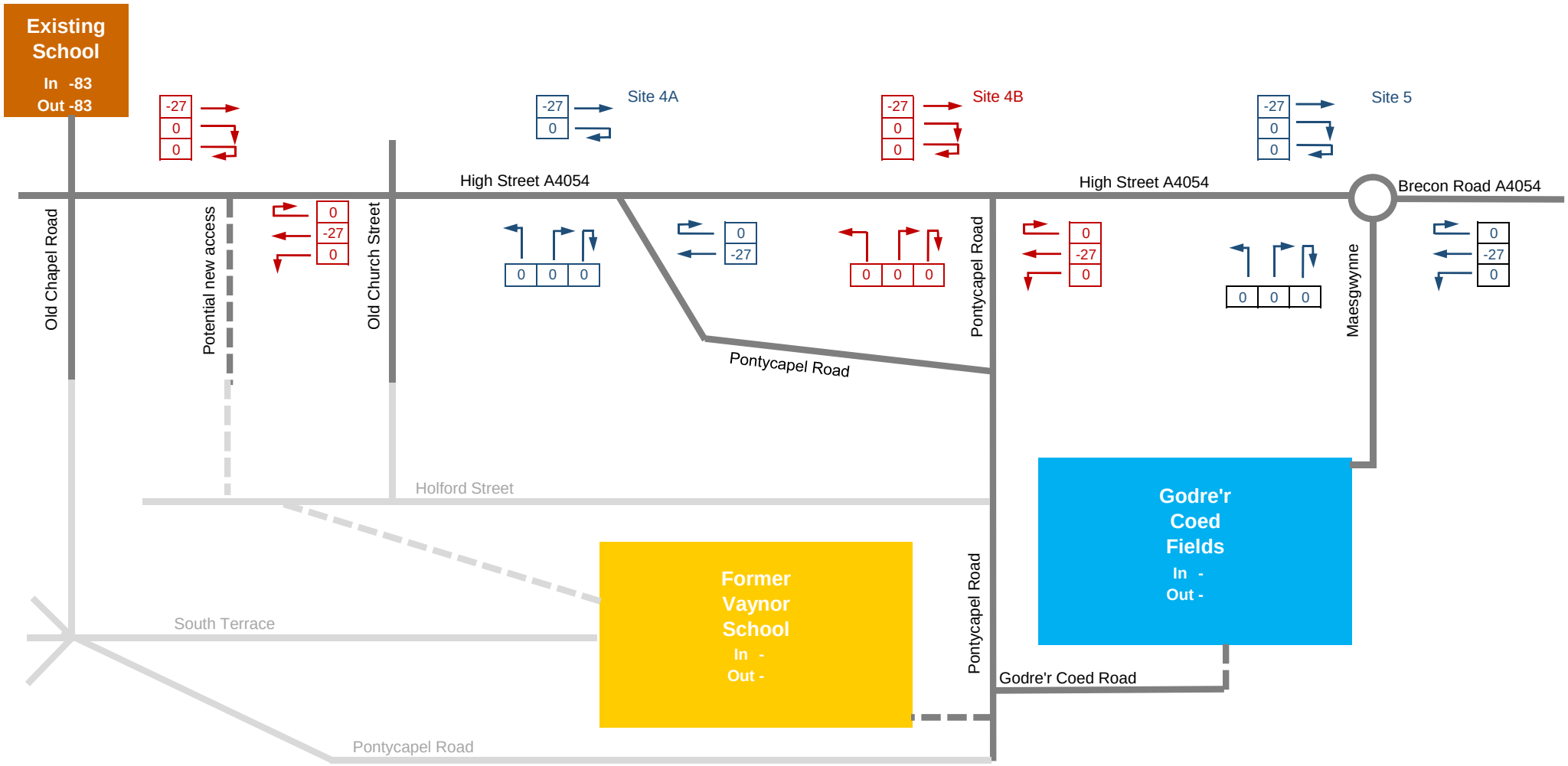

Scenario: **Trips to existing school to be removed from network**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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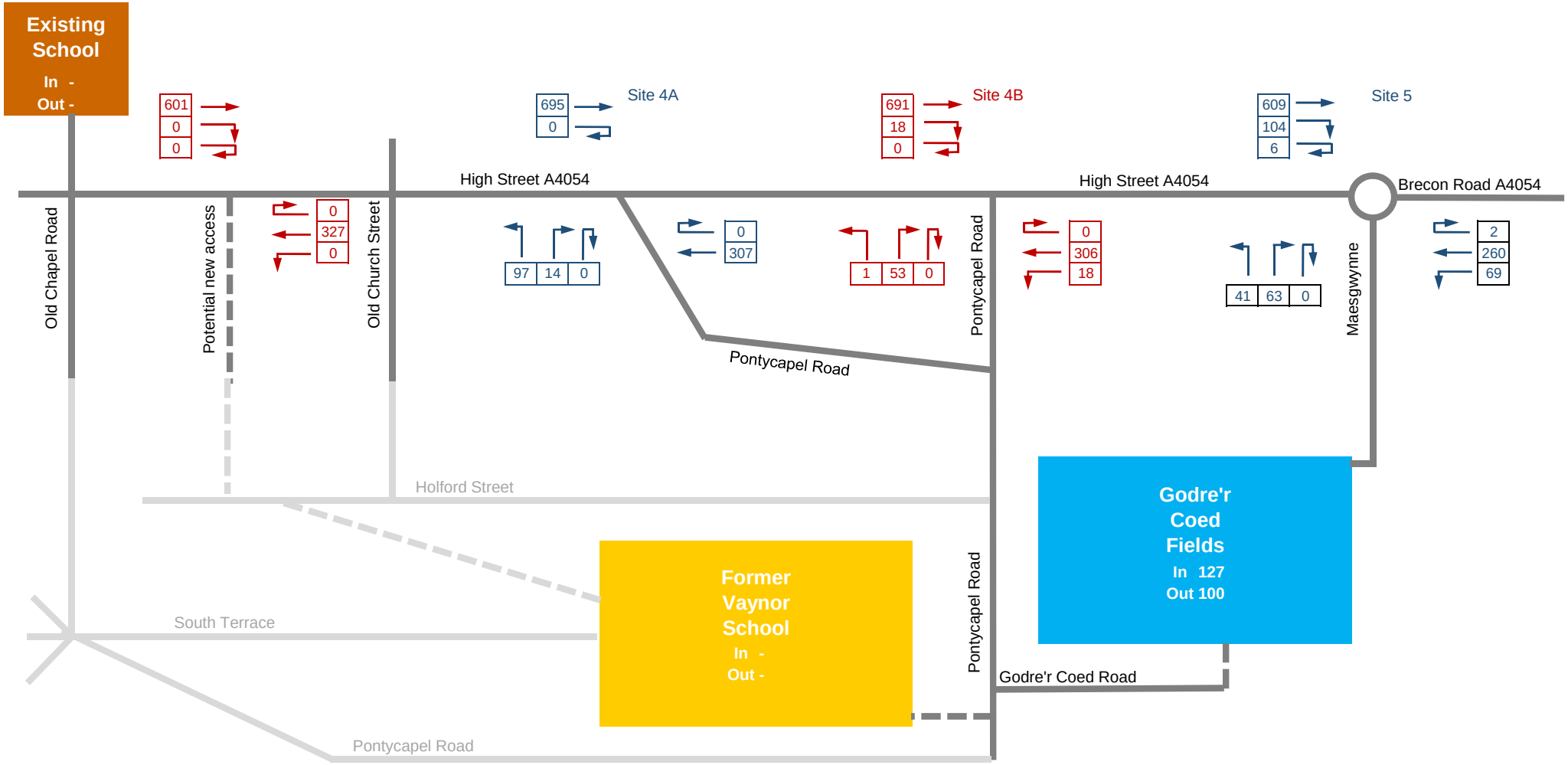

