

Llancarfan Primary School, Vale of Glamorgan

Transport Statement

Vale of Glamorgan Council

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Quality information

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1. Introduction

1.1 Introduction

- 1.1.1 AECOM has been commissioned by the Vale of Glamorgan (VoG) education department to provide transport planning and highways advice to inform a planning application for the proposed development of Llancarfan Primary School in Rhoose, Vale of Glamorgan.
- 1.1.2 Llancarfan Primary School is seeking detailed planning permission for the development of a new school facility set within a new residential development south of Porthkerry Way in Rhoose. The proposed school will be a co-educational primary school, located on and accessed from Rhoose Way. The new school is proposed to enrol a total capacity of 210 pupils in the primary school and 48 nursery pupils, totalling 234 full-day equivalent pupils on the site. The proposed staff numbers will include 23 Full Time Equivalents (FTE).
- 1.1.3 It is understood that the new school will replace the existing Llancarfan Primary school located in the village of Llancarfan located circa 2.5km north of the proposed school.
- 1.1.4 AECOM have liaised with the VoG in their role as the Local Highway Authority (LHA), in the preparation of this Transport Statement (TS). A scoping note has been prepared and sent to the LHA to gain an understanding of the level of assessment required for the TS. The LHA responded to this scoping note. A copy of the scoping report and correspondence with the LHA is included at **Appendix 1-1**. A Pre-Application Consultation (PAC) submission was made in February 2020; no comments on the submission were received from the LHA. The content of this TS and the proposals are generally as per the PAC submission, although more information has become available on the site itself, particularly topographical constraints, which has necessitated a change in design and the associated access strategy.
- 1.1.5 The content of this TS has been informed by a site visit to the existing school site completed on 25th February 2020 between 10:00hrs and 14:00hrs.

1.2 Site Location and Existing Usage

- 1.2.1 The proposed school development site is in Rhoose, located south of Cardiff International Airport, approximately 4km to the east of Barry and approximately 10km to the west of Llantwit Major. The proposed development sits within a residential development ('Taylor Wimpey Development') which is currently under construction.

1.3 Planning History

- 1.3.1 A new primary school was included in the proposals of an outline planning application (reference 2014/00550/OUT) for the adjacent residential development ('Taylor Wimpey Development') which is now mostly built-out but is still under construction. Planning permission for 350 dwellings and a primary school was granted in May 2015.
- 1.3.2 Waterman Transport and Development produced a TA ('Waterman TA') which was submitted with the planning application. The TA investigated the local transport systems serving the proposed development site, including the highway network, public transport and cyclist / pedestrian facilities, along with the impact of the proposed redevelopment on the surrounding highway network. The TA assessed the impact of the residential development on the local highway network along with the proposed school development.
- 1.3.3 The scale of proposals for the school remain largely unchanged from the approved application, and therefore this TS has been produced utilising the data and information included in the Waterman TA. The main change is that the new primary school is expected to replace the existing Llancarfan Primary school whereas it was previously assumed to supplement Rhws Primary School, located circa 650m to the west of the site.

- 1.3.4 A residential development ('Bellway / Persimmon Development') of 350 dwellings is proposed to the east of the school site. The two sites are proposed to share internal highway links and will therefore effectively become a single residential area within Rhoose.

1.4 Report Structure

- 1.4.1 This TS examines the existing transport and highway issues relating to the proposed development; considers the expected multi-modal trip generation and the traffic impact of the proposals on the local highway network and investigates methods of limiting car-based travel to produce a sustainable development in line with national and local planning guidance.

- 1.4.2 The remainder of the TS is structured as follows:

- **Section 2 – Existing Situation and Site Accessibility:** Examines the local transport conditions in the vicinity of the site and the accessibility of the site to non-car modes of travel;
- **Section 3 – Development Proposals:** Provides a detailed description of the development proposals, including the proposed means of access and parking provision;
- **Section 4 – Planning Policy Review:** Considers the development in the context of relevant national and local planning and transport policies;
- **Section 5 – Traffic Attraction, Distribution and Impact:** Sets out the trip generation derived for the consented primary school development. Outlines the likely changes in traffic distribution on the highway network owing to the change in school catchment. Outlines the impact of the development proposals on the local highway network.
- **Section 6 – Transport Implementation Strategy:** Details the key measures recommended to improve the existing conditions, along with encouraging sustainable travel; and
- **Section 7 – Summary and Conclusions:** Summarises the key findings and conclusions of the TS.

2. Existing Situation and Site Accessibility

2.1 Introduction

2.1.1 This section of the TS provides a description of the site location, the operation and safety of the local highway network, and the accessibility of the site to local facilities and by walking, cycling and public transport.

2.2 Site Location and Existing Use

2.2.1 The site is located in Rhoose, a village approximately 4km to the east of Barry in South Wales. The village lies to the south of Cardiff International Airport and has strategic connections by road and rail to the wider region including Cardiff to the east. **Figure 2-1** shows the location of the site.

2.2.2 The proposed school development will form part of a wider development that is currently under construction, accessed off Porthkerry Road and located directly to the north of the railway line. Once completed, the development will provide 350 houses. The site is bounded to the east by an existing residential area and to the west by a greenfield site ("the Bellway / Persimmon site") that has been granted planning permission for 350 houses.

2.2.3 **Figure 2-2** shows the boundary of the proposed school. The area currently under construction is identifiable by the satellite imagery, although it should be noted that at time of writing (February 2020) the extent of the site build-out is greater than suggested by the image. The area to the east of the site up to the highway (Pentir Y De) is the Bellway / Persimmon site.

Figure 2-2: Site Boundary



Notes: 1) All boundaries shown are indicative.

2.2.4 The site visit conducted on 25th February 2020 identified that a significant proportion of the site is fully built-out, with a large number of dwellings now occupied. The north-western portion of the site appears to be under construction, with construction access provided via St Peter's Crescent within the site.

- 2.2.5 The proposed school site is currently being utilised as a construction compound primarily for on-site construction staff car parking. On-site observations indicate a significant presence of construction and contractor parking along the estate roads. In terms of heavy vehicle movements, it is assumed that the main route currently through the site is via Rhoose Way to the area under construction, off St Peter's Crescent. However, there may be a requirement to access other parts of the site under construction, or the compound located at the southeast corner of the site.

2.3 Internal Road Layout

- 2.3.1 The site is accessed via a priority T-junction off Porthkerry Road. The junction is shown in **Figure 2-3**.

Figure 2-3: Site Access Junction onto Porthkerry Road



Source: AECOM, 2020.

- 2.3.2 Wide footways (approximately 3.0m width) are provided on both sides of the access junction, with signage on the eastern footway indicating a shared footway / cycleway. This path links to a Public Right of Way (PRoW) that follows a north-south alignment along the eastern boundary of the site, before continuing across the railway line to Heol Y Sianel.
- 2.3.3 Rhoose Way is the main spine road through the site, extending from Porthkerry Road to the southeast corner of the site, where the proposed school will be located. The extent of Rhoose Way within the site is fully-constructed. It is approximately 6.5m wide and 2.0m footways are provided on both sides of the road. Rhoose Way will provide a vehicular connection into the Bellway / Persimmon site as development at that site comes forward.
- 2.3.4 There are a couple of instances on Rhoose Way at corners where the carriageway widens significantly. This could encourage on-street parking in these locations which could reduce forward visibility. This is demonstrated in **Figure 2-4**.

Figure 2-4: Localised Carriageway Widening on Rhoose Way



Source: AECOM, 2020.

- 2.3.5 The streets accessed off Rhoose Way are predominantly of shared space construction, with total widths of approximately 6.0m.
- 2.3.6 Directly to the north west of the proposed school site, a central square is provided that features a Local Equipped Area for Play (LEAP). The square is bounded to the north, west and south by shared space and to the east by Rhoose Way. A footway is provided along the eastern boundary of the square, which connects to a pedestrian only link to the south of the site, via a dropped kerb crossing.

2.4 Local Highway Network

- 2.4.1 The local highway network to the proposed development is shown in **Figure 2-1**.
- 2.4.2 Porthkerry Road provides access to the site and runs in an east-west alignment in the vicinity of the site. To the east, Porthkerry Road provides access to Cardiff Airport and onwards to the A4426, a strategic route to Barry, Cardiff and the M4. Around 350m to the west of the site access, Porthkerry Road meets Rhoose Road at a roundabout junction.
- 2.4.3 Porthkerry Road is generally formed of a wide carriageway with footways provided on both sides of the road. The width of the carriageway encourages on-street parking along its extent, with on-site observations identifying “pavement parking” and damage to the highway verge where vehicles have parked. This is shown at **Figure 2-5**.

Figure 2-5: Damage to Highway Verge caused by Vehicle Parking



Source: AECOM, 2020.

- 2.4.4 Rhoose Road and Fontygary Road (which connects to Rhoose Road and provides access to the west of Rhoose) are similar in character and provide a main route through Rhoose Village. The incidence of on-street parking on these roads is less prevalent than on Porthkerry Road, however formalised parking is provided along Fontygary Road in the form of localised carriageway widening and demarcated bays.
- 2.4.5 The retail frontage on Fontygary Road is reflected in the provision of formalised crossing points (e.g. a zebra crossing provided directly to the west of the Spar shop, shown in **Figure 2-6**) and a 20mph zone enforced between the junctions of Kemeys Road and Wesley Avenue. The 20mph zone is in place as part of the Rhws Primary School's "Safety Zone". Traffic calming is present along Fontygary Road in the form of speed tables.

Figure 2-6: Zebra Crossing Provision on Fontygary Road



Source: AECOM, 2020.

- 2.4.6 Station Road meets Rhoose Road and Fontygary Road at a priority T-junction, and provides access to Rhoose Cardiff International Airport railway station, which has access to a car park to the south of the railway line (via a level crossing).
- 2.4.7 Station Road has a significant level of cars parked on-street along the eastern side of the carriageway which restricts two-way vehicle movement. Intermittent speed tables are provided along Station Road, as shown in **Figure 2-7**.
- 2.4.8 The eastern edge of Rhoose is defined by Pentir Y De, which extends between two roundabout junctions: Porthkerry Road and Bryn Y Gloyn / Trem Echni. There is no frontage along the majority of Pentir Y De, although it is understood that the road will provide future access to the Bellway / Persimmon site via a new roundabout junction.

Figure 2-7: Traffic Calming on Station Road



Source: AECOM, 2020.

2.5 Accident Analysis

- 2.5.1 Personal Injury Collision (PIC) data has been requested from the Welsh Government (WG) to determine whether there are any locations on the highway network with a poor collision record. Data has been requested for the most recent five-year period. The PIC study areas submitted in the request to WG is shown in **Figures 2-8** and **2-9**.

Figure 2-8: PIC Study Area A

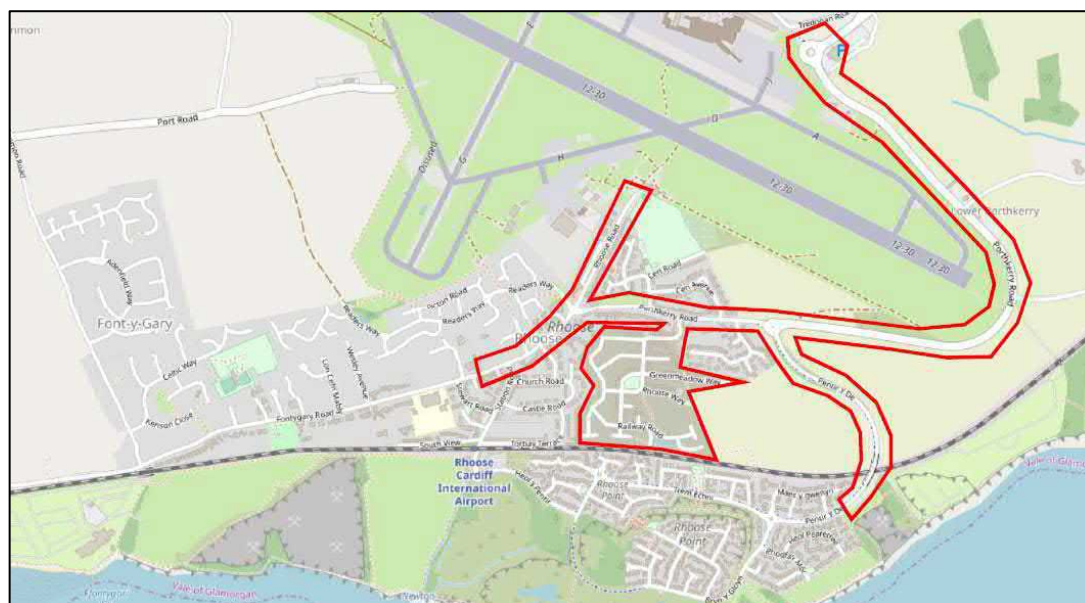
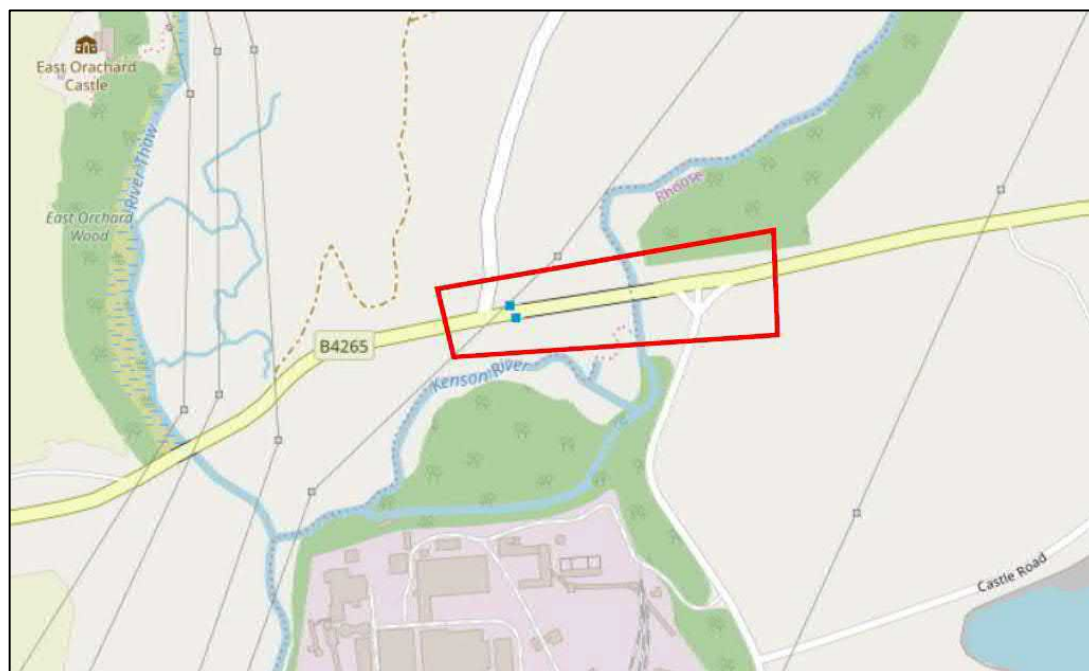


Figure 2-9: PIC Study Area B



2.5.2 At the time of writing, no response has been received. Therefore, an initial review has been undertaken using the 'Crashmap' online resource. An extract showing the PICs recorded in the study area during the five-year period from 1st January 2014 to 31st December 2018 is reproduced at **Appendix 2-1**.

Study Area A: Porthkerry Road, Rhoose Road and Residential Development

2.5.3 A total of nine PICs have been recorded over the five-year period, of which seven were 'slight'. The remaining PICs were categorised as 'serious'. No fatal PICs were recorded. The PIC data is summarised in **Table 2-1**.

Table 2-1: Summary of PICs – Study Area A

Location	No. of PICs by Severity			No. of PICs Involving Pedestrian / Cyclist Casualties
	Slight	Serious	Total	
Port Rd, northeast of Porthkerry Rd	3	0	3	0
Porthkerry Rd between Port Rd and Pentir Y De	0	2	2	0
Porthkerry Rd between Pentir Y De and Rhoose Way	1	0	1	0
Rhoose Way and Development Internal Roads	0	0	0	0
Porthkerry Rd between Rhoose Way and Rhoose Rd	0	0	0	0
Porthkerry Rd / Rhoose Rd roundabout	1	0	1	0
Rhoose Rd, north of Porthkerry Rd	1	0	1	0
Rhoose Rd, south of Porthkerry Rd	1	0	1	1
Total	7	2	9	1

2.5.4 The analysis shows that there is a cluster of three slight PICs which have occurred on Port Road to the north of the study area. None of these involved a pedestrian or cyclist. The two serious PICs both occurred on Porthkerry Road between the Porthkerry Road / Port Road roundabout and the Porthkerry Road / Pentir Y De roundabout. Neither collision involved a pedestrian or cyclist. One collision involving a pedestrian or cyclist has occurred on Rhoose Road to the south of the Porthkerry Road / Station Road junction. Further analysis of PIC data will be undertaken once the data requested from the WG has been received. This will be issued as an addendum to this TS.

Study Area B: B4365 / Font-Y-Gary Road / Unnamed Road Staggered Crossroads

- 2.5.5 A total of seven PICs have been recorded over the five-year period, of which six were 'slight'. The remaining PIC was categorised as 'serious'. No fatal PICs were recorded. The PIC data is summarised in **Table 2-2**.

Table 2-2: Summary of PICs – Study Area B

Location	No. of PICs by Severity			No. of PICs Involving Pedestrian / Cyclist Casualties
	Slight	Serious	Total	
B4365 / Unnamed Road junction	1	1	2	0
Between Unnamed Road and Font-Y-Gary Road	1	0	1	0
B4365 / Font-Y-Gary Road junction	4	0	4	0
Total	6	1	7	0

- 2.5.6 The analysis shows that most of the collisions have been recorded at the B4365 / Font-Y-Gary Road junction, although none of these involved a pedestrian or cyclist. Further analysis of PIC data will be undertaken once the data requested from the WG has been received. This will be issued as an addendum to this TS.

2.6 Walking and Cycling

Internal Layout

- 2.6.1 Wide footways (approximately 3.0m width) are provided on both sides of Rhoose Way at its junction with Porthkerry Road, with signage on the eastern footway indicating a shared footway / cycleway. This path links to a Public Right of Way (PRoW) that follows a north-south alignment along the eastern boundary of the site, before continuing across the railway line to Heol Y Sianel.
- 2.6.2 On-site observations indicate that the PRoW, known as "Porthkerry Footpath no.2 (Rhoose)", is to be closed between Rhoose Way and Green Meadow Way to undergo drainage works and new lighting / resurfacing work. The route is currently in a poor state of repair. This is shown at **Figure 2-10**.

Figure 2-10: Porthkerry Footpath no.2 (Rhoose)



Source: AECOM, 2020.

- 2.6.3 Rhoose Way within the site provides 2.0m footways on both sides of the road. Crossing points are informal, given the residential character of the road. The shared space streets accessed off Rhoose Way provide sufficient width (6.0m total) to maintain a pedestrian corridor and two-way vehicle movement.
- 2.6.4 To the south of the LEAP (northwest of the proposed school site) a pedestrian link is provided that is 3.0m in width and abuts the western boundary of the proposed school site. The link continues to the south before meeting a pedestrian route that runs along the southern boundary of the site. It is assumed that this route will eventually provide a pedestrian link to the Bellway / Persimmon site.
- 2.6.5 Apart from at the site access, there is no dedicated cycle provision. However, due to the nature of the roads within the site they are considered appropriate for on-street cycling.

Wider Walking and Cycling Network

- 2.6.6 Porthkerry Road provides footways on both sides of the road. To the east of the site access on the southern side of Porthkerry Road a shared footway / cycleway is provided, shown in **Figure 2-11**.

Figure 2-11: Porthkerry Road Shared Footway / Cycleway



Source: AECOM, 2020.

- 2.6.7 There is no formal pedestrian crossing provision along Porthkerry Road.
- 2.6.8 Rhoose Road and Fontygary Road provide footways on both sides of the road, with Fontygary Road incorporating formalised crossing provision (shown in **Figure 2-6**) and enforcing a low speed environment in proximity to Rhws Primary School that is conducive to pedestrian movement.
- 2.6.9 Station Road provides pedestrian access to the railway station and incorporates footways on both sides of the road. On-site observations indicate that the footway is in a poor state of repair with some crossing points susceptible to surface water pooling. This is demonstrated in **Figure 2-12**.

Figure 2-12: Station Road Pedestrian Crossings



Source: AECOM, 2020.

- 2.6.10 National Cycle Route (NCR) 88 forms a loop around Rhoose and incorporates Porthkerry Road, Pentir Y De, Rhoose Road and Station Road. On all roads apart from Pentir Y De, NCR 88 is designated as an on-road route. At a wider scale, NCR 88 provides a continuous route that connects Barry, Rhoose, and Llantwit Major.

Section 106 Contributions

- 2.6.11 A number of Section 106 contributions were secured through the Outline Planning Consent for the Taylor Wimpey Development. These are shown on plans at **Appendix 2-2** and include a number of pedestrian and cycle infrastructure improvements such as:
- **Porthkerry Road:** Footway widening to the west of the site access and new uncontrolled crossing points with tactile paving.
 - **Rhoose Road / Fontygary Road:** Improved pedestrian crossing provision at the roundabout junction with Porthkerry Road; improved vehicle crossover points, and; new pedestrian crossings with tactile paving across side roads.
 - **Station Road:** a new shared footway / cycleway on the western side of the road to accommodate NCR 88; “grasscrete” parking provided off-carriageway; new pedestrian crossings with tactile paving across side roads, and; a new vehicular access directly onto Station Road from the Rhoose and District Community Association car park.
- 2.6.12 At the time of the site visit (February 2020), there are no improvements that had been secured via Section 106 visibly commenced or delivered.
- 2.6.13 The Section 106 contributions will help to deliver significant improvements to the sustainable travel network in Rhoose and unlock more attractive pedestrian and cycle routes, particularly between the railway station and the development site

2.7 Local Facilities

- 2.7.1 The Institution for Highways and Transportation's (IHT's) *Guidelines for Providing for Journeys on Foot*, published in 2000, identifies that 2km is the preferred maximum distance that people will walk for education purposes. Cycling has been identified as having the potential to replace car trips of up to 5km. 5km equates to approximately a 20-minute journey by bicycle.
- 2.7.2 An approximate 2km walking distance from the school site is shown on **Figure 2-1**. There are significant residential areas within this distance, meaning that a significant proportion of future pupils would be able to walk to / from school within a reasonable distance. These include the newly constructed Taylor Wimpey development in addition to the proposed Bellway / Persimmon development.
- 2.7.3 There are several local retail, leisure and community facilities available within reasonable walking distance of the school which would be available for staff or escorting adult use. These include the LEAP within the internal Taylor Wimpey Site, in addition to a Library and Premier Store on Fontygary Road and a community centre on Rhoose Road. A GP and post-office are also available further afield.

2.8 Public Transport

Bus Services

- 2.8.1 The nearest public bus stops to the site are the 'Ceri Avenue' stops on Porthkerry Road approximately 350m walking distance from the school. These are located to the east and west of the Porthkerry Road / Rhoose Way junction.
- 2.8.2 The IHT's *Guidelines for Providing for Public Transport in Developments*, published in 1999, suggests 400m as the acceptable walking distance to a local bus stop. These bus stops are therefore within suitable walking distance of the school site. There is a comprehensive network of footways along Rhoose Way connecting the bus stops with the school site.
- 2.8.3 These stops provide access to several routes which are summarised in **Table 2-3**.

Table 2-3: Bus Service Information

Service	Route	Days	Direction	First Service	Last Service	Approximate Frequency
304	Llantwit Major – Cardiff	Monday – Friday	Towards Cardiff	06:25	02:10	1 hour
			Towards Llantwit Major	07:14	01:01	1 hour
		Saturday	Towards Cardiff	06:25	02:10	1 hour
			Towards Llantwit Major	07:14	01:01	1 hour
		Sundays and Bank Holidays	Towards Cardiff	-	-	-
			Towards Llantwit Major	02:10	02:10	Night bus only
905	Rhoose Cardiff International Airport – Cardiff International Airport	Monday – Friday	Towards Airport	06:17	23:16	1 hour
			Towards Station	05:57	22:53	1 hour
		Saturday	Towards Airport	06:16	23:16	1 hour
			Towards Station	06:15	23:51	1 hour
		Sundays and Bank Holidays	Towards Airport	09:16	22:16	1 hour
			Towards Station	09:51	22:51	1 hour

Notes: 1) Information obtained from <https://bustimes.org/>

2) Service times are arrival/departure times at/from the 'Rhoose before /after Ceri Avenue' stops.

- 2.8.4 A regular weekday service is available to / from Cardiff and Llantwit Major passing through local settlements included Tredogan, Font-Y-Gary and St Athan. The services run during the school arrival and departure period and therefore could be a viable transport option for journeys to / from the school.

- 2.8.5 There is also a regular service between Rhose Cardiff International Airport railway station and Cardiff International Airport which could be used for local journeys to / from the school site. This may also be a viable service for linked journeys undertaken by escorting adults.

Railway Services

- 2.8.6 The nearest railway station to the proposed school is Rhose Cardiff International Airport which is located approximately 600m to the south-west of the site equating to a 1.2km (15 minute) walk. The railway station is accessible via local bus services. The railway services to / from the railway station include Bridgend, Aberdare, Caerphilly, Merthyr Tydfil and Cardiff Central.
- 2.8.7 It is unlikely that rail services will be a viable option for journeys to / from school for future pupils, given that there are no other railway stations within the school catchment. There may be some rail use by school staff as part of a journey to work.

2.9 Summary

- 2.9.1 This section of the TS provides a description of the site location, the operation and safety of the local highway network, and the accessibility of the site to local facilities and by walking, cycling and public transport.
- 2.9.2 The site is located in Rhose, a village approximately 4km to the east of Barry in South Wales. The village lies to the south of Cardiff International Airport and has strategic connections by road and rail to the wider region including Cardiff to the east.
- 2.9.3 The proposed school development will form part of a wider development that is currently under construction, accessed off Porthkerry Road and located directly to the north of the railway line. The site visit conducted on 25th February 2020 identified that a significant proportion of the site is fully built-out, with a large number of dwellings occupied. The north-western portion of the site appears to be under construction. The site is accessed via a priority T-junction off Porthkerry Road.
- 2.9.4 An initial review of local highway safety has been undertaken using the 'Crashmap' online resource for two study areas on the local highway network. PIC data has been requested from the WG but to date no response has been received. The analysis will be updated once following the receipt of data and an Addendum submitted.
- 2.9.5 The school site is connected to a comprehensive network of footways available throughout the Taylor Wimpey Development and Rhose. A number of Section 106 contributions were secured through the Outline Planning Consent for the Taylor Wimpey Development. These include footway widening, new and improved crossings and new shared use paths. These have not yet been implemented. The Section 106 contributions will help to deliver significant improvements to the sustainable travel network in Rhose and unlock more attractive pedestrian and cycle routes, particularly between the railway station and the development site.
- 2.9.6 There is a significant residential catchment for the school within a 2km walking distance, stated as the recommended walking distance to / from school sites.
- 2.9.7 The site is accessible by local bus services servicing Cardiff, Tredogan, Font-Y-Gary St Athan and Llantwit Major. The nearest railway station is Rhose Cardiff International Airport.

3. Development Proposals

3.1 Introduction

3.1.1 This section of the TS provides a description of the school development proposals, including the site access strategy for vehicles, pedestrians and cyclists in addition for on-site parking arrangements for vehicles and bicycles. The construction of the proposed development is also discussed.

3.2 Overview of Proposals

3.2.1 The development proposals are for the construction of a new primary school and nursery school which will include the construction of a single storey school building with associated playgrounds and sports pitches. Access for all users of the school site will be via Rhoose Way.

3.2.2 An illustrative masterplan of the development proposals is provided at **Appendix 3-1** and has been reproduced as **Figure 3-1** for reference.

Figure 3-1: Development Masterplan



Source: *Stride Treglown, 2020.*

3.2.3 The school will accommodate 210 primary school pupils and 48 half-day nursery pupils, totalling 234 full-day equivalent pupils across the site. The school will accommodate up to 23 FTE members of staff, of which 13 FTE will be teaching staff (i.e. teachers and learning support assistants). The development quanta in terms of the number of pupils and staff is identical to that included in the 2014 outline application for the residential and school development at this site.

3.2.4 The proposed school will replace the existing Llancafarn Primary School which is located in the village of Llancafarn circa 4km to the northwest of the development site. The existing pupil intake will be relocated to Rhoose and the proposed school will also accommodate additional pupils from within the catchment.

3.2.5 The catchment of the proposed school is included at **Appendix 3-2**.

3.3 Vehicle Access and Movements

- 3.3.1 Vehicle access to the school site will be via Rhoose Way. Two points of access are to be provided, connected via an internal highway, which will be one-way only. Vehicles will enter via the eastern-most junction and egress via the western-most of the two junctions. This access will provide for delivery / servicing, mini-bus drop-off and school car park (for use by staff and visitors). This will not be used for escorting adult drop-off / pick-up.
- 3.3.2 Visibility splays of 2.4m x 25m (for 20mph) and 2.4m x 43m (for 30mph) will be provided at the exit onto Rhoose Way, in accordance with the guidance contained in *Manual for Streets* (MfS) (2007). The visibility splays are shown on the drawing included at **Appendix 3-3**. It can be seen that part of the visibility splays includes fencing both north and south of the junction. The fencing is required to enclose the maintainable areas and provide the security needed around the pedestrian access point. The fencing will be a weld mesh construction, similar to as shown in **Figure 3-2**. The proposed construction, as shown, will be semi-transparent such that the fence will not fully obscure a whole vehicle or pedestrian and, in accordance with MfS, “*will not have a significant impact on road safety.*”

Figure 3-1: Fence Boundary Construction



- 3.3.3 Swept Path Analysis (SPA) has been undertaken for the proposed accesses and internal highways. This is included at **Appendix 3-3**. The SPA demonstrates that:
- A large car (5.1m X 1.9m) can successfully enter the site via the eastern access and exit via the western access. Cars can successfully access parking spaces in the car park.
 - A mini-bus (6.3m x 2.1m) can enter the site via the eastern access and exit via the western access without demonstrable issue. Mini-buses can successfully access designated mini-bus spaces to the far west of the car park, and use the designated commercial lay-by to pick-up / drop-off children at the school
 - A Phoenix 2 Duo refuse vehicle (11.2m x 2.5m) can enter the site via the eastern access and exit via the western access. Although there is some overrun of the centreline of Rhoose Way on exit, this is not considered to be an issue given the frequency of such movements and the fact that this is the largest of the selection of available refuse fleet vehicles, ensuring a robust assessment. Appropriate iterations of test and design refinement have been undertaken to minimise the impact of the overrun as far as practicably possible;
 - A 7.5 tonne Box Van (8.0m x 2.1m) can enter the site via the eastern access and exit via the western access This vehicle can use comfortably attend the designated commercial lay-by.

