



# Cowbridge 1FE Primary School, Vale of Glamorgan Transport Assessment

*For Morgan Sindall Construction &  
Infrastructure Ltd*

---

Date: 28 May 2021

Doc ref: 17637-HYD-XX-XX-RP-TP-5001

# DOCUMENT CONTROL SHEET

Issued by	Hydrock Consultants Limited Castlebridge 5 5-19 Cowbridge Road East Cardiff CF11 9AB United Kingdom	T +44 (0)2920 023 665 E cardiff@hydrock.com www.hydrock.com
Client	Morgan Sindall Construction & Infrastructure Ltd	
Project name	Cowbridge 1FE Primary School, Vale of Glamorgan	
Title	Transport Assessment	
Doc ref	17637-HYD-XX-XX-RP-TP-5001	
Project no.	17637	
Status	S4	
Date	28/05/2021	

Document Production Record		
Issue Number	P02	Name
Prepared by		Grant Price MA (Hons)
Checked by		Neil Buckman
Approved by		Neil Buckman

Document Revision Record			
Issue Number	Status	Date	Revision Details
P01	Draft	19/05/21	For Review and Comment
P02	Issue	28/05/2021	For Stage Approval

Hydrock Consultants Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

# CONTENTS

1.	INTRODUCTION AND BACKGROUND .....	1
1.1	Introduction .....	1
1.2	Background .....	1
1.3	Scope of Report .....	1
2.	EXISTING CONDITIONS .....	3
2.1	Site Location and existing use .....	3
2.2	Existing access.....	3
2.3	Existing parking provision .....	5
2.4	Local Highway Network .....	8
2.5	Road Safety .....	8
3.	SUSTAINABLE CONNECTIVITY .....	10
3.2	Walking Infrastructure and Routes .....	10
3.3	Cycling and Scooting .....	14
3.4	Public Transport Connectivity .....	15
3.5	Summary.....	16
4.	PROPOSED DEVELOPMENT .....	17
4.1	Overview .....	17
4.2	Site Access .....	17
4.3	Site Layout .....	18
4.4	Servicing.....	18
5.	PROPOSED PARKING .....	19
5.1	Current parking standards .....	19
5.2	Proposed requirements .....	19
5.3	Proposed Parking Strategy.....	20
6.	TRAFFIC ASSESSMENT .....	24
6.1	Introduction .....	24
6.2	Existing Traffic Flows.....	24
6.3	Assessment methodology .....	24
6.4	Proposed Trip Generation - Pupils/Parents .....	24
6.5	Total Trip Generation.....	29
6.6	Traffic Distribution .....	30
7.	PERCENTAGE IMPACT ASSESSMENT .....	31

8.	SUMMARY AND CONCLUSIONS .....	32
8.2	Conclusions.....	32

## Tables

Table 5-1: Assessment of Parking Accumulation – Primary School Trip Rates .....	20
Table 5-2: Proposed parking requirement in accordance with standards .....	20
Table 6-1: Available traffic data .....	24
Table 6-2: TRICS Assessment - Proposed (Primary) .....	25
Table 6-3: Trips to and from school by main mode, region and rural urban classification: England: England (2018/2019).....	25
Table 6-4: Predicted peak period trips by mode using NTS survey data (Table NTS9908).....	26
Table 6-5: TRICS Assessment - Proposed (Nursery) .....	26
Table 6-6: Proposed trip generation with 100 place reduction .....	28
Table 6-7: Total Trip Generation - Proposed Development (210 Place Primary School and 48 Place Nursery) .....	29
Table 7-1: Percentage Impact Assessment – A4222 / St Athen Rd Signalised Crossroads.....	31

## Figures

Figure 2-1: Site Location Plan.....	3
Figure 2-2: Existing Site Accesses – Aberthin Road .....	4
Figure 2-3: Existing car parking locations.....	7
Figure 2-4: Location of Recorded PIAs .....	9
Figure 3-1: Existing Footways along Aberthin Road .....	11
Figure 3-2: Walk route photos .....	12
Figure 3-3: Local walking routes .....	13
Figure 3-4: Local PRoW's.....	14
Figure 4-1: Illustrative Masterplan.....	17
Figure 5-1: Vale of Glamorgan Parking Guidance .....	19
Figure 5-2: Proposed parking strategy .....	22
Figure 6-1: Current capacity information for existing schools within catchment area. ....	28

## Appendices

Appendix A	Road Safety Records
Appendix B	Indicative Site Masterplan
Appendix C	Swept Path Analysis
Appendix D	Proposed Parking Strategy
Appendix E	Traffic Data
Appendix F	TRICS Reports

## 1. INTRODUCTION AND BACKGROUND

### 1.1 Introduction

- 1.1.1 Hydrock has been commissioned by Morgan Sindall Construction and Infrastructure Ltd on behalf of Vale of Glamorgan Council (VoGC) to prepare this Transport Assessment (TA) to accompany an application for the proposed development of Cowbridge 1FE Primary School at Cowbridge Comprehensive School, Aberthin Road, Cowbridge.
- 1.1.2 The development proposals include the construction of a One Form Entry Primary School (approximately 1,400m<sup>2</sup> GIFA) with capacity for 210 primary places and 48 part-time nursery places. Following the completion of the new building there will be the creation of external sports provisions, teaching and learning areas and car parking. The remainder of the site will remain grassed sports field. The aspiration is for the New Primary School to be Net Zero Carbon.
- 1.1.3 The proposals will increase the capacity of Cowbridge Comprehensive School from 1,586 places to 1,796 places to accommodate 210 English medium primary school places with an additional 48 part-time nursery places.
- 1.1.4 Having all stages of a child's education within a single setting would be beneficial for parents of pupils in different stages of education as this would reduce the need to travel to multiple school sites and find alternative means of wrap-around care. This option was preferred to three other options (as outlined in VoG Cabinet Report dated 22 March 2021) partly because VoG believes it provides greater opportunities to maximise facilities across a single site with a single management team being responsible for the management of both phases. An all-through school also ensures there is a shared approach to management of the site, including the management of parking, drop off and pick up. This includes school day timings and a single traffic management plan.
- 1.1.5 This TA serves to demonstrate that the development is acceptable in terms of transportation, highway safety and access, and that it is compliant with relevant national and local planning policies.
- 1.1.6 It sets out the transport issues relating to the development site (existing conditions) and provides details of the development proposals; including issues associated with accessibility and connectivity, an assessment of the traffic predicted to be generated by the development and the corresponding predicted traffic impact on the surrounding local highway network.

### 1.2 Background

- 1.2.1 The proposals follow consultation by VoGC on the provision of an all-through school (ages 3-19) on the Cowbridge Comprehensive School site which would provide an additional 210 primary places and 48 part-time nursery places. The all-through school model would ensure Cowbridge Comprehensive School is able to continue providing excellent quality and standards in education whilst catering for a larger pupil population and age range as a result of both natural growth and new developments in the area. The proposed new self-contained building would be constructed on the Cowbridge Comprehensive School campus to accommodate the primary (210) and nursery (48 part-time) places.

### 1.3 Scope of Report

- 1.3.1 A scoping email was sent to VoGC on 08/04/2021 by Hydrock, outlining the proposals and proposed scope of this TA.

- 1.3.2 The scope of work has been based on advice set out in Technical Advice Note 18: Transport (TAN18). The TA also includes reference to the Active Travel Act (Wales - 2013) with regards to walking and cycling movements and Safe Routes in the Community Guidance.
- 1.3.3 The TA also considers guidance from the Department for Transport (DfT) including Transport Evidence in Plan Making, Manual for Streets, Manual for Streets 2, Local Transport Note 2/08: Cycle Infrastructure Design and guidance from the CIHT - Providing for Journeys on Foot.
- 1.3.4 The scope of the TA is proposed as follows:
- Introduction
  - Site location/ background and high level summary of existing adjacent highway network
  - High level road safety analysis within the vicinity of the site
  - Connectivity of the site in terms of safer routes to school, therefore fully considering walking, cycling and public transport movements in the context of the Active Travel Act and Safe Routes in the Community Guidance
  - Description of development proposals including site access
  - Details of servicing and access for delivery / operational vehicles
  - Vehicular trip generation and parking analysis
  - Traffic Impact Assessment
  - Summary and conclusions
- 1.3.5 The application is accompanied by a Framework School Travel Plan (FTP) which should be read on conjunction with this TA. The FTP includes measures and initiatives to encourage sustainable transport. The FTP will include sustainable targets, an Action Plan of responsibilities / target dates and a monitoring schedule, in accordance with Travel Plan guidance.

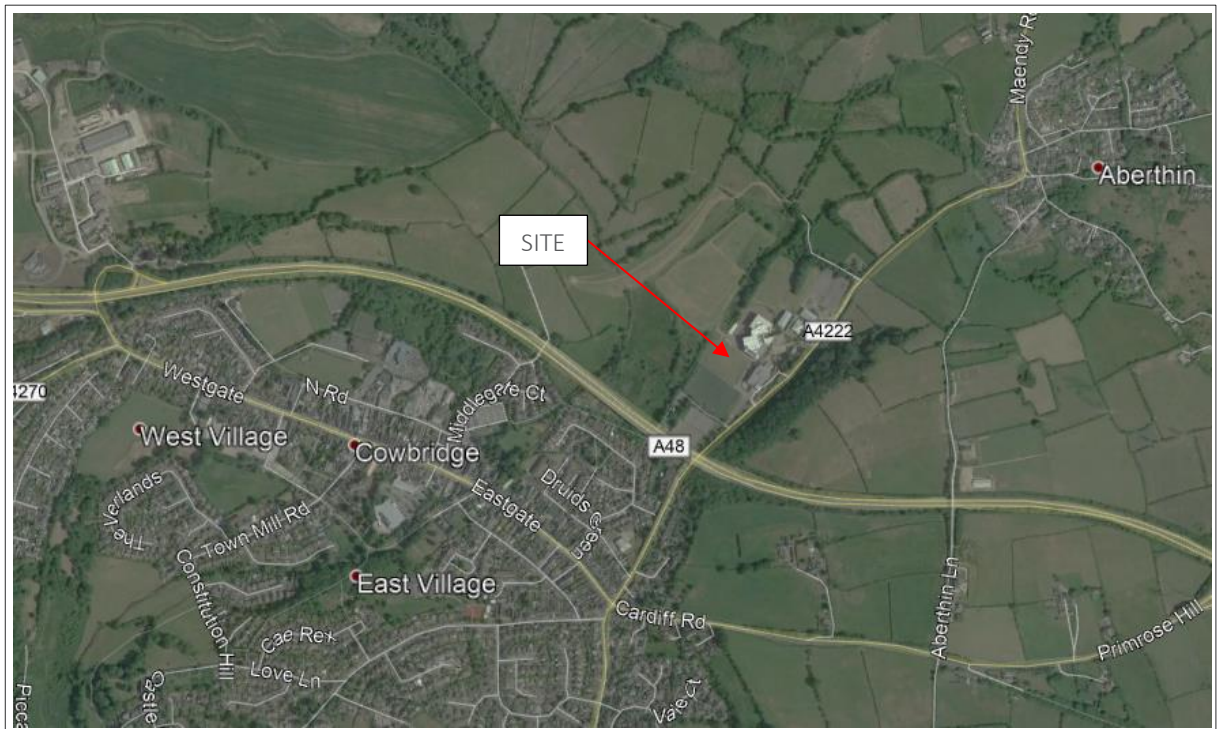
## 2. EXISTING CONDITIONS

### 2.1 Site Location and existing use

2.1.1 The site, measuring 0.6ha, is situated on the Cowbridge Comprehensive School campus and is currently used as open playing fields for the existing Cowbridge Comprehensive School and is entirely undeveloped. The School is located between Cowbridge and Aberthyn to the north of the A48, within the Vale of Glamorgan.

2.1.2 The site's location is shown indicatively in Figure 2-1.

Figure 2-1: Site Location Plan



### 2.2 Existing access

#### *Vehicular access*

2.2.1 Vehicular access is provided at two locations along Aberthyn Road (A4222); the northern main school access located approximately 380 metres north of the A48 road bridge and the southern secondary access located 150 metres north of the A48 bridge.

2.2.2 The schools primary access forms a junction with Aberthyn road and is partly controlled by signals during peak school times (timer controlled), reverting back to its primary design as a priority / give-way junction outside of these times. The all movements junction provides access for parents and staff, allowing pedestrians to access the school via the footway and internal footpath connection as well as vehicular access to the car parks and dedicated pick-up / drop-off areas.

2.2.3 The southern secondary access forms a simple give-way priority junction with Aberthyn Road (A4222) serving as a dedicated access for staff, visitors and deliveries as indicated by a school entrance sign. This access serves the reception, all-weather football pitches, playing fields and car parks.

2.2.4 The two site accesses can be seen in Figure 2-2.

Figure 2-2: Existing Site Accesses – Aberthin Road



### *Pedestrian access*

- 2.2.5 The schools primary access serves as the main pedestrian access point, providing the most convenient pedestrian access route to the school buildings via the internal footways and crossings. This route is indicated by appropriate signage along Aberthin Road.
- 2.2.6 Two metre footways are provided along the western side of Aberthin Road (A4222) which serve the site directly at various locations including both access junctions and a minor access located to the south of the secondary access.
- 2.2.7 The site operates a pedestrian friendly 5mph speed limit which is indicated by signage and road markings.



## 2.3 Existing parking provision

- 2.3.1 A site visit was conducted on 12/05/2021 where a number of observations were recorded on the operation of the current car parking use, car and coach pick-up/drop arrangements, vehicle movements and general site safety.
- 2.3.2 The site visit was conducted during the ongoing COVID-19 pandemic at a time when the school was operating a staggered entry and start times for pupils to avoid large groups gathering on site and to maintain separation between classes and school years. Pupil entry was staggered between 0800-0900 with lessons starting at approximately 08:50 at which time the school gates were closed. Entry to parent vehicles is restricted (managed by a member of staff) from 08:15 with only minibuses and coaches permitted; parents were observed turning within the junction mouth between the stop line and give-way markings at the edge of Aberthin Road. Prior to the pandemic lessons would start around 08:30 for all pupils and entry to the site would be between approximately 07:45 and 08:30 with gates closing at 08:30.
- 2.3.3 This assessment has been based on a pre-covid scenario which would represent the worst case for vehicle and pedestrian movements to and from the site. It is also acknowledged that the current management of the site has the safety of pupils and staff at the forefront and the observations below must be taken in this context.

### *Existing parking areas*

- 2.3.4 Three parking areas are located in the northern part of the site, accessible from the primary vehicle access. A small car park area is located to the south of the access, providing 30 car parking spaces as well as a mini-roundabout to facilitate turning and circulation of vehicles. To the north east and north west lie two larger car parking areas; the north western car park serves as a minibus and coach pick-up / drop-off area and the north eastern car park provides 90 spaces and operates a one-way system allowing vehicles to circulate and exit the site following pick-up/drop off. A turning area is provided at the end of the north western car park which can be used for turning minibuses.
- 2.3.5 A further three parking areas can be accessed via the secondary vehicular access off Aberthin Road. These comprise a small car park outside the reception with disabled spaces provided, a small restricted/barrier entry only car park to the south of the access and a large parking area located further west into the site accessible via the internal access road with access controlled via an automated barrier.

### *Site visit observations (AM)*

#### *Northern site car parks*

- 2.3.6 The primary access predominantly serves as a pick-up/drop-off area and minibus and coach parking and pick-up/drop-off during the AM peak. The small car park to the south of the northern access is used by school staff and was recorded as being close to its capacity prior to pupils arriving on site. Up to 08:15am, after which access to parent vehicles is restricted, parents use the large car park to the north east to drop children off as advised by the school and managed by a member of staff on the gate. The large parking area to the north west is used exclusively by minibuses and coaches. During the site visit there was a steady stream of minibuses and coaches dropping off from this north western parking area and at one time the car park accommodated four minibuses and two coaches. It is noted that the frequency of pupil drop-off is likely to increase when the school start times return to 08:30.

