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**Client:** Barratt and David Wilson Homes Ltd

**Project:** Phase 2, Land at B4265, Boverton

**Document Title:** Transport Note

**Date:** February 2018

**Copy No.:** 02

**Document Production Record**

Issue	Purpose/Status	Prepared by	Checked	Approved	Date
01	Draft for client approval	David Cooke	David Cooke	David Chapman	19/02/18
02	Final Issue	David Cooke	David Cooke	David Chapman	26/02/18

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## 1.0 INTRODUCTION

### 1.1 Overview

- 1.1.1 Hydrock has been commissioned by Barratt and David Wilson Homes to produce a Transport Note (TN) to accompany a full planning application in support of a proposed development for 24 residential dwellings on Land at B4265, Boverton.
- 1.1.2 The proposed 24 dwellings form Phase 2 of a wider development site which was allocated for housing as part of the Vale of Glamorgan Council (VoGC) Local Development Plan (LDP) (Site MG2 (22) *Land adjacent to Llantwit Major Bypass*). An extract from the LDP is included as **Appendix A**.
- 1.1.3 Phase 1 was granted planning approval in January 2018 (Planning Ref: 2014/00995/FUL) following a resolution to grant approval subject to the completion of a Section 106 agreement in November 2017. This proposed a residential development of 65 dwellings, the construction of a new ghost island right turn priority junction from the B4265, a crossing of Eglwys Brewis Road and a new footway / cycle link between the B4265 and Harding Close.
- 1.1.4 Phase 2 proposes the continuation of the site to the south-east. This will be accessed from the same priority junction from the B4265 and connected to Phase 1 via the main internal access road.

### 1.2 Scope

- 1.2.1 This TN has been set out in accordance with various local and national guidance including Technical Advice Note 18: Transport (TAN18), the Vale of Glamorgan Council (VoGC) Local Plan (Adopted June 2017), the VoGC Parking Standards SPG and VoGC Local Transport Plan 2015 – 2030 as well as considering our previous experience of other similar sites.
- 1.2.2 The TN 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.
- 1.2.3 Where applicable, this TN refers to the Transport Assessment submitted with the Phase 1 application as the analysis remains relevant and the application approved by VoGC. The principle of residential development on the site has previously been accepted by VoGC, in particular the vehicular access and sustainable connectivity of the site.
- 1.2.4 The scope of this TN has been discussed and agreed with Highway Officers at the VoGC and includes the following:
- Chapter 2 sets out details of **Existing Conditions** including site location, planning history, sustainable accessibility and a review of the most recent five years of personal injury accident data within 500-metres of the site;
  - Chapter 3 sets out the **Development Proposals** including the site layout plan, site composition, proposed vehicular access, parking, access by all modes, servicing and construction;



- Chapters 4 and 5 set out multi-modal **Trip Generation and Traffic Impact Assessment** which could be associated with the proposed development during the peak and daily periods (for a weekday). This chapter also considers the overall site development against the allocation; and
- Chapter 6 provides a **Summary**