- A Dennis Sabre Fire Tender (SWB) (7.0m x 2.4m) can enter the site via the eastern access and exit via the western access.

3.3.4 The SPA demonstrates that the proposed vehicle access and movement strategy for the proposed school is suitable for use by vehicle expected to require on-site access.

3.3.5 All vehicle access and areas for vehicle turning and manoeuvres on-site are shown to be segregated from pedestrian and pupil play spaces by an internal fence providing safe spaces for pedestrians on-site.

3.4 Pedestrian and Cycle Access

3.4.1 A segregated pedestrian access will be provided to the west of the western vehicular access junction (exit). The access can also be used by cyclists that have dismounted. Pedestrian and cycle access will also be provided at the eastern access junction (on-carriageway for cyclists).

3.4.2 The accesses serve internal footways (and ramp access for users at the western access) from which pupils will be able to access classrooms and the main entrance. Cycle storage is to be located outside the main entrance, accessible via both pedestrian / cycle accesses.

3.4.3 The interaction between the pedestrian access and the vehicular exit, located nearby, will be managed by the school through car park management measures. These measures could include physical marshalling by school staff or locking of school car park gates at the school start and finish times.

3.5 Parking Provision

Car Parking

3.5.1 The VoG Parking Standards 2019 has been adopted as Supplementary Planning Guidance (SPG). The standards identify how the *CSS Wales Parking Standards 2008* will be applied across the VoG. The parking standards seek to assist developers, designers and builders in the preparation and submission of planning applications, and to achieve a common approach to the provision of vehicle parking facilities associated with new development and change of use.

3.5.2 The parking standards are defined according to a zoning system based on the number, range and characteristics of facilities within walking distance and the level of public transport provision. Rhose falls within Zone C – Suburban. The relevant parking standards and resulting vehicle parking requirements for the proposed development are shown in **Table 3-1**.

Table 3-1: Vehicle Parking Standards

Development Type	Sub-Category	Parking Type	Standard (for Zone C)	Parking Requirement
Education	Nursery / Infants / Primary Schools	Teaching Staff	1 space per member of teaching staff	13
		Visitors	3 spaces	3
		Operational	1 space	1
Total				17

Notes: 1) Provision calculated based on total FTE staff.

3.5.3 On the basis that there will be 13 FTE teaching staff based at the school, up to 17 spaces will be required on-site, including one parking space allocated for a commercial vehicle. Of the 16 spaces for standard vehicles, three should be allocated for visitors, with the remainder for staff use. The SPG notes that parking standards indicated are set as the maximum provision, meaning that the total car parking provision should not exceed the derived number of spaces.

3.5.4 The on-site provision is in accordance with the standards, i.e. 17 spaces total, of which 13 are for staff use, three for visitor use, and one space for operational use (i.e. the commercial lay-by). One space is designated for disabled use and one space is designated for car sharing. Two mini-bus spaces are also proposed, but these are considered 'vehicle storage' not parking spaces; these will be equipped to allow charging of electric vehicles (should the school utilise this type of vehicle in the future).

3.5.5 The SPG also notes that:

- A minimum of 15 car spaces will be required for most schools;
- Where part-time staff are employed, they should be aggregated to their full-time equivalents. FTE staff have been considered in the calculation;
- Parking should be calculated based on full capacity of the nursery. This has been considered within the calculation.
- The parking area should include a facility for vehicles to turn without reversing. A service area is provided within the site boundary. This is a one-way system removing the need for turning on-site.
- Appropriate provision must be provided for parental drop off/pick up of children as dictated by local circumstances and any school travel plan. Drop off areas must be located so that the safety of pupils walking or cycling to school is not jeopardised. Arrangements for the new school facility are discussed in **Section 6** of this TS.

3.5.6 The parking standards do not specify provision for disabled blue badge holders for the education land use class but state that “*appropriate provision must be provided for use by disabled people*”. The requirement for existing employment development is set out in the SPG as 2% plus one additional space additional to the general parking outlined above. On this basis the requirement for disabled parking at the school is one disabled space. This has been provided.

Cycle Parking

3.5.7 VoG cycle parking standards are set out in Appendix 4 of the Parking Standards SPG. The guidance states that cycle parking should be in a safe, secure and convenient location and for reasons of security, cycle parking facilities should be in areas that are visible and therefore allow for informal surveillance.

3.5.8 **Table 3-2** summarises the cycle parking standards as outlined in the SPG. The number of proposed staff and pupil numbers at the school would equate to 18 cycle stands to be provided.

Table 3-2: Cycle Parking Standards – Nursery / Infants / Primary Schools

Development Type	Sub-Category	Cycle Parking Type	Standard	Allocation of Spaces
Education	Nursery / Infants / Primary Schools	Short Stay	1 stand per 5 staff and 1 stand per 20 children	16
		Long Stay	1 stand per 100 children	2
Total				18

Notes: 1) Figures are subject to rounding

3.5.9 20 cycle parking spaces will be located adjacent to the western pedestrian / cycle access and main entrance for convenience of use and surveillance.

3.6 Construction Traffic

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

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

3.6.3 There will be ongoing monitoring of the CTMP during the construction phase to establish the effectiveness of the measures.

3.7 Summary

- 3.7.1 This section of the TS has provided a description of the development proposals, including the site access strategy, parking and internal layout. The development proposals are for a new primary school and nurse school which will include the construction of a single storey school building with associated playgrounds and sports pitches. Access for all users of the school site will be via Rhoose Way.
- 3.7.2 The school will accommodate 210 primary school pupils and 48 half-day nursery pupils, totally in 234 full-day equivalent pupils across the site. There will be up to 23 FTE members of staff. The new school will replace the existing Llancafarn Primary School and accommodate additional pupils from the surrounding area.
- 3.7.3 The development quanta in terms of the number of pupils and staff is identical to that included in the 2014 outline application for the residential and school development at this site.
- 3.7.4 Vehicle access to the school site will be via Rhoose Way. Two points of access are to be provided, connected via an internal highway, which will be one-way only. Vehicles will enter via the eastern-most junction and egress via the western-most of the two junctions. This access will provide for delivery / servicing, mini-bus drop-off and school car park (for use by staff and visitors). This will not be used for escorting adult drop-off / pick-up. The accesses, internal highways and car park have been subject to SPA which demonstrates that these arrangements are suitable for the vehicles likely to access the site in future. The vehicular exit will be managed by the school to ensure that vehicle activity does not occur during school start and finish times.
- 3.7.5 A segregated pedestrian access will be provided to the west of the western vehicular access junction (exit). The access can also be used by cyclists that have dismounted. Pedestrian and cycle access will also be provided at the eastern access junction (on-carriageway for cyclists). The accesses serve internal footways (and ramp access for users at the western access) from which pupils will be able to access classrooms and the main entrance.
- 3.7.6 The accesses serve internal footways (and ramp access for users at the western access) from which pupils will be able to access classrooms and the main entrance. Cycle storage is to be located outside the main entrance, accessible via both pedestrian / cycle accesses.
- 3.7.7 The school car park will accommodate a total of 16 car parking spaces (including one disabled space, three visitor spaces and one car sharing space). An additional space will be provided for operational use. This is within the maximum VoG parking standards. 20 cycle parking spaces will be located adjacent to the western pedestrian / cycle access and main entrance for convenience of use and surveillance. Two mini-bus spaces are also proposed.
- 3.7.8 Construction impacts of the new school facility will be managed by a CTMP which will outline measures intended to protect the environment, amenity and safety of local residents, businesses, the general public and the surroundings in the vicinity of the proposed development.

4. Planning Policy Review

4.1 Introduction

- 4.1.1 This section of the TS provides a review of relevant planning and transport policies at a national and local level.

4.2 National Policy

Planning Policy Wales Edition 10, December 2018

- 4.2.1 Edition 10 of *Planning Policy Wales* (PPW) was published in December 2018 and sets out the land use planning policies of the Welsh Government (WG). It is supported by Technical Advice Notes (TANs), which provide detailed planning advice on subjects contained within PPW. *TAN 18: Transport* is relevant to the proposed development and is included in this policy review. An overarching theme within PPW is the commitment of the WG to sustainability.
- 4.2.2 Planning policy in Wales is plan-led, with up to date Local Development Plans (LDPs) forming a fundamental part of the system. PPW states that planning applications “*must be determined in accordance with the adopted plan unless material considerations indicate otherwise*”. This section provides a review of the VoG LDP to demonstrate that the proposed development accords with policy.
- 4.2.3 PPW outlines the vision for development of a more effective and efficient transport system, the promotion of more sustainable and healthy forms of travel, as well as minimising the need to travel. PPW indicates that this will be achieved through integration:
- *“within and between different types of transport;*
 - *between transport measures and land use planning;*
 - *between transport measures and policies to protect and improve the environment; and*
 - *between transport measures and policies for education, health, social inclusion and wealth creation.”*
- 4.2.4 Paragraph 4.1.8 states that the WG is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the *Well-being of Future Generations (Wales) Act 2015*.
- 4.2.5 The WG outlines a transport hierarchy in relation to the accessibility of new development, which prioritises walking and cycling in the first instance, followed by public transport, and finally private motor vehicles. This TS aims to improve the safety of pedestrians around the school site by providing measures such as a dedicated pedestrian access to the school which is segregated from vehicle access and the provision of ‘School Keep Clear’ markings adjacent to the school accesses. The site also benefits from walking and cycling infrastructure implemented as part of the Taylor Wimpey Development. These are existing and proposed measures.
- 4.2.6 Paragraph 4.1.10 of PPW states:
- “Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services.”*
- 4.2.7 Paragraph 4.1.50 states that car parking provision has a major influence on both mode choice and development patterns, and that *“minimum parking standards are no longer appropriate.”*

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

- 4.2.8 TAN 18 describes how to integrate land use and transport planning and explains how transport impacts should be assessed and mitigated. It supports, and should be read in conjunction with, PPW.
- 4.2.9 The integration of land use and transport planning forms part of an overall sustainable development approach by the WG towards strategy and policy objectives. This is predominantly through maximising the accessibility of developments by sustainable modes of transport. This also includes reducing the need to travel and encouraging multi-purpose trips. Accessibility is defined in TAN 18 as *“the relative ability to take up services, markets or facilities”* (p.8).
- 4.2.10 The proposed development demonstrates a clear link between land use and transport planning, and is accessible by sustainable transport modes, notably walking from within Rhoose and school bus provision.
- 4.2.11 Paragraph 4.6 states that parking standards for new development should be determined on an evidence basis which includes accessibility to other modes of transport. The proposed development provides car and cycle parking in accordance with the VoG Parking Standards SPG (March 2019), as discussed in **Section 3** of this TS.
- 4.2.12 Section 5 requires all new development to be designed in a way that is inclusive for all. The design of the development also plays an important role in providing genuine alternatives to car travel. This includes sufficient cycle parking in close proximity to the school access, for those pupils able to cycle to school, and ensuring suitable accessibility within the site for all pupils and staff.
- 4.2.13 Section 7 considers the role that public transport can play in offering an alternative to car travel, giving emphasis to the provision of new services and facilities, as well as facilitating interchange, as methods of encouraging uptake. The school proposed to expand the existing school transport by providing an additional school mini-bus.

The Wales Transport Strategy (2008)

- 4.2.14 The *Wales Transport Strategy* (WTS) sets out the WG’s main aims in improving transport:
- *“Reducing greenhouse gas emissions and other environmental impacts;*
 - *Improving public transport and better integration between modes;*
 - *Improving links and access between key settlements and sites across Wales and strategically important all-Wales links; and*
 - *Increasing safety and security.”*
- 4.2.15 The proposed development will aim to improve integration between modes, facilitate the use of existing school transport availability, and improve connectivity. It is therefore considered to be aligned with the WTS.

National Transport Finance Plan (2015)

- 4.2.16 The purpose of the *National Transport Finance Plan* (NTFP) is to:
- Provide the timescale for financing schemes undertaken by the WG;
 - Provide the timescale for delivering these schemes and detail the estimated expenditure required to deliver the scheme; and
 - Identify the likely source of financing to allow delivery to take place.
- 4.2.17 The NTFP is not a policy document nor does it seek to prioritise schemes to be taken forward. It brings together projects already being delivered. Some of these are already under construction. Others are already under development but are not yet being built.

Active Travel (Wales) Act 2013

- 4.2.18 The *Active Travel (Wales) Act* became law in Wales in November 2013. The Act makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve their infrastructure for walking and cycling every year. It also requires both the WG and local authorities to promote walking and cycling as a mode of transport.
- 4.2.19 The purpose of this Act is to require local authorities to continuously improve facilities and routes for pedestrians and cyclists and to prepare maps identifying current and potential future routes for their use. The Act also requires new road schemes (including road improvement schemes) to consider the needs of pedestrians and cyclists at design stage.
- 4.2.20 The Act is accompanied by a statutory design guidance document, published in December 2014, which provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure, and is to be used at all stages of the process. Reference will be made to this guidance in the planning and design of the proposed development.

Well-being and Future Generations (Wales) Act 2015

- 4.2.21 The *Wellbeing of Future Generations (Wales) Act 2015* has resulted in the WG outlining seven goals in a 'wellbeing statement' (published in 2017) that contribute to sustainable development and details the aims to improve economic, social, environmental and cultural wellbeing of Wales for future generations. The Act places a duty on Local Authorities to set wellbeing objectives and contribute to achieving the seven well-being goals, which are:
- A prosperous Wales;
 - A resilient Wales;
 - A healthier Wales;
 - A more equal Wales;
 - A Wales of cohesive communities;
 - A Wales of vibrant culture and thriving Welsh language; and
 - A globally responsible Wales.
- 4.2.22 The seven goals form the basis for twelve objectives, also detailed in the wellbeing statement. Several of these are directly relevant to this proposed scheme:
- Drive sustainable growth and combat climate change;
 - Promote good health and well-being for everyone;
 - Build healthier communities and better environments; and
 - Deliver modern and connected infrastructure.
- 4.2.23 By improving sustainable transport infrastructure in close proximity, the school access and improving the safety of pedestrians in the surrounding school area, a mode shift away from car to walking, cycling and bus use will be encouraged. By creating an area that supports active travel that communities use, the area will be healthier and have an improved environment to live and work and be educated in.

4.3 Local Policy

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

The Vale of Glamorgan Local Development Plan

- 4.3.2 The VoG LDP was updated in June 2017 and covers the period 2011-2026. The vision for the VoG is for a place:

- *“That is safe, clean and attractive, where individuals and communities have sustainable opportunities to improve their health, learning and skills, prosperity and wellbeing; and*
- *Where there is a strong sense of community in which local groups and individuals have the capacity and incentive to make an effective contribution to the future sustainability of the area.”*

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

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

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

- 4.3.5 Strategic Policy SP7 (Transportation) states:

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

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

- 4.3.6 The proposed development includes measures, which are outlined in **Section 7** of this TS.

- 4.3.7 A new primary school and nursery school at the development site (on land to the north of the railway line, Rhoose) is allocated under Policy MG6 (provision of Education Facilities) of the LDP. No specific requirements are given for this development. The surrounding residential development is also allocated under Policy MG2.

- 4.3.8 Policy MG16 (Transport Proposals) has been designed to safeguard several transport schemes, including:

- National Cycle Network Route 88 and associated local urban and rural connections; and
- Northern access road (St Athan enterprise zone).

- 4.3.9 Policy MD2 (Design of New Development) states, in relation to transport and highways, that development proposals should:

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

4.3.10 In respect to this, the LDP states:

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

- 4.3.11 The proposed development seeks to provide a safe and accessible environment particularly for pedestrians by installing School Keep Clear markings on the carriageway outside the school accesses. The school benefits from a range of walking and cycling improvements constructed as part of the on-site and off-site works for the Taylor Wimpey Development. The location of the school has already been deemed to be sustainably located through the outline application and subsequent award of permission for the development as a whole.

The Vale of Glamorgan Local Transport Plan 2015-2030

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

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

The Vale of Glamorgan Parking Standards

- 4.3.14 The VoG parking standards are set out in SPG to the LDP; the SPG was adopted in March 2019.
- 4.3.15 The SPG sets out the VoG’s parking standards and explains the planning policy for parking requirements for new developments or changes of use. The parking standards seek to promote and ensure transparent and consistent approaches to the provision of parking. In addition to this, it helps to inform developers and designers what is expected of them in terms of sustainability considerations and travel planning.
- 4.3.16 The proposed development provides parking in accordance with the SPG, as discussed at **Section 3** of this TS.

4.4 Summary

- 4.4.1 This section of the report has provided a review of existing planning and transport policies at a national and local level that are considered relevant to the proposed development. Planning law requires that applications for planning permission must be determined in accordance with the adopted LDP. The proposed development is considered to align with the objectives of the LDP.
- 4.4.2 The proposed development will facilitate opportunities for sustainable travel through the implementation of a TP, which is a requirement of the national and local policy. This will not form part of the planning application submission; however, it will be secured as a condition, through the planning process.

- 4.4.3 The proposed development will comply with the national and local policy and guidance, with access to the site being safe and suitable for all users. The site is accessible via a range of sustainable modes which will be further encouraged via a number of improvements, further detailed in **Section 6** of this TS. In summary, the proposals comply with national and local policies. The location of the school has already been deemed to be sustainably located through the outline planning application and subsequent award of permission for the development as a whole.

5. Traffic Attraction, Distribution and Impact

5.1 Introduction

- 5.1.1 This section of the TS outlines the traffic attraction and distribution for the proposed school. The school proposals are identical to the proposals included in the consented outline planning permission in terms of pupil and staff numbers. Therefore, the same trip attraction as calculated in the Waterman TA has been used for this application. The catchment for the proposed school has changed since the outline consent, in providing a replacement facility for Llancarfan rather than Rhws Primary School and therefore a comparison in traffic distribution across the local highway network is provided. Traffic impact has been considered compared to future year modelling included in the Waterman TA.
- 5.1.2 This chapter provides a summary of the approach used in the Waterman TA. The full methodology as outlined in 'Technical Note – Calculation of School Trip Attraction and Traffic Assignment' included at Appendix E of the Waterman TA has been included at **Appendix 5-1** of this TS.

5.2 Vehicle Trip Attraction

- 5.2.1 The methodology used to derive the vehicle trip attraction for the proposed primary school is summarised as follows.
- Multi-modal vehicle trip rates were derived from school-site surveys contained in the TRICS database. The trip rates were then applied to the proposed number of pupils (234 FTE) to derive a total trip attraction for the school site. This will have derived both pupil and staff trips.
 - The multi-modal trip attraction was then adjusted to reflect the mode share for the nearby Rhws Primary School, using data supplied by the VoG. This had the effect of increasing vehicle trip attraction compared to the TRICS trip rates.
 - The number of 'Linked Work' vehicle trips was derived. These are the trips where an escorting adult will drop-off / pick-up pupils at the school by car on the way to / from their place of work. The Waterman TA assumed that 17% of the total vehicle trip attraction were linked work trips, based on NTS statistics.
 - The number of 'Internal' trips was derived. These are the trips which would be generated by the residential aspect of the development and therefore would occur within the internal highways of the site. The Waterman TA assumed that 91 of the 234 pupils (38%) would be travelling within the entire residential site.
 - The number of 'Internal Linked Work' vehicle trips was derived. These are the 'linked work trips' as per Point 3 above, but which also originate within the residential development, as per Point 4. This was derived by applying the internalisation rate (38%) to the calculated number of linked work trips.
- 5.2.2 The Waterman TA considered 'internal linked work trips' as residential trip generation and did not assess them as part of the school development as this would have resulted in double counting. Except for the 'internal linked work trips', all the trips internal to the development were assumed to be undertaken by non-car modes.
- 5.2.3 The vehicle trip attraction for the school is presented in **Table 5-1**.

Table 5-1: School Vehicular Trip Attraction

Type of Traffic Generation	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Designated School Trips	84	59	143	6	8	15
Linked Work Trips	11	7	18	1	1	2
Total	95	66	161	7	9	17

Notes: 1) Summation errors are due to rounding.

2) Table is a replication of Table 9 in Technical Note at **Appendix 5-1**.

3) All trips are external to the 'Taylor Wimpey Development'.

- 5.2.4 Overall the school development is forecast to generate 161 two-way movements during the AM peak hour. This includes vehicle departures associated with escorting adult trips. Although this is a material trip attraction, most of these trips are already present on the highway network representing either trips to / from the existing Llancarfan Primary School (which will transfer to the new school post-development) or trips to / from a place of work (via a school drop-off / pick-up).
- 5.2.5 During the PM peak hour, trip attraction is significantly lower and will be mostly associated with staff movements and escorting adults collecting pupils from the after-school club. The majority of pupil trips will occur during the hour commencing 15:00.
- 5.2.6 The trip attraction shown in **Table 5-1** does not include vehicle trips which will occur along the internal highways within the Taylor Wimpy Development. Most of these trips are assumed to be undertaken by non-car modes. 38% of the total trips are assumed to be internal, consistent with the approach used in the Waterman TA. The Waterman TA only considered the internalisation from the Taylor Wimpy Development, and therefore other non-car trips are likely to occur between the school site and the Bellway / Persimmon Development.
- 5.2.7 'Internal linked work trips' are likely to be via car. These trips are outlined in **Table 5-2**. These vehicle trips are not considered to have a material impact on the internal highways to the Taylor Wimpy Development.

Table 5-2: Internal Linked Work Trips

Type of Traffic Generation	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Internal Linked Work Trips	7	5	11	0	1	1

5.3 Vehicle Trip Distribution

- 5.3.1 As discussed above, it is considered that the majority of the vehicle trip attraction shown in **Table 5-1** represents existing trips on the local highway network, associated either with the existing Llancarfan Primary School, or with journeys to / from work. Once the primary school has been constructed, it will effectively transfer all trips to / from the school.
- 5.3.2 At the time of the outline planning application, the school was expected to relieve the demand for Rhws Primary school in Rhoose as well as provide for the new residential developments in the area. As such, the Waterman TA derived the change in traffic flows across the highway network on the basis that trips would transfer from Rhws Primary School to the west of the development site.
- 5.3.3 However, since the outline planning application was consented, the purpose of the proposed primary school has changed. It will now replace the existing Llancarfan Primary School and all pupils will transfer to the new school site. The catchment of the school is provided at **Appendix 3-2**.
- 5.3.4 To understand the change in trip attraction distribution associated with the new school catchment, the home postcodes of existing pupils at Llancarfan Primary School have been obtained from VoG and plotted using Geographical Information System (GIS) software.
- 5.3.5 The GIS analysis is shown in **Figure 5-1**, which indicates that pupils at the proposed school are likely to come from across a wide area, however, compared to the location of the existing school, the new school site is located closer to pupil home addresses. Whilst the pupil home addresses will change year-on-year post-development, existing postcodes are considered representative and it is also likely that a higher proportion of pupils will reside within the larger settlement on Rhoose compared to the outlying villages.
- 5.3.6 The pupil home postcodes have been enumerated within local settlements, which is presented at **Appendix 5-2**. The traffic routing between each settlement and the proposed school location has been determined using online route planning software. The proportion of vehicular trips expected to travel along these routes are shown in **Table 5-3**.

Table 5-3: Existing Pupil Distribution

Name	Route to / from	Distribution
Route 1	A4266 east	28%
Route 2	B4265 west	23%
Route 3	Fontygary Rd	17%
Route 4	Unnamed Road, north of B4265	7%
Route 5	Kenson Hill	10%
Route 6	Tredogan Road	1%
Route 7	Pentir Y De	7%
Route 8	Rhose (Porthkerry Rd East)	6%
Total		100%

- 5.3.7 The distribution shown in **Table 5-3** will result in 46% of school traffic accessing the site to / from Porthkerry Road east of Rhose Way and 54% accessing the site to / from the west. This distribution has been applied to the anticipated trip attraction for the school development and then compared with the distribution outlined in the Waterman TA. This is shown in **Table 5-4**.

Table 5-4: Comparison in Traffic Assignment

Application	AM Peak Hour			PM Peak Hour		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Porthkerry Road East						
Consented TA	71	50	121	5	7	12
Current Application	44	31	75	3	4	8
Difference	-27	-19	-46	-2	-3	-5
Porthkerry Road West						
Consented TA	24	16	40	2	2	4
Current Application	51	35	86	4	5	10
Difference	+27	+19	+46	+2	+3	+5

Notes: 1) Summation errors are due to rounding

- 5.3.8 The change in catchment area for the proposed school will result in a net increase in traffic on Porthkerry Road west of Rhose Way, equating to an increase of 46 two-way movements during the AM peak hour and 5 two-way movements during the PM peak hour compared to the consented outline application for the school. There is also expected to be a corresponding reduction in traffic on Porthkerry Road east of Rhose Way. This is a reduction of 46 less two-way trips during the AM peak hour and five two-way trips during the PM peak hour.

5.4 Traffic Impact

- 5.4.1 The increase in traffic on Porthkerry Road to the west of the site equates to less than one vehicle movement per minute during the AM peak hour, or just over one vehicle per minute during a half hour period. This change in previously consented traffic flows is not considered to be severe.
- 5.4.2 The Waterman TA included junction capacity assessments for several junctions across the local highway network. These included assessments of the Rhose Road / Station Road priority T-Junction and the Fontygary Road / Fonmon Road signalised junction. Both junctions are located to the west of the site and are therefore forecasted to receive an increase in traffic flows associated with the school. The priority junction was assessed using PICADY. The signalised junction was assessed using LinSig.

- 5.4.3 Beyond the extent of these junctions, the effects of school traffic are unlikely to be material and therefore have not been considered in this TS. The Porthkerry Road / Rhoose Way junction has not been considered as there will be a net zero change in traffic at the junction compared to that assessed in the Waterman TA as the site access junction. The change in distribution is not expected to materially influence junction operation.
- 5.4.4 A summary of junction performance is provided in **Table 5-5**. The worst result, as presented in the Waterman TA, has been shown for the 2019 'Forecast Year' for the AM and PM peak hours. This assessment year includes traffic from local committed developments.
- 5.4.5 The outputs of the Junctions 9 models include 'Ratio Flow to Capacity' (RFC). Movements with an RFC above 0.85 are considered to exceed "practical capacity", as this is the point above which 'Random Oversaturation Delay' can occur. An RFC of 1.00 denotes the "absolute capacity" of the junction. LinSig outputs from the assessment include Degree of Saturation (DoS), expressed as a percentage. Lanes are considered to operate at "practical capacity" when their DoS is at 90% and "absolute capacity" where the DoS is at 100%.

Table 5-5: Summary of Junction Performance (Forecast Year of 2019)

Junction	Junction Capacity Assessment Result	
	AM Peak Hour	PM Peak Hour
Rhoose Road / Station Road Priority T-Junction	0.17	0.13
Fontygary Road / Fonmon Road signalised junction	45.5%	40.5%

- 5.4.6 It is clear that these junctions are currently operating well within practical capacity and therefore would be able to accommodate an increase of 46 vehicle movements during the AM peak hour and five two-way movements during the peak hour. Any change in 2019 baseline traffic compared to that forecasted by the Waterman TA is unlikely to have resulted in a material change in junction performance. Therefore, the impact of the development proposals cannot be considered severe.
- 5.4.7 The traffic impact of the school proposals has already been accepted and agreed as part of the outline consent. This assessment considers the likely modified vehicular distribution due to the change in designated school catchment. The previously assessed junctions, which are being considered as part of this analysis, clearly show half or more reserve capacity, and would therefore not suffer detriment to operation as part of this catchment redistribution. The minor increases of vehicle activity at these junctions would result in a corresponding minor decrease elsewhere on the local network, given that the majority of these trips already occur at another location.

5.5 Summary

- 5.5.1 The school proposals in terms of the number of proposed pupils and staff members is identical to that calculated for the consented outline planning application. The school trip attraction is the same as that presented in the Waterman TA. The school is forecast to attract a total of 161 two-way movements during the AM peak hour, and 17 two-way movements during the PM peak hour. No pupil trips occur during the PM peak hour.
- 5.5.2 The majority of trip attraction for the proposed school represents journeys already occurring on the local highway network, for example associated with the existing Llancarfan Primary School which the proposed school will replace.
- 5.5.3 The catchment of the proposed school is now slightly different to that assessed at the time of the outline planning consent. Analysis of the likely routeing between existing pupil home postcodes (from Llancarfan Primary School) and the proposed school site shows that as a worst case, 46 additional two-way movements are forecast for Porthkerry Road west of the site during the AM peak hour. There is a corresponding reduction in trips to the east. The increase is five two-way movements during the PM peak hour.

- 5.5.4 A worst-case increase in 46 two-way movements is not considered to be a severe impact from the proposed school development, equating to less than one vehicle per minute during the AM peak hour. This increase does not consider the effects of school travel planning, attendance at before and after school clubs or the increase in residential catchment from the adjacent Bellway / Persimmon development.
- 5.5.5 A review and analysis of the junction capacity modelling included in the Waterman TA shows that there is ample residual capacity for junctions to the west of the site access junction.