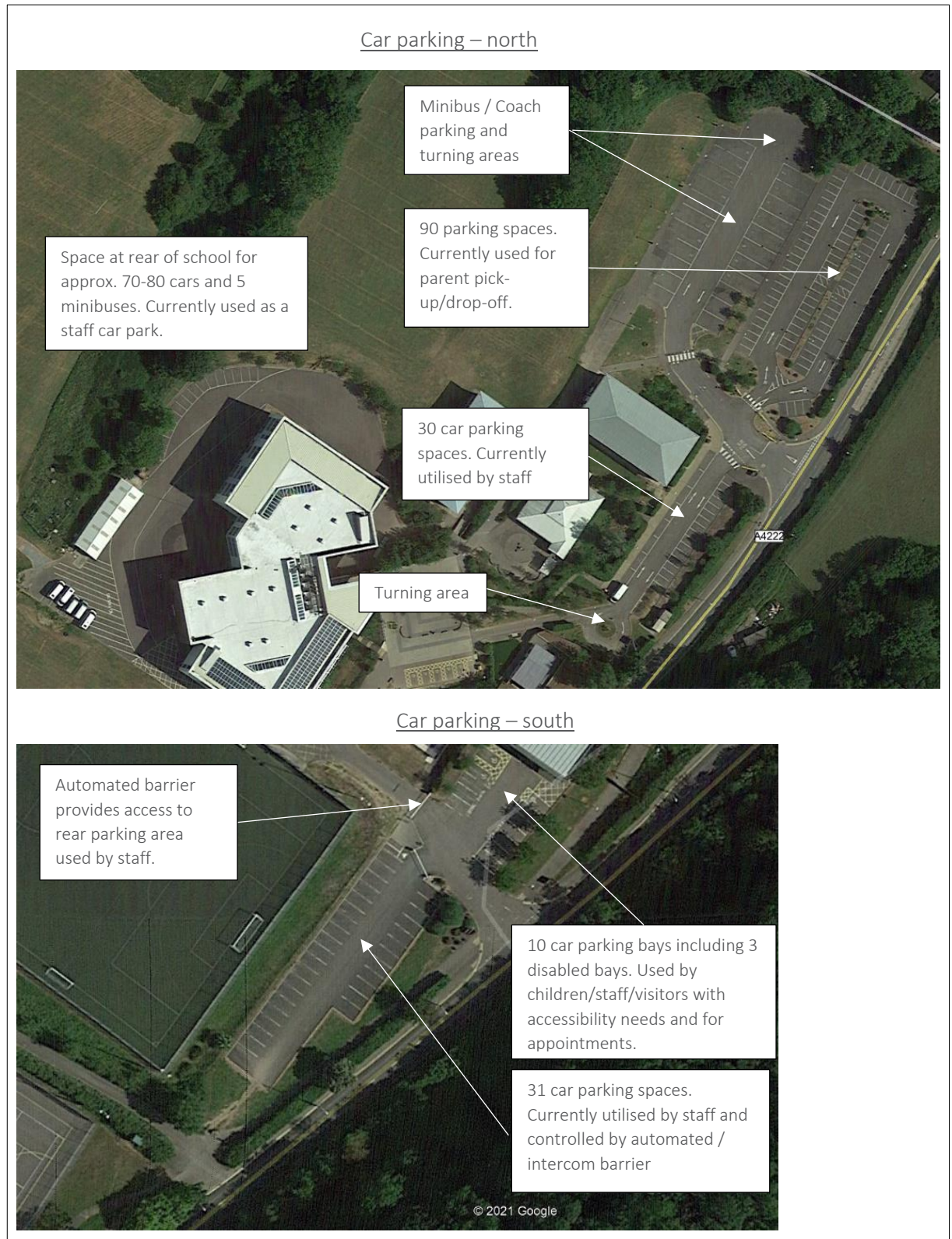
2.3.7 After the school gates are closed both large car parks remain empty and it is reported that they are used by school children during the day for free play and as a fire assembly point; therefore only in use by vehicles at pick-up and drop-off times.

*Southern site car parks*

2.3.8 The secondary access was predominantly used by school staff accessing the small car park to the south of the access (31 spaces) and large parking area (70-80 spaces) to the rear of the school, both of which are controlled for authorised access only via a barrier. A small car park adjacent to the school reception accommodates approximately 10 spaces including 3 disabled bays and was reserved for pupils with accessibility needs and for those with appointments at the school.

2.3.9 Figure 2-3 illustrates the existing parking areas and includes on-site observations recorded on how and by whom they are used.

Figure 2-3: Existing car parking locations



## 2.4 Local Highway Network

### *Aberthin Road (A4222)*

- 2.4.1 Aberthin Road is a single carriageway strategic rural A-road located along the site's eastern boundary and serves the School via two existing accesses (all users).
- 2.4.2 The road routes on a north-south alignment in the vicinity of the site and links Cowbridge and Aberthin locally. Street lighting is provided locally to the site which is supported by a 2 metre wide footway which runs along its western side providing pedestrian facility between Cowbridge to the south and Aberthin to the north. A 30mph speed limit is in place along this section of the road, enforced by speed cameras, signage and road markings.

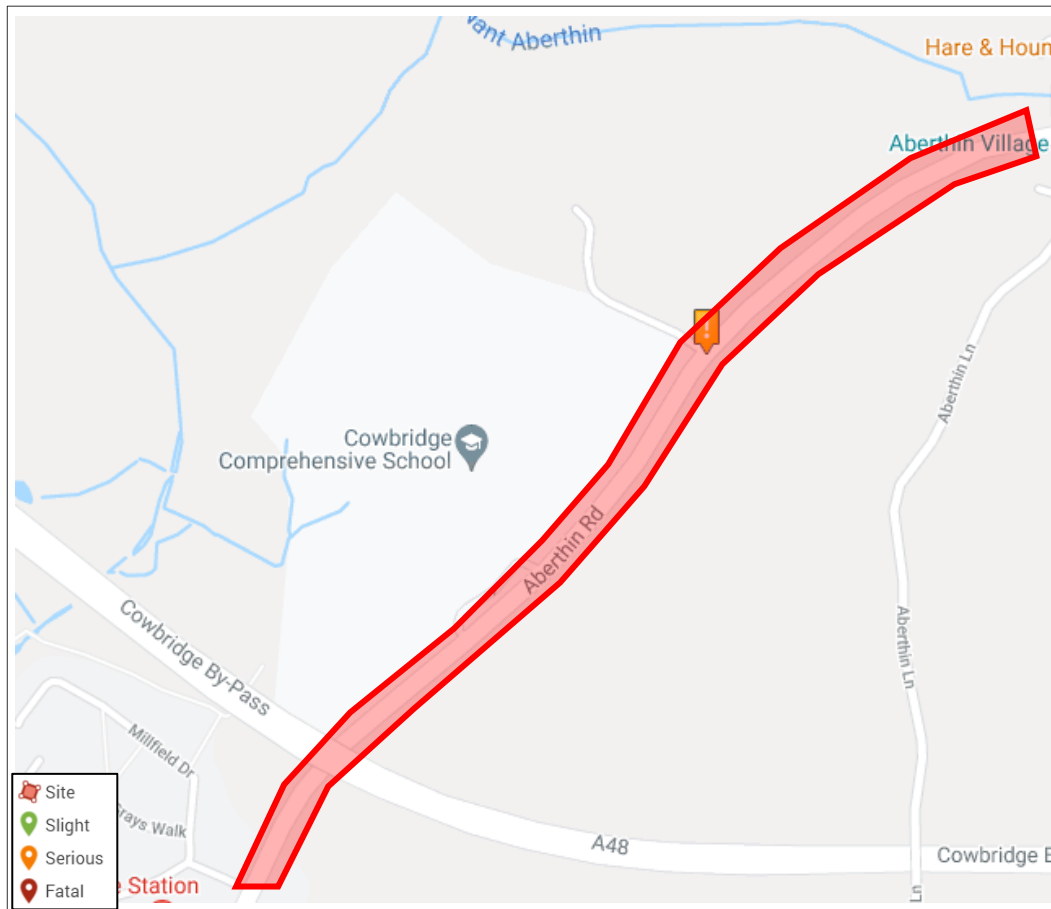
### *Links to strategic roads*

- 2.4.3 Further afield, Aberthin Road forms a junction the A48 to the east of the site at Cowbridge Garage junction providing a strategic east-west connection between the Vale of Glamorgan and Cardiff and Bridgend. To the north of the site the A422 continues north to Talbot Green and provides a route to the M4 via the A4119, providing strategic links.

## 2.5 Road Safety

- 2.5.1 Personal Injury Accident (PIA) data has been obtained from recorded road safety data published annually by the Department for Transport (DfT). The statistics provide recorded PIA data reported in each local authority recorded using the STATS19 accident reporting form.
- 2.5.2 The most recently approved five-year dataset covers the period between January 1st 2015 and 31<sup>st</sup> December 2019. In addition to this, provisional data has been revised which covers the period up to June 2020 after which the data is still unavailable or unverified.
- 2.5.3 Figure 2-4 contains a plot of the accidents within the study area over the recorded five-year period between 2015 and 2019 and also includes the additional period up to June 2020.

Figure 2-4: Location of Recorded PIAs



2.5.4 The purpose of examining PIA data is to ascertain if there are elements of the highway examined that may be casual factors in PIA events. It is unlikely that a single incident at a particular location will be of sufficient evidential value to implicate highway design or condition as a casual factor, unless the particular highway issues is in some way extreme, so particular attention is paid to accident clusters. Notwithstanding the foregoing, weather conditions can also affect the level of highway risk but mitigating hazardous weather conditions is not usually achieved through alterations to the highway.

#### *PIA Review*

- 2.5.5 Within the study area in the five-year period, one PIA was recorded within the vicinity of the site, classified as Slight in terms of severity. The accident was located adjacent to a private access situated approximately 340 metres north of the existing site access on Aberthin Road. The accident involved a car and light goods vehicle (or state two vehicles) and occurred during a right turn manoeuvre resulted in 1 casualty causing slight injury.
- 2.5.6 No accidents have been recorded in the vicinity of the existing site access within the latest five year period.
- 2.5.7 Due to the recorded PIA being an isolated incident, there is no indication of a specific pattern or issue with the geometry of the highway that would be exacerbated by the proposals, particularly when considering there are existing cycle and vehicle movements in this area.
- 2.5.8 The road safety report for the single PIA can be found at Appendix A.

### 3. SUSTAINABLE CONNECTIVITY

- 3.1.1 This chapter sets out the connectivity of the site to the surrounding area by sustainable modes of travel and demonstrates the sustainable location of the site. The proposed development is an extension to an existing school which is currently served by sustainable modes of travel including walking, cycling and public transport. The proposals will be supported by this existing infrastructure although it is noted that pupils will likely be accompanied by a parent/guardian.
- 3.1.2 The following section considers the connectivity of the site in terms of safer routes to school, fully considering walking, cycling and public transport options available to site users in the context of the Active Travel Act and Safe Routes in the Community Guidance.

#### 3.2 Walking Infrastructure and Routes

##### *Overview*

- 3.2.1 The site is well served by an established network of pedestrian infrastructure serving the site which connects the existing school to the local walkable residential areas which include Cowbridge and Aberthin. The proposals will be supported by this existing infrastructure.
- 3.2.2 The importance of walking and cycling in contributing towards sustainable travel patterns is detailed in the guidance contained within TAN18: Transport (March 2007).

##### *Footways*

- 3.2.3 A good quality well-lit footway serves as the primary pedestrian route to the school within the immediate vicinity and benefits from dropped kerb crossings with tactile paving at the school entrances. The footway is generally between 2.0m-2.5m wide and provides a connection to Cowbridge to the south and Aberthin to the north. During the site visit it was noted that vegetation has overgrown onto the footway narrowing the width in places and small sections of broken or uneven surfacing between the primary and secondary access.
- 3.2.4 Good quality street-lit footways exist alongside the wider local network beyond the site frontage, offering safe routes to the nearest residential areas. Within Cowbridge, footways are largely provided on both sides of the road and benefit from active frontages which contribute to a safer walking environment. Controlled and uncontrolled crossings are available along the main routes and footway crossovers provide continuous provision. To the north, the existing western footway routes through Aberthin Village, offering a safe walkable route between the school and local patrons. Footways are provided along both sides of the roads within the majority of quieter residential streets which provide alternative routes more suited to small children. Photos of some of these routes and facilities can be seen in Figure 3-1. .

Figure 3-1: Existing Footways along Aberthin Road



#### *Footpaths and safe school routes*

- 3.2.5 In addition to footways, the school benefits from a dedicated 'safe' walk route from Cowbridge Town Car Park. As well as the car park, the footpath links to a number of residential neighbourhoods with connections off Millfield Drive and Middlegate Walk, offering connections via quiet residential streets. This route is not lit and therefore would be less attractive during the winter months when daylight is diminished during the school commuting periods.
- 3.2.6 Photograph's of the 'safe' walk route at show in Figure 3-2 below.

Figure 3-2: Walk route photos

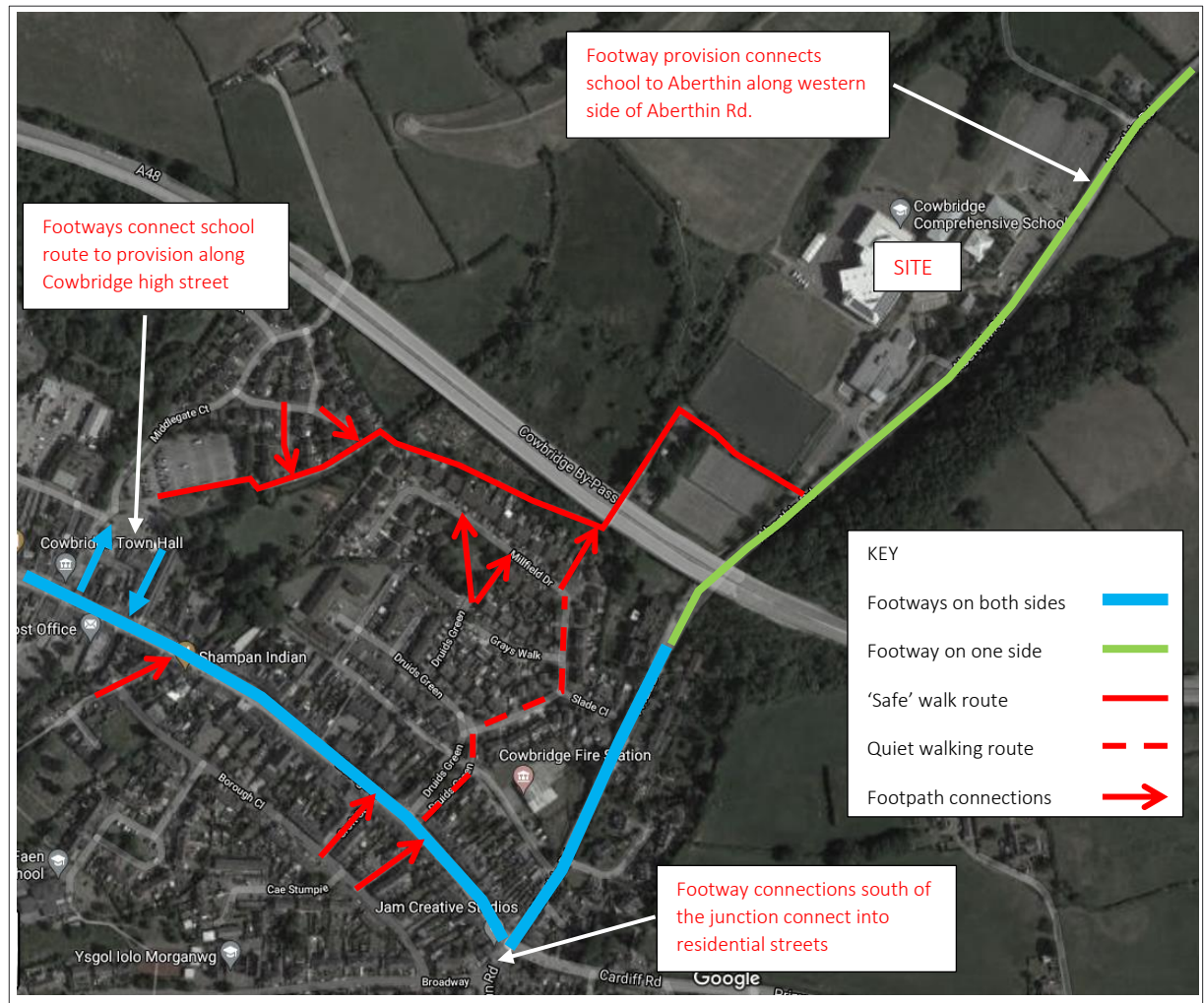


*Summary*

- 3.2.7 As demonstrated, the routes to and from the site are considered well established and safe for the users of the site. Figure 3-3 provides a summary of the key connections to the school.