Scenario: **Year 2020, Do something A**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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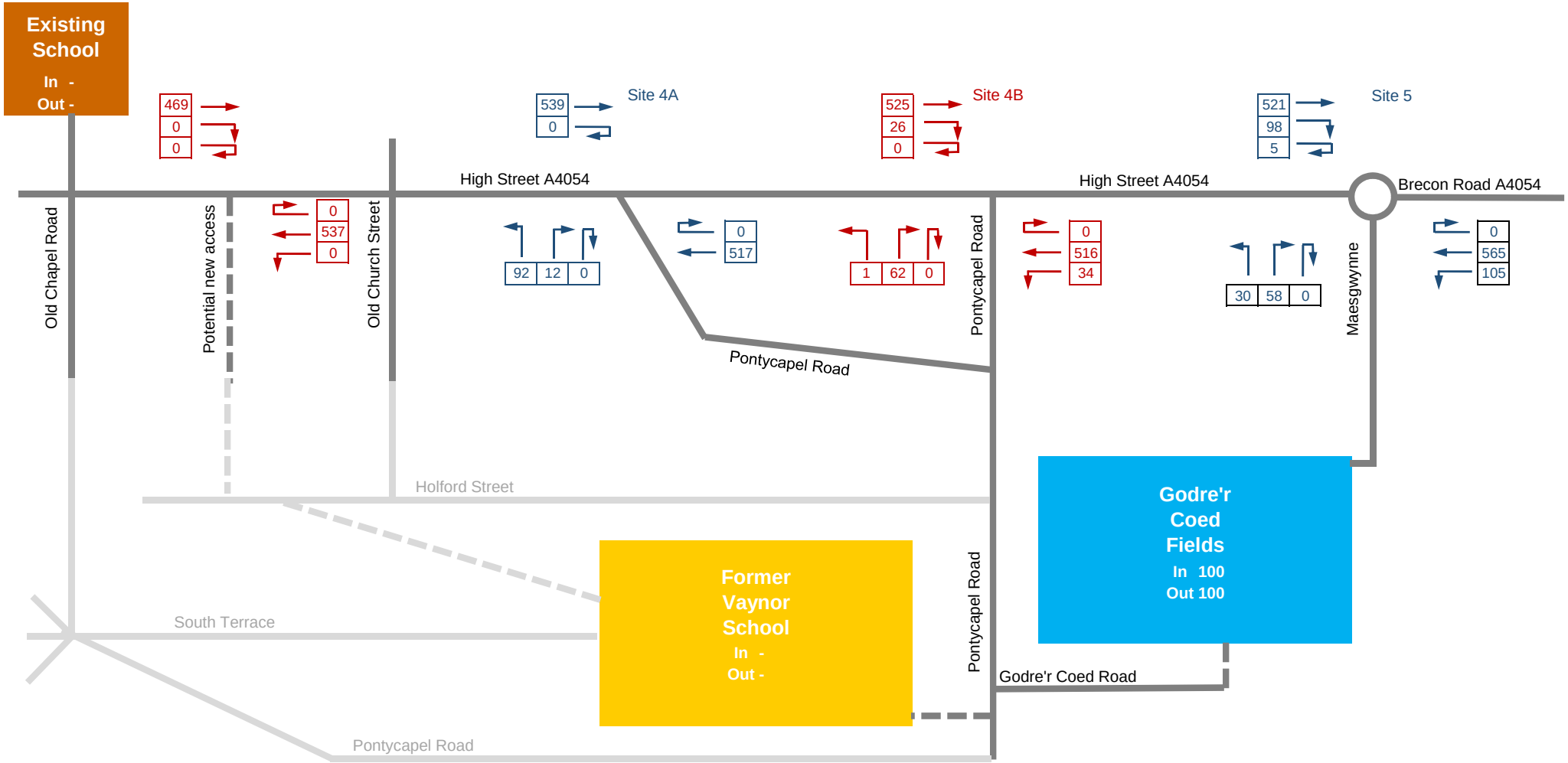