6. Transport Implementation Strategy

6.1 Introduction

- 6.1.1 TAN 18 requires that the transport assessment process for new developments includes the production of a Transport Implementation Strategy (TIS), which should “set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them.”
- 6.1.2 In a local context, the objectives of the TIS should align with the local development plan policies and strategy. This means providing opportunities for safe and attractive access to the site via sustainable modes and minimise the impact of new development on its local environment in terms of highway safety and traffic congestion.
- 6.1.3 An effective TIS has the opportunity to represent a progression of travel planning by strengthening the integration of sustainable travel measures with the physical design of the development. A TIS shares many of the same goals as a TP; therefore, the modal information, targets and measures set out in this section will inform the School TP which will be conditioned as part of the planning application. TAN 18 recognises that Travel Plans (TPs) still have a role to play and, as such, it is understood that a TP will be secured for the development via a planning condition.

6.2 Mode Share and Targets

- 6.2.1 A mode share profile for staff and pupils has been derived for the purposes of defining targets for a reduction in car trips to and from the site. The pupil mode share has been taken from the information included in *Technical Note – Calculation of School Trip Attraction and Traffic Assignment* originally produced as part of the Waterman TA (included at **Appendix 5-1**). The mode share is that for Rhos Primary School at the time of the outline application. The pupil mode share is shown in **Table 6-1**.

Table 6-1: Pupil Mode Share

Mode	Mode Share (%)
Vehicles	43%
Vehicle occupants	63%
Pedestrians	34%
Public transport users	3%
Cyclists	1%

- 6.2.2 Staff mode share has been calculated with reference to 2011 Census Journey to Work data for the “Vale of Glamorgan 014” Middle Super Output Area (MSOA) which encompasses the extents of Rhos Village and the area between Rhos and Llantwit Major. The staff mode share is presented in **Table 6-2**.

Table 6-2: Staff Mode Shares

Mode	Mode share (%)
Driving a car or van	70%
Passenger in a car or van	5%
On foot	15%
Bicycle	4%
Bus, minibus or coach	2%
Train	1%
Motorcycle, scooter or moped	1%
Taxi	0%
Other method of travel to work	1%

- 6.2.3 The mode share profile for staff and pupils does not account for measures that will be implemented to promote sustainable travel to and from the school. The mode share profile also does not consider the effect of physical measures on-site and in the immediate vicinity of the site that will seek to make travel by sustainable modes more attractive than by car.
- 6.2.4 A TP will be secured for the development via a planning condition and will be in place prior to first occupation of the site. The primary target for the TP will be a reduction in car trips to and from the site for staff and pupils and initially will be based on the forecast mode share profiles. It is considered robust to target a 6% reduction in car trips for both staff and students over a five-year period; accounting for the school catchment and local context, and opportunities to realise mode shift. This is in accordance with Smarter Choices' report *Changing the way we travel* (2004).
- 6.2.5 A commitment of the TP will be to undertake baseline travel surveys following first occupation in order to refine the mode share profile for staff and pupil trips and to re-visit the initial target for reduction in car trips.

6.3 Monitoring and Evaluation

- 6.3.1 The timing of the baseline travel survey will be agreed with VoG through the TP sign-off. It is usual for the baseline travel survey to be conducted within three months of first occupation and for a minimum response rate to be set.
- 6.3.2 The travel survey scope and format will be agreed with VoG but is likely to include:
- Hands-up surveys of pupils to establish mode of travel to and from the school;
 - Manual counts outside the school before and after school to establish peak vehicle movements; and
 - Pupil / parent and staff questionnaires that will aim to capture a greater level of detail regarding staff and pupil travel behaviours, including reasons for travel by a particular mode and likelihood of engaging with different sustainable modes.
- 6.3.3 The formal monitoring period for the TP is normally five years, unless agreed otherwise. Monitoring will take the form of annual travel surveys conducted on or around the date of the baseline survey. The scope of the survey will reflect the data collected in the baseline but may be expanded to incorporate important contextual changes or to capture information on uptake of new sustainable travel measures. Surveys will avoid sustained periods of inclement weather or when there is significant disruption to the local road or public transport network.
- 6.3.4 The appointed TP representative, or Travel Plan Coordinator (TPC), for the school will prepare a monitoring report within an agreed timescale of each annual travel survey that will provide as a minimum progress towards achievement of the mode share targets, and the success of measures implemented through the process. It is recommended that interim targets are set (e.g. after the first and third years) to maintain a focus for the TP. Specific objectives and targets will need to be identified, separated into short/medium/long term targets, and will need to be SMART (Specific, Measurable, Achievable, Realistic, and Timed).
- 6.3.5 It may be suitable to agree remedial measures to be introduced should progress towards the overall target be limited, for example Personalised Travel Planning (PTP) or additional marketing. This will be agreed with VoG as part of the TP.
- 6.3.6 Following the formal monitoring period, it is expected that the TP will continue to operate, reflecting a sustainable travel culture embedded at the site. The TP is considered a "living document" and, as such, it will be reviewed after five years to ensure that it still reflects the requirements of the school and the local area.

6.4 Travel Plan Measures and Interventions

- 6.4.1 A package of TP measures will be implemented in order to achieve the targeted reduction in car trips and promote sustainable travel to and from the school.

- 6.4.2 The main focus for the TP will be the delivery of effective communications and awareness-raising to both staff and pupils regarding the sustainable options for travel available to them. This will include:
- Newsletters;
 - Noticeboards and information libraries containing travel information, bus and rail timetables, and sustainable travel events;
 - Expanding the school prospectus and staff induction packs to provide travel information; and
 - Promotion and participation in national sustainable travel events such as “national walk to school day”.
- 6.4.3 An action plan will be prepared as part of the TP and will detail the proposed timescales for the implementation of these measures, and who is responsible for the implementation of each measure. The appointed TPC will be required to oversee and coordinate the delivery of the TP.

6.5 Physical Measures and Interventions

- 6.5.1 Physical measures will be implemented to encourage journeys to / from the school site using sustainable transport modes and to ensure that safe and secure access can be provided for non-motorised users. These measures are summarised in the following sub-sections.

On-Site Physical Measures and Interventions

- 6.5.2 **Section 3** of this TS has provided a description of the school development proposals, including on-site transport infrastructure such as parking and cycling provision.
- 6.5.3 It is proposed that people of all abilities shall be able to easily enter into and move through the landscape and each space within it via level or ramped entry points where necessary. Footpaths will be aligned to suit desire lines and entry points.
- 6.5.4 Primary pedestrian and cycle access will be via gates on Rhoose Way. This will provide safe and secure access to the curtilage of the new school building, from which specific class arrangements for pupil drop-off and pick-up can be made. No other pedestrian accesses are to be provided so as to create a secure boundary around the school site.
- 6.5.5 A total of 20 cycle parking spaces are proposed, in accordance with parking standards, to be located near the main entrance and western pedestrian / cycle access.

Walking and Cycling Infrastructure

- 6.5.6 The school will be set within the wider Taylor Wimpey and Bellway / Persimmon residential developments, and consideration has been made to the likely impact of travel associated with the school on existing and future residents of these sites, and the ability for these developments provide safe and suitable access to the school, particularly by walking and cycling.
- 6.5.7 All roads within the site are provided with 2.0m footways on both sides, with some shared space areas. Traffic-free links are provided at locations within the site, including adjacent to the western boundary of the school site (shown in **Figure 6-1**), and a PRoW runs in a north-south alignment from Porthkerry Road along the eastern border of the school development.
- 6.5.8 In terms of off-site infrastructure, an existing shared footway / cycleway is provided on the southern side of Porthkerry Road to the east of the site, and along the full extent of Pentir Y De. A range of new walking / cycling infrastructure, including footway widening and new crossing points, were secured via Section 106 agreement attached to the planning permission for the Taylor Wimpey Development. These are detailed in **Section 2**. It is anticipated that these measures will be completed by first occupation of the school.

Figure 6-1: Pedestrian Link to the west of the School Site



Source: AECOM, 2020.

Traffic Regulation Orders and “School Safety Zone”

- 6.5.9 Rhoose Way in the vicinity of the school site is currently observed to be used for on-street parking by construction and contractor vehicles on the southern side of the road. This situation is shown in **Figure 6-2**. Given the width of the road, it is likely that on-street parking in this location will continue following completion of the construction activities, accommodating both residential demand and temporary demand where pupils are dropped-off / picked-up by car. On the opposite side of the road off-street parking is provided for the residential dwellings that abut Rhoose Way which effectively prevents on-street parking (as shown in **Figure 6-2**).
- 6.5.10 With on-street parking on the southern side of the carriageway, Rhoose Way could still accommodate two-way vehicle movement (albeit at low speeds). However, it is recommended that school “zig-zag” markings are provided in the vicinity of both points of vehicle access to the school to avoid encroachment by parked vehicles, which could have a negative impact on operation and highway safety. These are shown at **Appendix 6-1**.

Figure 6-2: On-Street Parking along Rhoose Way



Source: AECOM, 2020.

- 6.5.11 Outside of these markings, further carriageway restrictions to create a “school safety zone” are not considered to be appropriate as:
- Parking / movement restrictions would adversely affect residential parking amenity;
 - Traffic Regulation Orders (TROs) would be required, which would be subject to statutory consultation and therefore could be objected to by local residents (where residential amenity would be affected); and
 - Restrictions would result in overspill parking on Porthkerry Road which would potentially have more adverse highway operation and safety implications.
- 6.5.12 Furthermore, allowing parking on Rhoose Way and surrounding roads will mean that vehicles are parked within a reasonable walking distance of the school and on the same side of the road as the school to avoid unnecessary crossing of the highway.
- 6.5.13 The school management will engage with VoG to explore the potential to implement an informal one-way system to reduce vehicle conflict and promote efficiencies across the local highway network. Such a system will be communicated to all parents through appropriate channels.
- 6.5.14 An indicative route could comprise:
- Inbound via Rhoose Way off Porthkerry Road; and
 - Outbound via the Bellway / Persimmon site onto Pentir Y De.
- 6.5.15 This route assumes a vehicular connection between the two sites via a continuation of Rhoose Way. An interim route may be required prior to completion of the vehicular link and route to Pentir Y De and could include a one-way circulation using the Rhoose Way / Greenmeadow Way / Railway Road loop that is adjacent to the school.

6.6 School Bus

- 6.6.1 The existing Llancarfan Primary School has one mini-bus which is used to provide school transport to / from school. Following the construction of the new school, an additional mini-bus will be purchased to expand the provision of school transport. This will reduce the number of vehicle trips associated with the school.
- 6.6.2 The exact policy regarding the operation, eligibility, pricing and routeing of the school buses will be determined pre-occupation of the school. It is recommended that this seeks to capture pupils located further afield and therefore likely to be driven to / from school. Postcode information for future pupils will be available to help determine this policy.

6.7 Construction Traffic

- 6.7.1 The Taylor Wimpey Development is mostly built-out (at time of writing) but on-site observations indicate a significant presence of construction traffic, both in terms of heavy vehicles and construction staff cars on the internal highway to the development. The proposed school site is currently being utilised as a construction compound. However, it is anticipated that the construction of the residential element will be completed by 2021 prior to the occupation of the school site.
- 6.7.2 In the unlikely event that construction traffic continues to require access to the residential development post-occupation of the school, the school will engage with VoG to agree a strategy for mitigating the impact of remaining construction activity on school operations and safety of staff and pupils. This is likely to include liaison with on-site contractors, communicating travel and access arrangements to staff and parents, and awareness-raising to pupils regarding safe practices and behaviour.
- 6.7.3 The construction of the Bellway / Persimmon development is expected to commence following the occupation of the school site. It will be the duty of the developers of that site to ensure that the impacts of construction on the school will be minimised. This will likely be achieved through a CTMP for that site.

6.8 Summary

- 6.8.1 Targets have been set for the reduction of private car use and a commitment to a TP and monitoring programme has been made. The measures that will be implemented as part of the development proposals have been outlined to help to achieve the targets and objectives set. TP measures will add another layer of interventions once the TP is established. This will continue to promote and encourage the range of facilities available and improve awareness or provision wherever possible.
- 6.8.2 It is recommended that 'School Keep Clear' markings are installed on the carriageway in the vicinity of the school accesses to avoid encroachment by parked vehicles, which could have a negative impact on operation and highway safety.
- 6.8.3 The school will engage with VoG to implement a one-way system to reduce vehicle conflict and promote efficiencies across the local highway network. The school will increase the provision of school transport for future students. The school will liaise with the VoG to determine appropriate measures to reduce the impacts of any ongoing construction work post-occupation of the school.

7. Summary and Conclusion

7.1 Summary

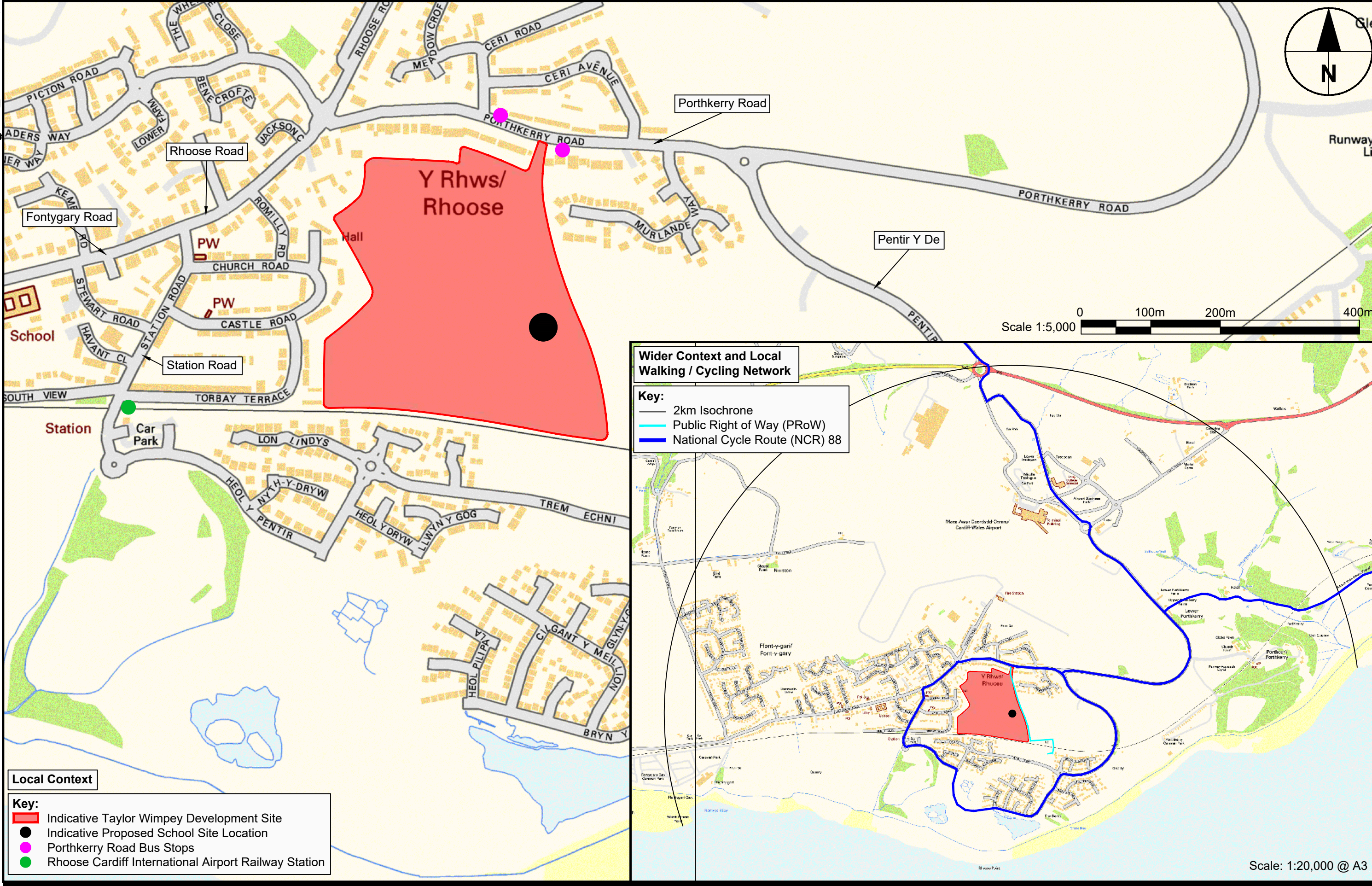
- 7.1.1 AECOM has been commissioned by the Vale of Glamorgan (VoG) education department to provide transport planning and highways advice to inform a planning application for the proposed development of Llancarfan Primary School in Rhoose, Vale of Glamorgan. It is understood that the new school will replace the existing Llancarfan Primary school located in the village of Llancarfan located circa 2.5km north of the proposed school.
- 7.1.2 AECOM have liaised with the VoG in their role as the Local Highway Authority (LHA), in the preparation of this Transport Statement (TS). The content of this TS has been informed by a site visit to the existing school site completed on 25th February 2020. A Pre-Application Consultation (PAC) submission was made in February 2020; no comments on the submission were received from the LHA. The content of this TS and the proposals are generally as per the PAC submission, although more information has become available on the site itself, particularly topographical constraints, which has necessitated a change in design and the associated access strategy.
- 7.1.3 A new primary school was included in the proposals of an outline planning application (reference 2014/00550/OUT) for the Taylor Wimpey Development. Planning permission for 350 dwellings and a primary school was granted in May 2015. Waterman Transport and Development produced a TA ('Waterman TA') which was submitted with the planning application. The proposals for the school remain largely unchanged from the approved application, and therefore this TS has been produced utilising the data and information included in the Waterman TA.
- 7.1.4 The proposed school will be a co-educational primary school, located on and accessed from Rhoose Way. The new school is proposed to enrol a total capacity of 210 pupils in the primary school and 48 nursery pupils, totalling 234 full-day equivalent pupils on the site. The proposed staff numbers will include 23 Full Time Equivalents (FTE), of which 13 FTE will be teaching staff.
- 7.1.5 Vehicle access to the school site will be via Rhoose Way. Two points of access are to be provided, connected via an internal highway, which will be one-way only. Vehicles will enter via the eastern-most junction and egress via the western-most of the two junctions. This access will provide for delivery / servicing, mini-bus drop-off and school car park (for use by staff and visitors). This will not be used for escorting adult drop-off / pick-up. The accesses, internal highways and car park have been subject to SPA which demonstrates that these arrangements are suitable for the vehicles likely to access the site in future. 16 car parking spaces are to be provided, within the maximum VoG parking standards. 20 bicycle parking spaces are to be provided, above the minimum VoG parking standards. The access and exit to this area will be managed to limit interaction with the pedestrian access points during school start and finish times.
- 7.1.6 The site is located in Rhoose, a village approximately 4km to the east of Barry in South Wales. The village lies to the south of Cardiff International Airport and has strategic connections by road and rail to the wider region including Cardiff to the east. The proposed school development will form part of the Taylor Wimpey Development currently under construction, accessed off Porthkerry Road and located directly to the north of the railway line. The site visit conducted on 25th February identified that a significant proportion of the site is fully built-out, with a large number of dwellings occupied.
- 7.1.7 An initial review of local highway safety has been undertaken using the 'Crashmap' online resource for two study areas on the local highway network. Personal Injury Collision (PIC) data has been requested from the WG but to date no response has been received. The analysis will be updated and submitted once this has been received.
- 7.1.8 The school site is connected to a comprehensive network of footways available throughout the Taylor Wimpey Development and Rhoose. Section 106 contributions were secured through the Outline Planning Consent for the Taylor Wimpey Development. These include footway widening, new and improved crossings and new shared use paths. These have not yet been implemented.

- 7.1.9 There is a significant residential catchment for the school within a 2km walking distance, stated as the recommended walking distance to / from school sites. The site is accessible by local bus services servicing Cardiff, Tredogan, Font-Y-Gary St Athan and Llantwit Major. The nearest railway station is Rhoose Cardiff International Airport. The proposed site has already been accepted as sustainably located through the wider site planning consent.
- 7.1.10 The school is forecast to attract a total of 161 two-way movements during the AM peak hour, and 17 two-way movements during the PM peak hour. No pupil trips occur during the PM peak hour. The school proposals in terms of the number of proposed pupils and staff members is identical to that calculated for the consented outline planning application, and therefore the school trip attraction is the same as that presented in the Waterman TA. Most of the trip attraction for the proposed school represents journeys already occurring on the local highway network, for example associated with the existing Llancarfan Primary School which the proposed school will replace.
- 7.1.11 The catchment of the proposed school is different to that assessed at the time of the outline planning consent, previously considered to serve Rhws Primary School. Analysis of the likely routeing between existing pupil home postcodes (from Llancarfan Primary School) and the proposed school site shows that as a worst case, 46 additional two-way movements are forecast for Porthkerry Road west of the site during the AM peak hour. There is a corresponding reduction in trips to the east. The increase is five two-way movements during the PM peak hour.
- 7.1.12 A worst-case increase in 46 two-way movements is not considered to be a severe impact from the proposed school development, equating to less than one vehicle per minute during the AM peak hour. This increase does not consider the effects of school travel planning, attendance at before and after school clubs or the increase in residential catchment from the adjacent Bellway / Persimmon development. Analysis of junction capacity modelling included in the Waterman TA shows that there is ample residual capacity for junctions to the west of the site access junction.
- 7.1.13 The Transport Implementation Strategy (TIS) for the site includes:
- Targets for the reduction of private car use and a commitment to a TP and monitoring programme has been made. The measures that will be implemented as part of the development proposals have been outlined to help to achieve the targets and objectives set.
 - 'School Keep Clear' markings are installed on the carriageway in the vicinity of the school accesses to avoid encroachment by parked vehicles, which could have a negative impact on operation and highway safety.
 - The school will engage with VoG to explore the potential to implement an informal one-way system to reduce vehicle conflict and promote efficiencies across the local highway network.
 - The school will increase the provision of school transport for future pupils.
 - The school will liaise with the VoG to determine appropriate measures to reduce the impacts of any ongoing construction work post-occupation of the school.

7.2 Conclusion

- 7.2.1 This TS concludes that there are no transport planning reasons why the proposed school development would be unacceptable in terms of highway safety or operation. This TS has also demonstrated that safe and suitable access to the site can be obtained for all future users.

Figures



Llancarfan Primary School, Vale of Glamorgan

Transport Statement

Figure 2-1: Site Location and Local Context



Appendix 1-1: Transport Statement Scoping Note

Project:	Llancarfan Primary School, Rhoose	Job No:	6065462
Subject:	Transport Statement Scoping Note		
Prepared by:	Kirsty Cox (Principal Consultant)	Date:	05/02/2020
Checked by:	Spiro Panagi (Associate Director)	Date:	06/02/2020
Approved by:	Spiro Panagi (Associate Director)	Date:	06/02/2020

The following table sets out the proposed scope of a Transport Statement (TS) in respect of the proposed development of Llancarfan Primary School, a new school to be located within the Taylor Wimpey Residential development, off Rhoose Way, Rhoose, Vale of Glamorgan (VoG). This Note is submitted to the VoG, in its role as Local Highway Authority (LHA), for agreement and approval.

1	Site Location and Existing Land Use	<p>Llancarfan Primary School is seeking planning permission for development of a new facility school set within the Taylor Wimpey residential development in the VoG. A plan indicating the location of the school is attached in Appendix A.</p> <p>The proposed school will be a co-educational primary school, located on and accessed from Rhoose Way. The site is located in Rhoose, immediately south of Cardiff international Airport (CWL) which can be accessed via Porthkerry Road. Porthkerry Road provides direct access to the A4226, linking the site to Barry and Cardiff in the east, with the B4625 linking to Llantwit Major and Porthcawl to the West. Both the A4226 and B4265 provide access to Bonvilston and Cowbridge to the north.</p>
2	Planning History	<p>A Transport Assessment (TA) was completed by Waterman Transport and Development in May 2014 to accompany a planning application for the residential site 2014/00550/OUT where it includes the proposed school development within the wider site.</p> <p>The application was approved, the detailed permission for the residential development was granted under application reference 2015/01070/RES on 29 July 2016.</p> <p>AECOM have been appointed as transport consultants to support a planning application solely for the proposed school development.</p> <p>As set out above a full TA has already taken the school into account as part of the wider proposals and this has been approved as part of the 2014/00550/OUT application. The TA included traffic analysis and assessments which were inclusive of the traffic that would be generated by the school. The outcome of these assessments was determined to be acceptable through the granting of planning permission. The school is therefore considered to benefit from an outline consent as part of the wider site proposals.</p> <p>On the basis of the above, we would suggest that a Transport Statement is provided at this stage to inform the planning application. This will serve to</p>

		present the relevant information as well as a review of the proposed layout in terms of access, parking and circulation.
3	Development Proposal	<p>The new school is proposed to enrol a total capacity of 210 pupils in the primary school and 24 nursery pupils, totalling 234 pupils on the site. The proposed staff numbers will include 23 Full Time Equivalents (FTE). It has been checked and confirmed that the quantum within the current proposal remain unchanged from that which was assessed in the 2014 TA by Waterman Transport and Development and which was subsequently awarded outline planning approval.</p> <p>The TS will present more detail on the proposed school layout than was previously available at the outline application stages, it is proposed to include the following:</p> <ul style="list-style-type: none"> ▪ Details of the access arrangements; ▪ Internal transport layout for the site, including cycle and car parking provision (staff and visitor) and circulation along with pedestrian circulation; ▪ Consideration of the potential for bus stops, layovers and parent drop-off points; and ▪ Swept Path Analysis (SPA) to demonstrate that larger vehicles (school buses, refuse, delivery and emergency) can be accommodated.
4	Planning Policy Review	<p>The context of the development proposals will be considered in relation to the following policy and guidance:</p> <ul style="list-style-type: none"> ▪ Planning Policy Wales (PPW) 10; ▪ Technical Advice Note (TAN) 18: Transport, published in March 2007; ▪ The Wales Transport Strategy, published in April 2008; ▪ National Transport Finance Plan, published in September 2015; ▪ Active Travel (Wales) Act 2013; ▪ Wellbeing of Future Generations (Wales) Act 2015; ▪ Vale of Glamorgan Local Development Plan (LDP) 2011-2026 [adopted June 2017]; ▪ Vale of Glamorgan Local Transport Plan (LTP) 2015-2030; and ▪ Supplementary Planning Guidance (SPG) to the LDP, including Parking Standards (March 2019). <p>The TS will clearly demonstrate the development's compliance to the above policies and corresponding objectives, whilst taking account of any changes in Policy since the outline application stage. This will be presented within the policy chapter (following the setting out of the development proposals), linking specific development proposals to the policies and their objectives. A summary will be provided within the TS conclusions.</p>
5	Existing Situation and Site Accessibility	<p>The TS will include the following:</p> <ul style="list-style-type: none"> ▪ Description of the site location and existing usage; ▪ Description of the local highway network, including carriageway widths, speed limits, street lighting, etc;

		<ul style="list-style-type: none"> ▪ Description of the existing highway operational conditions with reference to previous traffic survey data, along with queuing conditions at key junctions; ▪ Analysis of Personal Injury Collision (PIC) data for the purposes of a highway safety record review; ▪ Description of existing walking/cycling facilities; ▪ Description of public transport services; and ▪ Identification of key local facilities and their accessibility by sustainable modes.
6	Data Collection	<p>PIC data will be obtained from the Welsh Government for the most recent 5-year period, covering an appropriate study area. This study area will include the site along with the assessed junctions and will be analysed and reported upon within the TS. Should the data not be returned in good time for the TS to be completed, a preliminary assessment will be carried out using an online resource such as Crashmap. This will be followed by a more detailed assessment using the PIC data from Welsh Government and submitted as an updated TS or as an Addendum, as appropriate.</p>
7	Trip Generation & Distribution	<p>The trip generation and distribution of the proposed development will draw from the assessment undertaken by the 2014 TA by Watermen Transport and Development. It will also demonstrate how this is still applicable, given that the quantum of development proposed in is line with that which was assessed previously.</p>
8	Transport Implementation Strategy (TIS)	<p>The TS will include a TIS, which will consider potential measures, and appraise those already being implemented by the wider residential site, to encourage the mode share of sustainable travel modes by staff and pupils at the school. In particular, the following will be considered:</p> <ul style="list-style-type: none"> ▪ Feasibility of walking and cycling routes in the surrounding areas including consideration for potential improvements; ▪ Provision of cycle parking within the school grounds; ▪ Pedestrian and cycle access and circulation within the site; and ▪ Bus/parent drop-off points. <p>A new Travel Plan for the site will be secured as part of a planning condition.</p>
9	Construction Traffic	<p>The TS will include discussion of potential routeing arrangements and estimates of construction traffic.</p>

Appendix A

Location Plan - Llancafán Primary School, Rhoose



Parker, Matt J.

From: Aitken, James <jaitken@valeofglamorgan.gov.uk>
Sent: 10 February 2020 14:27
To: Panagi, Spiro
Cc: Cox, Kirsty; Phillips, Kyle W; Howells, Lee M; Williams, Kelly A
Subject: RE: Llancarfan Primary School, Rhoose

Follow Up Flag: Follow up
Flag Status: Completed

Hi Spiro,

Many thanks for the scoping note for a TS to be submitted as part of the new Llancarfan Primary School. It is appreciated that a comprehensive TA was submitted as part of the Outline consent and looked at the residential scheme and the school. The detail within the scoping note is acceptable and it would be beneficial if the following information is added:

1. A plan highlighting the catchment area for the school and where pupils are likely to be travelling from. Will the catchment remain the same as the old Llancarfan Primary School? If so this will predict more vehicle movements from the Large rural area of Llancarfan although provide modal split. The catchment can be seen in the original TA Appendix E.
2. Proposed school opening and closing times and whether there is provision for breakfast clubs/after school clubs and the envisaged usage for these and then relate it to trips to/from the school.
3. Pupils travelling via school transport services and appropriate provision within the site to cater for this.
4. The relationship the proposed school will have with the neighbouring residential developments. The Taylor Wimpey development is due to be completed by June 2021. How the school opening could impact on any surrounding development and vice versa as construction traffic will need to be monitored not to conflict with school traffic.
5. Any Traffic Regulation Orders that will be required for the area surrounding the school. Indiscriminate parking should be prevented as best as possible and it is understood that a pick up and drop off area will be provided however school zig-zag's and double yellow lines should be looked at. The Council will soon have the provision of a Camera Car to enforce these TRO's particularly around schools where parking is problematic.