Figure 3-3: Local walking routes

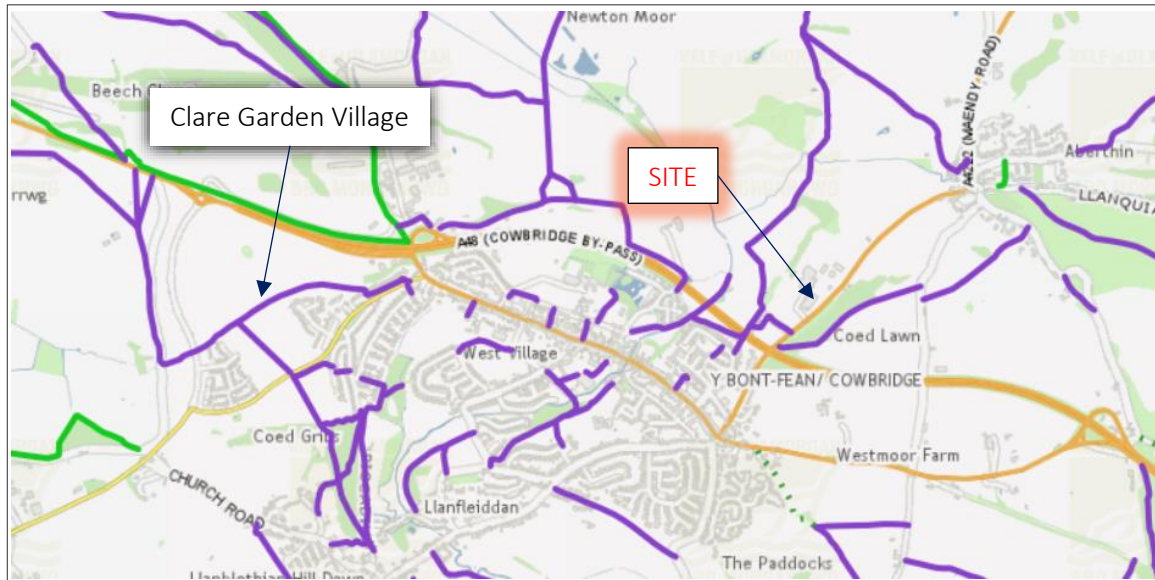


### Walking distances

- 3.2.8 Within the CIHT publication ‘Providing for Journeys on Foot’ (CIHT 2000) it suggests that the preferred maximum walking distance to school is 2km, with the acceptable distance being 1km and the desirable distance being 500 metres.
- 3.2.9 DfT - TA91/05 Provision for Non-Motorised Users - Paragraph 2.2 states that 2 miles is ‘a distance that could easily be walked by the majority of people’. Paragraph 2.3 also continues by stating that ‘Walking is used to access a wide variety of destinations including educational facilities... and places of work, normally within a range of up to 2 miles’ (3.2km).
- 3.2.10 CIHT (2015) – Planning for Walking: In relation to shorter trips in particular, (section 2.1) states that across Britain about ‘80% of journeys shorter than 1 mile (1.6km) are made wholly on foot’.
- 3.2.11 Both Cowbridge and Aberthin are located well within 2km walking distance of the school, in line with the recommended walking distance for schools within the CIHT guidance (2000). Figure 3-3 shows the location of these areas within the context of a 2km walking distance.
- 3.2.12 As the proposed development is an extension to an existing school provision on the existing school grounds, there is already pedestrian infrastructure in place to support transport to and from the school by walking.

3.2.13 Figure 3-4 illustrates the numerous PRoW connections within the vicinity of the site including the ‘safe’ walk route shown in Figure 3-3.

Figure 3-4: Local PRoW's



3.2.14 The site has good accessibility by walking to the surrounding residential areas including the newly constructed Clare Garden Village Development, via appropriate safe routes. This will encourage staff, pupils and parents of the school, who live within this area, to use non-car modes and reduce their reliance on the private car.

### 3.3 Cycling and Scooting

#### Cycling

3.3.1 TA91/05 states in paragraph 2.11 that ‘Cycling is used for accessing a variety of different destinations, including educational facilities and places of work, up to a range of around 5 miles (8km). Cycling is also undertaken as a leisure activity, often over much longer distances.’ Paragraph 2.9 also states that 5 miles (c.8km) is a distance ‘that could easily be cycled by the majority of people’.

3.3.2 This is consistent with the statement LTN1/20 Cycle Infrastructure Design (in paragraph 2.2.2) that ‘Two out of every three personal trips are less than five miles in length – an achievable distance to cycle for most people’.

3.3.3 Although TAN18 suggests 8km as the cycling threshold distance, cycling journeys are more likely to be up to 5km. A cycling journey of 8km would equate to approximately a 25-minute trip. It is recognised it is unlikely that accompanied pupils would cycle from 8km, but this could be acceptable and appropriate for some staff and sixth form pupils.

3.3.4 Whilst there are no dedicated off-road cycle facilities in the immediate vicinity of the site, local residential roads are deemed safe for cycling.

#### Scooting

3.3.5 More and more children are scooting to school due to the many benefits not least as a more convenient alternative to walking. The site benefits from a good network of footways and footpaths within the

vicinity of the site which would be attractive and acceptable as scooting routes for primary school age children as future users of the proposed development.

#### *Summary*

- 3.3.6 The site has good accessibility by walking, scooting and cycling via appropriate routes. This will encourage users who live within these areas to walk, cycle or scoot and thereby reduce reliance on the private car.

### **3.4 Public Transport Connectivity**

#### *School Transport*

- 3.4.1 The Council has a statutory duty to provide free school transport for pupils of statutory school age who reside beyond walking distance to the nearest appropriate school, in accordance with 'The Learner Travel (Wales) Measure 2008'. Pupils who are eligible for free learner transport are able to apply to the Council's School Transport Team.

- 3.4.2 The VoGC provides free school transport for:

- Primary age pupils residing two miles or over from their nearest designated catchment area school of type
- Secondary age pupils residing three miles or over from their nearest designated catchment area school of type

- 3.4.3 Therefore, free school transport would be available for users of the proposed primary school; nursery users would not qualify. However, it is not expected that a large proportion of the proposed primary school pupils will travel by this method as the primary school catchment area would limit the eligibility by keeping distances below the threshold.

#### *Bus*

- 3.4.4 The school benefits from a number of dedicated school minibus and coach services run by VoGC and private operators; the current timetables show 18 services are provided to/from a number of destinations within the surrounding catchment. Minibuses and coaches access the site using the primary access off Aberthin Road and are provided with a dedicated pick-up/ drop-off and parking area.

- 3.4.5 The closest non-school stops are located within Cowbridge Town Centre approximately 1.0km from the school. Bus service 321 currently serves these stops, providing connections to Talbot Green and Llantwit Major. The current timetable shows that the 321 service would only be able to provide a return journey from Llantwit Major due to COVID-19 restructuring; a total of five services with three in the morning and two in the afternoon. This service offers a connection to Llantwit Major Rail Station, allowing travel options from further afield as part of a multi-modal journey.

#### *Train*

- 3.4.6 The closest train station is Llantwit Major located approximately 7km to the south of the site. Located on the Vale of Glamorgan Line, the station offers connections to major stations including Bridgend and Cardiff in addition to a direct service to Aberdare via Cardiff. From Monday to Saturday the station offers an hourly service to Cardiff and Bridgend, with a two-hourly service operating on a Sunday.

### 3.5 Summary

- 3.5.1 The site benefits from connections to established walking, scooting and cycling routes connecting to surrounding residential areas which are within suitable walking and cycling distances. These facilities provide a safe and sustainable route for pupils, parents and staff.
- 3.5.2 Public bus services within the vicinity of the site which provide access to residential areas and these services provide will provide an alternative to travelling via private car for future users of the development. However, it is likely to attract a minimal level of use associated with the school staff due to limited services current available.
- 3.5.3 Given the level of school bus services it is considered that additional services can be managed to integrate the primary school age children of an appropriate age. This assessment does not account for pupil travelling to school via bus.
- 3.5.4 Llantwit Major rail station provides alternative travel options for the site, although this would mainly be for staff and be as part of a multi-modal journey relying on the connecting bus service. It is hope that bus services will return to pre-COVID-19 levels with additional services making this choice more attractive. The train therefore provides an alternative travel option for staff.
- 3.5.5 In summary, there are realistic opportunities for trips to and from the school to be made via non-car modes with the most likely mode being either walking, cycling or scooting for the proposed development. Due to the age of the proposed future users, staff will be the predominant users of public transport and although it is possible for staff to travel to the site using bus and train services it is more likely that staff will car share as an alternative to SOV.

## 4. PROPOSED DEVELOPMENT

### 4.1 Overview

4.1.1 The proposals seek consent for the construction of a One Form Entry Primary School (approximately 1,400m<sup>2</sup> GIFA) located on the grounds of the existing Cowbridge High School in Cowbridge. In addition, the school will be supported by new sports provisions, teaching and learning areas and car parking. The remainder of the site will remain grassed sports field.

4.1.2 Figure 4-1 illustrates the proposals and a copy of the masterplan can be found at Appendix B.

Figure 4-1: Illustrative Masterplan



### 4.2 Site Access

#### *Vehicular access*

4.2.1 It is proposed that the proposed development will be served from the existing primary access off Aberthin Road located to the north of the site.

- 4.2.2 The access is considered to be appropriate to support the proposed development of the site. As demonstrated in Section 2, the access has no record of accidents over the latest 5 year period and is considered to be of a suitable layout and scale to serve the proposed site uses.

#### *Pedestrian access*

- 4.2.3 Pedestrian access is to be provided via a new footpath which will provide a link between the proposed development and existing provision located to the south of the secondary access. The existing tactile paving crossing allows safe access to this path from the north via the existing Aberthin Footways.

### 4.3 Site Layout

- 4.3.1 The latest indicative masterplan shows the proposed development is to be located behind Block E to the west of the secondary access.
- 4.3.2 Staff and parents will utilise the proposed parking areas shown on Figure 5-2.
- 4.3.3 A delivery bay is proposed adjacent to the proposed building footprint which is accessible from the existing internal access road served from the secondary access via an automated barrier entry/exit arrangement. Indicative Swept Path Analysis is provided at Appendix C, demonstrating access by a large refuse.
- 4.3.4 Pedestrian access is provided via a new footpath which links to the existing provision located to the south of the secondary access. The existing tactile paving crossing allows safe access to this path from the north via the existing Aberthin Footways.

### 4.4 Servicing

- 4.4.1 The current servicing arrangement will continue via Aberthin Road using the existing secondary access junction and the schedule will be adapted to meet the needs of the new facility using the proposed delivery bay.

## 5. PROPOSED PARKING

### 5.1 Current parking standards

- 5.1.1 Parking guidance is provided in Vale of Glamorgan Local Development Plan 2011-2026 Parking Standards SPG (2019). The site, as identified in Plan 1 of the SPG, is situated in Zone E – Deep Rural. The maximum parking guidance for a secondary school is shown in Figure 5-1.

Figure 5-1: Vale of Glamorgan Parking Guidance

Type of Development	Operational	Non-operational
Primary School	1 commercial vehicle space	1 space per each member of teaching staff, 1 space per 2 ancillary staff & 3 visitor spaces

- 5.1.2 In addition to the non-operational parking an area must be provided for the picking up and dropping off of school children.

### 5.2 Proposed requirements

- 5.2.1 The proposed nursery and primary school will utilise the existing pick-up/drop-off and parking areas for parents and staff. The following section provides further details on how the site can accommodate the proposed development.

#### *Staff*

- 5.2.2 It is anticipated that the proposed development will employ approximately 22 members of staff. The nursery will require up to 6 members of staff for the 24 children (day care staff ratio of 1 per 4 children) with the primary school requiring 16 members of staff (2 per 30 children plus 4 supporting staff).
- 5.2.3 From the site visit observations it was shown that there is capacity within the current layout to accommodate these and the assessment is shown below. It was noted that the large north eastern car park is only used for parent pick-up/drop-off with the car park remaining empty for the rest of the day.

#### *Pupils/parents*

- 5.2.4 Due to the age of nursery children, parents will need to park up and leave their car to drop the children to the classroom and therefore will require a parking space which will be occupied for a short period of time. In addition, a number of parents to primary school children will also have to park up and walk children to the classroom based on their age. Therefore, as a result of the proposed development there will be a number of vehicles parked on site for a short period of time during the pick-up / drop-off times (0800-0900 & 1500-1600). An assessment of the trip rates for both uses has been undertaken to calculate the likely parking accumulation and predict what level of car parking is required for the proposals.
- 5.2.5 The trip generation exercise (further details shown in TA) shows that the proposals are likely to generate 32 and 8 arrivals in the AM and PM peaks (0800-0900 & 1500-1600). Figure 5-1 below predicts the likely proportion of parking accumulation either side of the peak periods using the trip rate profiles.

Table 5-1: Assessment of Parking Accumulation – Primary School Trip Rates

Time Period	Trip Rates (per pupil)			Parking Accumulation proportions			
	ARR	DEP	TOT	ARR	ACC	DEP	ARR+ACC+DEP
<b>PRIMARY SCHOOL</b>							
0700-0800	0.039	0.016	0.055	8	5	3	16
0800-0900	0.307	0.242	0.549	64	18	51	134
0900-1000	0.029	0.049	0.078	6	14	10	31
<b>0700-1000</b>	Accumulation Percentage Split			<b>44%</b>	<b>21%</b>	<b>36%</b>	<b>181</b>
10:00-11:00	0.014	0.013	0.027	3	14	3	20
11:00-12:00	0.027	0.018	0.045	6	16	4	26
12:00-13:00	0.021	0.029	0.05	4	15	6	25
13:00-14:00	0.02	0.024	0.044	4	14	5	23
1400-1500	0.067	0.02	0.087	14	24	4	42
1500-1600	0.162	0.22	0.382	34	12	46	92
1600-1700	0.054	0.081	0.135	11	6	17	34
<b>1400-1700</b>	Accumulation Percentage Split			<b>33%</b>	<b>23%</b>	<b>37%</b>	<b>168</b>

- 5.2.6 From the figures in Figure 5-1 it is predicted that between 21%-23% of arrivals could accumulate on site during the school peak periods; 25% has been selected for this assessment for robustness. As a worst case it has been assumed that all nursery trips will park on site and remain in place during the peak arrival times to account for the pick-up/drop-off of small children. Based on the worst-case of 26 arrivals for the primary school, the assessment predicts that there are likely to be 6 vehicles parking on site during the AM peak period based a parking accumulation figure of 25%; this results in a total of 12 when combined with the nursery arrivals.
- 5.2.7 The proposed development is predicted to require a total of approximately 34 parking spaces for both staff and parents; 22 staff spaces and 12 dwell spaces for parent pick-up/drop-off.