## 2.0 EXISTING CONDITIONS

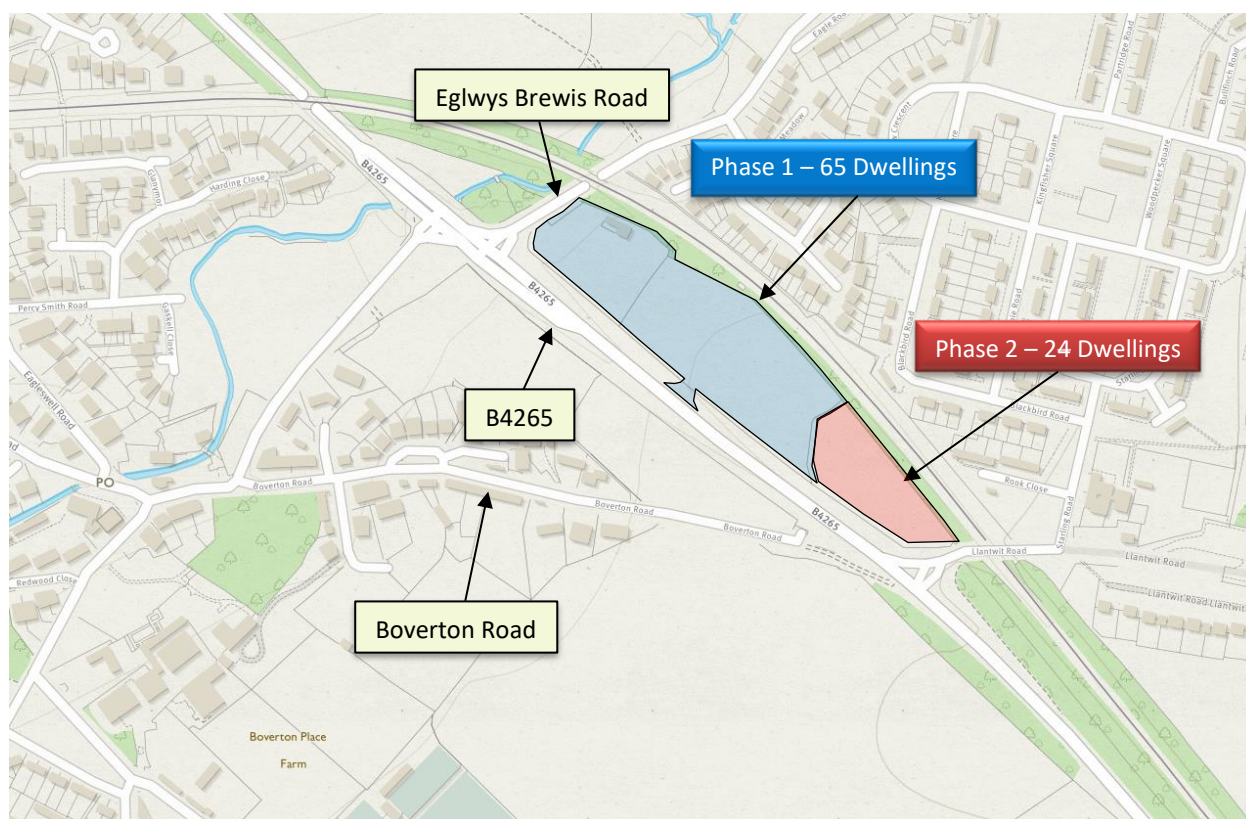
### 2.1 Site Location and Use

2.1.1 The overall site fronts the north-eastern side of the B4265 carriageway which runs in an east – west alignment between Cardiff Airport and Bridgend.

2.1.2 The Phase 2 site is bordered by the permitted Phase 1 site and Eglwys Brewis Road to the north-west, the Vale of Glamorgan railway line to the north-east, Llantwit Road to the south-east and the B4265 to the south-west.

2.1.3 The location of the site in its wider geographical context is shown in **Figure 2.1**.

**Figure 2.1: Site Location Plan**



### 2.2 Planning History

2.2.1 The site benefits from an existing allocation in the LDP for 70 dwellings across the entire site (Phase 1 and Phase 2). Phase 1 has already received planning consent for 65 dwellings with the masterplan included as **Appendix B**.

### 2.3 Northern Access Road, St Athan

2.3.1 The aim of the Northern Access Road (NAR) is to provide a good quality link from the B4265 north-east of Llantwit Major into the existing Aerospace Business Park (ABP) in St Athan, and to also serve the future residential and commercial development that is planned.

2.3.2 The route of the proposed new bypass road is shown in **Appendix C**.



2.3.3 The provision of the bypass road to the north of Eglwys Brewis Road will result in a redistribution of background traffic away from Eglwys Brewis Road and therefore reduce vehicle movements along this road. The design brief for the NAR seeks to discourage vehicles associated with the ABP and other employment developments from using Eglwys Brewis Road.

## 2.4 Site Connectivity

2.4.1 The principle of residential development on the site has been accepted through the site allocation and planning approval for Phase 1. The connectivity of the site by sustainable modes has therefore been accepted by VoGC as suitable for residential use.

2.4.2 The TA submitted in support of Phase 1 undertook a detailed analysis of the connectivity of the site by sustainable modes. The Phase 1 mitigation also included a new crossing facility on Eglwys Brewis Road as well as a new walking / cycling link connecting the B4265 and Harding Close.

2.4.3 The Phase 2 site is situated adjacent to the Phase 1. The analysis undertaken as part of the Phase 1 assessment therefore remains valid and appropriate. Based on this analysis it is considered that Boverton and Llantwit Major, as well as the various local facilities and amenities contained therein, are located within acceptable walking and cycling distances of the site.

2.4.4 These locations are also accessible via good pedestrian infrastructure and crossing facilities, particularly considering the improvements provided by Phase 1.

2.4.5 To access the regional centres of Cardiff, Bridgend and Barry within the vicinity of the site there are two regular bus services which serve bus stops within 400 metres of the site.