The council has currently gone out to consultation for improved active travel routes to the site through Rhoose as part of the S106 contributions from the Taylor Wimpey development. Although this is just a consultation and cannot be considered a definitive scheme it will be worth looking at this to see proposed improvements to Active Travel provision to/from the site.

Kind regards

James Aitken
Engineer – Highway Development
Highway Development (Engineering Design & Procurement)
Vale of Glamorgan Council / Cyngor Bro Morgannwg
tel / ffôn: 02920-673030
mob / sym:
e-mail / e-bost: jaitken@valeofglamorgan.gov.uk

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Correspondence is welcomed in Welsh or English / Croesewir Gohebiaeth yn y Gymraeg neu yn Saesneg.

From: Howells, Lee M <LMHowells@valeofglamorgan.gov.uk>

Sent: 07 February 2020 13:59

To: Aitken, James <jaitken@valeofglamorgan.gov.uk>

Cc: Cox, Kirsty <Kirsty.Cox@aecom.com>; Panagi, Spiro <Spiro.Panagi@aecom.com>

Subject: RE: Llancarfan Primary School, Rhoose

James,

Can you please can you review the scoping and provide comments

Kind Regards

Lee

Lee Howells

Engineering Manager Highway Development & Traffic / Prif Beiriannydd

Highways and Engineering / Priffyrdd a Pheirianneg

Vale of Glamorgan Council / Cyngor Bro Morgannwg

tel / ffôn: 02920 673081

mob / sym:

e-mail / e-bost: LMHowells@valeofglamorgan.gov.uk

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Correspondence is welcomed in Welsh or English / Croesewir Gohebiaeth yn y Gymraeg neu yn Saesneg.

From: Panagi, Spiro <Spiro.Panagi@aecom.com>

Sent: 07 February 2020 12:15

To: Howells, Lee M <LMHowells@valeofglamorgan.gov.uk>

Cc: Cox, Kirsty <Kirsty.Cox@aecom.com>

Subject: Llancarfan Primary School, Rhoose

Good afternoon Lee

I hope you are well and had a good start to 2020.

We have been appointed to support a proposed new school facility in Rhoose, to be known as Llancarfan Primary School. In our initial investigations we have considered the previous planning history of the site and have determined that the land was provided within the wider Taylor Wimpey residential development and that the Transport Assessment (TA) submitted in support for the outline planning application (2014/00550/OUT) included

and assessed the traffic impact of the school facility. The permission was subsequently awarded and the residential development has proceeded (2015/01070/RES).

Given that the school has already been taken into account as part of the previous proposals, supported by a TA and found to be acceptable, we propose the preparation of a Transport Statement in support of school application. We have confirmed that the scale of the school in terms of pupils and staff is still identical to that which was assessed in the previous TA.

We have prepared and attached a Scoping Note for a Transport Statement which we hope will cover all the detail that you would want to see and also to adequately support the school application by drawing reference from the previous work and include the update, such as layout, as part of this scheme in one stand-alone report.

We trust that this is useful and helps to refine the amount of consultation time needed on this scheme. We would be grateful if you could review the attachment and advise that you are able to agree the content or discuss any additional requirements.

Thank you for your time, looking forward to catching up with you again soon.

Kind regards

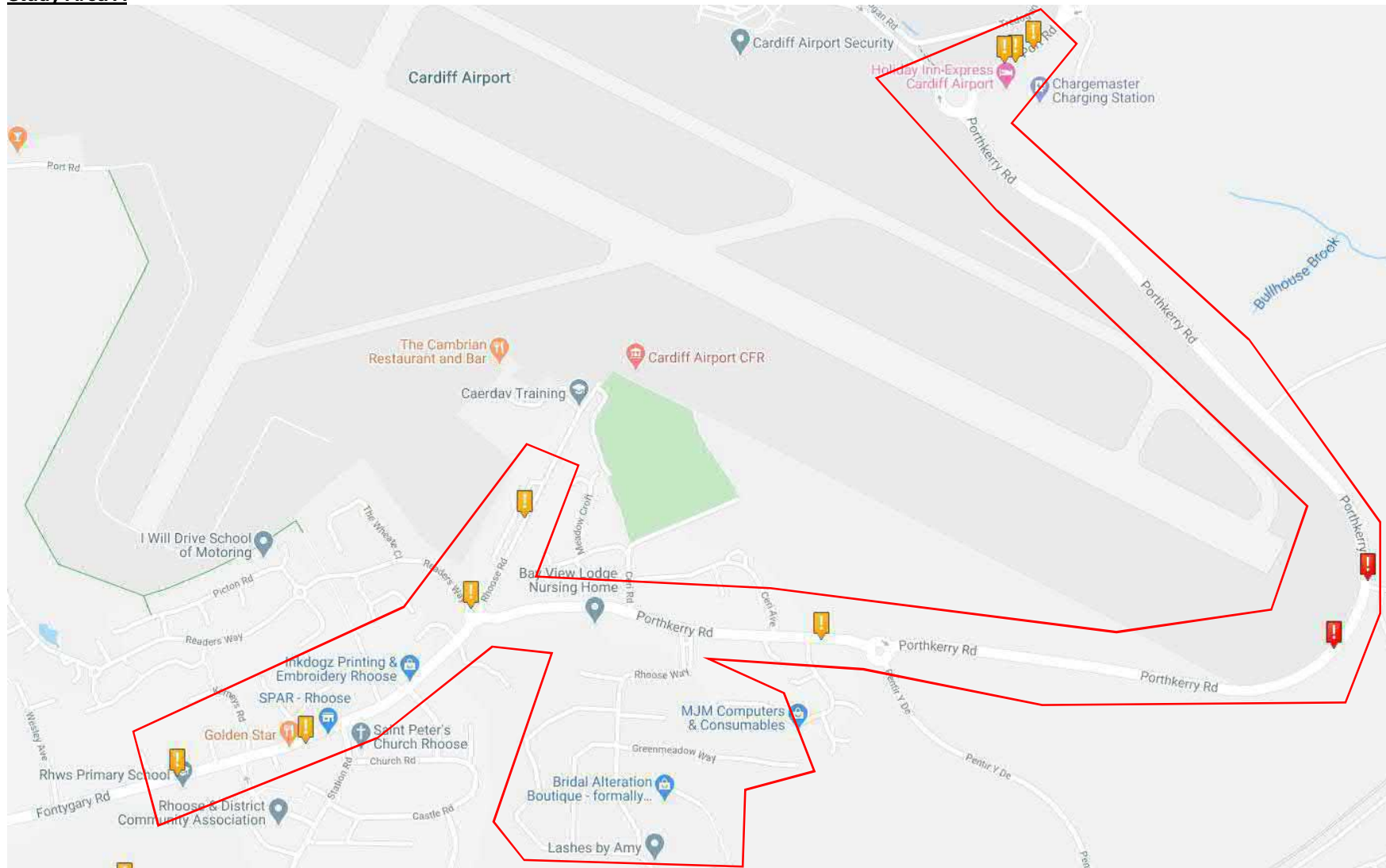
Spiro Panagi BSc (Hons) CMILT
Associate Director, Transportation
D +44 (0)29 2067 4763
M +44 (0)7920 593 542
E: Spiro.Panagi@aecom.com

AECOM
1 Callaghan Square
Cardiff, CF10 5BT
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F +44 (0)29 2067 4699
www.aecom.com

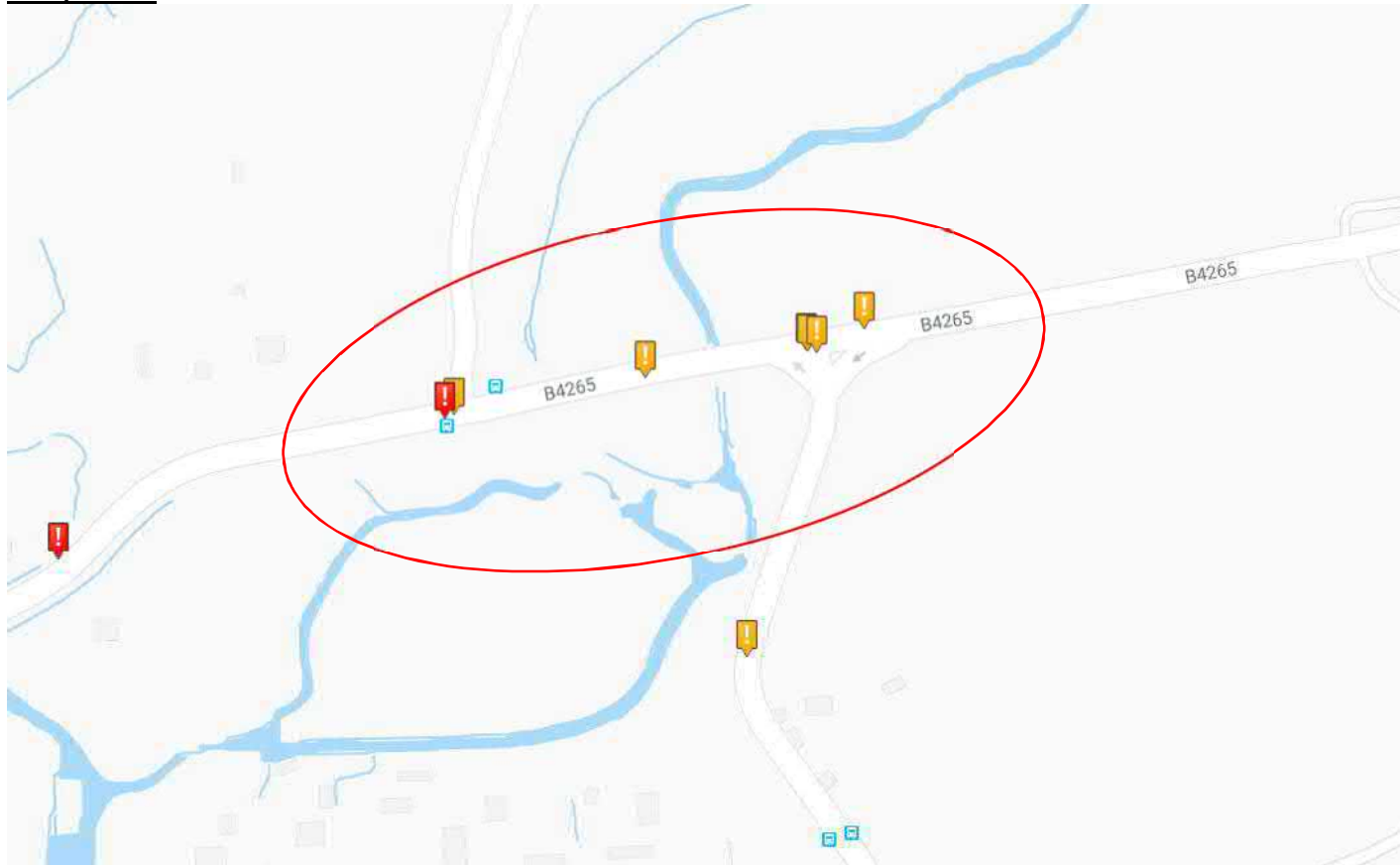
Appendix 2-1: Extract from Crashmap

Llancarfan Primary School, Rhoose
Personal Injury Collision Data – Extract from Crashmap for 2014-2018

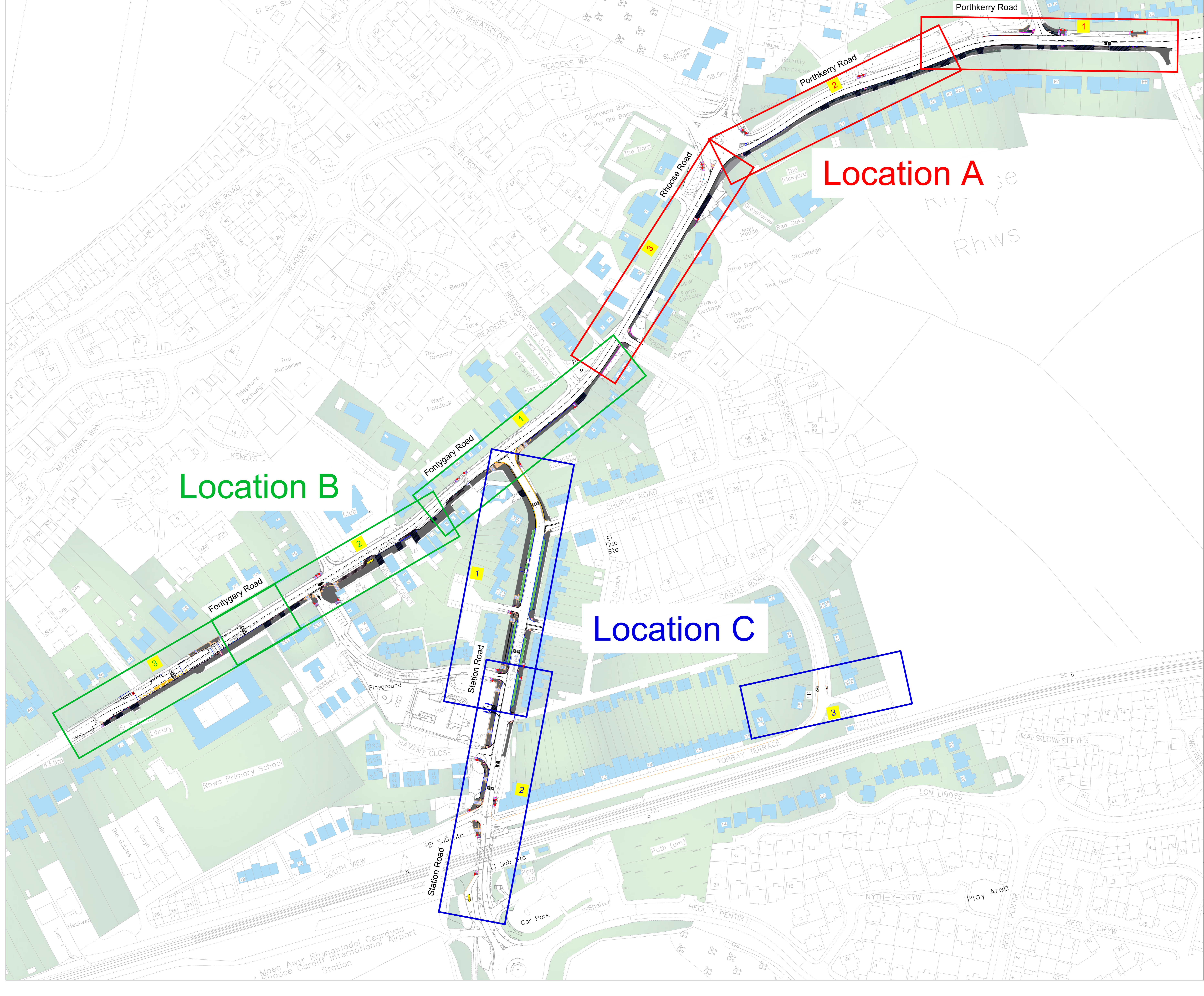
Study Area A



Study Area B



Appendix 2-2: S106 Walking / Cycling Improvements

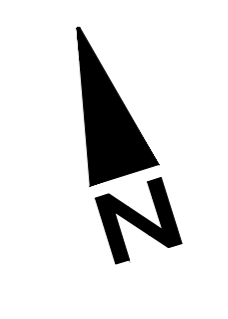


Location B

Location A

Location C

Rev.	Amendment	Date	Drawn	CK'd



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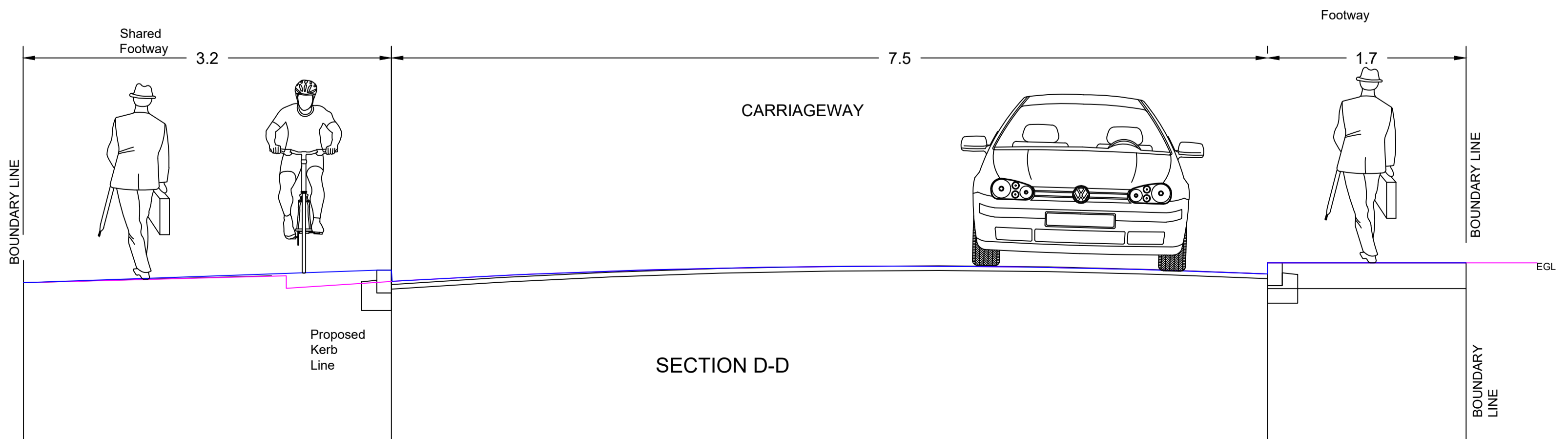
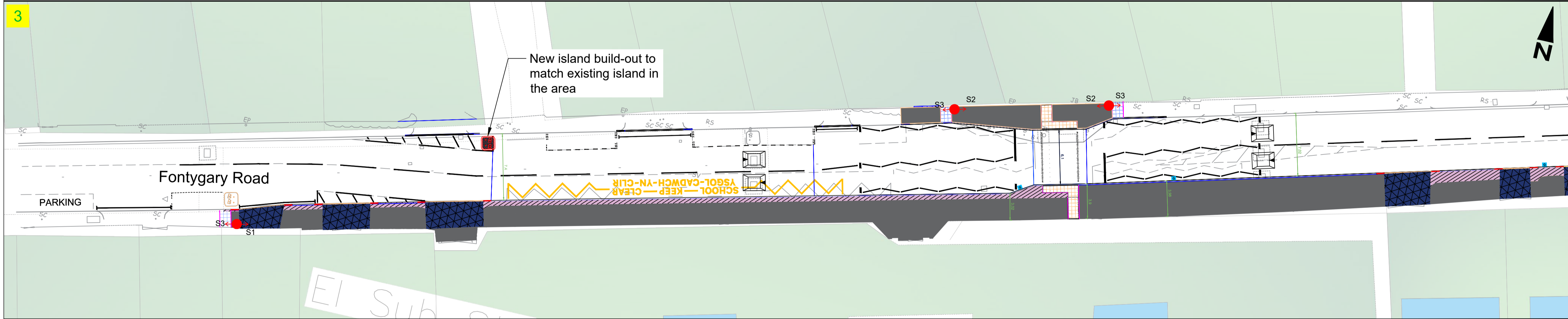
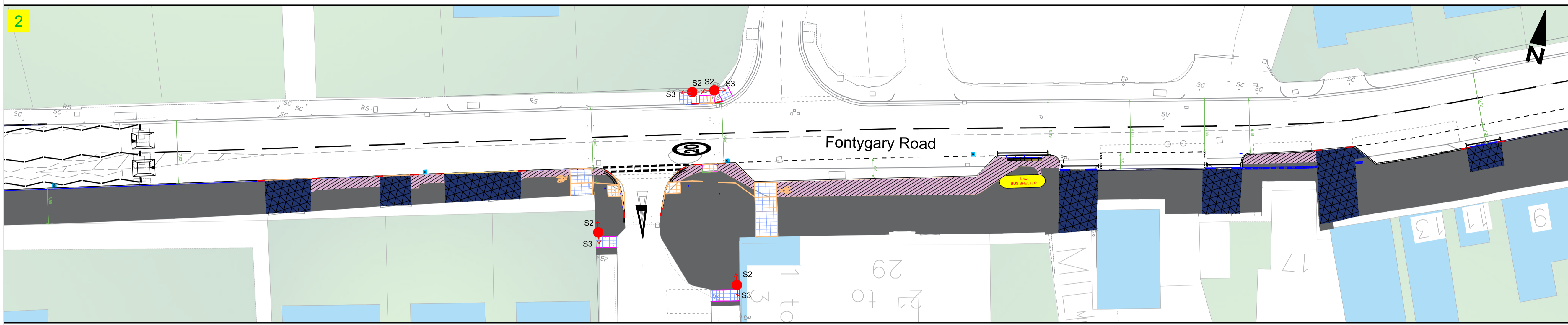
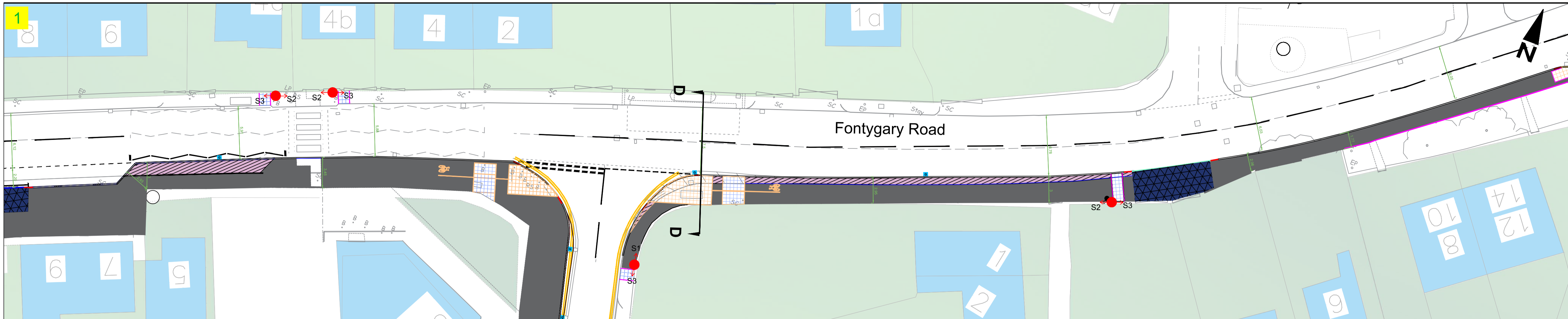
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ALPS QUARRY ROAD WENVOE CARDIFF CF5 6AA

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DRAWING TITLE: Consultation Overview

DRAWN: TB	APPROVED: CH
CHECKED: SI	DATE: 23/01/2020 SCALE: N/A

PROJECT NO.: 2164	DRAWING NO.: 001	REV.: A1
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Rev.	Amendment	Date	Drawn	Ck'd

- Key
- Footway to be constructed to vehicle Crossover Standard
 - Existing carriageway to be converted into Footway
 - Existing Footway to be Reinstated
 - Uncontrolled Crossing Tactile Paving (buff Color)
 - Proposed Gladson Manchester Bollards With Lockfast Sockets with Red and White banding
 - Cycleway Demarcation Tactiles

BEICWYR AILYMUNWCH A'R LńN GERBYDAU CYCLISTS REJOIN CARRIAGEWAY S1

DIWEDD Y LLWYBR END OF ROUTE S2

 S3

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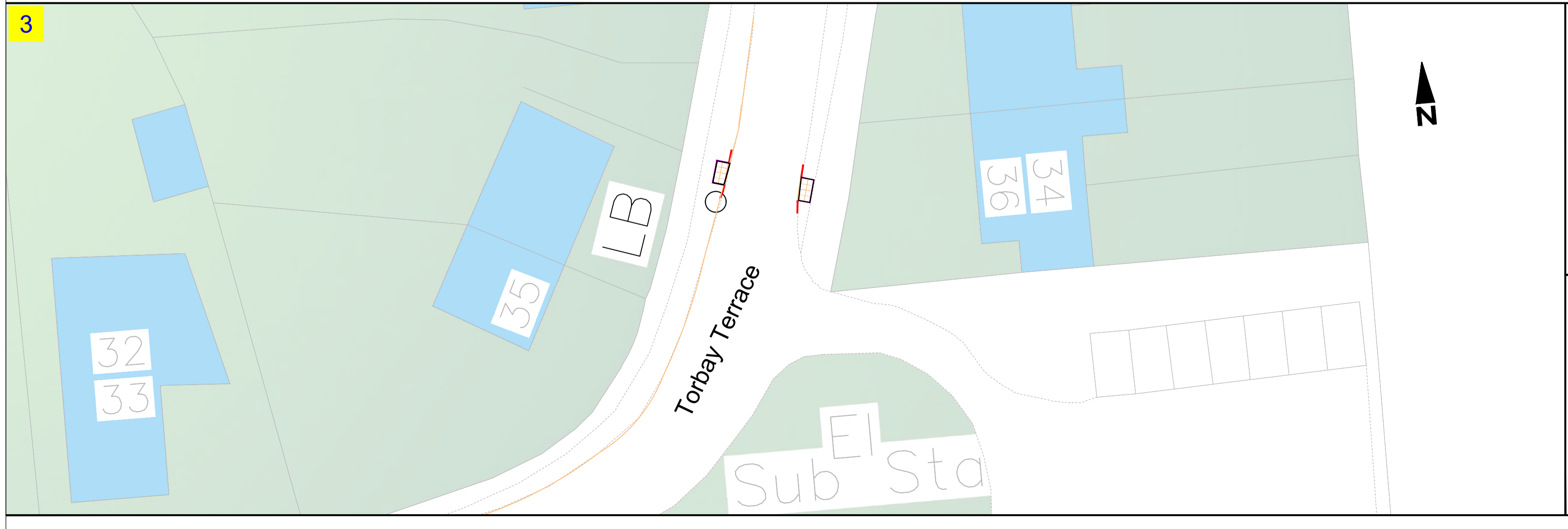
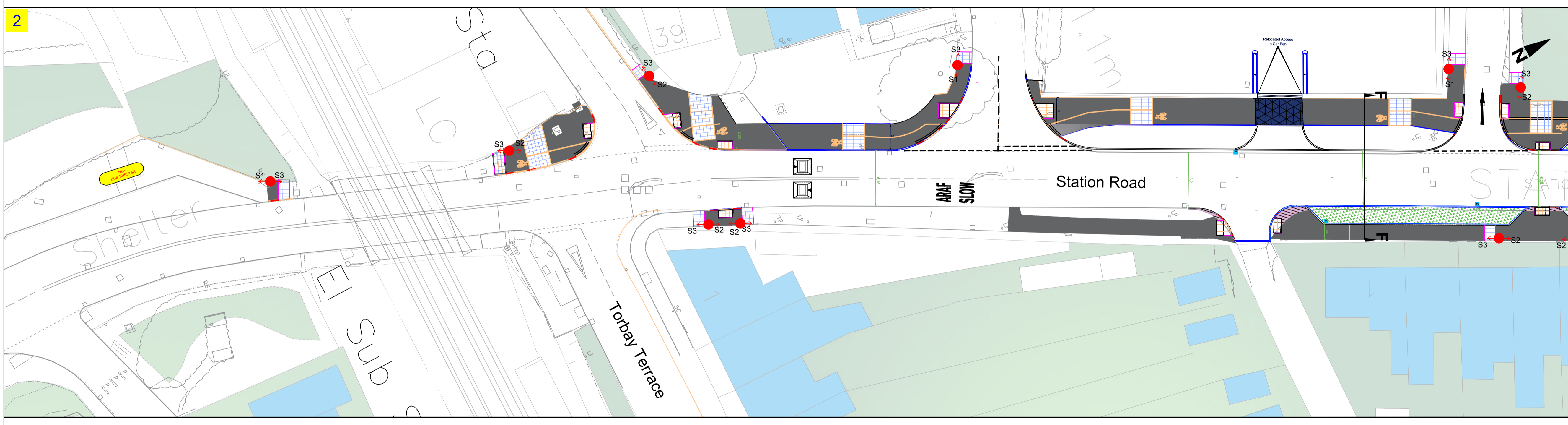
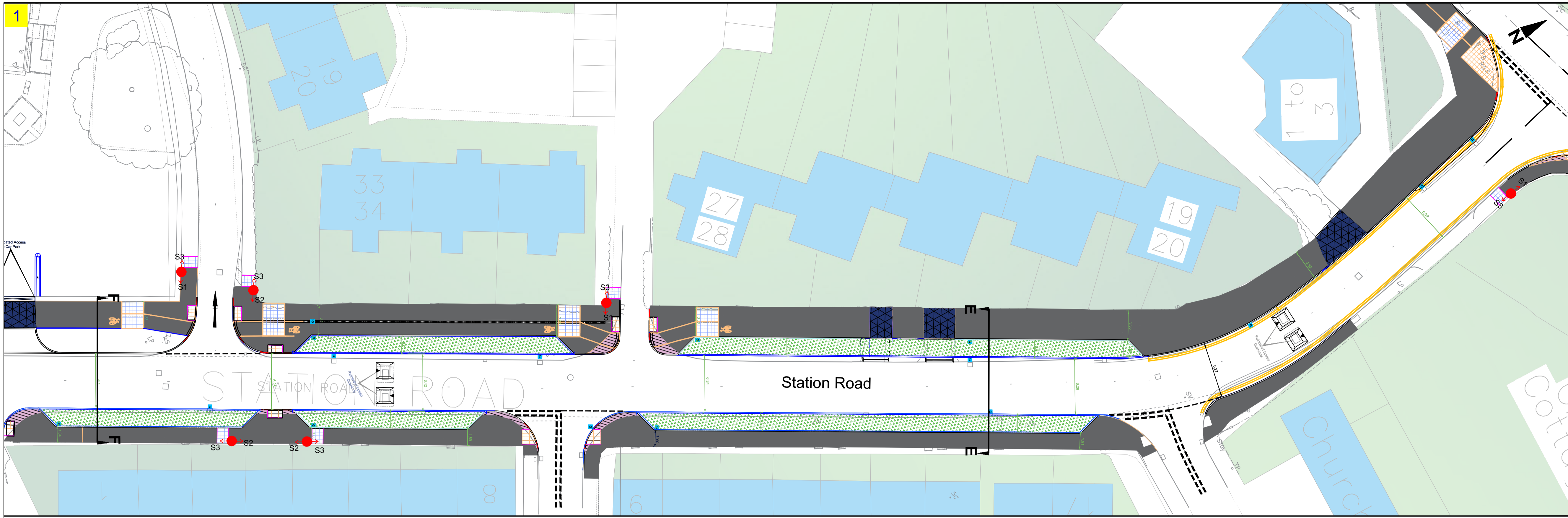
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CARDIFF
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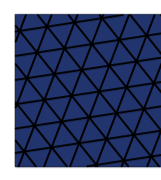
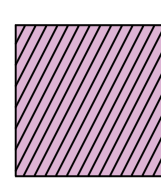
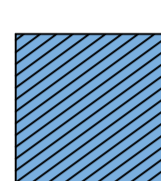