Table 5-2: Proposed parking requirement in accordance with standards

Use	Parking spaces / demand
Nursery Staff (6 staff)	6 spaces (1 per staff member)
Primary Staff (7 teachers, 7 assistants and 4 ancillary staff)	7 for teachers (1 per teacher), 7 for assistant (1 per staff member) + 2 spaces for ancillary staff (1 space for 2 staff) = 16
Nursery and Primary school parents	12
<b>Total</b>	<b>34</b>

## 5.3 Proposed Parking Strategy

### Overview

- 5.3.1 The following section outlines a parking strategy to accommodate the proposals within the existing school site.
- 5.3.2 The proposed parking strategy includes the following changes to the current parking arrangements; these are required to accommodate the proposed increases in demand and help to alleviate some of the known parking and pick-up/drop-off issues on site:

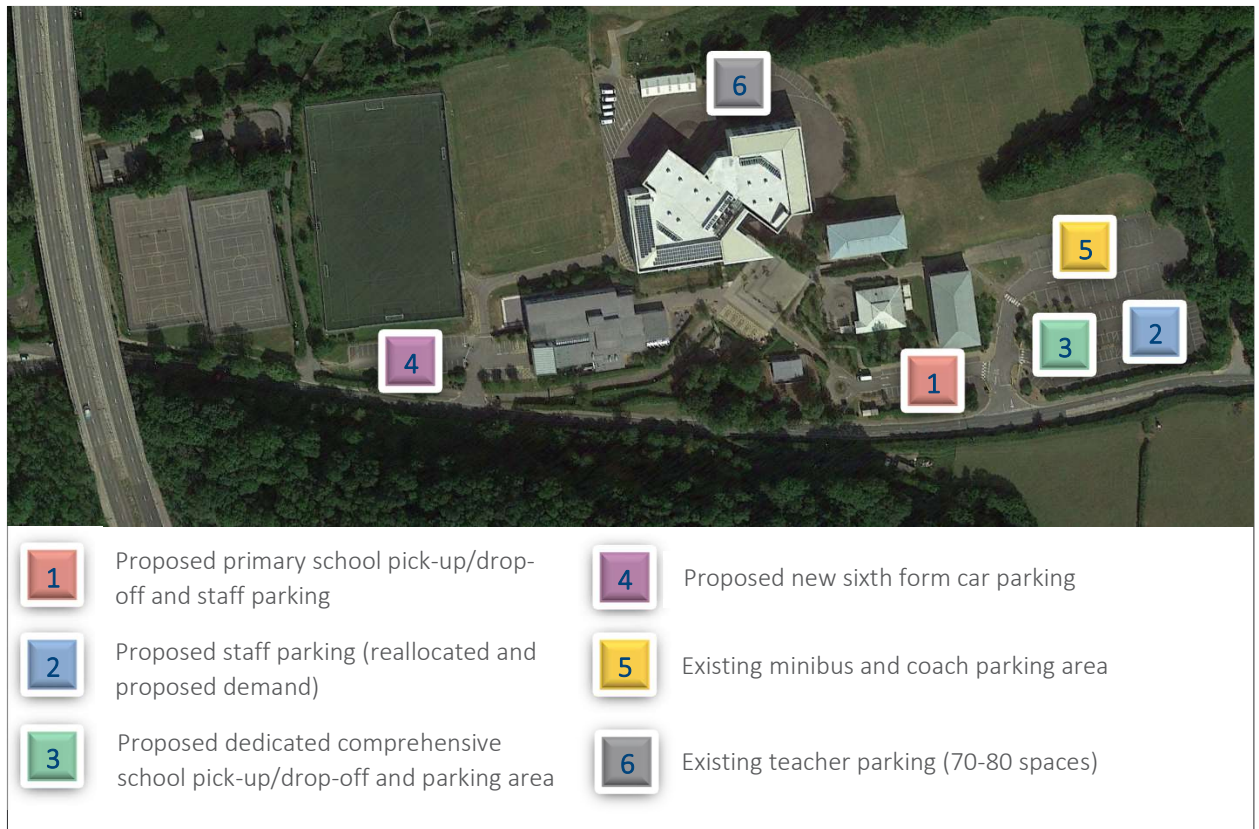


- The 31 space small pick-up/drop-off car park located to the south of the primary access will be shared between the parents and staff of the proposed nursery and primary school. Due to the layout lending itself to pick-up/drop-off purposes, the majority of spaces will be designated for nursery and primary school parents to meet the proposed 12 parking space demand; 15 spaces will be allocated to account for any overspill (+25%). The remaining 16 will be reserved for use by school staff. The car park will be managed from the gate by a member of staff; this will offer a safe dedicated pick-up and drop-off location for the nursery and primary school age children. It is proposed that, apart from those using remaining 16 spaces, the staff who currently park in this car park will be reallocated spaces within the reconfigured northern car park, replacing 15 spaces now allocated to nursery and primary school parents.
- Sixth form parking will be accommodated on site within the existing car park located to the south of the secondary access directly east of the 3G pitch. This is seen as a way of alleviating problems experienced by residents whereby sixth form pupils park under the A48 road bridge. Staff who currently park in this car park will be reallocated spaces within the reconfigured northern car park, replacing the total 30 spaces provided.
- Existing northern car parks to be reconfigured to accommodate:
  - » 59 staff parking spaces located in the new reconfigured northern car park to accommodate the 45 reallocated and 6 new from the 22 predicted for proposed staff (the remaining 16 of the proposed demand can be accommodated in the pick-up/drop-off car park). This car park therefore offers 8 surplus for any overspill.
  - » New secondary school pick-up/drop-off and parking area (24 spaces + Circulating pick-up/drop-off aisle)

5.3.3 The 22 spaces required for the proposed staff parking will be spread across the reconfigured northern car park and existing pick-up/drop-off car park located to the south of the main access.

5.3.4 Figure 5-2 illustrates the proposed strategy which can be seen in more detail at Appendix D including details on its operation.

Figure 5-2: Proposed parking strategy



## Summary

5.3.5 It is not thought that a reduction in available spaces within the north eastern car park would have any adverse impact on its current operation as a pick-up and drop-off facility; the site visit observed this areas to be underutilised. Cars will continue to circulate in a clockwise direction as intended and parents will also benefit from being able to park to assist with pick-up/drop-off. A new footway connection is proposed between the staff parking and pupil pick-up/drop-off area which connects users to the internal footpaths via the existing paths and crossings.

## 5.4 Parking safety

5.4.1 During the site visit it was noted that the school has concerns over conflict between parents cars and school children at pick-up/drop-off times and this is why the school currently restricts vehicle movements after 08:15 and before 14:15 using a member of staff and gates; coaches are allowed access after 08:15 but parents are discouraged away at the gate. Site safety in this area is a priority as all areas of the school are open to children during the school day for free play and the large car parks are also used as a fire assembly point.

5.4.2 The restrictions result in the following:

- Parents parking on Aberthin Road and/or turning within the junction mouth;
- Coaches parked along Aberthin Road prior to 14:15 when the gates open for picking up children.

5.4.3 The VoG Highways Department have raised concerns with these events and it is therefore proposed that the site will not restrict entry to vehicles prior to lessons starting at 08:30 resolve this issue.

- 5.4.4 Further discussions should be had with coach companies to agree stricter schedules to avoid any parking along Aberthin Road. It is noted that there is a lay-by located south of the A48 bridge which could be utilised in the event that coaches arrive prior to 14:15.
- 5.4.5 Site safety will continue to be monitored and further measures such as communication and signage can be proposed to manage vehicles as they enter and exit the site.

## 6. TRAFFIC ASSESSMENT

### 6.1 Introduction

6.1.1 This section examines the impact of the proposed development on the local highway network. The scope of the assessment has been discussed with VoG with the following junction highlighted for consideration:

- A4222 Cardiff Road / Aberthin Road / St Athan Road

### 6.2 Existing Traffic Flows

6.2.1 At the time of writing this report the VoG were not accepting traffic survey data recorded during the ongoing COVID-19 pandemic. In order to overcome this Hydrock has sought to obtain historic data recorded prior to the pandemic. A review of nearby historic planning applications has identified traffic flow data for the aforementioned junction. Table 6-1 provides further details on this data and the flows are summarised on Traffic Figure Diagrams 001-002 found in Appendix E.

Table 6-1: Available traffic data

Survey Location	Source(s)	Survey Date	Survey Type
A4222 Cardiff Rd / Aberthin Rd / St Athan Rd	Land to the North-West of Cowbridge Transport Assessment	2014	Manual Classified Counts

### 6.3 Assessment methodology

6.3.1 The following section sets out the assumptions and assessment methodology applied to this traffic assessment.

#### *Staff Trips - Methodology*

6.3.2 It is anticipated that the proposed development will employ approximately 30 members of staff. The nursery will require up to 6 members of staff for the 24 children (day care staff ratio of 1 per 4 children) with the primary school requiring 18 members of staff (2 per 30 children plus 4 supporting staff).

6.3.3 The majority of teaching and support staff to be employed at the site will be required to be on-site before the arrival of any pupils and are to remain on-site until after pupils have left and therefore the majority of arrivals/departures of staff are outside of both network and school peak hours. Non-teaching staff such as cooks and cleaners also travel outside of peak times.

6.3.4 Therefore, for the purpose of assessment it has been assumed that all staff arrive before the network and school peak hour and leave after the school peak hour and before the network peak hour. The trip generation of staff is therefore considered purely in terms of parking demand and not for its impact on the local highway network during peak hours.

### 6.4 Proposed Trip Generation - Pupils/Parents

#### *Overview*

6.4.1 Trip rates for similar primary school and nursery sites have been obtained from the TRICS database to predict the level of trips that are likely to be generated by the proposed school extension. The subsequent trip rates can be found at Appendix F.

6.4.2 The following assessment uses person/pupil trip rates for the proposed primary school to enable a site specific application alongside modal share information. However, in the absence of suitable multi-modal surveys for the proposed nursery, vehicle trip rates have been utilised.

### *Primary School (210 places)*

6.4.3 The TRICS database has been analysed to identify similar sites. The following criteria have been applied to obtain sites of a similar nature:

- Sites in the 04 – Education; A – Primary
- Sites located in England and Wales (excluding London)
- Sites in Edge of Town and Neighbourhood Centre locations
- Sites with a surrounding population of less than 10,000 within 1 mile of the site and less than 100,000 within 5 miles.

6.4.4 The selection criteria identified two similar primary school sites. A summary of the vehicle trip rates in the AM (0800 - 0900) and PM (1500 - 1600) school peaks are summarised in Table 6-2.

Table 6-2: TRICS Assessment - Proposed (Primary)

Time Period	Trip Rates (per pupil)			Trips (210 pupils)		
	ARRIVALS	DEPARTURES	TOTAL	ARRIVALS	DEPARTURES	TOTAL
AM School Peak (0800 - 0900)	0.979	0.287	1.266	206	60	266
PM School Peak (1500 - 1600)	0.23	0.687	0.917	48	144	193
PM Network Peak 1700-1800	0.041	0.077	0.118	9	16	25

### *Modal Share*

6.4.5 Analysis of the National Travel Survey data (Table NTS9908) suggests approximately 37% of pupils (including those accompanied) walk to primary school within rural towns; the remaining 36% travel by car, 14% by local bus, 8% by private bus, 4% bicycle and 1% other. These are summarised in Table 6-3.

Table 6-3: Trips to and from school by main mode, region and rural urban classification: England: England (2018/2019).

Mode	Share %
Walk	37%
Cycle	4%
Car	36%
Private Bus (incl school bus)	8%
Local Bus	14%
Rail	0%
Other	1%
Total	100

Note: Data for category: Rural Town and Fringe. Ages 5-16 <https://www.gov.uk/government/statistical-data-sets/nts03-modal-comparisons->

6.4.6 This modal share has been used to predict the likely modal split for the proposed primary school extension. Table 6-4 provides a summary of the proposed peak trip generation by mode.

Table 6-4: Predicted peak period trips by mode using NTS survey data (Table NTS9908)

Mode	Person Trips by mode and per peak period								
	ARR	DEP	TOT	ARR	DEP	TOT	ARR	DEP	TOT
	0800-0900			1500-1600			1700-1800		
WALK	76	22	98	18	53	71	3	6	9
CYCLE	8	2	11	2	6	8	0	1	1
CAR	74	22	96	17	52	69	3	6	9
PRIVATE									
BUS	16	5	21	4	12	15	1	1	2
LOCAL									
BUS	29	8	37	7	20	27	1	2	3
RAIL	0	0	0	0	0	0	0	0	0
OTHER	2	1	3	0	1	2	0	0	0

6.4.7 Following the refinement of proposed trips using modal shift assumptions it is predicted that the site would generate approximately 96, 69 and 9 two-way car trips in the AM, inter-peak and PM peak periods respectively.

*Nursery (24 children per session)*

6.4.8 The TRICS database has been analysed to identify vehicular trip rates associated with similar nursery sites using the following criteria:

- Sites in the 04 – Education; D – Nursery
- Sites located in England and Wales (excluding London)
- Sites in Edge of Town and Neighbourhood Centre locations
- Sites with a surrounding population of less than 10,000 within 1 mile of the site and less than 100,000 within 5 miles.

6.4.9 The likely number of trips associated with the 48 place childcare facility are summarised in Table 6-5.

Table 6-5: TRICS Assessment - Proposed (Nursery)

Time Period	Trip Rates (Vehicle trips)			Trips (24 children per session)		
	ARRIVALS	DEPARTURES	TOTAL	ARRIVALS	DEPARTURES	TOTAL
AM School Peak (0800 - 0900)	0.352	0.345	0.697	8	8	17
PM School Peak (1500 - 1600)	0.085	0.07	0.108	2	2	3
PM Network Peak 1700-1800	0.261	0.338	0.599	6	8	14

6.4.10 For the purpose of this assessment it has been assumed that the predominant modal share for the nursery is private car, although reductions have been made for car sharing as detailed below.

### *Trip Rate Summary*

- 6.4.11 This assessment has focused on the impact of the development during the Weekday AM and PM school peak periods of 08:00-09:00 and 15:00-16:00.
- 6.4.12 These figures do not account for car sharing which would occur for parents with more than one child studying at the school and the likelihood of one or both at primary school age.

### *Car sharing*

#### *Car Share predictions*

- 6.4.13 A proportion of the car trips shown in Table 6-5 will already be shared between the nursery and primary school as one trip; parents who have two children located at the school. This is one of the advantages of an all-through school and has been taken into account during the assessment.
- 6.4.14 The Census dataset QS118EW (Families with dependent children) has been reviewed, which provides the total number of families with children within the catchment Cowbridge 002. The analysis shows that approximately 55% of the respondents have more than one dependent children between 0-18 years.
- 6.4.15 It is considered reasonable to apply a car share reduction to the proposed development trips, not least because the proposals will combine 3 school stages (nursery, primary and secondary) into one thereby making it realistic assumption.
- 6.4.16 A **reduction figure of 30%** has been applied to the predicted primary school and nursery car trips.

### *Overprovision of school places*

- 6.4.17 Due to the overprovision of primary school places locally there are a number of places/pupils which will be reallocated to the proposed development from primary schools within Cowbridge Comprehensive School catchment area. Therefore, it can be argued that a number of trips to and from the proposed school will already been on the local road network within the existing catchment area and as such will not represent new trips requiring capacity.
- 6.4.18 VoG Cabinet reports (dated 22/03/21 & 21/12/20) advised on how the number of primary school places in Cowbridge can be increased to meet demand as a result of recent and proposed housing developments in the area. Information on the capacity of existing primary schools was included in the report which evidence current shortfalls in pupil places.
- 6.4.19 Figure 6-1 shows an extract from the reports which provides a summary of this information. Figures shown below suggest that there are currently 20% / 200 places oversubscribed.

Figure 6-1: Current capacity information for existing schools within catchment area.