Scenario: **Year 2020, Do something A**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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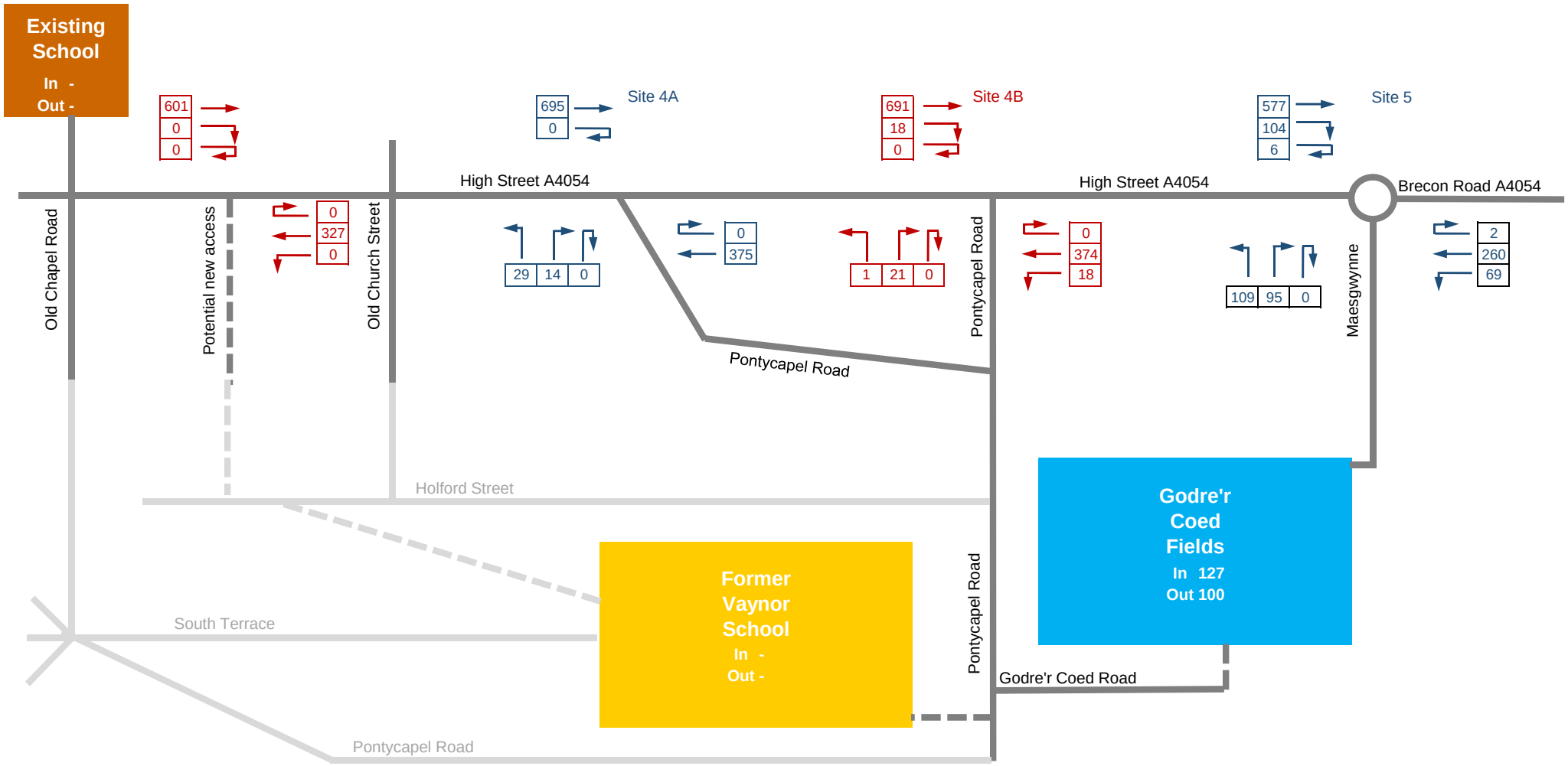

Scenario: **Year 2020, Do something B**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