2.4.6 The following bus services operate from these bus stops:

- 303 (New Adventure Travel): Hourly service between Bridgend and Barry;
- 905 (New Adventure Travel): six services a day between Rhoose Station and Cardiff Airport (allows direct interchange with rail services along the Vale of Glamorgan Line); and
- X91 (Cardiff Bus): Two services a day departing during the morning peak and returning during the evening peak hours.

2.4.7 The site is therefore well connected for walking, cycling and public transport which provide realistic alternatives to travelling by car.

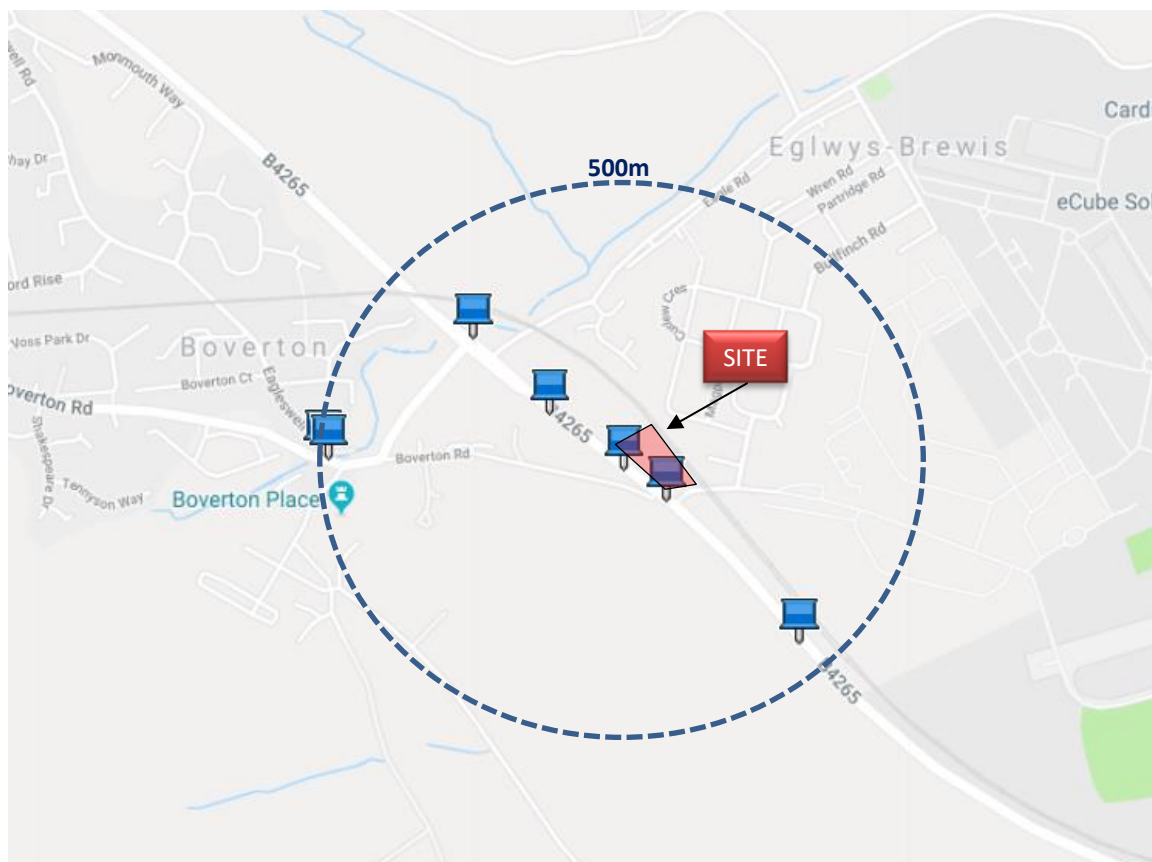
## 2.5 Road Safety

2.5.1 Personal Injury Accident (PIA) data has been obtained from the Welsh Government. The statistics provided have been derived from STATS19 accident reporting forms and include likely causality factors. The most recently available five-year dataset covers between January 1<sup>st</sup> 2012 and 31<sup>st</sup> December 2017.

2.5.2 The study area considered within the analysis covers an area within a 500 metre radius of the proposed development site. The data during this time showed that eight PIAs occurred within the study area during the five year period. These have been plotted on **Figure 2.2**.

2.5.3 All eight PIAs were classed as slight in severity. There were no serious or fatal PIAs recorded during this period.