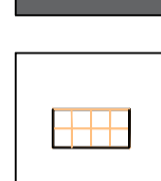
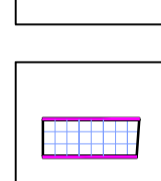

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DRAWN: TB	APPROVED: CH
CHECKED: SI	DATE: 23/01/2020 SCALE: N/A
PROJECT NO.: 2164	DRAWING NO.: 003 REV: XX



Rev.	Amendment	Date	Drawn	Ck'd


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-  Footway to be constructed to vehicle Crossover Standard
 -  Existing carriageway to be converted into Footway
 -  Proposed Footway
 -  Existing Footway to be Reinstated
 -  Uncontrolled Crossing Tactile Paving (buff Color)
 -  Cycleway Demarcation Tactiles
 -  Grasscrete Area Parking

BEICWYR AILYMNWCH A'R LON GERBYDAU
CYCLISTS REJOIN CARRIAGEWAY

S1

DIWEDD Y LLWYBR
END OF ROUTE

S2

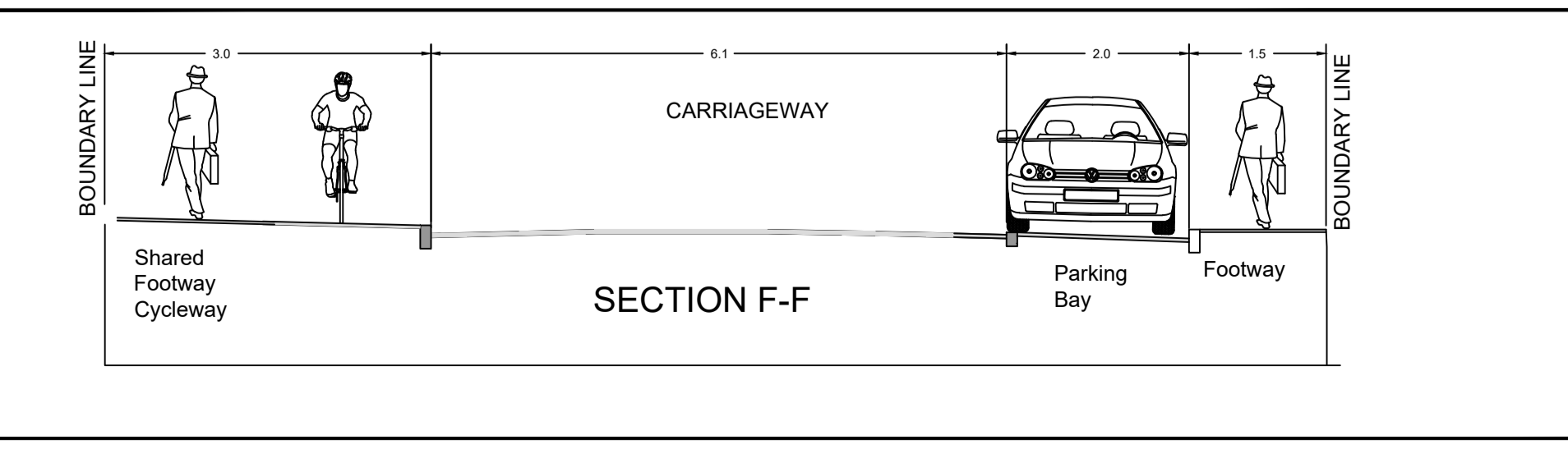
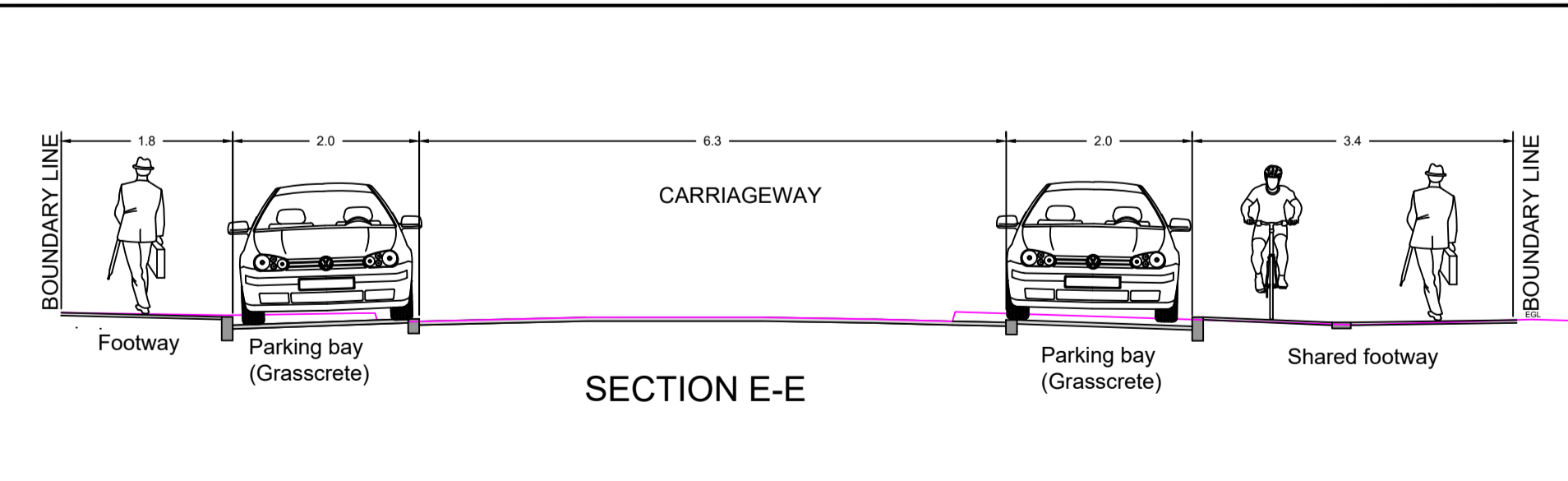


S3


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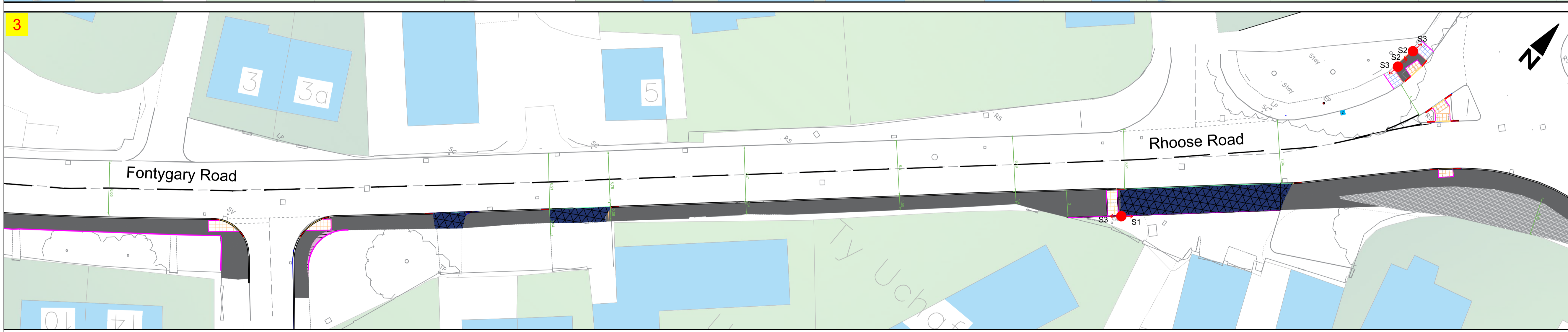
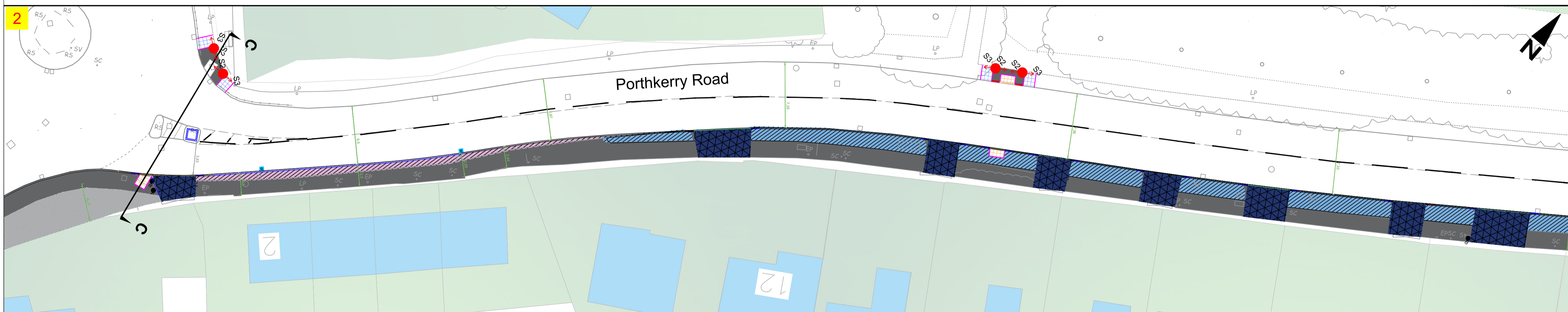
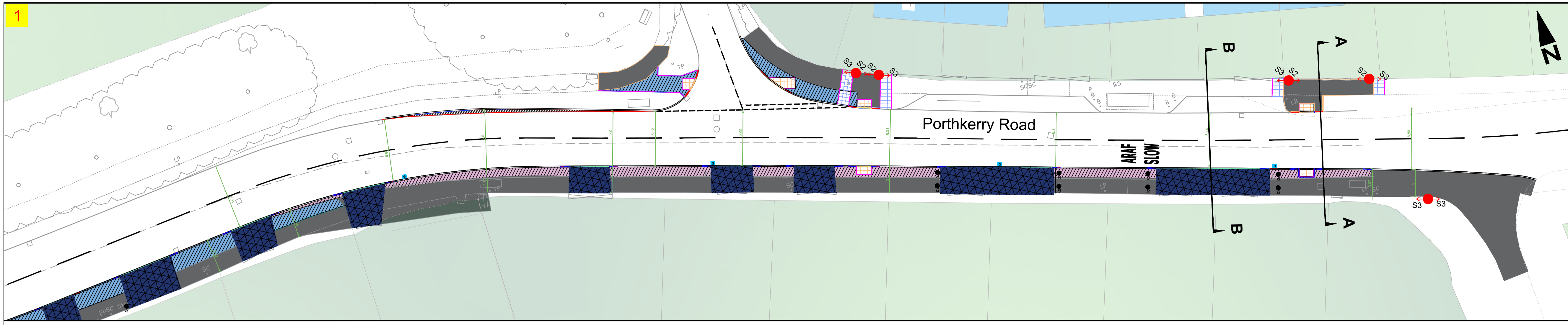
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CF5 6AA

PROJECT TITLE: **S106 - Porthkerry Road Rhoose Village**

DRAWING TITLE: **Consultation Drawing Location C**

DRAWN: TB	APPROVED: CH
CHECKED: SI	DATE: 23/01/2020 SCALE: N/A
PROJECT NO.: 2164	DRAWING NO.: 004 REV: XX




Rev.	Amendment	Date	Drawn	Ck'd

- Key
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 - Proposed Footway
 - Existing Footway to be Reinstated
 - Uncontrolled Crossing Tactile Paving (buff Color)
 - Proposed Gladson Manchester Bollards With Lockfast Sockets with Red and White banding
 - Cycleway Demarcation Tactiles

BEICWYR AILYMUNWCH A'R LńN GERBYDAU CYCLISTS REJOIN CARRIAGEWAY S1


DIWEDD Y LLWYBR END OF ROUTE S2

 S3

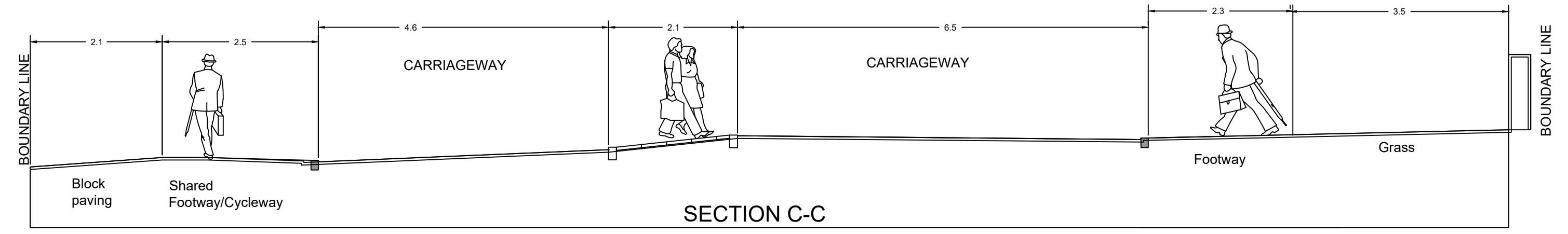
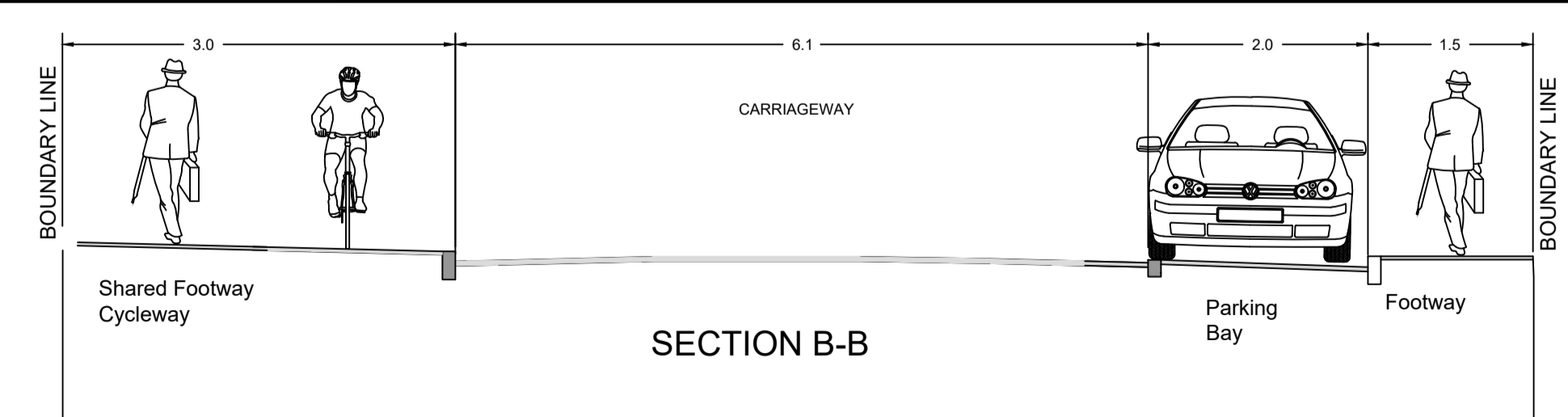
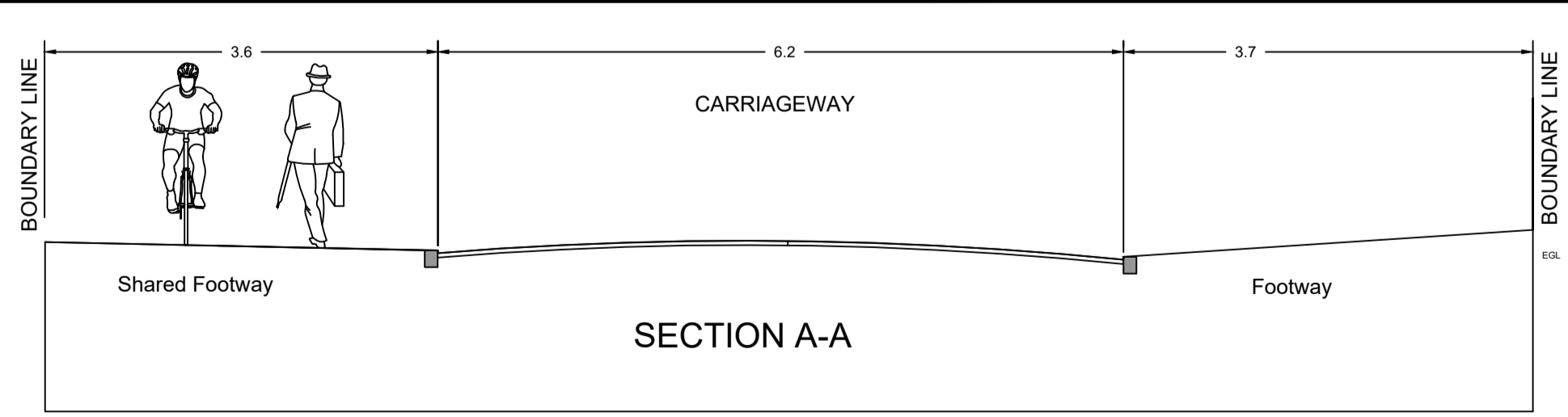
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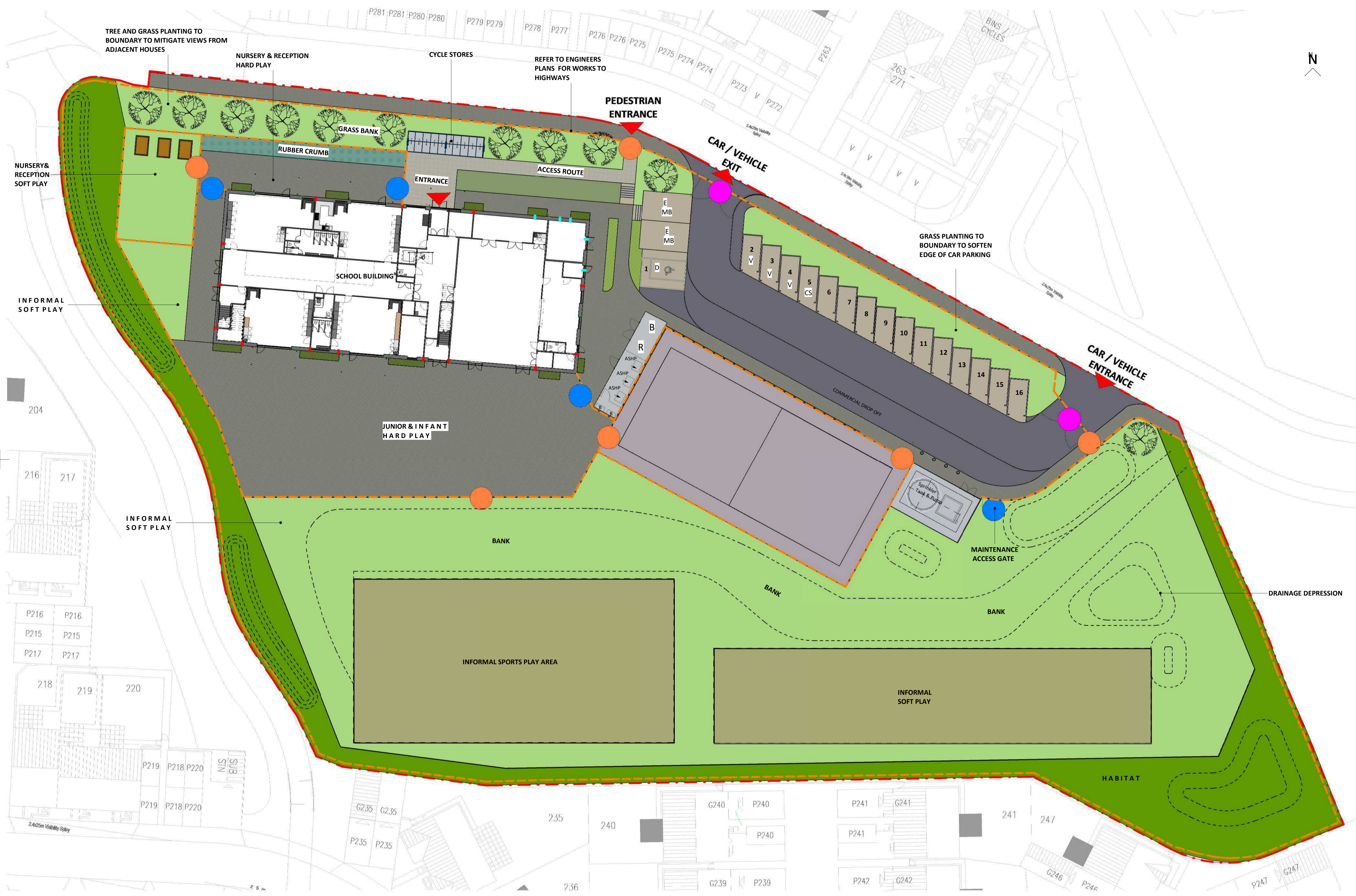


PROJECT TITLE: **S106 - Porthkerry Road Rhoose Village**

DRAWING TITLE: **Consultation Drawing Location A**

DRAWN: TB	APPROVED: CH
CHECKED: SI	DATE: 23/01/2020 SCALE: N/A
PROJECT NO.: 2164	DRAWING NO.: 002 REV: XX

Appendix 3-1: Development Masterplan



Legend

- - - Site boundary.
- - - Fence.

- Gates**
- Site entrance vehicle gates.
- Pedestrian single gate.
- Pedestrian and maintenance vehicle access gate.

- R** Recycling bins.
- B** General waste bins.
- D** Disabled parking space.
- CS** Car share space parking.
- E MB** Electric charging and mini bus parking space.
- New tree planting.

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STATUS	REV	DATE	DESCRIPTION	CHECKED BY	CS
Vale of Glamorgan Council				ORIGINATOR NO	152855

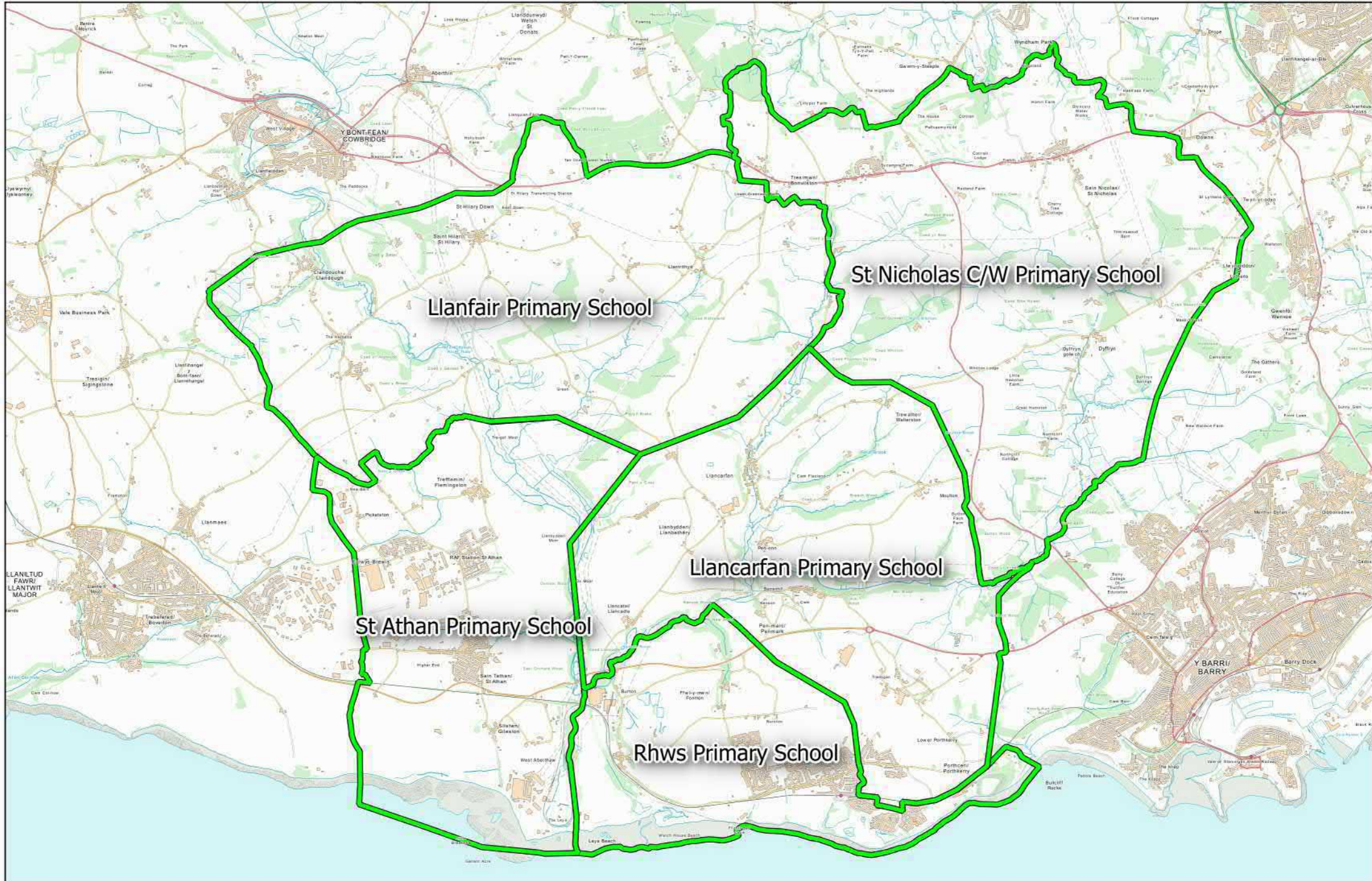
CONSULTANT
STRIDE TREGLOWN
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PROJECT
 Llancafarn Primary School in Rhoose
 Project Address