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Transport Options Assessment
June 2017

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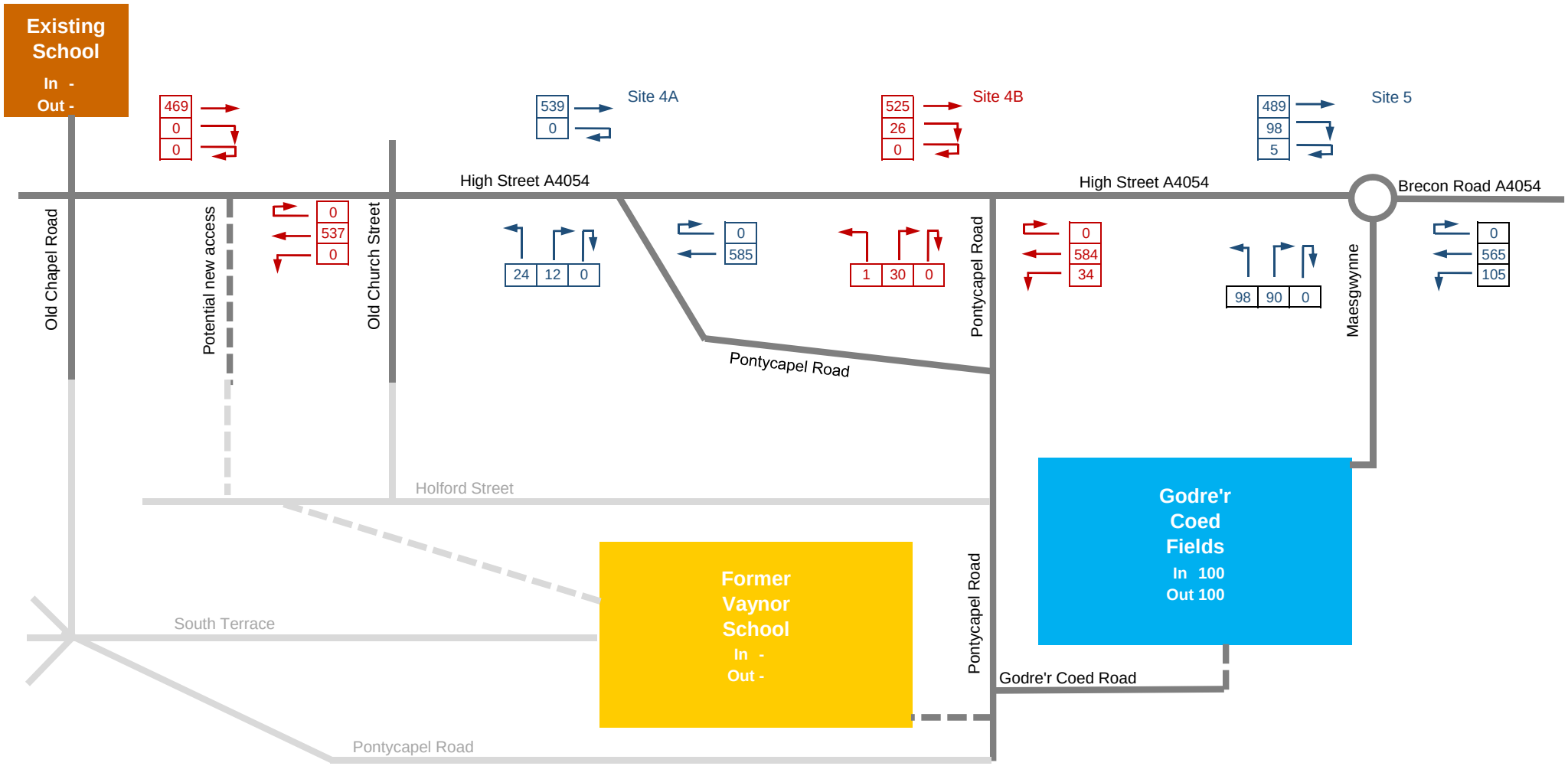

Scenario: **Year 2020, Do something