Figure 2.2: Location of PIAs within 500 metres of the proposed development site



2.5.4 A summary of the PIAs is set out as follows:

- Two PIAs involved pedestrians. One of these occurred due to a vehicle failing to see a pedestrian crossing at the zebra crossing on Boverton Road and the other occurred when a pedestrian was crossing the B4265 at the signalised crossing;
- Two PIAs involved cyclists. One of these involved a vehicle on the B4265 driving too close to a cyclist and knocking them into the grass verge and the other was as a result of a vehicle turning right at the Eagleswell Road / Boverton Road junction failing to observe a cyclist travelling through the junction;
- Two PIAs were rear end shunts at traffic signals and one of these was caused by a vehicle breaking sharply as a result of a passing emergency vehicle;
- One PIA involved the wing mirrors of two cars colliding at a slight road narrowing; and
- One PIA occurred as a result of the vehicle driver having a medical issue.

2.5.5 There were no locations within the study area where a cluster of four or more PIAs occurred.

2.5.6 Although all incidents are regrettable, there is no evidence of a pattern which suggests an existing issue with the geometry of the highway that would be exacerbated by the proposals.





## 3.0 DEVELOPMENT PROPOSALS

### 3.1 Overview and Layout

3.1.1 The proposals are for a residential development of 24 residential dwellings. The composition of the development has been summarised as follows:

- 4 – one bed houses
- 9 – two bed houses
- 11 – three bed houses

3.1.2 The proposals also make provision for off-street parking for 55 vehicles. The proposed site masterplan is included as **Appendix D**.

### 3.2 Access

#### *Vehicular Access*

3.2.1 The Phase 2 site will be accessed from the highway network from the priority junction onto the B4265 proposed as part of the Phase 1 site. The access arrangements have been agreed with VoGC and are considered suitable to accommodate the Phase 2 site.

3.2.2 The internal access road within the Phase 1 site would be continued into the Phase 2 site. On entry to the Phase 2 development site the access road is 5.5 metres wide and has 2 metre wide footways on either side. Along the frontage of Plot 18 the carriageway narrows to 4.8 metres and the surfacing changes to block paving.

#### *Walking / Cycling Access*

3.2.3 Pedestrians will access the Phase 2 site using the footways on either side of the internal access road which link to the Phase 1 site. The Phase 2 site would also provide a footway connection linking to Llantwit Road to the south. This provides a link to an existing signal controlled pedestrian crossing on the B4265.

3.2.4 The Phase 1 site arrangements would remain the same with a shared footway / cycleway connecting to Eglwys Brewis Road to the north and a proposed footway link between the B4265 and Harding Close. These arrangements are considered to suitably accommodate pedestrian movements from the site.

3.2.5 The proposed Phase 2 site would provide an alternative route from the overall site to Boverton, including the schools and shop / post office and therefore may reduce the pedestrian demand at the Eglwys Brewis Road crossing from the overall site.

3.2.6 Cyclists can connect to the overall site using the cyclist link to the north onto Eglwys Brewis Road or on-carriageway via the B4265.

### 3.3 Internal Layout Servicing Arrangements

3.3.1 The site has been designed in accordance with the principles set out within Manual for Streets (MfS). Residential properties front both sides of the internal access road providing natural surveillance for pedestrians.

3.3.2 The internal access road within the Phase 2 site reduces in width to 4.8 metres to assist with reducing vehicle speeds.



### 3.4 Servicing Arrangements

3.4.1 Swept path analysis of a 11.2-metre-long refuse vehicle manoeuvring within the site has been carried out. This demonstrates that the layout is acceptable for refuse vehicles which can enter and exit the site in forward gear. This analysis is shown in **Appendix E**.

### 3.5 Parking

#### *Car Parking*

3.5.1 Guidance on parking standards for new residential development is provided within VoGC's Parking Standards SPG which was adopted in 2015. Based on the SPG parking zones plan, the site is located in a Zone 6 'deep rural' location, however it is situated immediately adjacent to Zone 5 'countryside' and Zone 4 'suburban' locations.

3.5.2 The parking standards for residential properties in Zone 2-6 locations and the resultant parking provision applicable to the site based on the standards are set out in **Table 3.1**.

**Table 3.1: Car Parking Standards and Provision**

No. of Units	Total Number of Bedrooms	Car Parking Standards		Potential Site Car Parking Provision
		Residents	Visitors	
24	55	1 space per bedroom (max 3 spaces)	1 space per 5 units	59 spaces
<b>TOTAL</b>				<b>59 spaces</b>

3.5.4 A total of 55 car parking spaces are proposed on-site. This is in line with the SPG as set out in Table 3.1 and an appropriate provision on the site.