Table 3 – Data about schools serving the Cowbridge Comprehensive School catchment area							
School	Type	Language	Admission No.	Capacity	Current NOR	Surplus (%)	Nursery Places
Iolo Morganwg	Community	WM	30	210	176	16%	66
Llancarfan	Community	EM	18	126	69	45%	0
Llanfair	Community	EM	18	129	130	-1%	20
Llangan	Community	EM	15	111	102	8%	24
Llansannor CIW	VA	EM	30	210	210	0%	30
Pendoylan CIW	VA	EM	30	210	194	8%	30
Peterston-Super-Ely CIW	VC	EM	27	189	174	7%	28
St Brides CIW	VA	EM	29	203	194	8%	48
St David's CIW	VA	EM	20	140	149	-6%	28
St Nicholas CIW	VC	EM	18	126	124	2%	0
Y Bont Faen	Community	EM	30	210	218	-4%	60

6.4.20 It is considered reasonable that a reduction could be applied to the car trips predicted for the primary school (using TRCIS) to account for the fact that a proportion of the surplus places will be reallocated to the new school as is intended for the proposed development. Therefore, in the interests of keeping the assessment robust, a **100 place reduction** has been applied to the predicted car trips. The result of this reduction are shown in Table 6-3.

Table 6-6: Proposed trip generation with 100 place reduction

Time Period	Person Trips by mode								
	ARR	DEP	TOT	ARR	DEP	TOT	ARR	DEP	TOT
	AM Peak 0800-0900			School PM Peak 1500-1600			PM Network Peak 1700-1800		
WALK	27	8	34	6	19	25	1	2	3
CYCLE	3	1	4	1	2	3	0	0	0
CAR	26	8	33	6	18	24	1	2	3
PRIVATE BUS	6	2	7	1	4	5	0	0	1
LOCAL BUS	10	3	13	2	7	9	0	1	1
RAIL	0	0	0	0	0	0	0	0	0
OTHER	1	0	1	0	1	1	0	0	0

6.4.21 This would result in approximately 33, 24 and 3 two-way car trips in the AM, inter-peak and PM peak periods respectively.

6.4.22 A proportion of these trips will be made by parents who already currently make the trip to the proposed site for the child who is attending Cowbridge Comprehensive.

### Summary of reductions /assumptions

6.4.23 The following provides a summary of the assumptions which have been applied to the TRICS trip generation outputs shown in Table 6-4 and Table 6-5.

- 30% (could be more like 25%) reduction to account for car share which is realistic given the proposals will combine 3 school ages and analysis has shown that 55% of families have more than one dependent child.



- 100 reduction to primary school places to account for reallocation as a result of current oversupply at neighbouring schools within the catchment – trips are already on the network. Current figures show that there is approximately 200 places oversubscribed within Cowbridge Comprehensive Catchment Area. Therefore the reduction is considered reasonable.

## 6.5 Total Trip Generation

6.5.1 Table 6-7 provides a summary of the total predicted trips associated with the proposed development, following the refinements shown above including reductions for reallocated trips and modal share projections. The figures do not consider school bus trips.

Table 6-7: Total Trip Generation - Proposed Development (210 Place Primary School and 48 Place Nursery)

Mode	Person Trips by mode and per peak period								
	ARR	DEP	TOT	ARR	DEP	TOT	ARR	DEP	TOT
	0800-0900			1500-1600			1700-1800		
Primary School									
WALK	27	8	34	6	19	25	1	2	3
CYCLE	3	1	4	1	2	3	0	0	0
CAR	26	8	33	6	18	24	1	2	3
PRIVATE BUS	6	2	7	1	4	5	0	0	1
LOCAL BUS	10	3	13	2	7	9	0	1	1
RAIL	0	0	0	0	0	0	0	0	0
OTHER	1	0	1	0	1	1	0	0	0
Nursery									
WALK	6	6	12	1	1	2	5	6	10
CYCLE	1	1	1	0	0	0	0	1	1
CAR	6	6	12	1	1	2	4	6	10
PRIVATE BUS	1	1	3	0	0	0	1	1	2
LOCAL BUS	2	2	5	1	0	1	2	2	4
RAIL	0	0	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0	0	0
Totals									
WALK	33	14	46	8	20	27	6	8	14
CYCLE	4	1	5	1	2	3	1	1	1
CAR	32	13	45	8	19	26	5	8	13
PRIVATE BUS	7	3	10	2	4	6	1	2	3
LOCAL BUS	12	5	18	3	8	10	2	3	5
RAIL	0	0	0	0	0	0	0	0	0
OTHER	1	0	1	0	1	1	0	0	0

6.5.2 The resultant predicted vehicle trip generation associated with the proposed development equates to 45, 26 and 13 two-way car trips in the AM, inter-peak and PM peak periods respectively.

6.5.3 The greatest number of vehicle trips are predicted to occur during the AM peak period (0800-0900) with 32 arrivals and 13 departures. This represents approximately 1 arrivals every 2 minutes and 1 departure every 4 minutes in the peak hour.

## 6.6 Traffic Distribution

### *Pupil pick-up/drop-off*

- 6.6.1 The proposed development will cater predominantly for the local area admitting pupils based on the 2-3 mile primary school catchment area. This now includes the new residential development to the west of Cowbridge.
- 6.6.2 The forecast vehicle movements generated from the proposed development have been assigned onto the local highway network based on local population density.
- 6.6.3 The proposed trip distribution and predicted trip assignment for the proposed development trips can be found at Appendix E.

## 7. PERCENTAGE IMPACT ASSESSMENT

- 7.1.1 The closest junction to the site is the A4222 / St Athen Rd / A4222 signalised crossroads location approximately 500 metres to the south. The junction has been highlighted by VoGC for consideration.
- 7.1.2 A percentage impact assessment has been undertaken at this junction to demonstrate the impact of the proposed net development trips (shown in Table 6-7) and the results are shown in Table 7-1. The assignment of proposed trips has been informed by the trip distribution exercise in Section 6.

Table 7-1: Percentage Impact Assessment – A4222 / St Athen Rd Signalised Crossroads

Year / Period		A4222 / St Athen Rd Signalised Junction																			
		Aberthin Rd				Cardiff Rd				St Athen Rd				Eastgate Rd				Total			
		Base	Dev	B+D	%	Base	Dev	B+D	%	Base	Dev	B+D	%	Base	Dev	B+D	%	Base	Dev	B+D	%
2012 (Survey Date)	AM	380	11	391	2.7%	329	11	340	3.1%	363	9	372	2.5%	316	16	332	4.8%	1388	47	1435	3.3%
	PM	374	15	389	4.0%	382	15	397	3.9%	259	2	261	0.8%	415	4	419	0.9%	1430	37	1467	2.5%

- 7.1.3 The assessment results show that the junction experiences impacts of between 2.5% and 3.3% across the peak hours. The greatest percentage impact is predicted at the Eastgate Road arm in the AM with 4.8%. This level of impact is not considered a material increase; the impact lies below the WAG's TAN 18 Guidance which considers any increase of 5% and above as material. Furthermore, the corresponding predicted development flow of 16 (arrivals) is very low and would equate to approximately 1 vehicle every 4 minutes.
- 7.1.4 It is worth noting that the proposed trip generation does not take into account any interventions as a result of the school Travel Plan which aim to further reduce the reliance on the car.

## 8. SUMMARY AND CONCLUSIONS

- 8.1.1 Hydrock Consultants Ltd has been commissioned on behalf Morgan Sindall Construction & Infrastructure Ltd in support of a planning application to be submitted to the Vale of Glamorgan Council for the proposed educational development of Cowbridge Primary School, Aberthin Road, Cowbridge
- 8.1.2 The development proposals include the construction of a specialist learning facility, approximately 1,400m<sup>2</sup> GIFA, with capacity for 210 primary places and 48 part-time nursery places. Following the completion of the new building there will be the creation of external sports provisions, teaching and learning areas and car parking. The remainder of the site will remain grassed sports field. The aspiration is for the New Primary School to be Net Zero Carbon.
- 8.1.3 This TA has been produced to provide the necessary information for the local highway and planning authorities to consider the merits of the development in terms of accessibility, highway safety and the impact of the development traffic on the local highway network.
- 8.1.4 The TA is supported by a Travel Plan which is submitted as a separate document.

### 8.2 Conclusions

- 8.2.1 To summarise, in light of the assessment work and analysis within the TA, it is considered that the development would not have a material detrimental impact in relation to transport.
- 8.2.2 It is not considered that the development will have a material impact upon the operation of the local highway network, nor an unacceptable impact on highway safety and is therefore fully in accordance with the NPPF.
- 8.2.3 Consequently, it is considered that there are no significant highways and transportation matters that should preclude the Local Planning Authority from approving this planning application.

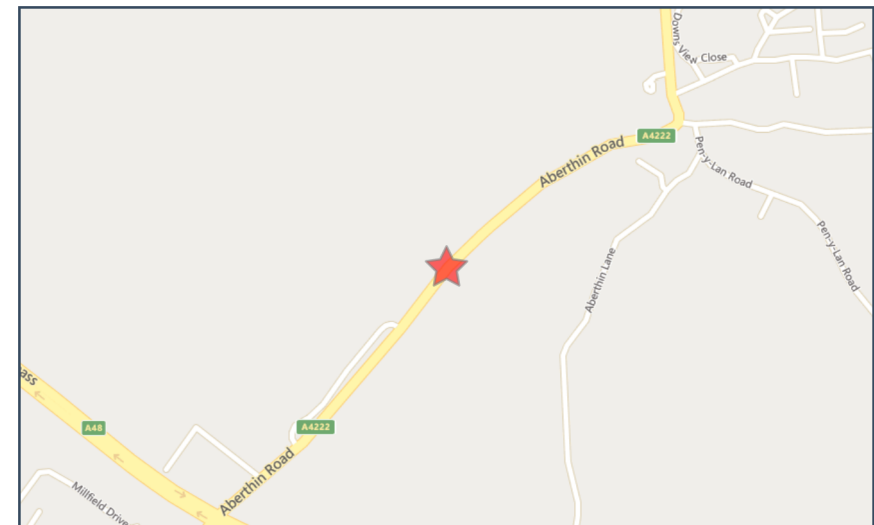
# Appendix A Road Safety Records

[Click here to enter Appendix title.](#)



Validated Data

<b>Crash Date:</b>	Wednesday, December 11, 2019	<b>Time of Crash:</b>	9:13:00 AM	<b>Crash Reference:</b>	2019621901614
<b>Highest Injury Severity:</b>	Slight	<b>Road Number:</b>	A4222	<b>Number of Casualties:</b>	1
<b>Highway Authority:</b>	The Vale of Glamorgan	<b>Number of Vehicles:</b>	2	<b>OS Grid Reference:</b>	300453 174997
<b>Local Authority:</b>	Vale of Glamorgan				
<b>Weather Description:</b>	Raining without high winds				
<b>Road Surface Description:</b>	Wet or Damp				
<b>Speed Limit:</b>	30				
<b>Light Conditions:</b>	Daylight: regardless of presence of streetlights				
<b>Carriageway Hazards:</b>	None				
<b>Junction Detail:</b>	T or staggered junction				
<b>Junction Pedestrian Crossing:</b>	No physical crossing facility within 50 metres				
<b>Road Type:</b>	Single carriageway				
<b>Junction Control:</b>	Give way or uncontrolled				



For more information about the data please visit: [www.crashmap.co.uk/home/Faq](http://www.crashmap.co.uk/home/Faq)  
To subscribe to unlimited reports using CrashMap Pro visit [www.crashmap.co.uk/Home/Premium\\_Services](http://www.crashmap.co.uk/Home/Premium_Services)



**Validated Data**

**Vehicles involved**

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Goods vehicle over 3.5 tonnes and under 7.5 tonnes mgw	-1	Male	46 - 55	Vehicle is in the act of turning right	Front	Other	None	None
2	Car (excluding private hire)	7	Female	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

**Casualties**

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Female	Over 75	Unknown or other	Unknown or other

For more information about the data please visit: [www.crashmap.co.uk/home/Faq](http://www.crashmap.co.uk/home/Faq)

To subscribe to unlimited reports using CrashMap Pro visit [www.crashmap.co.uk/Home/Premium\\_Services](http://www.crashmap.co.uk/Home/Premium_Services)

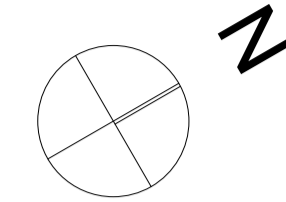
# Appendix B      Indicative Site Masterplan

[Click here to enter Appendix title.](#)

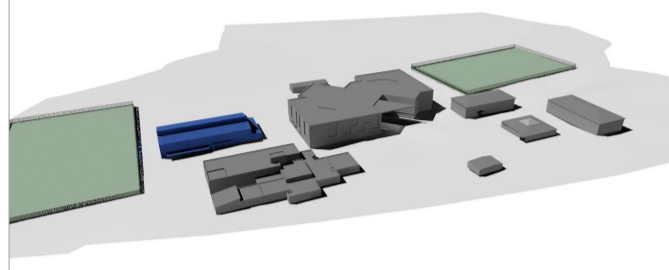




**Notes**  
 Check all dimensions on site. Do not scale from this drawing.  
 Report any discrepancies and omissions to HLM Architects.  
 This Drawing is Copyright ©  
 DESIGN/SKETCH DESIGN  
 Unless stated otherwise the designs shown are subject to detailed site survey investigations and legal definition of the CDM Regulations and the comments and / or approval of the various relevant Local Authority Officers Statutory Undertakers - Fire Officers Engineers and the like. They are copyright project specific and confidential and no part is to be used or copied in any way without the express prior consent of HLM Architects.  
 PHOTOCOPIED/SCANNED INFORMATION  
 NB This drawing is based on photocopied / scanned information liable to distortion in scale.



BBS9 / S9 Category (Brief Area)	Existing Area (m2)	Proposed Area (m2)
Non Net site - Vehicular	11,906	12,509
Non Net site - Pedestrians	2,854	4,031
Secondary Sports Pitches (64,250)	41,058	31,192
Secondary Sports Pitches - All-Weather	6,010	11,608
Secondary Games Courts (3,700)	4,822	4,822
Secondary Soft Informal (4,675)	12,633	12,090
Secondary Hard Informal (2,725)	2,386	2,386
Secondary Habitat (1,750)	12,731	12,638
1FE Games Courts (1,020)		781
1FE Soft Informal (1,325)		2,834
1FE Soft Informal - Nursery (75)		121
1FE Hard Informal (715)		904
1FE Hard Informal - Nursery (45)		72
1FE Habitat - Nursery (30)		67



- Proposed Primary School Area boundary treatment (to be left open to rest of school).
- Proposed Nursery / Reception External Area
- 5m 'no build zone' - proximity to existing building.
- Entrance Route - Pedestrian
- Entrance Route - Vehicle / Delivery access
- Existing Area of Vegetation
- Flood Risk Zone

P03	Draft Issue	20.04.21	CC	BT
P02	Preliminary Issue	19.03.21	BT	AS
P01	Building Footprint Updated	08.12.20	AMS	GW
Rev	Description	Date	By	Chk

Revisions  
 Project  
**15-1089-01**  
**Cowbridge**  
**Primary School**  
 Client