B**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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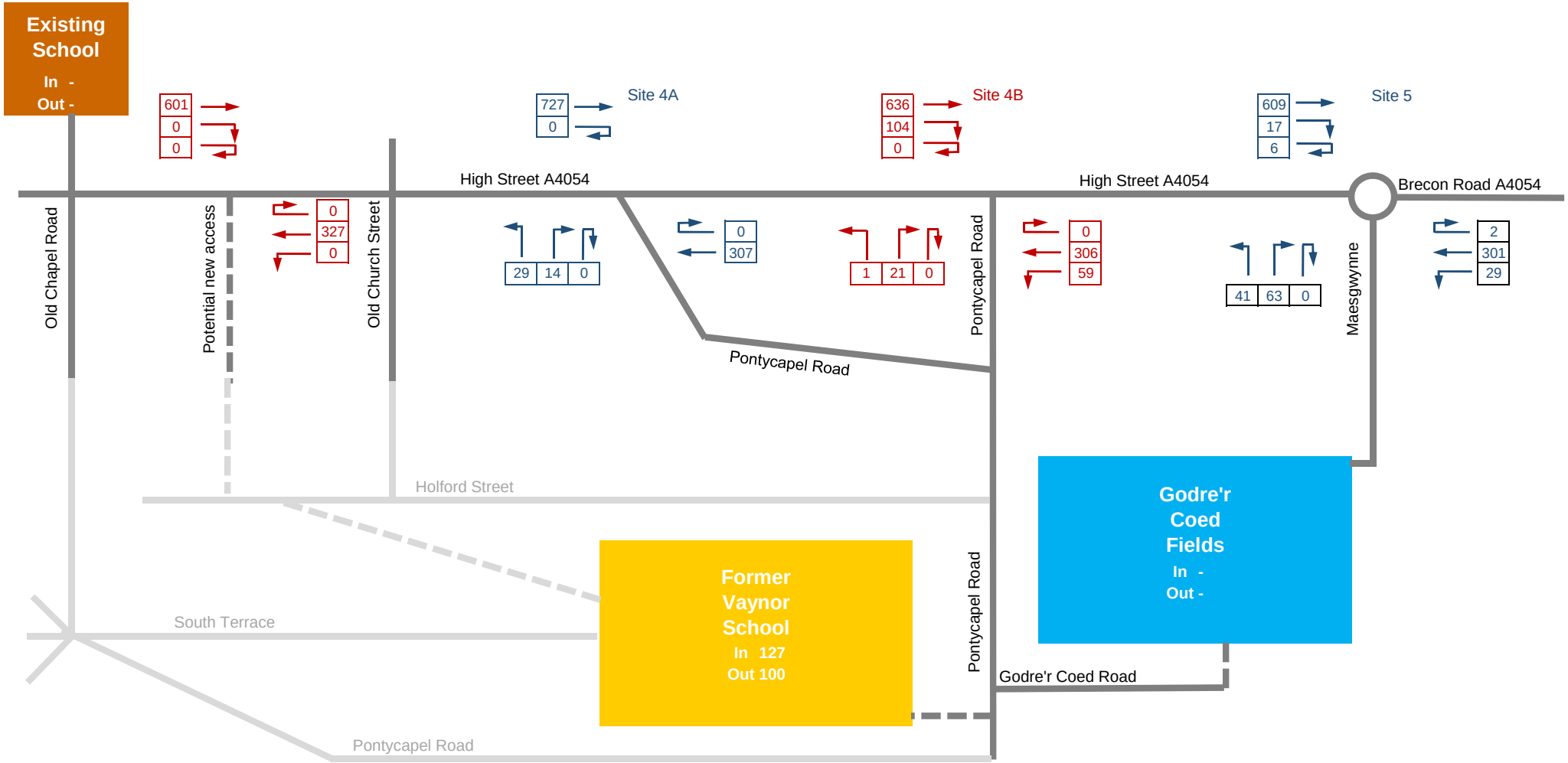

Scenario: **Year 2020, Do something C**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