DRAWING TITLE
 Proposed Site Plan

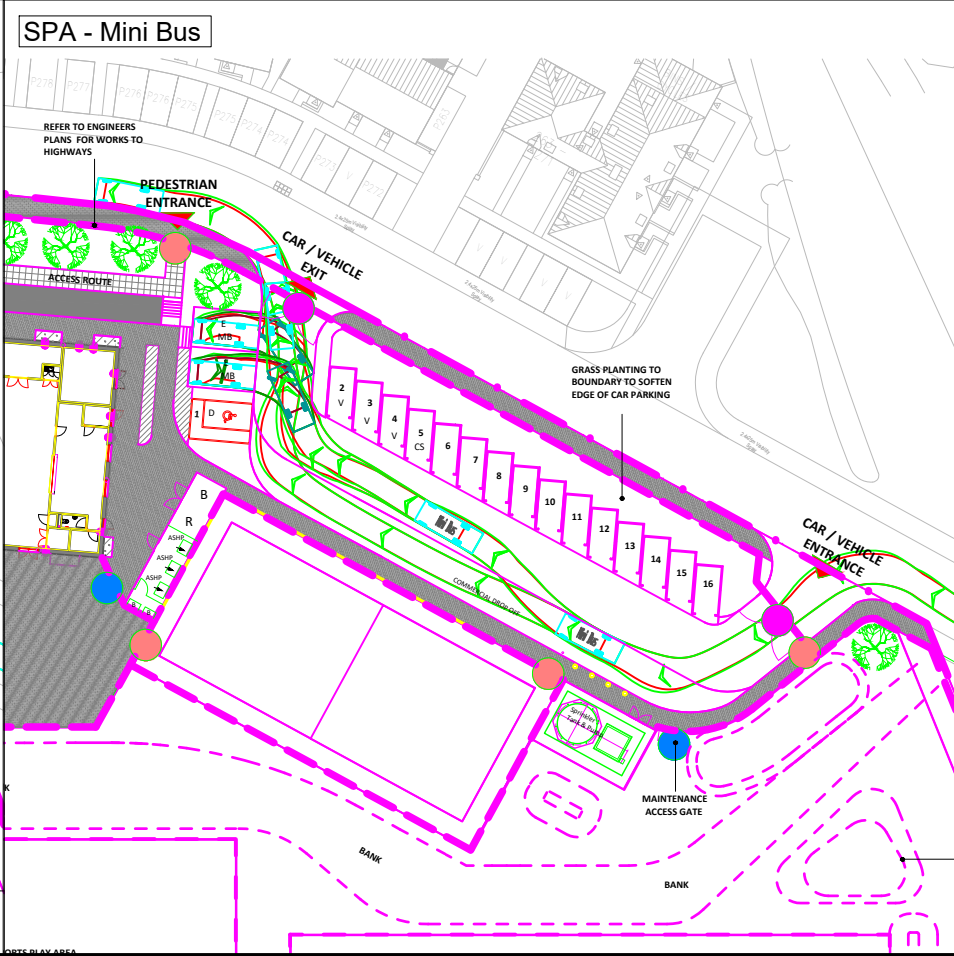
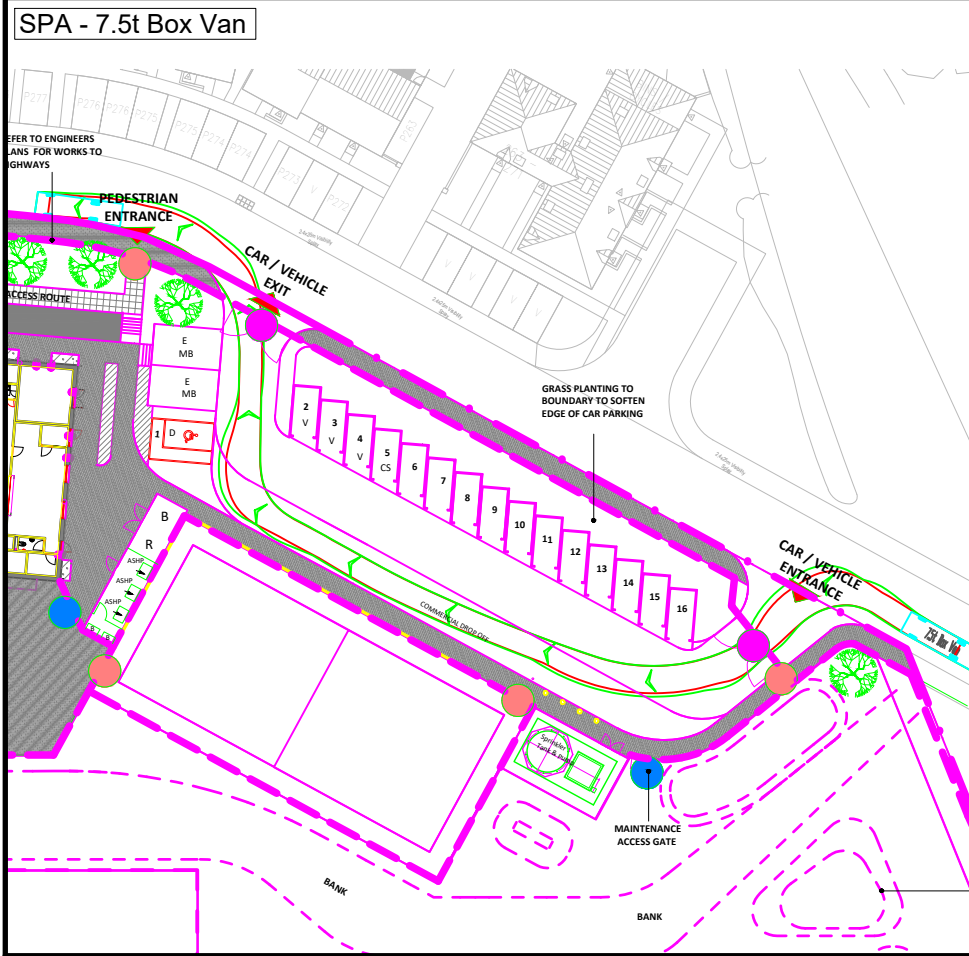
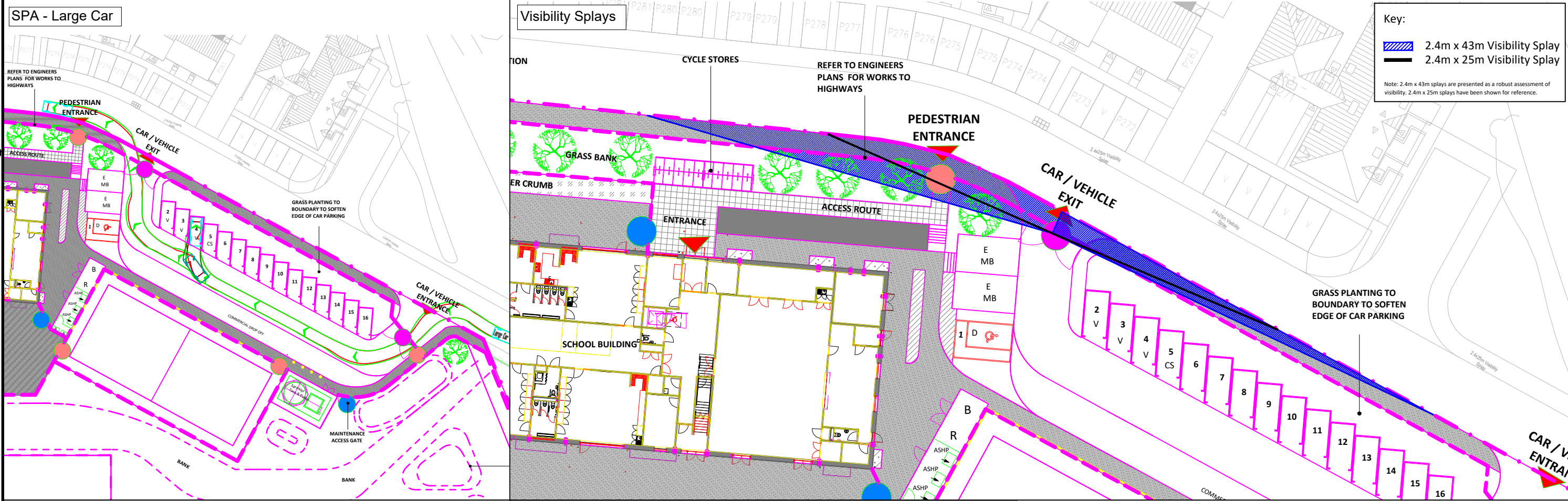
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LPS-STL-XX-XX-DR-L-9001	PL09

Appendix 3-2: Proposed School Catchment

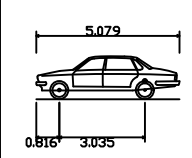
Proposed Primary School Catchment Areas



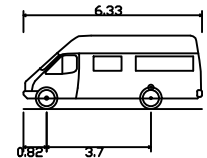
Appendix 3-3: Swept Path Analysis



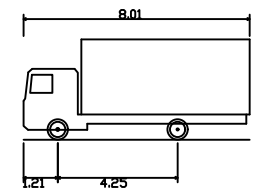
Drawing based on LPS-STL-XX-XX-DR-L-9001-PL-PL09



Large Car (2006)
 Overall Length 5.079m
 Overall Width 1.872m
 Overall Body Height 1.525m
 Min Body Ground Clearance 0.310m
 Max Track Width 1.831m
 Lock to lock time 4.00s
 Kerb to Kerb Turning Radius 5.900m



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



7.5t Box Van
 Overall Length 8.010m
 Overall Width 2.100m
 Overall Body Height 3.556m
 Min Body Ground Clearance 0.351m
 Track Width 2.064m
 Lock to lock time 4.00s
 Kerb to Kerb Turning Radius 7.400m

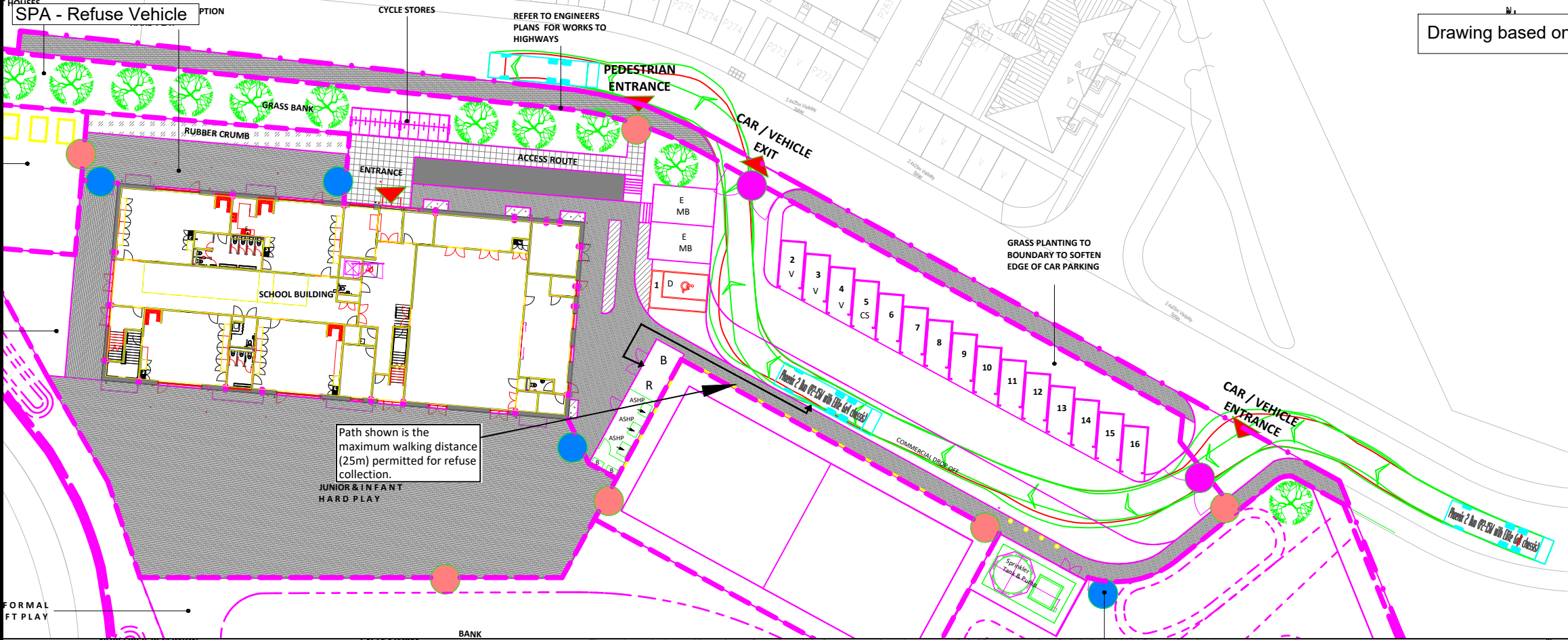
Llancarfen Primary School, Vale of Glamorgan

Transport Statement
 Swept Path Analysis (SPA) and Visibility Splays - 01

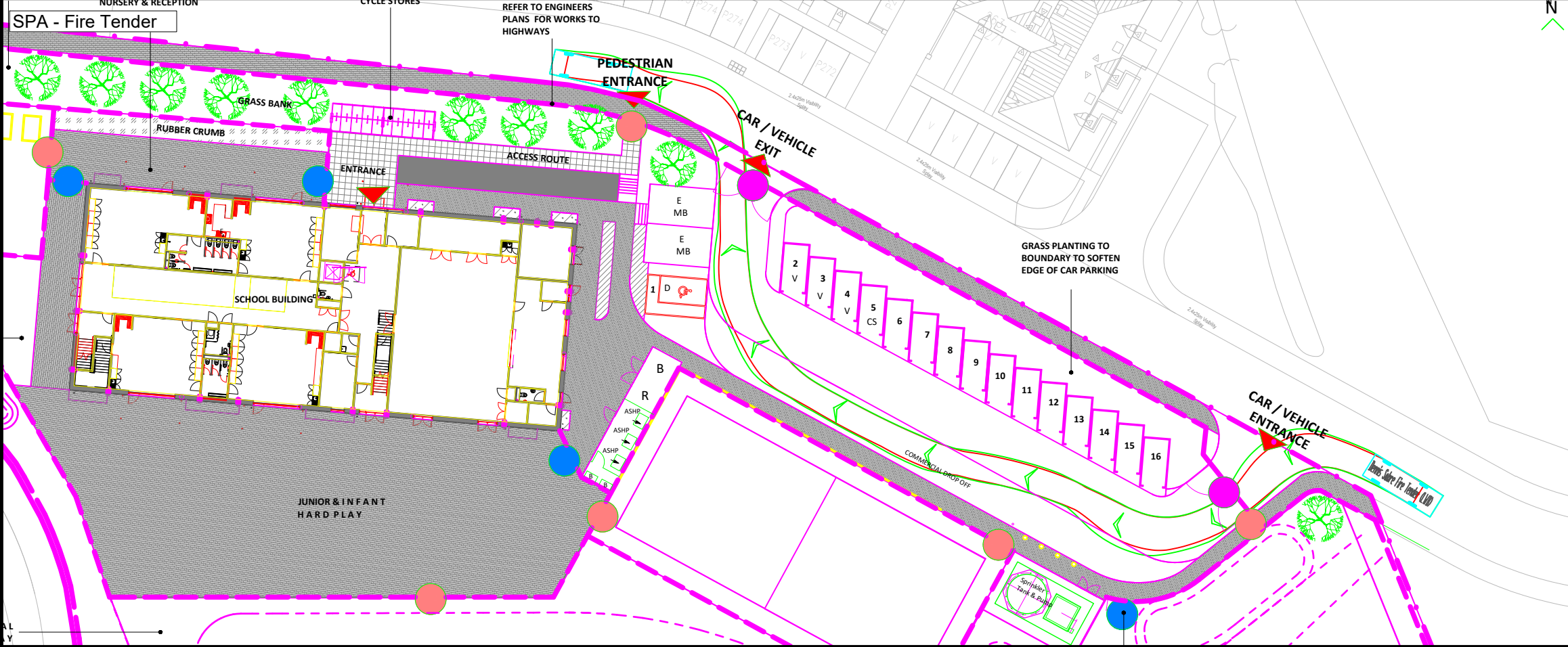


60614562-003

Drawing based on LPS-STL-XX-XX-DR-L-9001-PL-PL08



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)	
Overall Length	11.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.500m



Dennis Sabre Fire Tender (LWB)	
Overall Length	7.700m
Overall Width	2.430m
Overall Body Height	3.512m
Min Body Ground Clearance	0.397m
Track Width	2.380m
Lock to lock time	5.00s
Kerb to Kerb Turning Radius	7.400m

Llancarfen Primary School, Vale of Glamorgan

Transport Statement
Swept Path Analysis (SPA) and Visibility Splays - 02



60614562-003

Appendix 5-1: Technical Note – Calculation of School Trip Attraction and Traffic Assignment (Waterman)

Technical Note – Calculation of School Trip Attraction and Traffic Assignment

Introduction

This technical note provides details of the methodology used to calculate the trip attraction and traffic assignment of a proposed 258 pupil primary school located within Rhoose. This primary school forms part of a proposed mixed use development to the south of Porthkerry Road, which will, in addition to the primary school, also comprise a 350 dwelling residential development. It is proposed that the development will be accessed from a single point of access located along Porthkerry Road between the Ceri Road and Ceri Avenue junctions.

A separate assessment has been undertaken of the residential development, which will be presented in the final Transport Assessment of the scheme. However, as there is likely to be interaction between the proposed residential and school developments, this note also provides further detail on the potential for internal trips to be made between the uses.

The development site forms half of a housing allocation (Housing Site 22) within the Vale of Glamorgan’s (VoG) Unitary Development Plan (UDP) 1996 – 2011. A planning application has also already been submitted by Bellway and Persimmon homes for 350 houses, on the neighbouring site to the east which forms the other half of the sites allocation.

Trip Attraction

A trip attraction calculation has been undertaken of the site based on comparative sites within the ‘Education – Primary’ category of the TRICS database. Table 1 below provides a summary of the calculate trip attraction rates for the assessed AM (08:00-09:00) and PM (17:00-18:00) peak hours, and for the whole day (07:00 – 19:00). A full TRICS output has also been provided as Appendix A.

Table 1: School Trip Attraction Rates (per pupil) Calculated from TRICS

Mode Split	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 – 19:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Total People	1.252	0.352	1.604	0.037	0.07	0.107	2.387	2.32	4.707
Vehicles	0.37	0.259	0.629	0.027	0.037	0.064	0.882	0.851	1.733
Vehicle Occupants	0.581	0.175	0.756	0.034	0.055	0.089	1.141	1.049	2.19
Pedestrians	0.641	0.174	0.815	0.003	0.014	0.017	1.157	1.191	2.348
Public Transport Users	0.023	0	0.023	0	0	0	0.07	0.061	0.131
Cyclists	0.007	0.003	0.01	0	0.001	0.001	0.019	0.019	0.038

The trip attraction rates in Table 1 have been used to calculate an initial trip attraction for the school. It is noted that, whilst the school will cater for 258 pupils, 48 of these pupils will be nursery children which will be split so that half (24 pupils) attend school during the morning period and the other half (24 pupils) attend during the evening. Thus, the trip attraction figures have been calculated on the basis of 234 full day pupils (i.e. 210 primary pupils and effectively 24 full day nursery places). Details of this analysis are provided in Table 2 below.

Table 2: School Trip Attraction (Based on 234 full day pupils) Calculated from TRICS

Mode Split	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 – 19:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Total People	293	82	375	9	16	25	559	543	1101
Vehicles	87	61	147	6	9	15	206	199	406
Vehicle Occupants	136	41	177	8	13	21	267	245	512
Pedestrians	150	41	191	1	3	4	271	279	549
Public Transport Users	5	0	5	0	0	0	16	14	31
Cyclists	2	1	2	0	0	0	4	4	9

The results in Table 2 have been used to calculate the TRICS based daily mode split for the school as shown in Table 3 below.

Table 3: TRICS Based School Daily Mode Split

Mode Split	Daily Total TRICS Based Trip Attraction (07:00 – 19:00)	TRICS Based Mode Split
Total People	1101	100%
Vehicles	406	37%
Vehicle Occupants	512	47%
Pedestrians	549	50%
Public Transport Users	31	3%
Cyclists	9	1%

Mode Split Adjustment

Data has been supplied by VoG regarding the mode of travel of pupils attending the nearby Rhws primary school. This local data has been used to calculate the mode split of the proposed school which has been used to adjust the TRICS based trip attraction figures in Table 2. The details of this analysis are discussed below.

Modal Splits

The Rhws School pupil travel mode data is summarised in Table 4. In addition, this data has been grouped into the relevant TRICS mode split categories as outlined in Tables 1 and 2, with details of this provided in Table 5.

Table 4: Rhws School - Mode of Travel

Mode	Numbers of Pupils
Car (one pupil in car)	72
Car share (more than one pupil in car)	120
Bus	8
Walk	96
Cycle	2
Train	1
Any other way (please specify)	8
Total No in class	307

Table 5: Rhws School - Mode of Travel (Grouped into TRICS categories)

Mode	Numbers of Pupils
Total People	307
Vehicles	132
Vehicle Occupants	192
Pedestrians	104
Public Transport Users	9*
Cyclists	2

*includes trips in the 'Any other way' category

For the purpose of this analysis it has been assumed that those pupils recorded as car sharing would do so with one other pupil. Therefore, the vehicle numbers shown in Table 5 have been calculated by halving the car sharers in Table 4 ($120 / 2 = 60$) before adding the total of the single pupil car journeys ($60 + 72 = 132$). This analysis therefore represents a worst case assessment of the proportion of vehicles as in some instances more than two pupils may share a vehicle.

The pupil numbers shown in Table 5 have been used to calculate the total daily mode split for the school as shown in Table 6. It is assumed that this mode split will also apply to parents and staff travelling to and from the school.

Table 6: Daily Mode Split of Proposed School

Mode	Numbers of Pupils
Total People	100%
Vehicles	43%
Vehicle Occupants	63%
Pedestrians	34%
Public Transport Users	3%
Cyclists	1%

Adjustment of TRICS Calculation

Mode split adjustment factors have been calculated by dividing the local mode splits shown in Table 6 by the TRICS based mode splits shown in Table 3. These factors are shown in Table 7 below.

Table 7: Mode Split Adjustment Factors

Mode	Mode Split Adjustment Factors
Vehicles	1.17
Vehicle Occupants	1.34
Pedestrians	0.68
Public Transport Users	1.05
Cyclists	0.81

The factors shown in Table 7 have been applied to the trip attraction figures in Table 2. The results of this analysis, which represents the forecast trip attraction of the school, are shown in Table 8 below.

Table 8: Forecast School Trip Attraction

Mode Split	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 – 19:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Total People	292	83	375	11	20	31	564	538	1101
Vehicles	101	71	172	7	10	17	241	233	474
Vehicle Occupants	183	55	238	11	17	28	359	330	689
Pedestrians	102	28	130	0	2	3	184	189	373
Public Transport Users	6	0	6	0	0	0	17	15	32
Cyclists	1	1	2	0	0	0	4	4	7

Linked Vehicle Trips

The school vehicle trips will be split into those linked with other uses and designated school trips. For the purpose of this analysis it has been assumed that all linked trips will be work based drop-off / pick-up trips. Thus in the AM peak it is assumed these trips will drop pupils off at school before travelling onto their work destination. Similarly the reverse is assumed to happen in the PM peak as parents drive into school to pick up their children prior to driving home.

The Department for Transport's 'National Travel Survey – 2004' states that:

“17 per cent of morning escort education trips for both men and women were followed by a trip to work or business.”

On this basis it has been assumed that 17% of all school trips will be linked work trips with the remaining 83% consisting of designated (single purpose) school trips. The vehicle numbers in Table 8 have therefore been split based on these percentages with the resultant traffic flows shown in Table 9.

Table 9: Forecast School Trips Split by Linked Work trips and Designated Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 – 19:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Linked Work Trips	17	12	29	1	2	3	41	40	81
Designated School Trips	84	59	143	6	8	15	200	193	393
Total	101	71	172	7	10	17	241	233	474

Removal of Development Linked Vehicle Trips

The developer (Taylor Wimpey) has confirmed that approximately 91 of the schools 234 full day pupils should come from the development site itself (i.e. from the proposed residential development). For the purpose of this analysis it has been assumed that, with the exception of linked trips, all of the trips from the development will be pedestrian.

As discussed earlier, a separate traffic assessment has been undertaken for the residential development site, which has assessed traffic movements at the site access and the external highway network. Thus, whilst there may be some diversion of traffic from the residential development to the school in the form of linked trips, the impact of these trips on the external highway network would already be taken account of in the traffic assessment of the residential development. Thus, in order to avoid the double counting of these trips, these vehicles therefore need to be subtracted from the net traffic impact of the school. Further details regarding this assessment are provided below.

Calculation of Residential Development's Linked Trips

In order to calculate the linked school trips from the residential development a factor has been calculated which has been applied to the Linked Work Trips shown in Table 9. This factor has been calculated by dividing the estimated number of full day pupils (including nursery pupils) that will reside in the development site (91) by the number of full day pupils within the whole school ($91 / 234 = 0.39$). The resultant forecast school linked trips from the proposed residential development are shown in Table 10.

Table 10: Forecast Linked School Trips from the Proposed Residential Development

AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 – 19:00)		
Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
7	5	11	0	1	1	16	15	31

The vehicle numbers in Table 10 have been removed from the Linked Work Trips in Table 9 in order to calculate the numbers of vehicles that will arrive and depart from the developments vehicle access. The results of this analysis are shown in Table 11 below.

Table 11: Forecast Additional School Trips Split by Linked Work trips and Designated Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)			Daily (07:00 – 19:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Linked Work Trips	11	7	18	1	1	2	25	24	49
Designated School Trips	84	59	143	6	8	15	200	193	393
Total	94	66	161	7	9	16	225	217	442

Trip Reassignment

It is noted that, other than that generated by the proposed housing development, there will be no additional pupil demand proposed by the development. Furthermore, for reasons already discussed the Primary School education trips from the proposed residential site have already been extracted from the trip attraction figures shown in Table 11. The remaining pupil demand should already be included in the base traffic figures which include background traffic growth and traffic from committed developments. It is also noted that without the introduction of the proposed school it is likely that all of the residents of Rhoose would continue to use Rhws School which would obviously need to expand their facility to cater for the additional numbers of pupils. On this basis, it is forecast that the school will lead to a reassignment of traffic flows, from the Rhws school access (located west of the development site along Fontgary Road) to the development access, rather than additional traffic on the network. The calculation of this reassignment is discussed below.

AM Peak

Arrivals

Details of school catchment areas are shown in diagrams included within Appendix A of the VoG Local Development Plan Background Paper titled 'Education Facilities'. The diagram showing the catchment for the English Medium Schools has been extracted and included as Appendix B of this document.

It can be seen from the diagram in Appendix B that the catchment of the Rhws primary school predominantly serves the area of Rhoose. It is considered appropriate to assume that the introduction of the proposed school will effectively divide this catchment in half with the new school taking in some of the overflow from the Rhws School and at the same time providing additional capacity required for the development site (350 dwellings), adjacent Bellway development (350 dwellings), and development site south of the railway line (50 dwellings).

Given that the majority of vehicle catchment is likely to be accessible from the east it has been assumed that 75% of the vehicles will arrive from this direction. Thus it is assumed that the remaining 25% of vehicles will arrive from the west. Thus in terms of turning movements at the developments vehicle access junction it has been assumed that 25% will turn into the junction via the Porthkerry Road (W) arm and 75% of the vehicles will turn into the junction via the Porthkerry Road (E) arm.

As discussed earlier it is likely that the introduction of the school will result in a redistribution of traffic (i.e from Rhws School to the development site) rather than additional traffic on the assessed network. Thus, whilst it has been forecast that 75% of the schools arrivals will turn into the site from the east, it has also been assumed that the same traffic volume will be removed from the straight ahead movement of the junction and subsequent movements on approach from the existing school. Moreover, whilst it is assumed that traffic approaching from the east will travel to the site via Porthkerry Road and / or the Pentir De junction, these trips should not represent additional trips on the network.

It is considered likely that the eastern boundary of the catchment for the proposed school will stop short of the Rhoose Road / Station Road / Fonman Road junction as it is assumed that all households west of this junction will be within the catchment of Rhws School. Notwithstanding this point it is likely that half of the western portion of the catchment ($25\% / 2 = 12.5\%$) will be accessible via Station Road. It is assumed that vehicles arriving from this junction would therefore turn right at the Station Road junction onto Rhoose Road, before continuing onto Porthkerry Road and turning right at the development's proposed vehicle access. It is likely that this traffic would have previously turned left at Station Road to access the existing school and therefore an equivalent reduction in traffic has been assumed for the left turn out of this junction.

It is assumed that the remaining 12.5% of the western catchment would reside in the residential streets to the northwest of the development site and to the east of Station Road. These vehicles would also access the site via Rhoose Road / Porthkerry Road and on arrival would also turn right into the development access from the west. It is likely that this traffic would have previously travelled westwards across the Station Road junction to access the existing school and therefore an equivalent reduction in traffic has been assumed for the straight ahead movement on the eastern approach to this junction.

Full details of the arrival distribution are provided in Figure 1. The total AM arrival traffic flows shown in Table 11 have been assigned based on the distribution figures shown in Figure 1, with the results of this analysis shown in Figure 2.

It is noted that, in the AM peak the distribution of the Designated and Linked Arrivals should be the same and therefore no separate distribution has been calculated for these trips.

Departures – Designated Trips

It has been assumed that designated trips would return to their origin in the AM peak. Thus the distribution of departing designated trips, as shown in Figure 3, is a reversal of the trip movements shown in Figure 1. The total AM peak hour designated school departure traffic flows shown in Table 11 have been assigned based on the distribution figures shown in Figure 3, with the results of this analysis shown in Figure 4.

Departures - Linked Work Trips

The distribution of the departing AM peak linked work trips is based on the same assumed departure distribution of the proposed residential development. This distribution is therefore based on that agreed for the neighbouring Bellway / Persimmon housing site to the east, as outlined in Figure 6.1 of the accompanying TA (produced by FMW in June 2010).

As discussed previously the introduction of the school should not represent an increase in traffic on the local network but should merely represent a reassignment of traffic from Rhws School access to the proposed school access. The reassignment of traffic therefore takes account of this.

The resultant distribution, or redistribution, is included as Figure 5 of this report. The AM peak hour linked school departure traffic flows shown in Table 11 have been assigned based on the distribution figures shown in Figure 5, with the results of this analysis shown in Figure 6.

PM Peak

Arrivals – Designated Trips

It is assumed that these trips will have the same distribution as the AM arrivals. On this basis the designated arrival trips shown in Table 11 have been applied to the distributions shown in Figure 1. The results of the analysis are shown in Figure 7.

Arrivals - Linked Work Trips

The distribution of the arriving PM peak linked work trips is based on the same assumed arrival distribution of the proposed residential development. This distribution is therefore based on that agreed for the neighbouring Bellway / Persimmon housing site to the east, as outlined in Figure 6.1 of the accompanying TA (produced by FMW in June 2010).

As discussed previously the introduction of the school should not represent an increase in traffic on the local network but should merely represent a reassignment of traffic from Rhws School access to the proposed school access. The reassignment of traffic therefore takes account of this.

The resultant distribution, or redistribution, is included as Figure 8 of this report. The PM peak hour linked school arrival traffic flows shown in Table 11 have been assigned based on the distribution figures shown in Figure 8, with the results of this analysis shown in Figure 9.

Departures

It has been assumed that departure trips would return to their origin in the PM peak. Thus the total PM departure trips shown in Table 11 have been applied to the percentage redistribution figures shown in Figure 3, with the results of this analysis shown in Figure 10.

It is noted that, in the PM peak the distribution of the Designated and Linked Departures should be the same and therefore no separate distribution has been calculated for these trips.

Net School Development Traffic Impact

The following traffic scenarios have been combined to create the Net Development Traffic Flow diagrams shown in Figure 12 (AM Peak) and 13 (PM Peak):

- 'Figure 11 – School Net Traffic Impact – AM Peak' = 'Figure 2 – School Arrival Traffic Reassignment – AM Peak' + 'Figure 4 – School Designated Departure Traffic Reassignment – AM Peak' + 'Figure 6 – School Linked Departure Traffic Reassignment – AM Peak'
- 'Figure 12 – School Net Traffic Impact – PM Peak' = 'Figure 7 – School Designated Arrival Traffic Reassignment – PM Peak' + 'Figure 9 – School Linked Arrival Traffic Reassignment – PM Peak' + 'Figure 10 – School Designated Departure Traffic Reassignment – PM Peak'

It is noted that these traffic flow diagrams represent a robust assessment of school traffic flows. The reasons for this are as follows:

- With regards to car sharers it has been assumed that a maximum of two pupils will share a car when in reality this is likely to be higher.
- No reduction has been introduced to take into account the impact of travel plan measures.
- With the exception of some linked work trips it has been assumed that all of the traffic attraction of the school will be external to the site when in reality there may be some designated car trips within the site that will not create impact on the external traffic network.
- No reduction has been applied to take account of any potential transport links between the development and adjacent housing areas (e.g. the Persimmon / Bellway site to the east).