Title  
**Cowbridge Site**  
**Masterplan**

Drawing No. **VGP-HLM-00-00-DR-L-00001** Revision **P03**

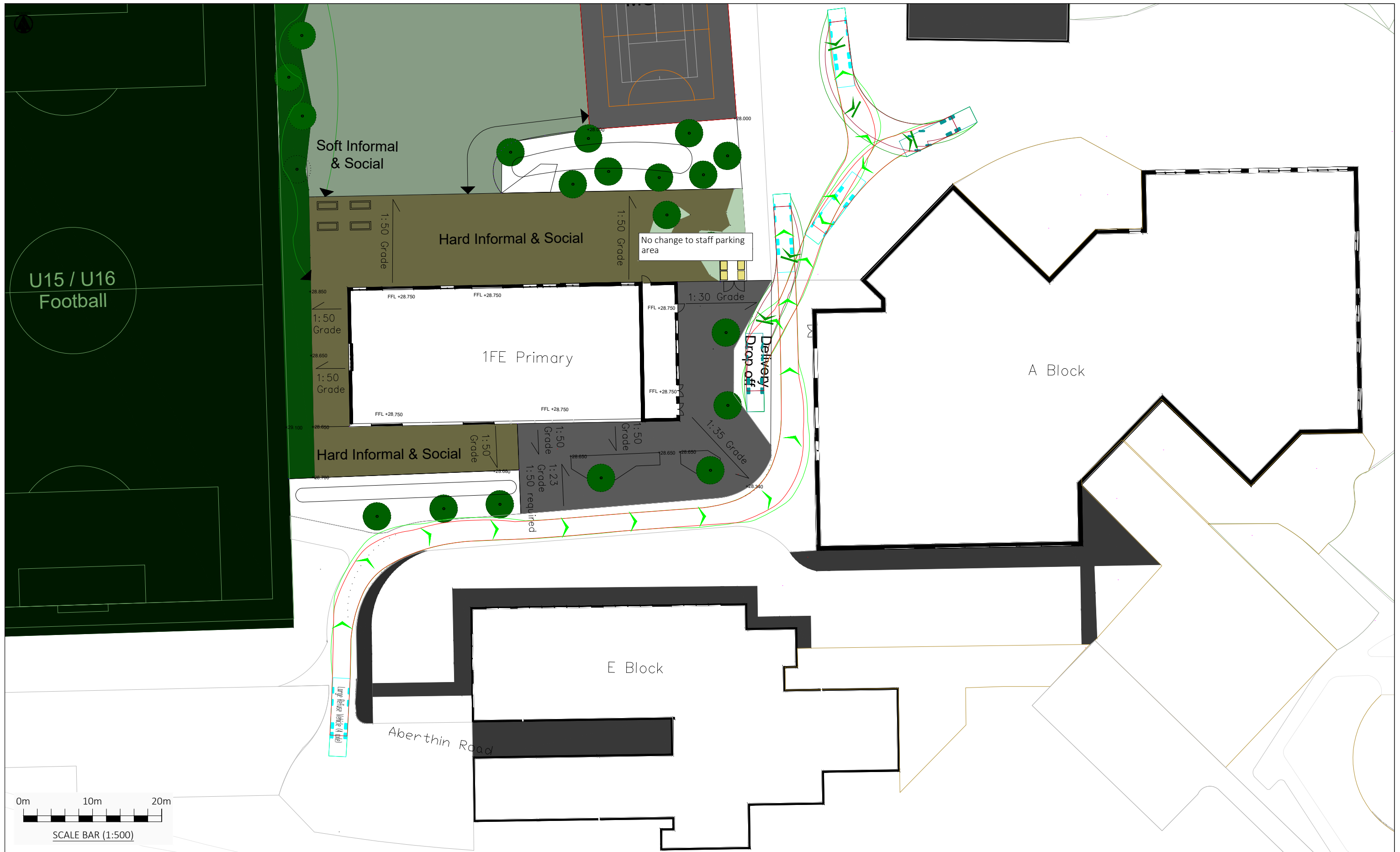
Scale @ A1  
**1:500**  
 Date **20.04.21**  
 Drawn **CC**  
 Checked **BT**

HLM Architects  
 © HLM Architects Suite 104 The Creative Quarter Morgan Arcade The Hayes Cardiff CF10 1AF  
 www.hlmarchitects.com  
 T. +44 (0) 29 2039 6070  
 F. +44 (0) 29 2039 6080  
 cardiff@hlmarchitects.com

Indicative Site Section Proposed Primary External Play Proposed Primary Building Existing Block E

# Appendix C Swept Path Analysis

[Click here to enter Appendix title.](#)



DESIGN VEHICLE

Large Refuse Vehicle (4 axle)

Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS

Rev	Date	Description	By	Ckd	App
P01	25/05/21	First Issue.	GP	NB	NB

FIRST FLOOR, CASTLEBRIDGE 5  
5-19 COWBRIDGE ROAD EAST  
CARDIFF  
CF11 9AB  
t: +44 (0) 2920 023665  
e: cardff@hydrock.com

CLIENT  
MORGAN SINDALL CONSTRUCTION &  
INFRASTRUCTURE LTD

PROJECT  
COWBRIDGE SCHOOL  
VALE OF GLAMORGAN

TITLE SWEPT PATH ANALYSIS OF PROPOSED DELIVERY / SERVICE BAY USING LARGE REFUSE VEHICLE	
HYDROCK PROJECT NO. C-17637	SCALE @ A3 1:1000
STATUS DESCRIPTION INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 17637-HYD-XX-XX-DR-TP-0101	REVISION P01

## Appendix D Proposed Parking Strategy

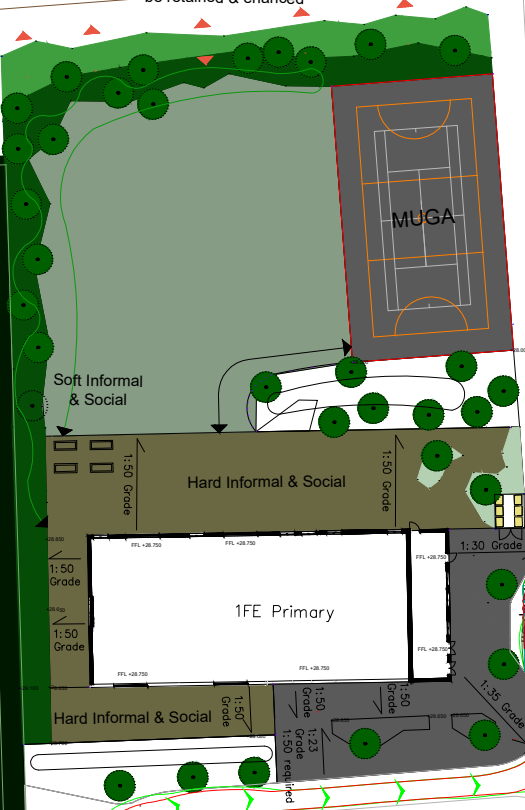
[Click here to enter Appendix title.](#)



Existing Planting on the boundary to be retained & enhanced



U15 / U16 Football



Soft Informal & Social

Hard Informal & Social

1FE Primary

Hard Informal & Social

1:50 Grade

1:50 Grade

1:30 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:30 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

1:50 Grade

No change to staff parking area

A Block

B Block

Entry to staff parking controlled by barrier.

D Block

C Block

Pastoral

Aberthin Road

Proposed nursery and primary school pick-up/drop-off and car park. This car park provides 15 parent parking spaces and 16 staff spaces within the existing 31 spaces.

New comprehensive school pick-up/drop-off car park. 24 spaces plus circulating pick-up/drop-off aisle.

Proposed footpath connection separates car parks

Proposed staff parking area providing 59 spaces (includes 8 overspill)

Proposed sixth form parking area to accommodate those parking under the A48 over bridge (approx. 30)



SCALE BAR (1:1000)



KEY	NOTES
	EXISTING
	PROPOSED PHYSICAL CHANGES

NOTES (CONTINUED)
-------------------

REVISIONS (CONTINUED)
-----------------------

REVISIONS
P02 28/05/21 First Issue. GP NB NB
P01 25/05/21 First Issue. GP NB NB
Rev Date Description By Ckd App

Hydrock	FIRST FLOOR, CASTLEBRIDGE 5 5-19 COWBRIDGE ROAD EAST CARDIFF CF11 9AB t: +44 (0) 2920 023665 e: cardiff@hydrock.com
CLIENT	MORGAN SINDALL CONSTRUCTION & INFRASTRUCTURE LTD
PROJECT	COWBRIDGE SCHOOL VALE OF GLAMORGAN

TITLE	Proposed Parking Layout / Strategy
HYDROCK PROJECT NO.	C-17637
SCALE @ A3	1:1000
STATUS DESCRIPTION	INFORMATION
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	17637-HYD-XX-XX-DR-TP-0601
STATUS	S2
REVISION	P02

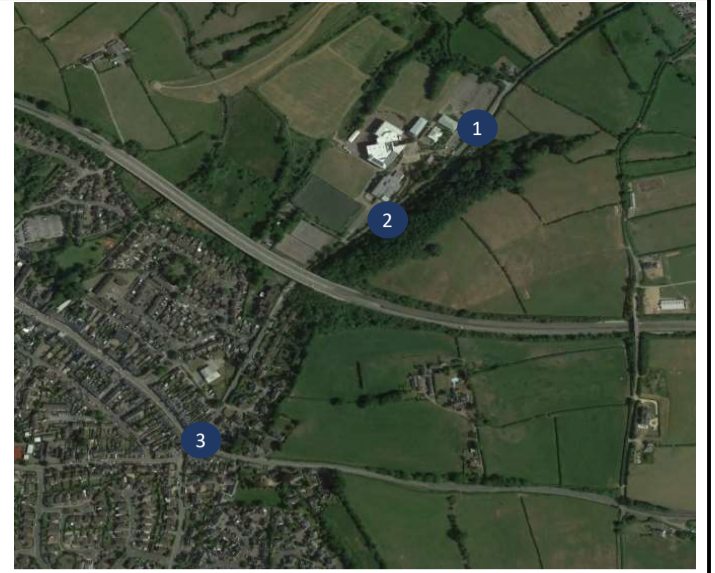
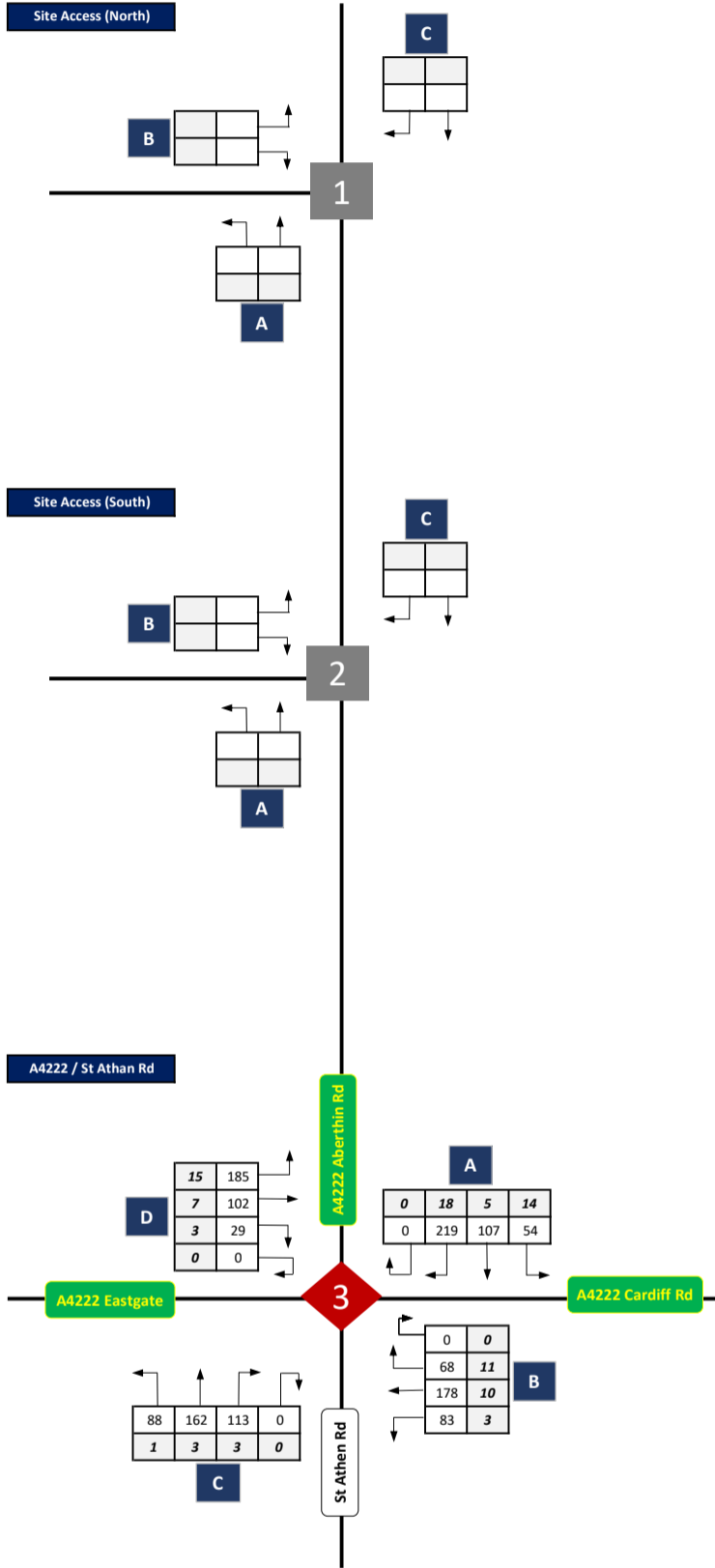
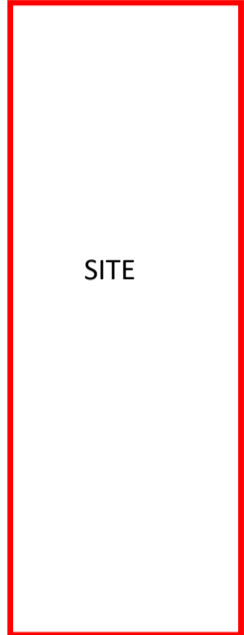
STATUS	S2
REVISION	P02

## Appendix E Traffic Data

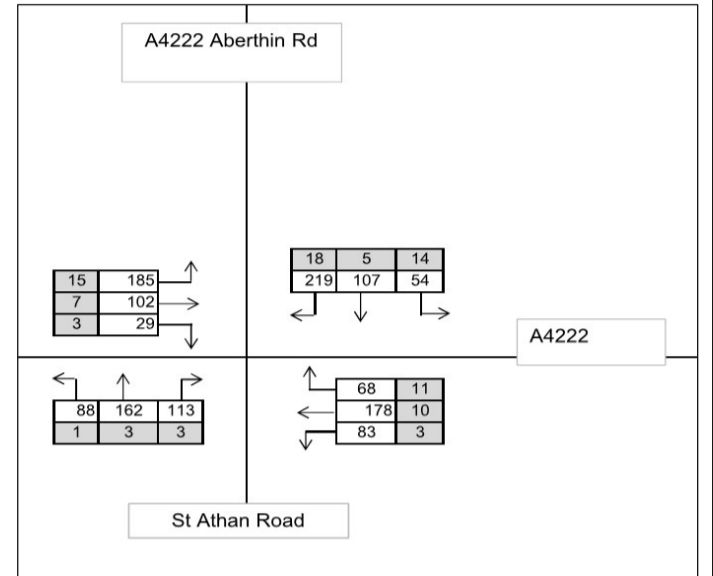
[Click here to enter Appendix title.](#)

**KEY**

12	Total Vehicles
12	HGV



AM FLOWS EXTRACTED FROM TA FOR APP 2014/01505/OUT



NOTES:

PROJECT:

Cowbridge 1FE Primary School, VoG

PLAN TITLE:

Traffic Figure Diagrams

TIME PERIOD:

AM Peak Hour (08:00 - 09:00)

North West of Darren Close - 2021 with link road and All Development

DATE:

May 2021

JOB NUMBER:

17637

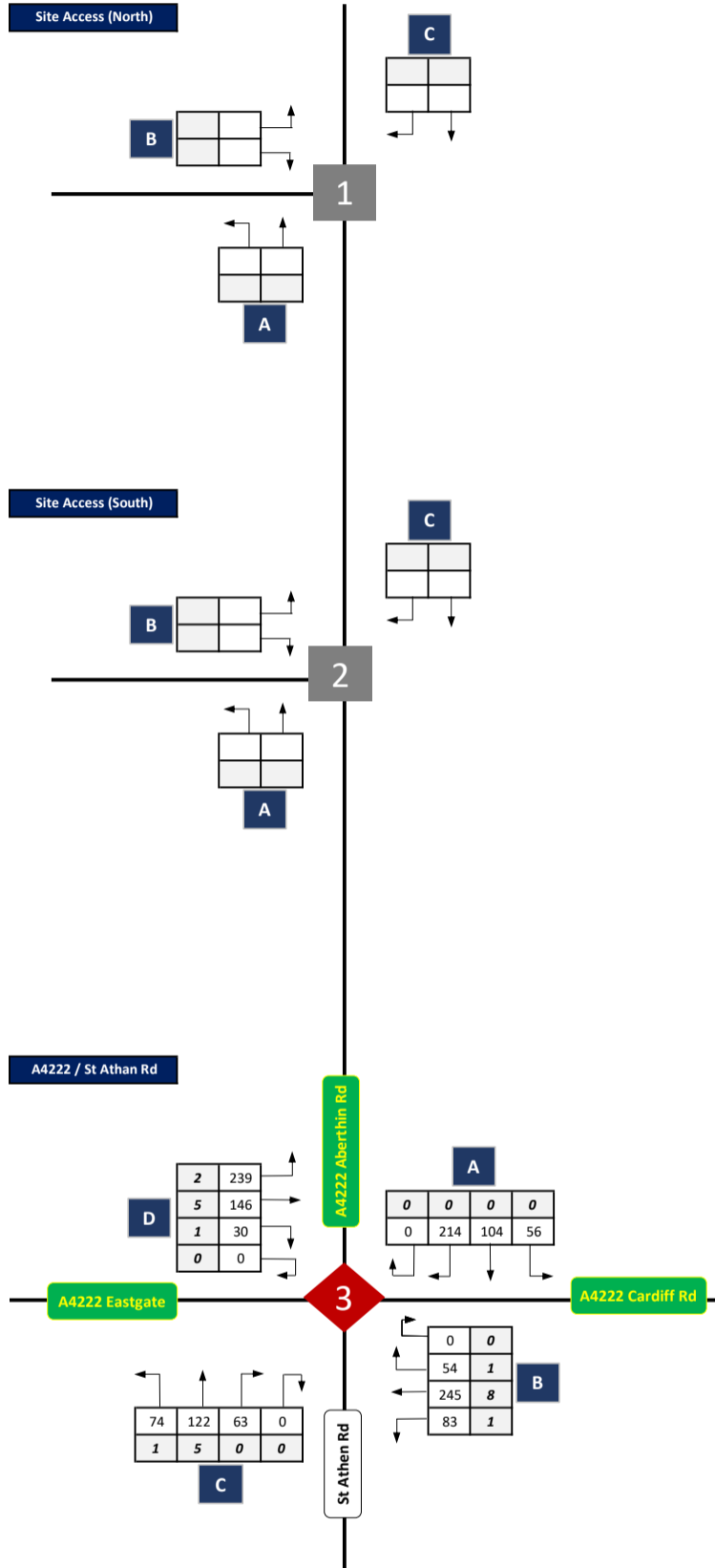
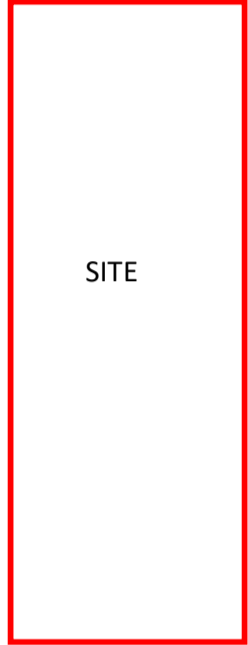
DRAWN BY:

GP

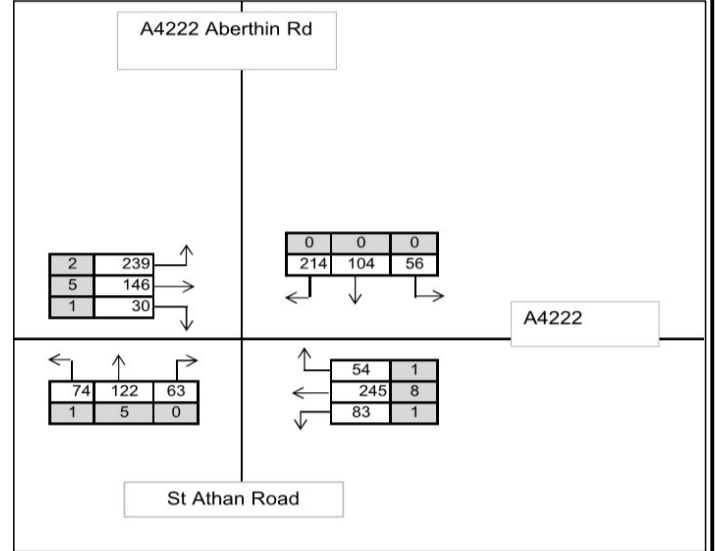
FIGURE:

001

12	Total Vehicles
12	HGV's



PM FLOWS EXTRACTED FROM TA FOR APP 2014/01505/OUT



NOTES:

PROJECT:

Cowbridge 1FE Primary School, VoG

PLAN TITLE:

Traffic Figure Diagrams

TIME PERIOD:

PM Peak Hour (17:00 - 18:00)

North West of Darren Close - 2021 with link road and All Development

DATE:

May 2021

JOB NUMBER:

17637

DRAWN BY:

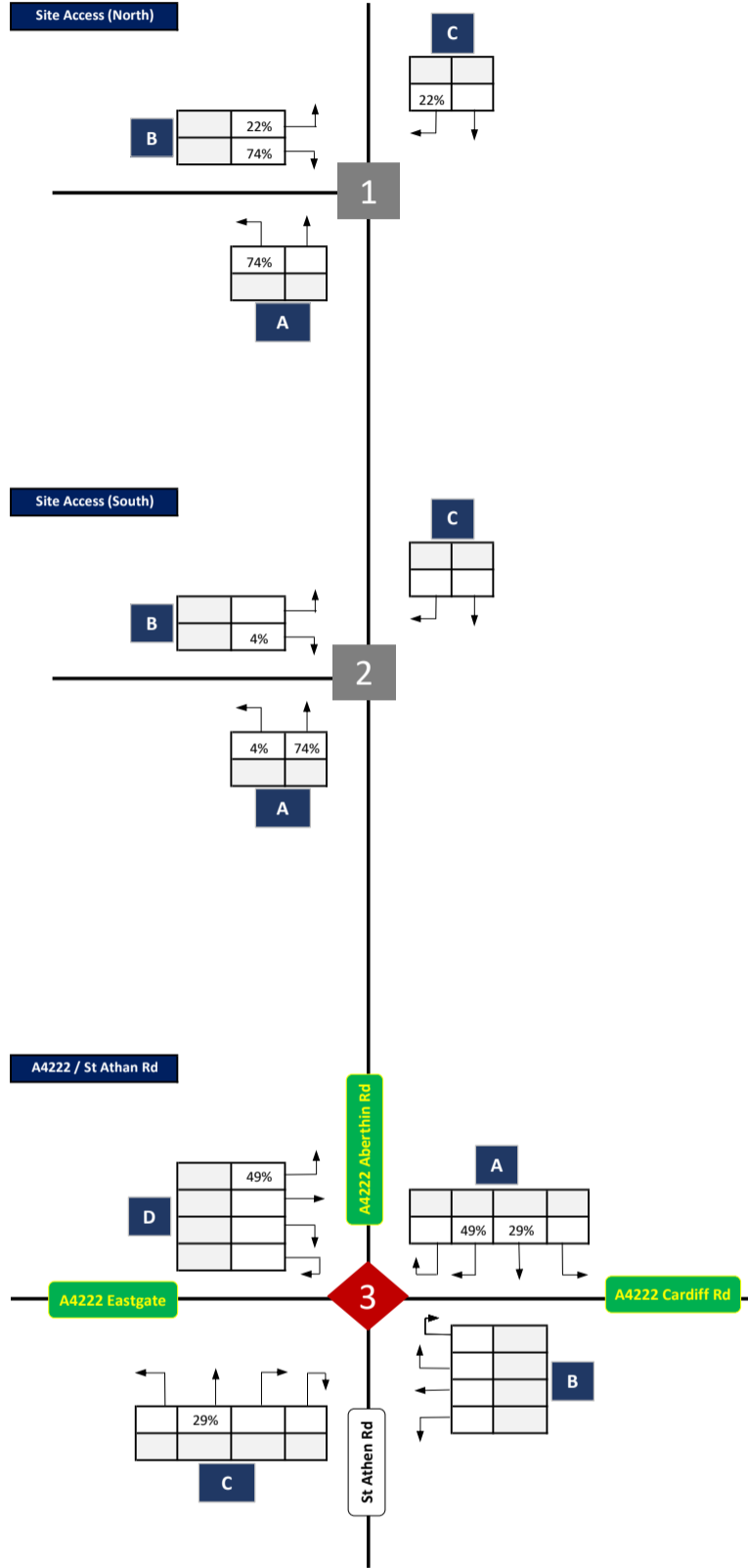
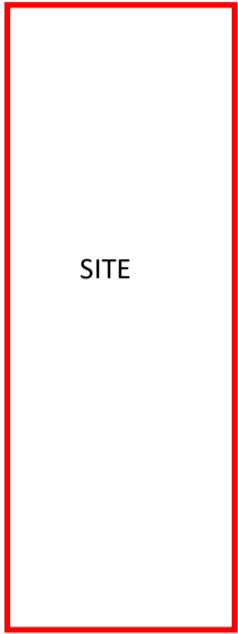
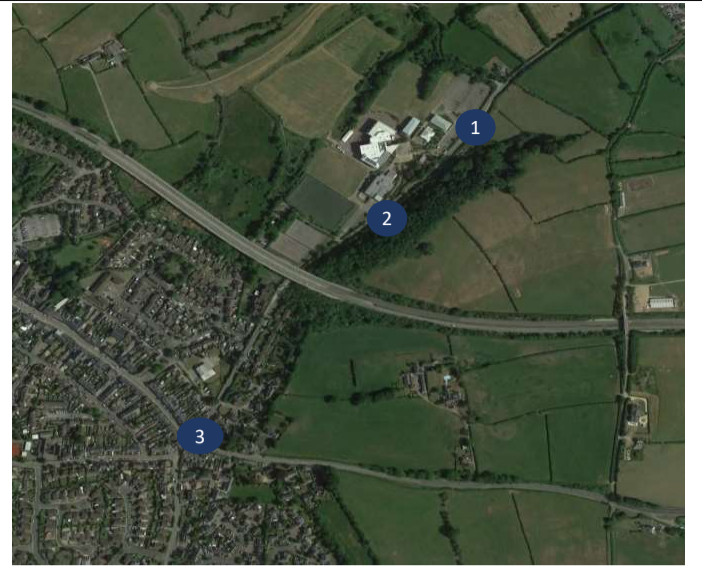
GP

FIGURE:

002



<b>KEY</b>	
12	Total Vehicles



NOTES:

PROJECT:

Cowbridge 1FE Primary School, VoG

PLAN TITLE:

Traffic Figure Diagrams

TIME PERIOD:

AM & PM

Proposed Development Trip Distribution - Arrivals & Departures

DATE:

May 2021

JOB NUMBER:

17637

DRAWN BY:

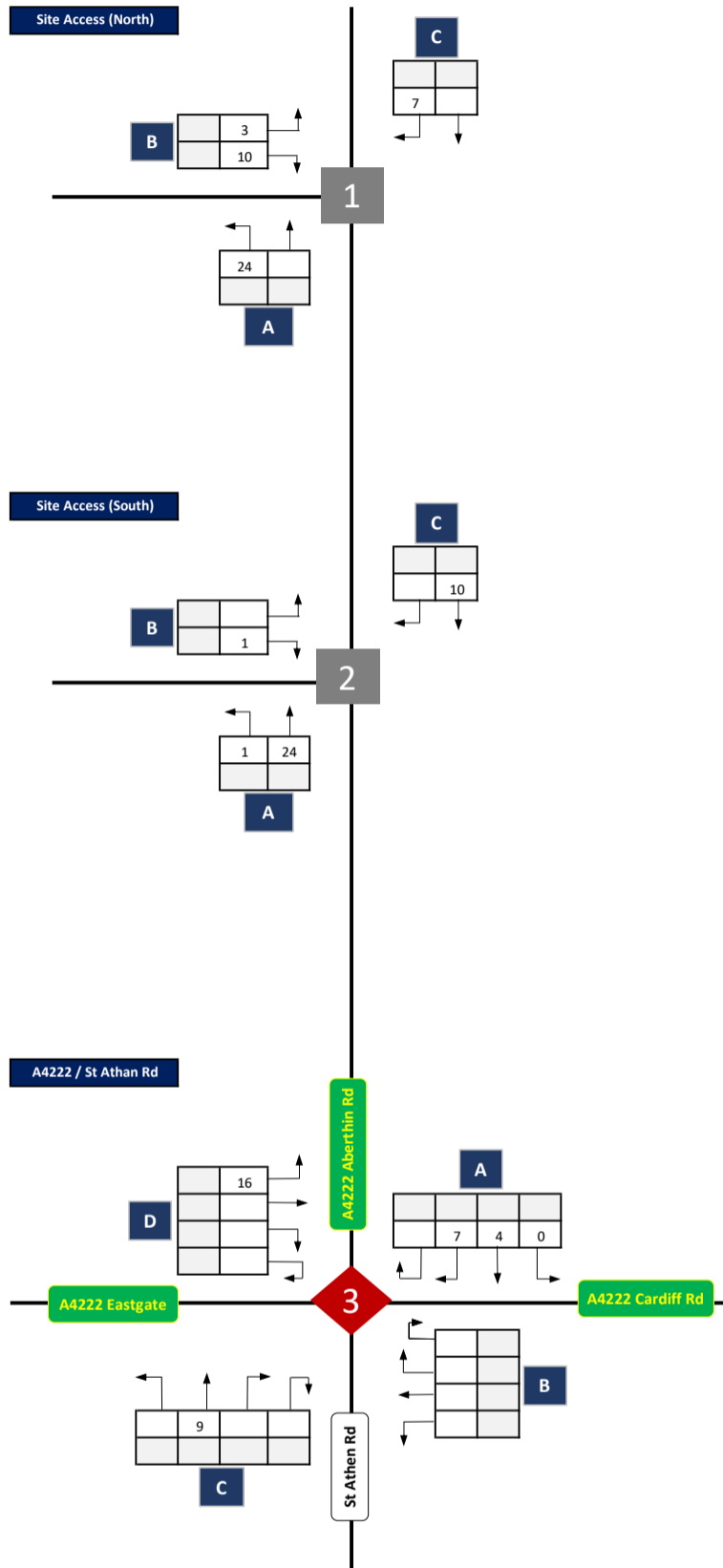
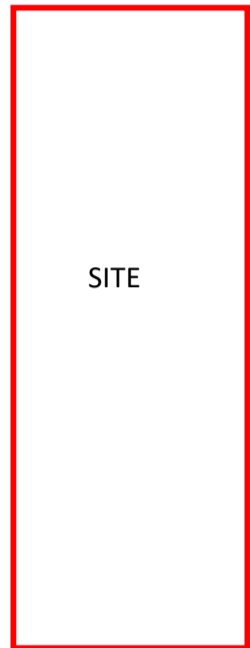
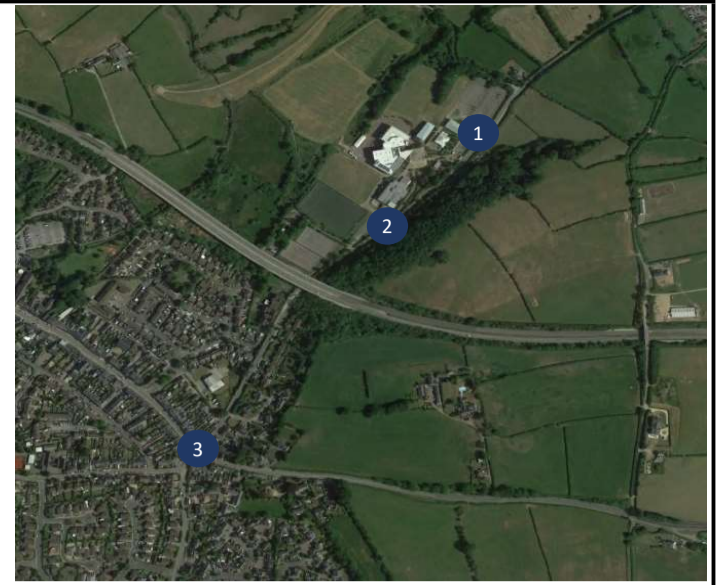
GP