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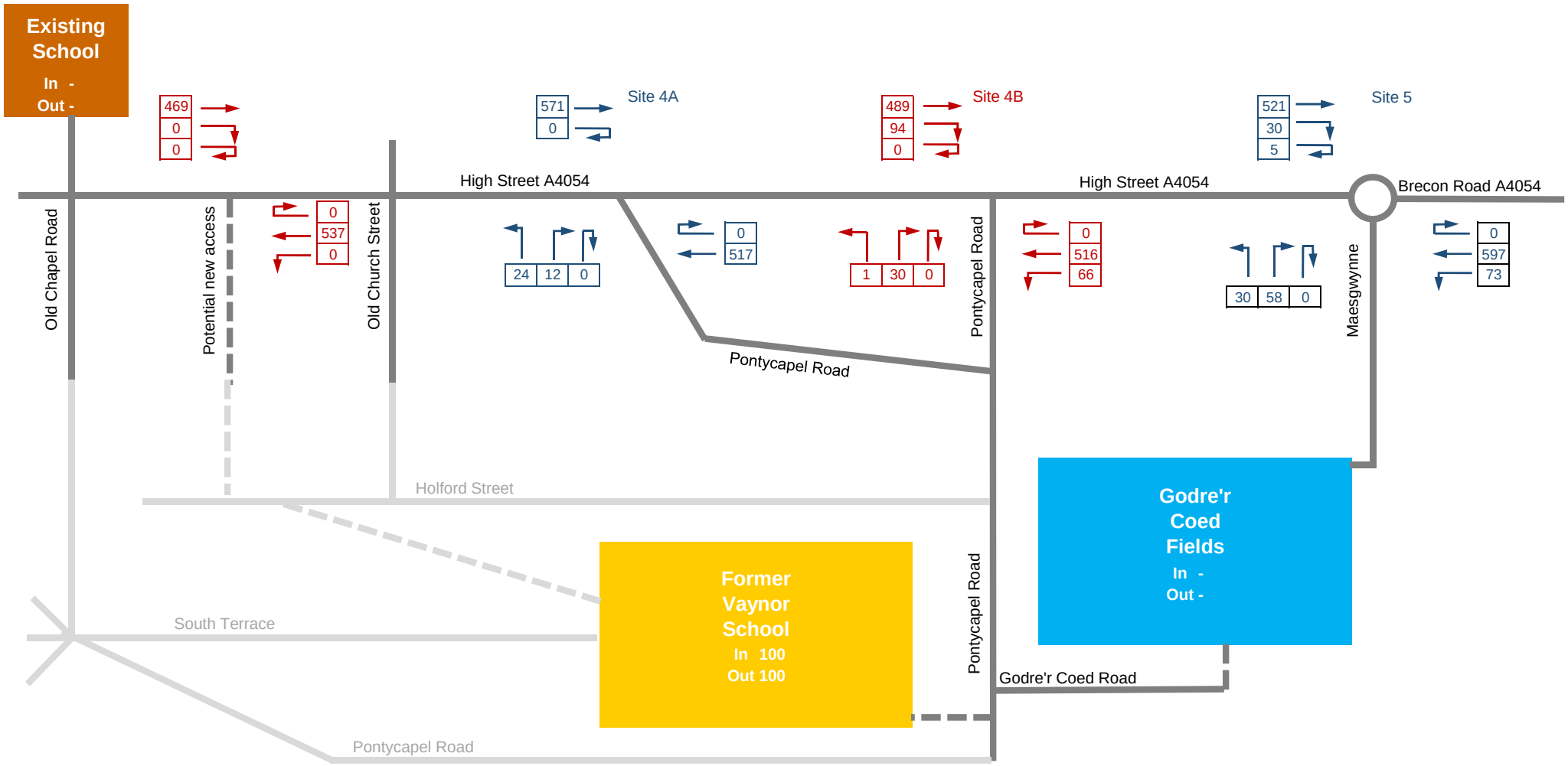

Scenario: **Year 2020, Do something C**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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