FIGURES

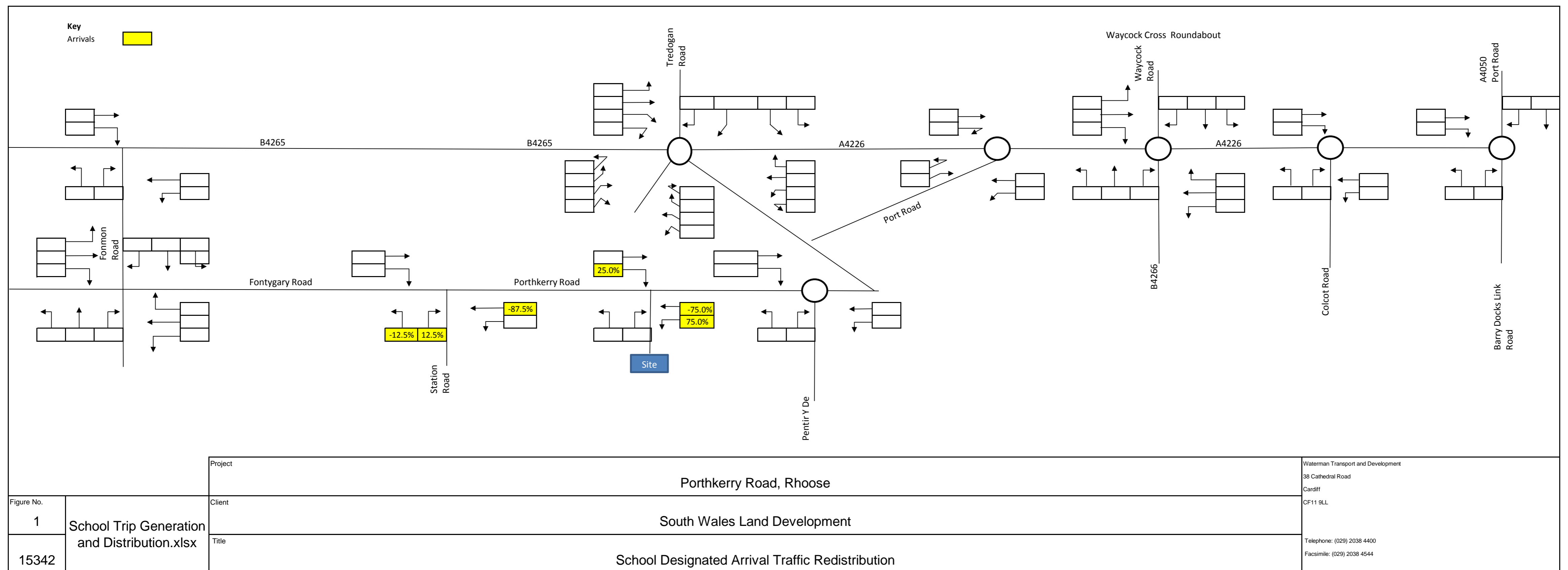


Figure No.
1
15342

School Trip Generation
and Distribution.xlsx

Project	Porthkerry Road, Rhose
Client	South Wales Land Development
Title	School Designated Arrival Traffic Redistribution

Waterman Transport and Development
38 Cathedral Road
Cardiff
CF11 9LL
Telephone: (029) 2038 4400
Facsimile: (029) 2038 4544

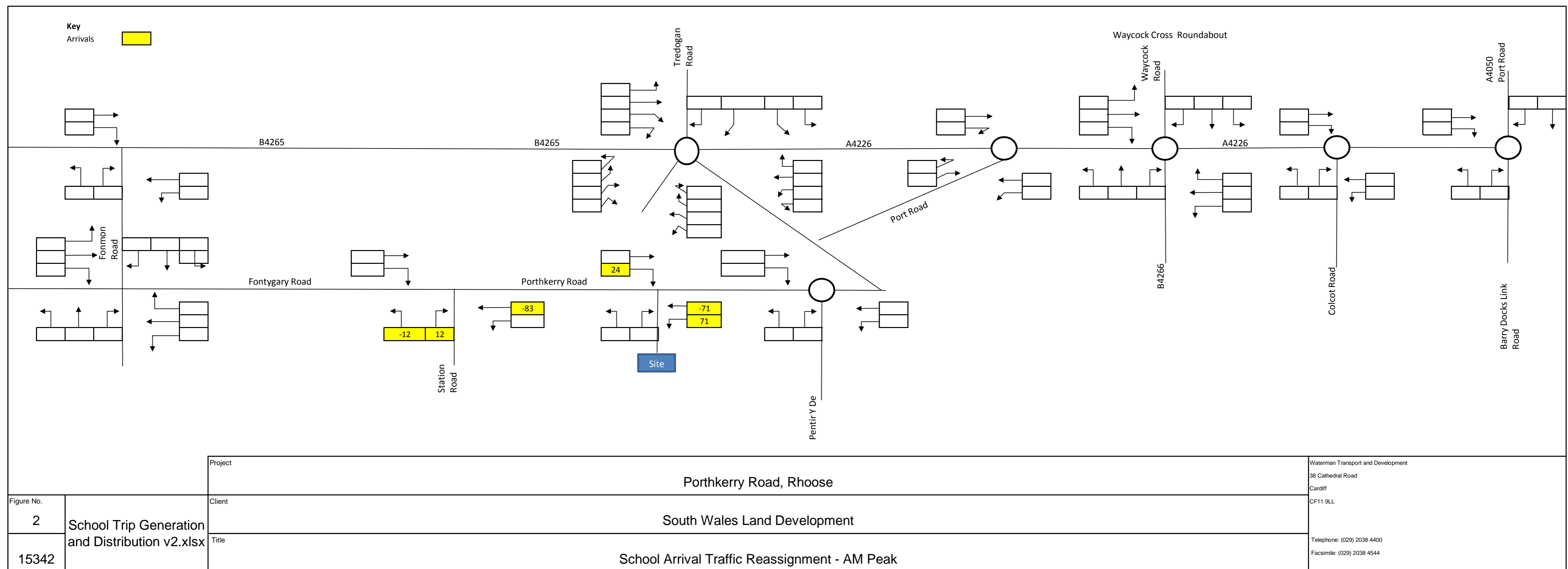


Figure No.
2
15342

School Trip Generation
and Distribution v2.xlsx

Project: Porthkerry Road, Rhose

Client: South Wales Land Development

Title: School Arrival Traffic Reassignment - AM Peak

Waterman Transport and Development
38 Cathedral Road
Cardiff
CF11 9LL
Telephone: (029) 2038 4400
Facsimile: (029) 2038 4544

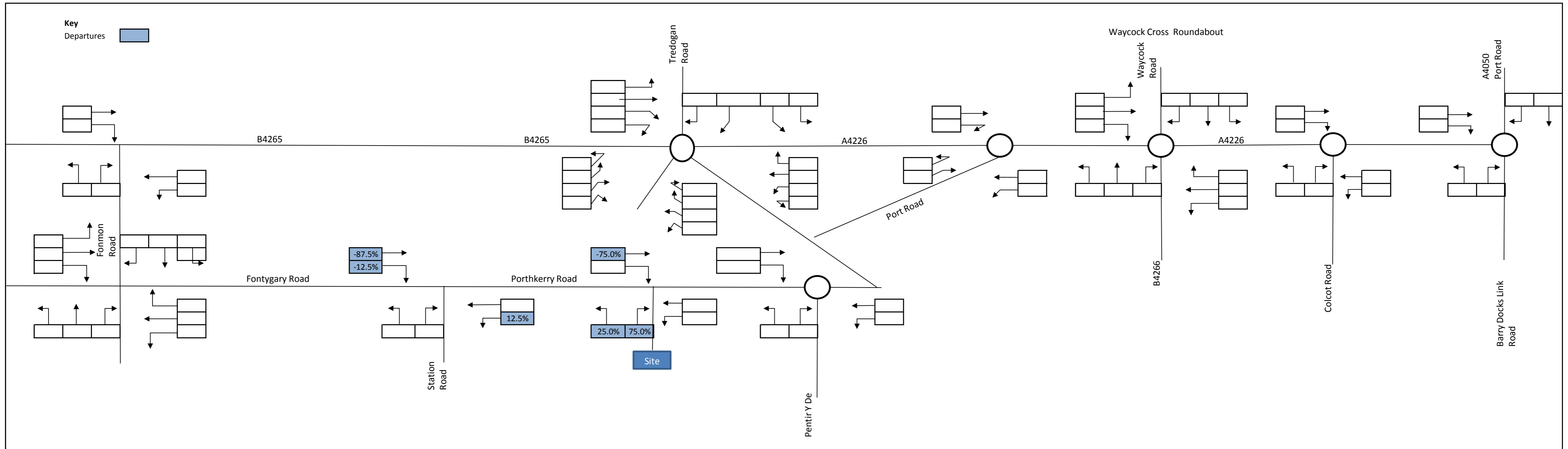


Figure No.		Project		Waterman Transport and Development	
3		Porthkerry Road, Rhose		38 Cathedral Road	
School Trip Generation and Distribution.xlsx		Client		Cardiff	
15342		South Wales Land Development		CF11 9LL	
		Title		Telephone: (029) 2038 4400	
		School Designated Departure Traffic Redistribution		Facsimile: (029) 2038 4544	

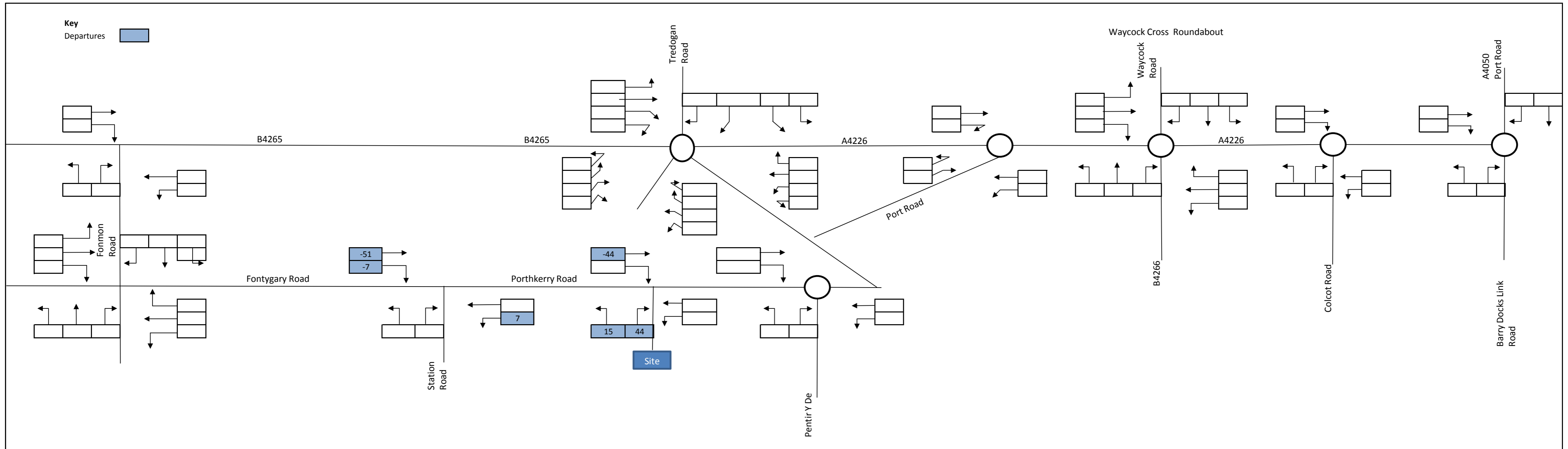


Figure No.		Project		Waterman Transport and Development	
4		Porthkerry Road, Rhose		38 Cathedral Road	
School Trip Generation and Distribution v2.xlsx		Client		Cardiff	
15342		South Wales Land Development		CF11 9LL	
		Title		Telephone: (029) 2038 4400	
		School Designated Departure Traffic Reassignment - AM Peak		Facsimile: (029) 2038 4544	

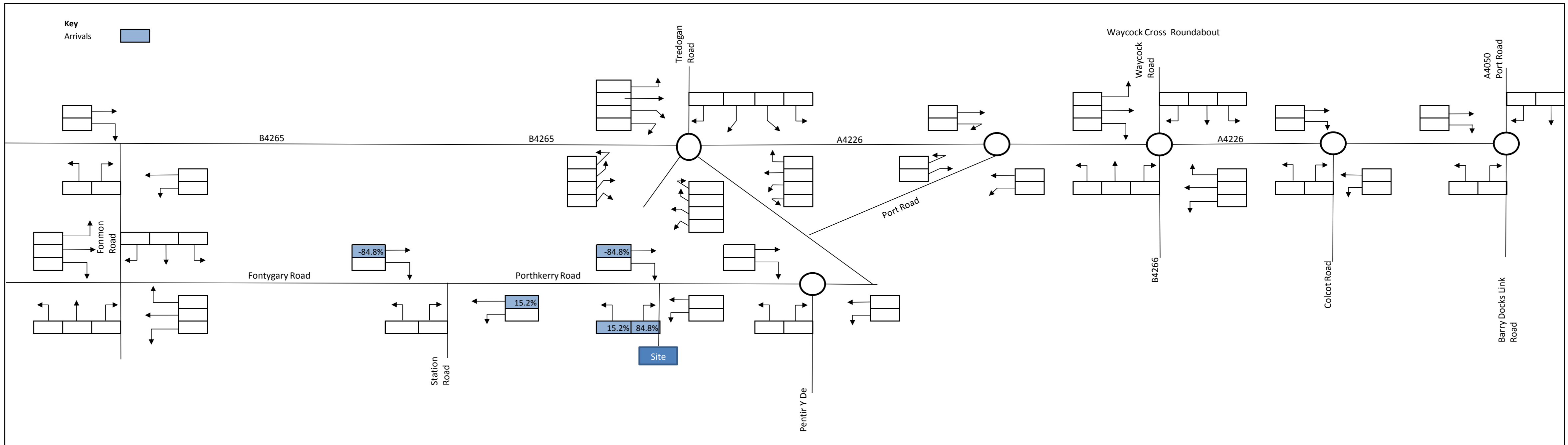
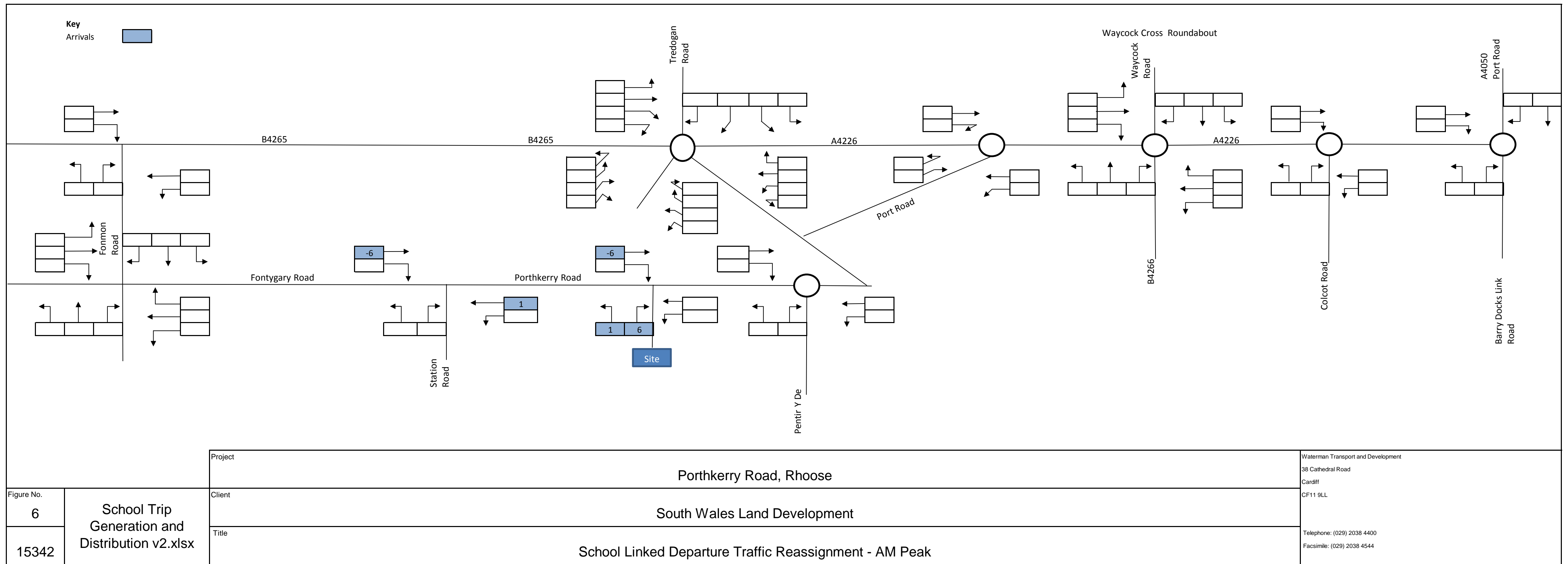


Figure No.		Project		Waterman Transport and Development 38 Cathedral Road Cardiff CF11 9LL Telephone: (029) 2038 4400 Facsimile: (029) 2038 4544
5		Porthkerry Road, Rhose		
15342		School Trip Generation and Distribution.xlsx		
		Client		
		South Wales Land Development		
		Title		
		School Linked Departure Traffic Redistribution - AM Peak		



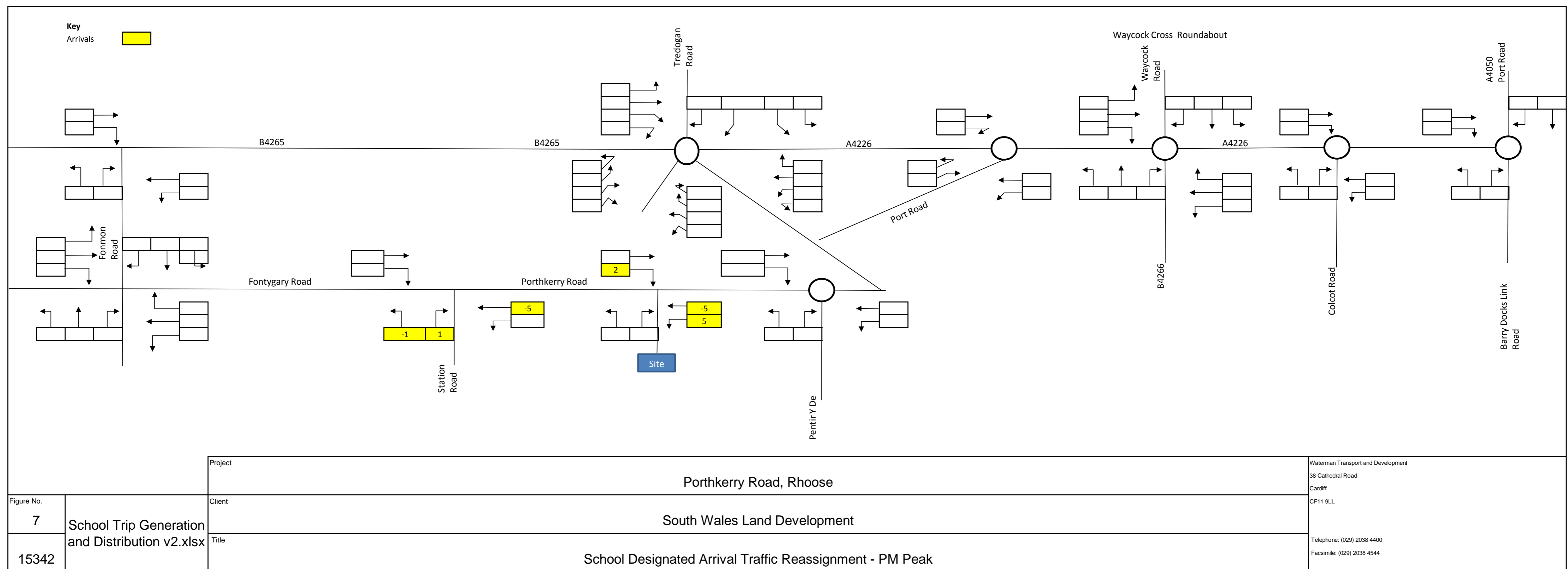


Figure No.
7
15342

School Trip Generation
and Distribution v2.xlsx

Project: Porthkerry Road, Rhose

Client: South Wales Land Development

Title: School Designated Arrival Traffic Reassignment - PM Peak

Waterman Transport and Development
38 Cathedral Road
Cardiff
CF11 9LL
Telephone: (029) 2038 4400
Facsimile: (029) 2038 4544

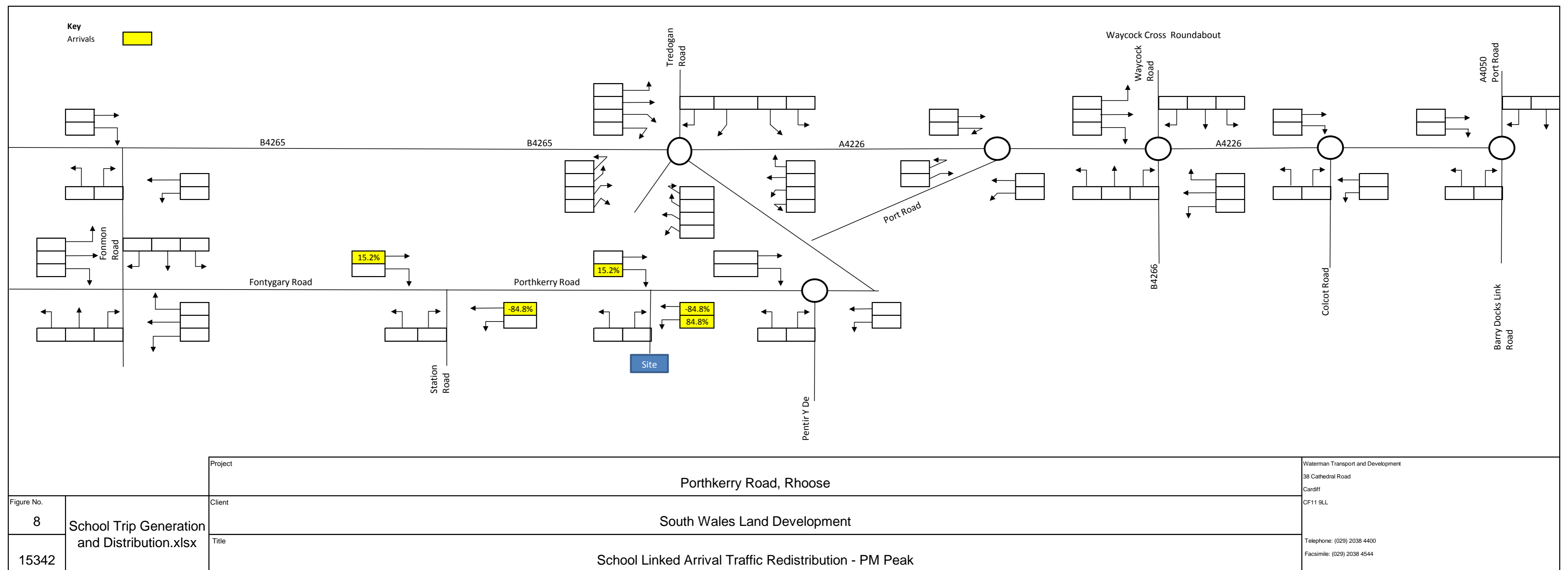


Figure No.
8
15342

School Trip Generation
and Distribution.xlsx

Project	Porthkerry Road, Rhose
Client	South Wales Land Development
Title	School Linked Arrival Traffic Redistribution - PM Peak

Waterman Transport and Development
38 Cathedral Road
Cardiff
CF11 9LL
Telephone: (029) 2038 4400
Facsimile: (029) 2038 4544

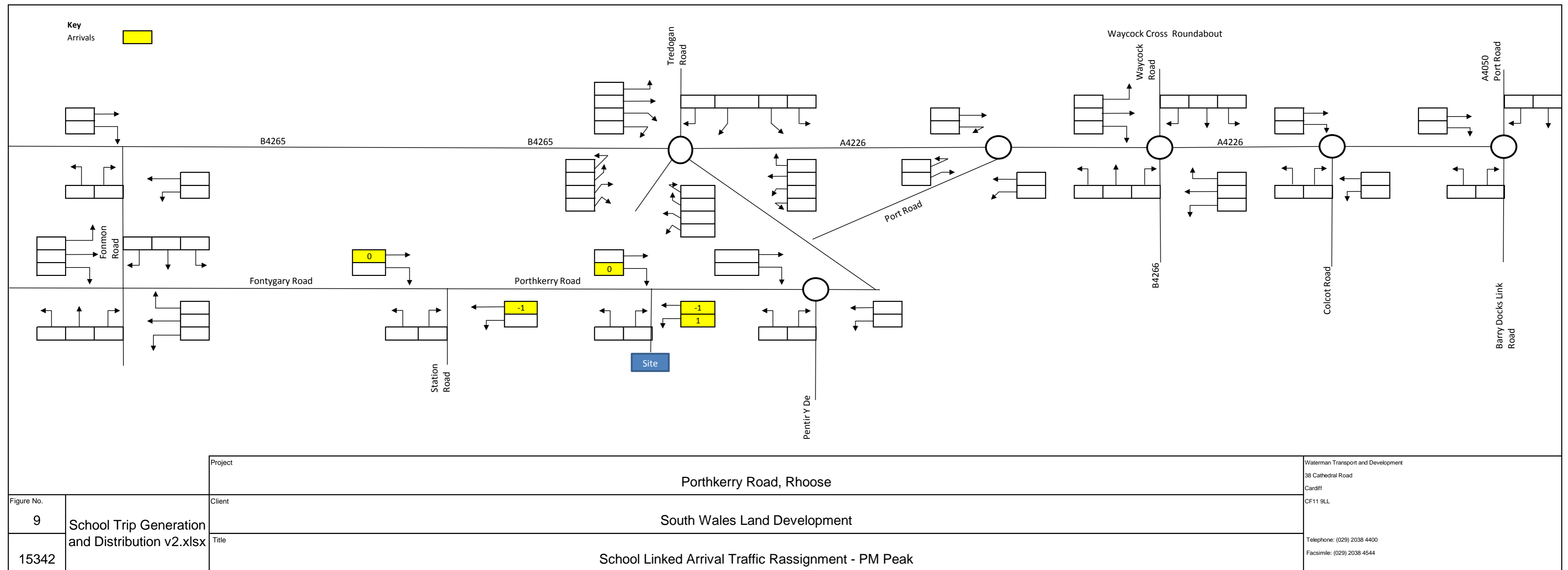


Figure No.
9
15342

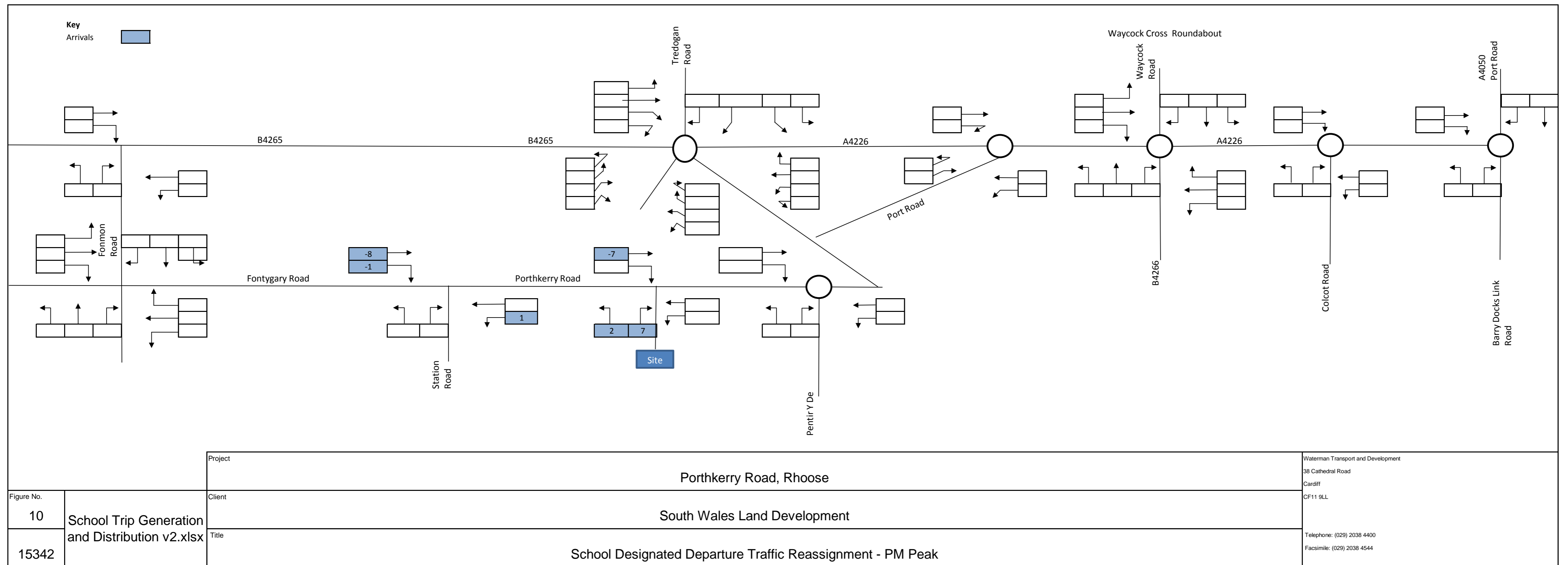
School Trip Generation
and Distribution v2.xlsx

Project: Porthkerry Road, Rhose

Client: South Wales Land Development

Title: School Linked Arrival Traffic Rassignment - PM Peak

Waterman Transport and Development
38 Cathedral Road
Cardiff
CF11 9LL
Telephone: (029) 2038 4400
Facsimile: (029) 2038 4544