FIGURE:

003



<b>KEY</b>
12 Total Vehicles



NOTES:

PROJECT:

Cowbridge 1FE Primary School, VoG

PLAN TITLE:

Traffic Figure Diagrams

TIME PERIOD:

AM Peak Hour (08:00 - 09:00)

Proposed Development Trips

DATE:

May 2021

JOB NUMBER:

17637

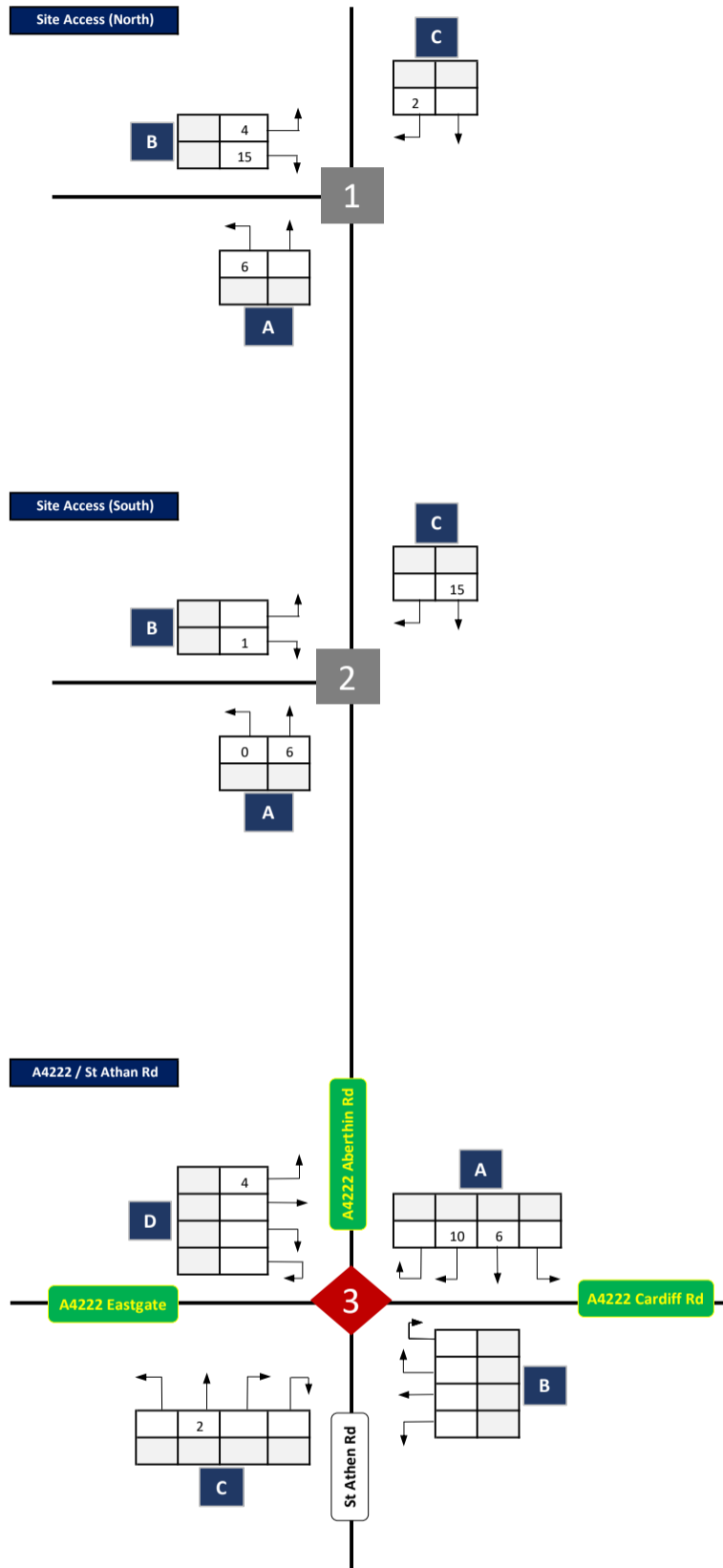
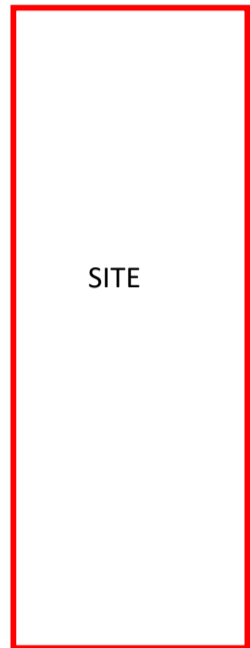
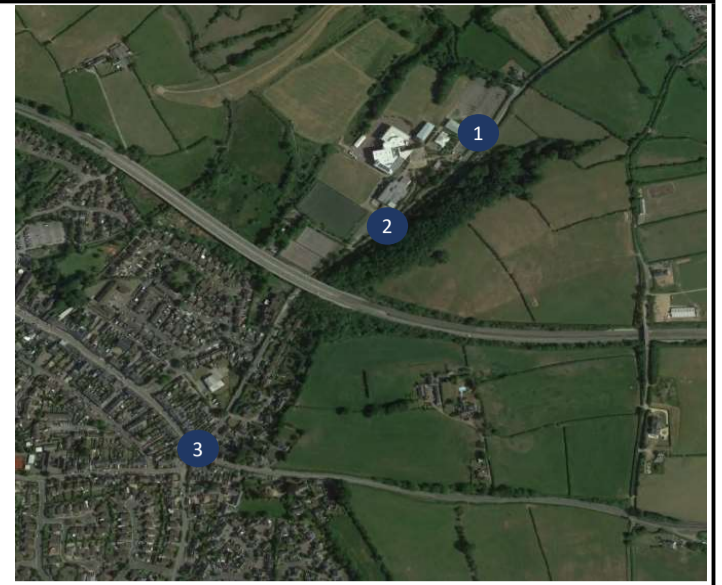
DRAWN BY:

GP

FIGURE:

004

<b>KEY</b>
12 Total Vehicles



NOTES:

PROJECT:

Cowbridge 1FE Primary School, VoG

PLAN TITLE:

Traffic Figure Diagrams

TIME PERIOD:

AM Peak Hour (15:00 - 16:00)

Proposed Development Trips

DATE:

May 2021

JOB NUMBER:

17637

DRAWN BY:

GP

FIGURE:

005

## Appendix F

## TRICS Reports

Filtering Summary

Land Use	04/A	EDUCATION/PRIMARY
Selected Trip Rate Calculation Parameter Range	92-472 PUPILS	
Actual Trip Rate Calculation Parameter Range	199-414 PUPILS	
Date Range	Minimum: 01/01/00	Maximum: 03/04/21
Parking Spaces Range	All Surveys Included	
Days of the week selected	Wednesday	1
	Thursday	1
Main Location Types selected	Neighbourhood Centre (PPS6 Local Centre)	2
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	1,001 to 5,000	1
	5,001 to 10,000	1
Population <5 Mile ranges selected	25,001 to 50,000	1
	75,001 to 100,000	1
Car Ownership <5 Mile ranges selected	0.6 to 1.0	1
	1.1 to 1.5	1
PTAL Rating	No PTAL Present	2

Calculation Reference: AUDIT-540501-210423-0425

## TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	SC SURREY	1 days
03	SOUTH WEST	
	WL WILTSHIRE	1 days

*This section displays the number of survey days per TRICS® sub-region in the selected set*

## Primary Filtering selection:

*This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.*

Parameter: Number of pupils  
 Actual Range: 199 to 414 (units: )  
 Range Selected by User: 92 to 472 (units: )

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 03/04/21

*This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.*

Selected survey days:

Wednesday	1 days
Thursday	1 days

*This data displays the number of selected surveys by day of the week.*

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

*This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.*

Selected Locations:

Neighbourhood Centre (PPS6 Local Centre)	2
--	---

*This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.*

Selected Location Sub Categories:

Village	2
---------	---

*This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.*

## Secondary Filtering selection:

Use Class:

F1(a)	2 days
-------	--------

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.*

Population within 500m Range:

All Surveys Included

## Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	1 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	1 days

*This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.*

Travel Plan:

Yes	1 days
No	1 days

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

No PTAL Present	2 days
-----------------	--------

*This data displays the number of selected surveys with PTAL Ratings.*

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

MULTI-MODAL TOTAL PEOPLE

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	2	307	0.100	2	307	0.029	2	307	0.129
08:00 - 09:00	2	307	0.979	2	307	0.287	2	307	1.266
09:00 - 10:00	2	307	0.162	2	307	0.116	2	307	0.278
10:00 - 11:00	2	307	0.029	2	307	0.015	2	307	0.044
11:00 - 12:00	2	307	0.020	2	307	0.023	2	307	0.043
12:00 - 13:00	2	307	0.028	2	307	0.028	2	307	0.056
13:00 - 14:00	2	307	0.042	2	307	0.064	2	307	0.106
14:00 - 15:00	2	307	0.078	2	307	0.075	2	307	0.153
15:00 - 16:00	2	307	0.230	2	307	0.687	2	307	0.917
16:00 - 17:00	2	307	0.101	2	307	0.416	2	307	0.517
17:00 - 18:00	1	414	0.041	1	414	0.077	1	414	0.118
18:00 - 19:00	1	414	0.179	1	414	0.068	1	414	0.247
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			1.989			1.885			3.874

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.



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

MULTI-MODAL CARS

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	2	307	0.021	2	307	0.013	2	307	0.034
08:00 - 09:00	2	307	0.142	2	307	0.124	2	307	0.266
09:00 - 10:00	2	307	0.011	2	307	0.013	2	307	0.024
10:00 - 11:00	2	307	0.016	2	307	0.010	2	307	0.026
11:00 - 12:00	2	307	0.008	2	307	0.013	2	307	0.021
12:00 - 13:00	2	307	0.010	2	307	0.007	2	307	0.017
13:00 - 14:00	2	307	0.010	2	307	0.021	2	307	0.031
14:00 - 15:00	2	307	0.028	2	307	0.026	2	307	0.054
15:00 - 16:00	2	307	0.044	2	307	0.072	2	307	0.116
16:00 - 17:00	2	307	0.038	2	307	0.038	2	307	0.076
17:00 - 18:00	1	414	0.000	1	414	0.000	1	414	0.000
18:00 - 19:00	1	414	0.000	1	414	0.000	1	414	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.328			0.337			0.665

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

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

MULTI-MODAL LGVS

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	2	307	0.000	2	307	0.000	2	307	0.000
08:00 - 09:00	2	307	0.007	2	307	0.005	2	307	0.012
09:00 - 10:00	2	307	0.003	2	307	0.002	2	307	0.005
10:00 - 11:00	2	307	0.002	2	307	0.002	2	307	0.004
11:00 - 12:00	2	307	0.003	2	307	0.005	2	307	0.008
12:00 - 13:00	2	307	0.000	2	307	0.002	2	307	0.002
13:00 - 14:00	2	307	0.005	2	307	0.002	2	307	0.007
14:00 - 15:00	2	307	0.000	2	307	0.002	2	307	0.002
15:00 - 16:00	2	307	0.000	2	307	0.002	2	307	0.002
16:00 - 17:00	2	307	0.000	2	307	0.000	2	307	0.000
17:00 - 18:00	1	414	0.000	1	414	0.000	1	414	0.000
18:00 - 19:00	1	414	0.000	1	414	0.000	1	414	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.020			0.022			0.042

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

Filtering Summary

Land Use	04/D	EDUCATION/NURSERY
Selected Trip Rate Calculation Parameter Range	1-100 PUPILS	
Actual Trip Rate Calculation Parameter Range	35-61 PUPILS	
Date Range	Minimum: 01/01/00	Maximum: 12/07/21
Parking Spaces Range	All Surveys Included	
Days of the week selected	Monday	1
	Tuesday	1
	Friday	1
Main Location Types selected	Edge of Town	2
	Neighbourhood Centre (PPS6 Local Centre)	1
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	1,000 or Less	1
	1,001 to 5,000	1
	5,001 to 10,000	1
Population <5 Mile ranges selected	25,001 to 50,000	1
	50,001 to 75,000	2
Car Ownership <5 Mile ranges selected	0.6 to 1.0	1
	1.1 to 1.5	2
PTAL Rating	No PTAL Present	3

Calculation Reference: AUDIT-540501-210506-0555

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION

Category : D - NURSERY

## TOTAL VEHICLES

Selected regions and areas:

04	EAST ANGLIA	
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
10	WALES	
	GW GWYNEDD	1 days

*This section displays the number of survey days per TRICS® sub-region in the selected set*

## Primary Filtering selection:

*This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.*

Parameter: Number of pupils  
 Actual Range: 35 to 61 (units: )  
 Range Selected by User: 1 to 100 (units: )

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 12/07/21

*This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.*

Selected survey days:

Monday	1 days
Tuesday	1 days
Friday	1 days

*This data displays the number of selected surveys by day of the week.*

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

*This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.*

Selected Locations:

Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	1

*This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.*

Selected Location Sub Categories:

Commercial Zone	1
Residential Zone	1
Village	1

*This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.*

## Secondary Filtering selection:

Use Class:

E(f) 3 days

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.*

Population within 500m Range:

All Surveys Included

## Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	1 days
5,001 to 10,000	1 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	2 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	2 days

*This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.*

Travel Plan:

No	3 days
----	--------

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

No PTAL Present	3 days
-----------------	--------

*This data displays the number of selected surveys with PTAL Ratings.*

LIST OF SITES relevant to selection parameters

1	GW-04-D-01	NURSERY		GWYNEDD
	FFORDD GELLI MORGAN			
	BANGOR			
	PARC MENAI			
	Edge of Town			
	Commercial Zone			
	Total Number of pupils:		46	
	<i>Survey date: MONDAY</i>		<i>13/07/09</i>	<i>Survey Type: MANUAL</i>
2	SF-04-D-01	NURSERY		SUFFOLK
	IXWORTH ROAD			
	NEAR BURY ST EDMUNDS			
	THURSTON			
	Neighbourhood Centre (PPS6 Local Centre)			
	Village			
	Total Number of pupils:		35	
	<i>Survey date: TUESDAY</i>		<i>09/05/06</i>	<i>Survey Type: MANUAL</i>
3	WK-04-D-01	NURSERY		WARWICKSHIRE
	THE RIDGEWAY			
	STRATFORD UPON AVON			
	Edge of Town			
	Residential Zone			
	Total Number of pupils:		61	
	<i>Survey date: FRIDAY</i>		<i>29/06/18</i>	<i>Survey Type: MANUAL</i>

*This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.*

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DH-04-D-02	not similar

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

TOTAL VEHICLES

Calculation factor: 1

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	3	47	0.176	3	47	0.049	3	47	0.225
08:00 - 09:00	3	47	0.352	3	47	0.345	3	47	0.697
09:00 - 10:00	3	47	0.099	3	47	0.092	3	47	0.191
10:00 - 11:00	3	47	0.035	3	47	0.035	3	47	0.070
11:00 - 12:00	3	47	0.042	3	47	0.049	3	47	0.091
12:00 - 13:00	3	47	0.049	3	47	0.028	3	47	0.077
13:00 - 14:00	3	47	0.035	3	47	0.070	3	47	0.105
14:00 - 15:00	3	47	0.028	3	47	0.028	3	47	0.056
15:00 - 16:00	3	47	0.085	3	47	0.070	3	47	0.155
16:00 - 17:00	3	47	0.148	3	47	0.127	3	47	0.275
17:00 - 18:00	3	47	0.261	3	47	0.338	3	47	0.599
18:00 - 19:00	2	48	0.000	2	48	0.135	2	48	0.135
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			1.310			1.366			2.676

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

#### Parameter summary

Trip rate parameter range selected:	35 - 61 (units: )
Survey date range:	01/01/00 - 12/07/21
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.