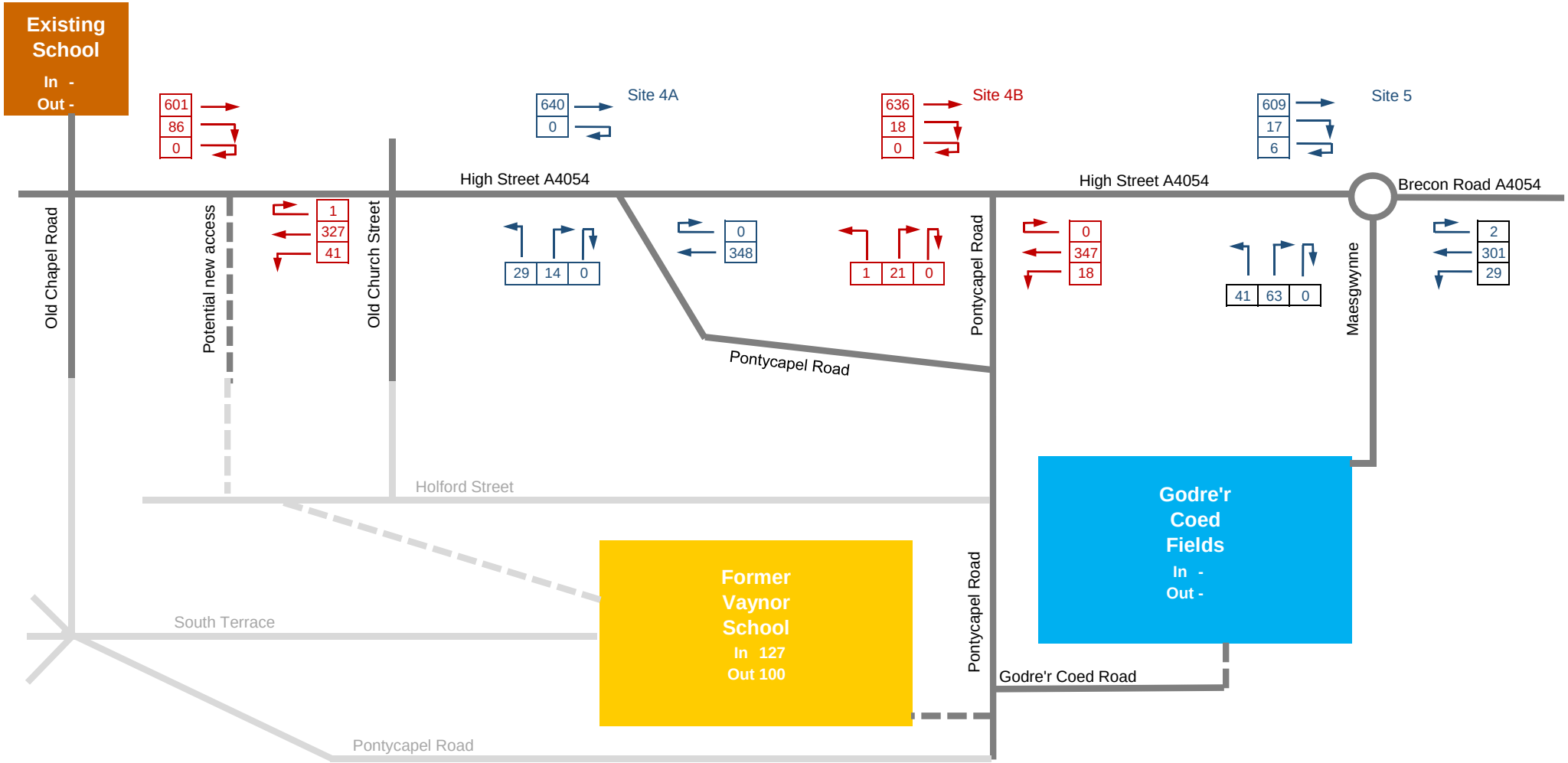

Scenario: **Year 2020, Do something D**
Time period: **AM 2 hours**
Flows are shown in PCU for time period

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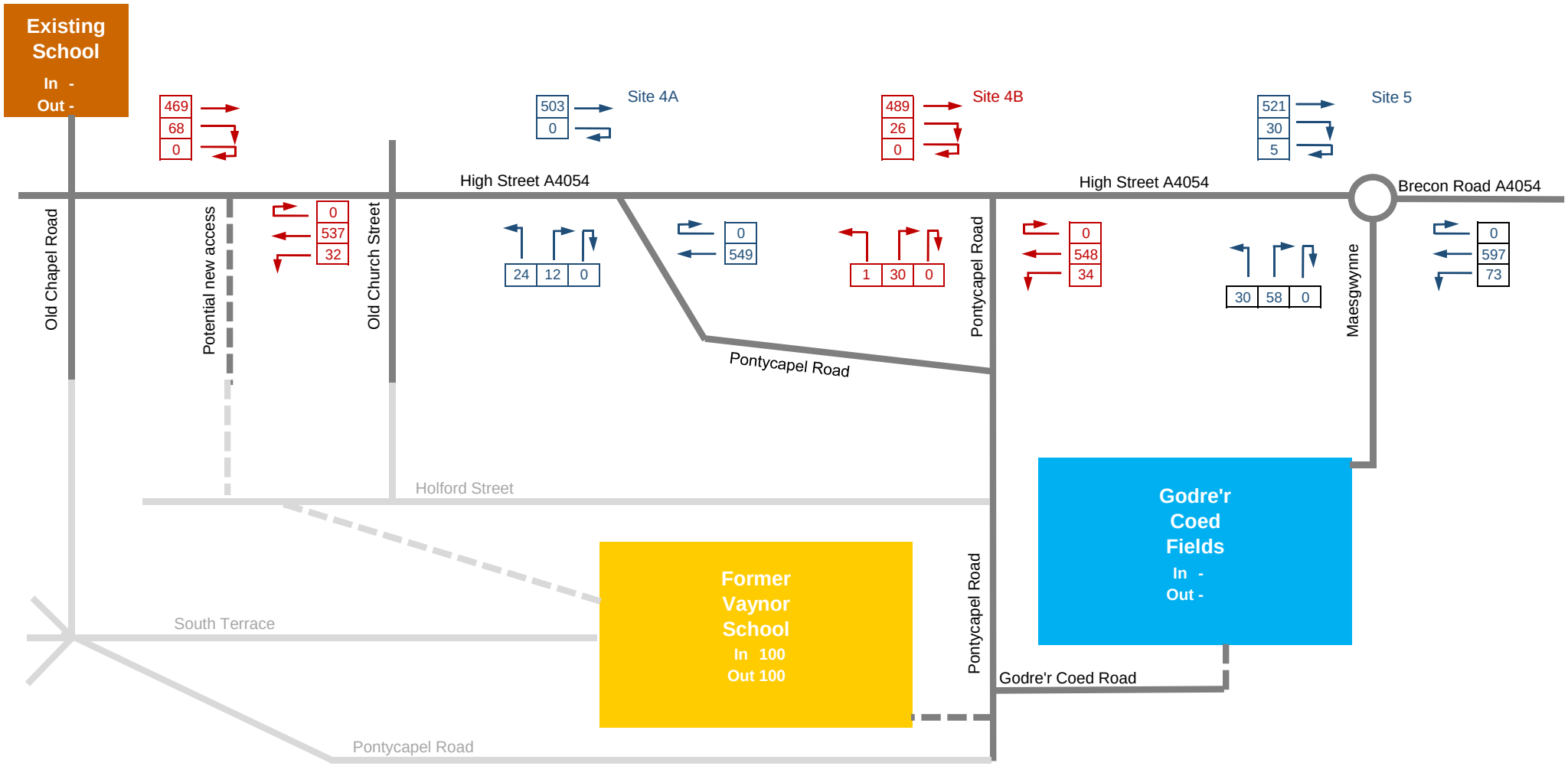

Scenario: **Year 2020, Do something D**
Time period: **PM 2 hours**
Flows are shown in PCU for time period

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1 Capital Quarter
Tyndall Street
Cardiff
CF10 4BZ

www.wsp-pb.com