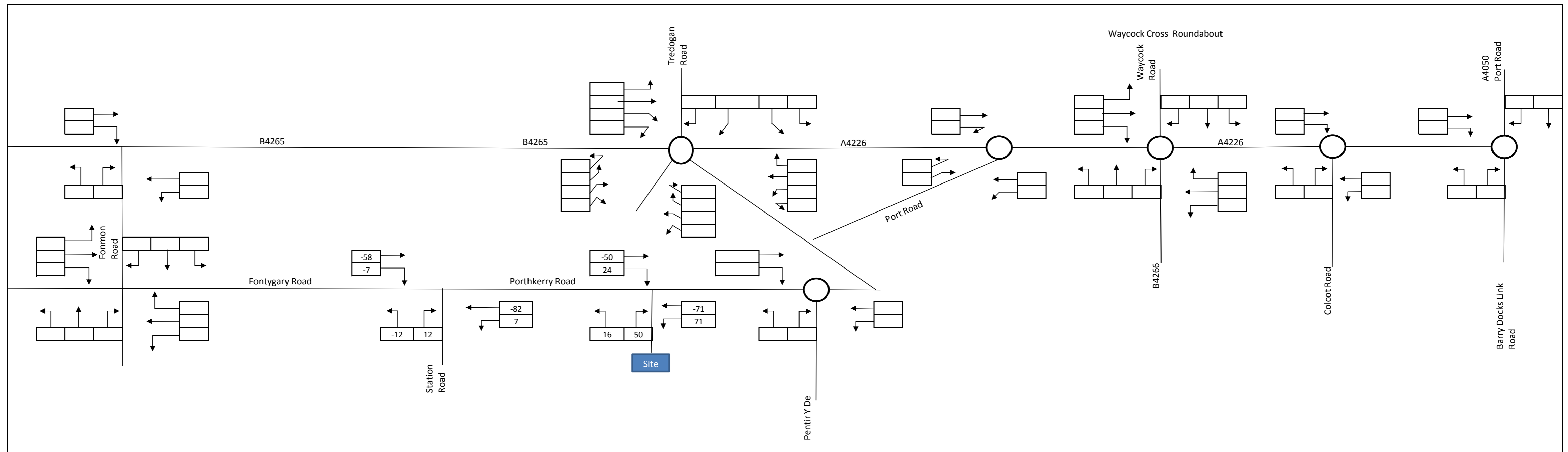


Figure No.		Project	Waterman Transport and Development
11	School Trip Generation and Distribution v2.xlsx	Client	38 Cathedral Road Cardiff
15342		Title	CF11 9LL
			Telephone: (029) 2038 4400 Facsimile: (029) 2038 4544
		Porthkerry Road, Rhose	
		South Wales Land Development	
		School Net Traffic Impact - AM Peak	

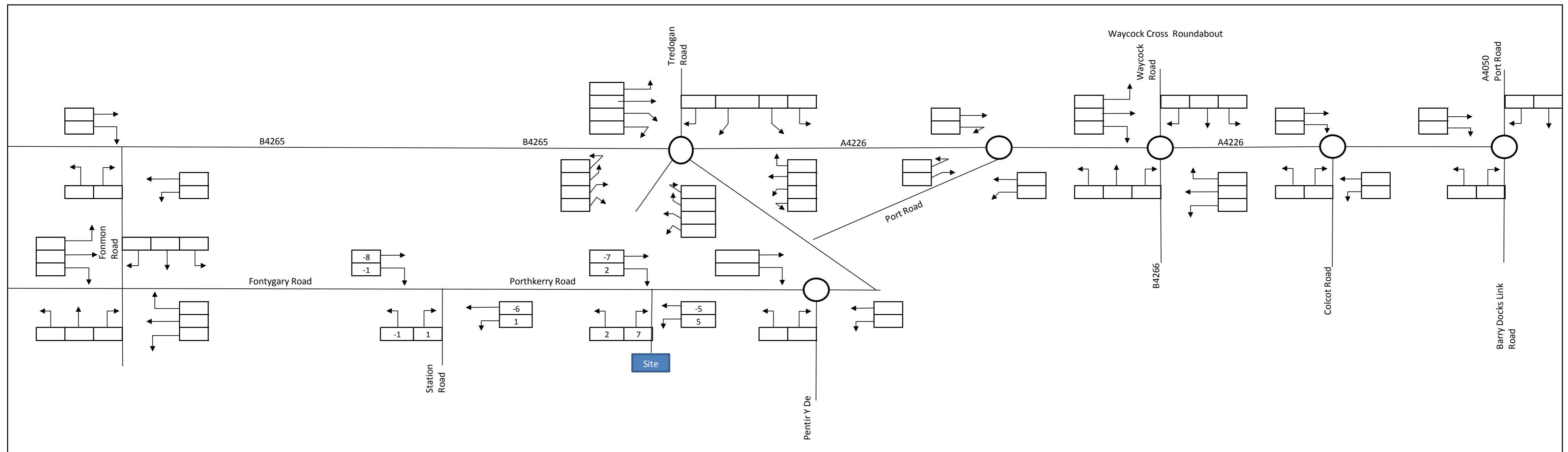


Figure No.		Project	Waterman Transport and Development 38 Cathedral Road Cardiff CF11 9LL
12	School Trip Generation and Distribution v2.xlsx	Client	South Wales Land Development
15342		Title	School Net Traffic Impact - PM Peak
			Telephone: (029) 2038 4400 Facsimile: (029) 2038 4544

APPENDICES

A. School TRICS Output

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
 Category : A - PRIMARY
 MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	SC SURREY	1 days
06	WEST MIDLANDS	
	WO WORCESTERSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	1 days
10	WALES	
	WR WREXHAM	1 days
17	ULSTER (NORTHERN IRELAND)	
	DO DOWN	1 days

Filtering Stage 2 selection:

Parameter: Number of pupils
 Actual Range: 120 to 447 (units:)
 Range Selected by User: 90 to 500 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 13/06/13

Selected survey days:

Monday 2 days
 Thursday 3 days

Selected survey types:

Manual count 5 days
 Directional ATC Count 0 days

Selected Locations:

Edge of Town Centre 1
 Suburban Area (PPS6 Out of Centre) 2
 Neighbourhood Centre (PPS6 Local Centre) 2

Selected Location Sub Categories:

Residential Zone 2
 Village 2
 No Sub Category 1

Filtering Stage 3 selection:

Use Class:

D1 5 days

Population within 1 mile:

1,001 to 5,000 1 days
 5,001 to 10,000 1 days
 15,001 to 20,000 1 days
 20,001 to 25,000 1 days
 25,001 to 50,000 1 days

Filtering Stage 3 selection (Cont.):

Population within 5 miles:

5,000 or Less	1 days
75,001 to 100,000	3 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	3 days
1.6 to 2.0	1 days

Travel Plan:

Yes	1 days
No	4 days

LIST OF SITES relevant to selection parameters

1	DO-04-A-01 CHURCH GROVE	PRIMARY SCHOOL	DOWN
	KIRCUBBIN Neighbourhood Centre (PPS6 Local Centre) Village Total Number of pupils: 120 Survey date: MONDAY 19/12/11 Survey Type: MANUAL		
2	MS-04-A-01 DERWENT ROAD	RC PRIMARY SCHOOL	MERSEYSIDE
	ST HELENS Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 193 Survey date: THURSDAY 05/10/06 Survey Type: MANUAL		
3	SC-04-A-01 SCHOOL LANE	PRIMARY SCHOOL	SURREY
	PIRBRIGHT NEAR WOKING Neighbourhood Centre (PPS6 Local Centre) Village Total Number of pupils: 414 Survey date: THURSDAY 22/11/12 Survey Type: MANUAL		
4	WO-04-A-01 ST PETERS CHURCH LANE	PRIMARY SCHOOL	WORCESTERSHIRE
	DROITWICH SPA Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of pupils: 447 Survey date: MONDAY 13/06/05 Survey Type: MANUAL		
5	WR-04-A-01 BODHYFRYD	PRIMARY SCHOOL	WREXHAM
	WREXHAM Edge of Town Centre No Sub Category Total Number of pupils: 283 Survey date: THURSDAY 13/10/11 Survey Type: MANUAL		

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BN-04-A-01	London Site
CN-04-A-01	London Site
DV-04-A-03	City Too Large
HK-04-A-01	London Site
LE-04-A-01	City Too Large
MS-04-A-02	City Too Large

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL VEHICLES

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	291	0.036	5	291	0.017	5	291	0.053
08:00 - 09:00	5	291	0.370	5	291	0.259	5	291	0.629
09:00 - 10:00	5	291	0.045	5	291	0.069	5	291	0.114
10:00 - 11:00	5	291	0.010	5	291	0.015	5	291	0.025
11:00 - 12:00	5	291	0.036	5	291	0.021	5	291	0.057
12:00 - 13:00	5	291	0.016	5	291	0.035	5	291	0.051
13:00 - 14:00	5	291	0.036	5	291	0.035	5	291	0.071
14:00 - 15:00	5	291	0.103	5	291	0.027	5	291	0.130
15:00 - 16:00	5	291	0.122	5	291	0.232	5	291	0.354
16:00 - 17:00	5	291	0.058	5	291	0.085	5	291	0.143
17:00 - 18:00	5	291	0.027	5	291	0.037	5	291	0.064
18:00 - 19:00	5	291	0.023	5	291	0.019	5	291	0.042
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.882			0.851			1.733

Parameter summary

Trip rate parameter range selected: 120 - 447 (units:)
 Survey date date range: 01/01/05 - 13/06/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 6

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL CYCLISTS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	291	0.003	5	291	0.000	5	291	0.003
08:00 - 09:00	5	291	0.007	5	291	0.003	5	291	0.010
09:00 - 10:00	5	291	0.001	5	291	0.002	5	291	0.003
10:00 - 11:00	5	291	0.000	5	291	0.001	5	291	0.001
11:00 - 12:00	5	291	0.000	5	291	0.000	5	291	0.000
12:00 - 13:00	5	291	0.001	5	291	0.000	5	291	0.001
13:00 - 14:00	5	291	0.000	5	291	0.000	5	291	0.000
14:00 - 15:00	5	291	0.001	5	291	0.001	5	291	0.002
15:00 - 16:00	5	291	0.005	5	291	0.003	5	291	0.008
16:00 - 17:00	5	291	0.001	5	291	0.008	5	291	0.009
17:00 - 18:00	5	291	0.000	5	291	0.001	5	291	0.001
18:00 - 19:00	5	291	0.000	5	291	0.000	5	291	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.019			0.019			0.038

Parameter summary

Trip rate parameter range selected: 120 - 447 (units:)
 Survey date date range: 01/01/05 - 13/06/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 6

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	291	0.044	5	291	0.018	5	291	0.062
08:00 - 09:00	5	291	0.581	5	291	0.175	5	291	0.756
09:00 - 10:00	5	291	0.069	5	291	0.069	5	291	0.138
10:00 - 11:00	5	291	0.013	5	291	0.019	5	291	0.032
11:00 - 12:00	5	291	0.049	5	291	0.028	5	291	0.077
12:00 - 13:00	5	291	0.021	5	291	0.054	5	291	0.075
13:00 - 14:00	5	291	0.047	5	291	0.053	5	291	0.100
14:00 - 15:00	5	291	0.086	5	291	0.038	5	291	0.124
15:00 - 16:00	5	291	0.111	5	291	0.369	5	291	0.480
16:00 - 17:00	5	291	0.039	5	291	0.148	5	291	0.187
17:00 - 18:00	5	291	0.034	5	291	0.055	5	291	0.089
18:00 - 19:00	5	291	0.047	5	291	0.023	5	291	0.070
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.141			1.049			2.190

Parameter summary

Trip rate parameter range selected: 120 - 447 (units:)
 Survey date range: 01/01/05 - 13/06/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 6

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
 MULTI-MODAL PEDESTRIANS
 Calculation factor: 1 PUPILS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	291	0.009	5	291	0.002	5	291	0.011
08:00 - 09:00	5	291	0.641	5	291	0.174	5	291	0.815
09:00 - 10:00	5	291	0.058	5	291	0.111	5	291	0.169
10:00 - 11:00	5	291	0.009	5	291	0.008	5	291	0.017
11:00 - 12:00	5	291	0.021	5	291	0.016	5	291	0.037
12:00 - 13:00	5	291	0.014	5	291	0.012	5	291	0.026
13:00 - 14:00	5	291	0.021	5	291	0.040	5	291	0.061
14:00 - 15:00	5	291	0.161	5	291	0.027	5	291	0.188
15:00 - 16:00	5	291	0.194	5	291	0.709	5	291	0.903
16:00 - 17:00	5	291	0.021	5	291	0.074	5	291	0.095
17:00 - 18:00	5	291	0.003	5	291	0.014	5	291	0.017
18:00 - 19:00	5	291	0.005	5	291	0.004	5	291	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.157			1.191			2.348

Parameter summary

Trip rate parameter range selected: 120 - 447 (units:)
 Survey date date range: 01/01/05 - 13/06/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 6

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

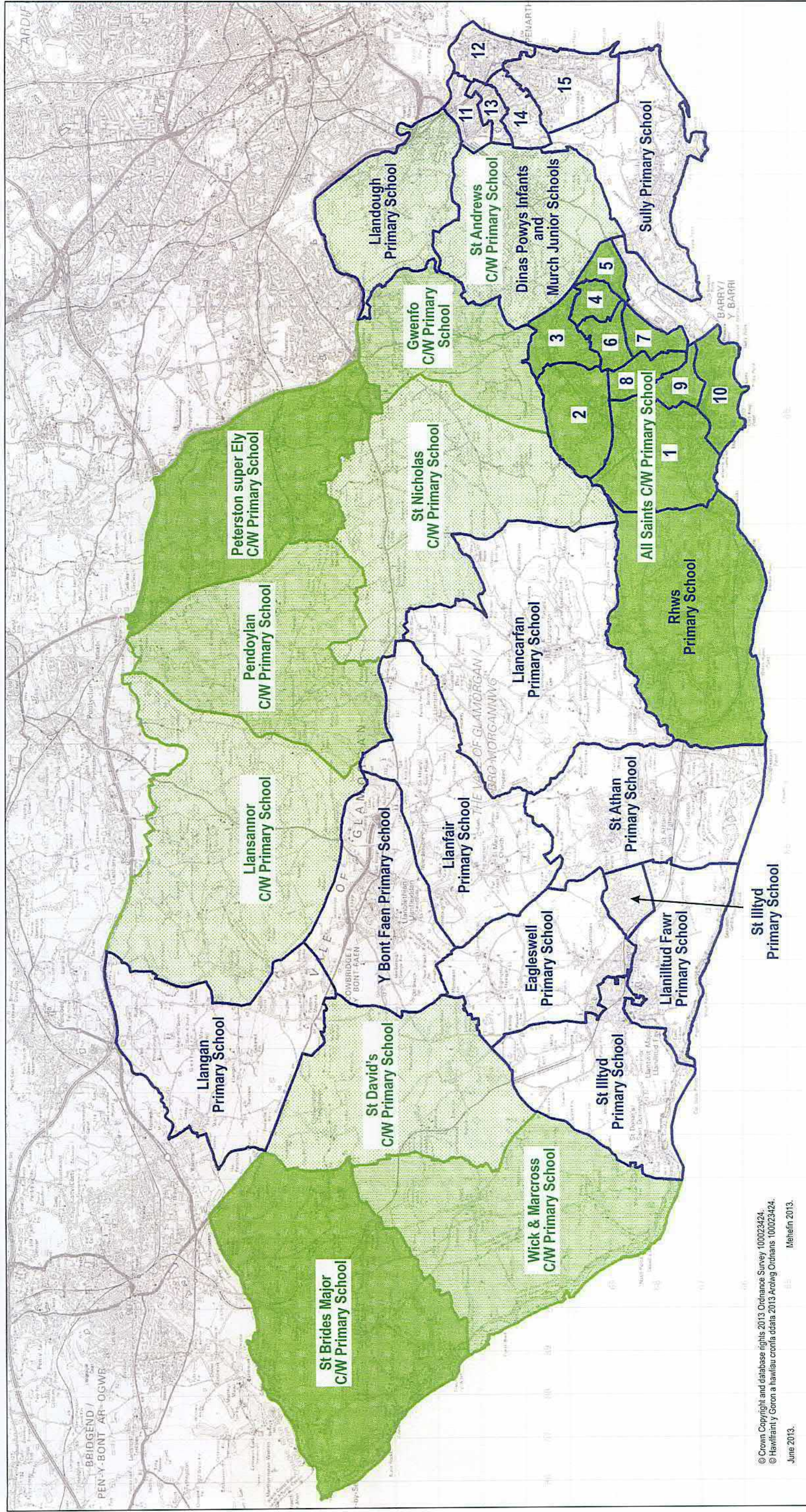
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	291	0.000	5	291	0.000	5	291	0.000
08:00 - 09:00	5	291	0.023	5	291	0.000	5	291	0.023
09:00 - 10:00	5	291	0.000	5	291	0.000	5	291	0.000
10:00 - 11:00	5	291	0.000	5	291	0.000	5	291	0.000
11:00 - 12:00	5	291	0.000	5	291	0.000	5	291	0.000
12:00 - 13:00	5	291	0.020	5	291	0.001	5	291	0.021
13:00 - 14:00	5	291	0.000	5	291	0.000	5	291	0.000
14:00 - 15:00	5	291	0.023	5	291	0.030	5	291	0.053
15:00 - 16:00	5	291	0.004	5	291	0.030	5	291	0.034
16:00 - 17:00	5	291	0.000	5	291	0.000	5	291	0.000
17:00 - 18:00	5	291	0.000	5	291	0.000	5	291	0.000
18:00 - 19:00	5	291	0.000	5	291	0.000	5	291	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.070			0.061			0.131

Parameter summary

Trip rate parameter range selected: 120 - 447 (units:)
Survey date date range: 01/01/05 - 13/06/13
Number of weekdays (Monday-Friday): 5
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 6

B. Catchment of Existing Welsh Medium Schools – Extracted from Vale of Glamorgan Local Development Plan

Catchment Areas for English Medium Primary Schools in the Vale of Glamorgan



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 June 2013. Mehefin 2013.



Primary Schools in Barry

1. Romilly Community Primary School
2. Colcot Primary School
3. Oakfield Primary School
4. Cadoxton Primary School
5. Palmerston Primary School

Primary Schools in Penarth

11. Cogan Primary School
12. Albert Road Primary School
13. Fairfield Primary School
14. Victoria Primary School
15. Evenlode Primary School

Appendix 5-2: Pupil Postcode Analysis

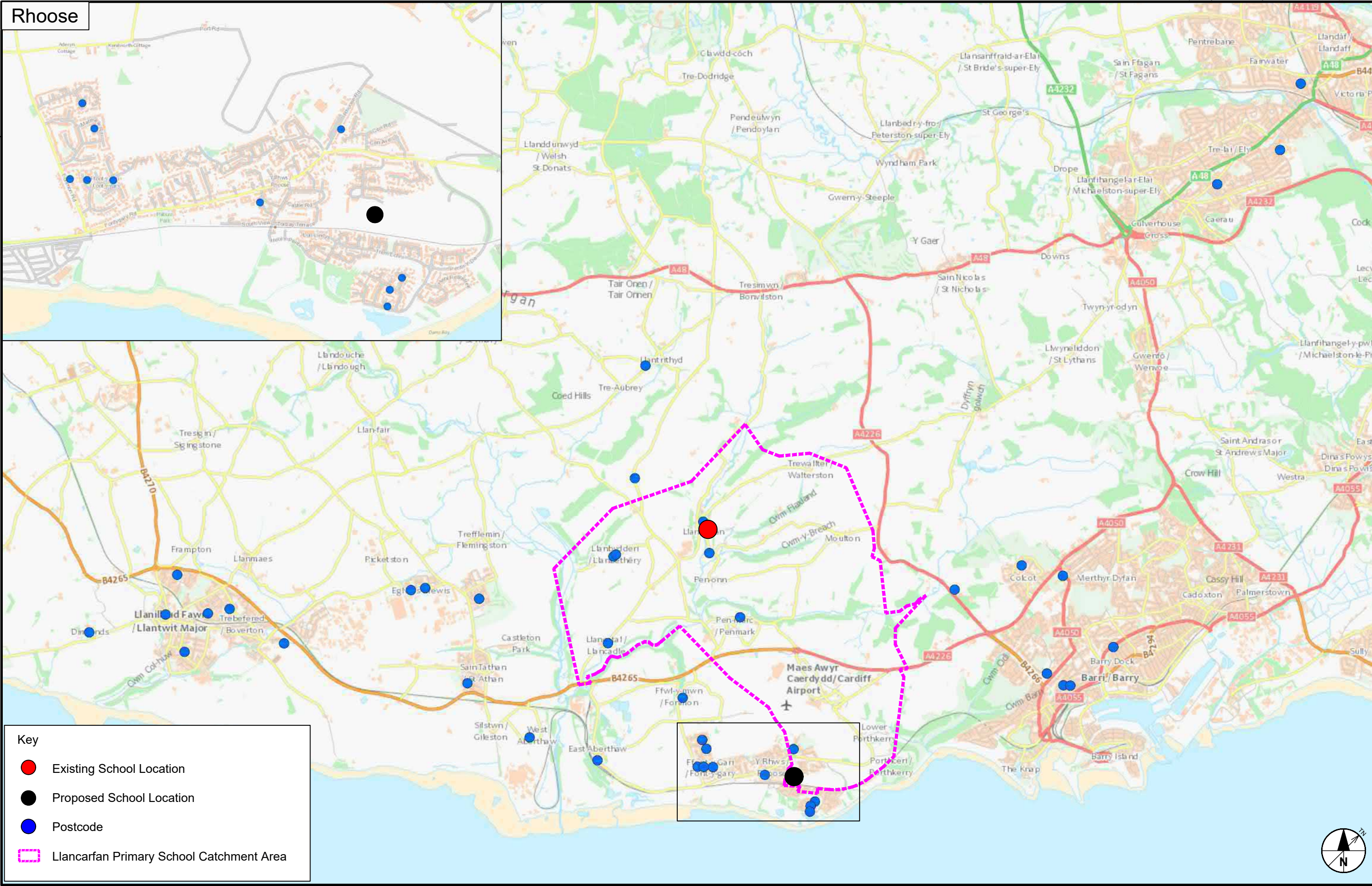
Postcode Analysis

Pupil Postcode	Nearest Settlement
CF62 3AA	Barry
CF62 7EG	Barry
CF62 7EG	Barry
CF62 7ER	Barry
CF62 7JG	Barry
CF62 7JG	Barry
CF62 8ND	Barry
CF62 8ND	Barry
CF61 1UH	Boverton
CF61 1UH	Boverton
CF61 2LN	Boverton
CF5 5HZ	Caerau
CF5 5HZ	Caerau
CF5 5HZ	Caerau
CF5 5JR	Caerau
CF5 5JR	Caerau
CF62 8AR	Colcot
CF62 8UJ	Colcot
CF62 8UJ	Colcot
CF61 1YX	Dimlands Castle
CF62 3DH	East Aberthaw
CF62 3DH	East Aberthaw
CF5 3AT	Fairwater
CF62 3BU	Font-Y-Gary
CF62 3BU	Font-Y-Gary
CF62 3BU	Font-Y-Gary
CF62 3DZ	Font-Y-Gary
CF62 3DZ	Font-Y-Gary
CF62 3ED	Font-Y-Gary
CF62 3FT	Font-Y-Gary
CF62 3FT	Font-Y-Gary
CF62 3FW	Font-Y-Gary
CF62 3FW	Font-Y-Gary
CF62 4JA	Gileston
CF39 8UE	Gilfach Goch
CF39 8UE	Gilfach Goch
CF62 3AN	Llanbethery
CF62 3AN	Llanbethery
CF62 3AP	Llanbethery
CF62 3AQ	Llancadle
CF62 3AD	Llancarfan
CF62 3AD	Llancarfan
CF62 3AD	Llancarfan
CF62 3AG	Llancarfan
CF62 3AG	Llancarfan
CF71 7UB	Llantrithyd
CF71 7UB	Llantrithyd
CF61 1RA	Llantwit Major
CF61 1RP	Llantwit Major
CF61 1YX	Llantwit Major
CF61 2SR	Llantwit Major
CF61 2XJ	Llantwit Major
CF62 3AE	Llanvithyn
CF62 3BP	Penmark
CF62 3AY	Rhoose
CF62 3EQ	Rhoose
CF62 3EQ	Rhoose
CF62 3FJ	Rhoose
CF62 3LD	Rhoose Point
CF62 3LD	Rhoose Point
CF62 3LH	Rhoose Point
CF62 3LH	Rhoose Point
CF62 3LJ	Rhoose Point
CF62 4JG	St Athan
CF62 4JG	St Athan
CF62 4JQ	St Athan
CF62 4JZ	St Athan
CF62 4JZ	St Athan
CF62 4PT	St Athan

Settlement	No.	%	Route 1	Route 2	Route 3	Route 4	Route 5	Route 6	Route 7	Route 8
Barry	8	12%	100%							
Boverton	3	4%		100%						
Caerau	5	7%	100%							
Colcot	3	4%	100%							
Dimlands Castle	1	1%		100%						
East Aberthaw	2	3%			100%					
Fairwater	1	1%	100%							
Font-Y-Gary	10	14%			100%					
Gileston	1	1%		100%						
Gilfach Goch	2	3%	100%							
Llanbethery	3	4%				100%				
Llancadle	1	1%				100%				
Llancarfan	5	7%					100%			
Llantrithyd	2	3%					100%			
Llantwit Major	5	7%		100%						
Llanvithyn	1	1%				100%				
Penmark	1	1%						100%		
Rhoose	4	6%								
Rhoose Point	5	7%							100%	100%
St Athan	6	9%		100%						
Total	69	100%								

Route	Description	Distribution
Route 1	Porthkerry Rd, Port Road, A4226	28% East
Route 2	Rhoose Rd, Fotygary Rd, B4265	23% West
Route 3	Rhoose Rd, Fotygary Rd	17% West
Route 4	Rhoose Rd, Fotygary Rd, B4265, Unnamed Road	7% West
Route 5	Porthkerry Rd, Port Road, A4226, Kenson Hill	10% East
Route 6	Porthkerry Rd, Port Road, A4226, Tredogan Road	1% East
Route 7	Porthkerry Rd, Pentir Y De	7% East
Route 8	Porthkerry Rd E	6% West
Total		100%

East	46%
West	54%

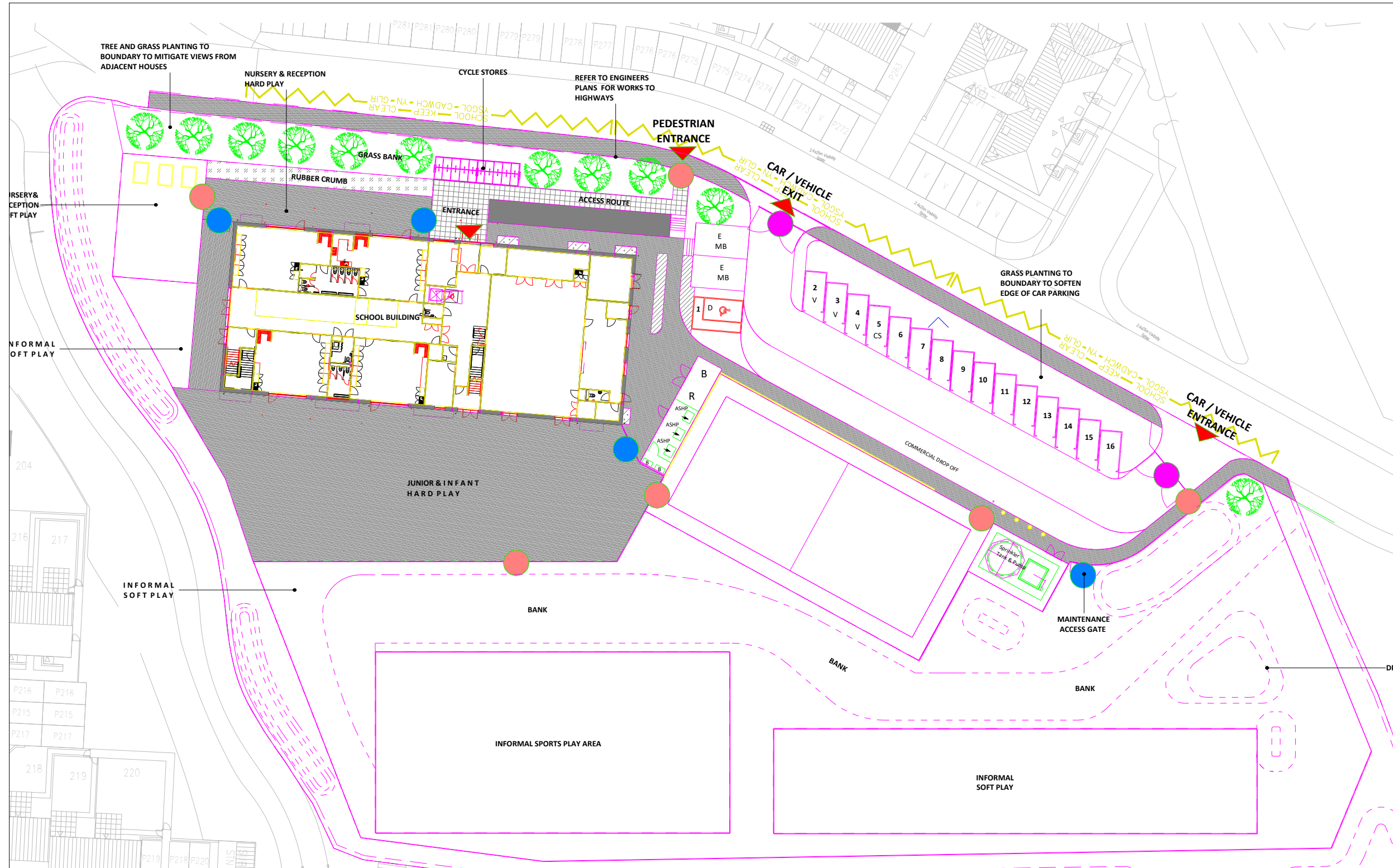
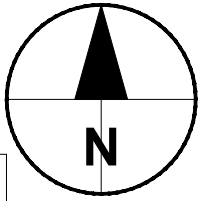


Llancaiach Primary School

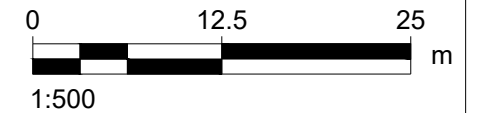
Pupil Postcode Plot



Appendix 6-1: School Keep Clear Markings



Drawing based on LPS-STL-XX-XX-DR-L-9001-PL-PL09



Llancarfan Primary School, Vale of Glamorgan

Transport Statement
School Keep Clear Markings
Date: 2020-02-27



60614562