3.5.5 All car parking spaces have been designed with minimum dimensions of 2.4 x 4.8 metres consistent with guidance in the SPG.

#### *Cycle Parking*

3.5.6 A minimum of one cycle parking space will be provided within the curtilage of the individual dwellings for households.

#### *Motorcycle Parking and Disabled Parking*

3.5.7 No provision has been made for motorcycle or disabled parking provision on-site. It is considered that these users will be accommodated within the car parking provision.

### 3.6 Construction

3.6.1 The details of the construction of the site are yet to be finalised. The impacts of construction would be short term and temporary in nature.

3.6.2 It is proposed that all routes to the site will be agreed with VoGC prior to construction commencing, however all construction vehicle traffic would route via B4265.

3.6.3 Measures would be adopted during the construction of the site to minimise the impact of construction traffic movements with potential measures set out below:

- The production of a plan detailing measures to reduce the contract duration and the number of trips made



- Measures will be set out to encourage construction staff to reduce car use to the site, particularly through car sharing and also where feasible by public transport, walking and cycling
- All construction worker vehicles would be accommodated on the site to reduce the impact of overspill parking on the local highway network
- Wheel washing and dust sheeting will be undertaken to reduce the impact of mud, dust and dirt on the local highway network



## 4.0 TRIP GENERATION

### 4.1 Introduction

4.1.1 The vehicle trip rates and generation for the Phase 2 site have been based on the accepted trip rates for Phase 1. The trip generation characteristics would be consistent across the entire site.

4.1.2 The vehicle trip rates are considered extremely robust as at the request of VoGC, 85<sup>th</sup> percentile trip rates have been applied. In addition, all comparable sites used in the TRICS analysis were from the houses privately owned category. An element of the proposed development would be affordable housing which likely generate a lower level of vehicle movements than private dwellings.

### 4.2 Phase 1 – Permitted Development

4.2.1 The Phase 1 vehicle trip generation and trip rates have been taken directly from Table 5.2 of the TA submitted with the application and have been reproduced in **Table 4.1** as follows. The TRICS reports are included in **Appendix F** for reference.

**Table 4.1 – Phase 1 Residential Vehicle Trip Rates and Trip Generation**

	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)			Two-Way (0700 – 1900)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Trip Rates	0.138	0.667	0.805	0.600	0.313	0.912	3.381	3.393	6.774
Trip Generation (65 dwellings)	9	43	52	38	20	58	216	217	434

### 4.3 Phase 2 – Proposed Development

4.3.1 The trip rates shown in **Table 4.1** have been applied to the Phase 2 proposals for 24 residential dwellings. The resultant forecast vehicle trip generation is summarised in **Table 4.2**.

**Table 4.2 – Phase 2 Vehicle Trip Generation (24 dwellings)**

	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)			Two-Way (0700 – 1900)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Trip Generation (24 dwellings)	3	16	19	14	8	22	81	81	162

4.3.2 The proposed Phase 2 development is forecast to generate 19 two-way vehicular trips in the AM peak and 22 two-way vehicular trips in the PM peak. This equates to approximately one additional vehicle every three minutes during the peak hours.

4.3.3 This level of vehicle generation will not have a material impact on the surrounding local highway network.



## 4.4 Total Overall Development Site

4.4.1 The vehicle trip generation which is forecast to be generated with the overall 89 dwelling development is summarised in **Table 4.3**.

**Table 4.3 – Overall Development Vehicle Trip Generation (Phase 1 + Phase 2)**

	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)			Two-Way (0700 – 1900)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Phase 1 (65 dwellings)	9	43	52	38	20	58	216	217	434
Phase 2 (24 dwellings)	3	16	19	14	8	22	81	81	162
<b>Total Development (89 dwellings)</b>	<b>12</b>	<b>59</b>	<b>71</b>	<b>52</b>	<b>28</b>	<b>80</b>	<b>297</b>	<b>298</b>	<b>596</b>

4.4.2 The overall site is forecast to generate between 71 and 80 vehicle movements in the peak hours.

## 4.5 Allocation compared with Proposed Overall Development

4.5.1 The site has been allocated for a residential development of 70 dwellings. The proposals for Phase 2 would increase the overall site development by 19 dwellings to a total of 89 dwellings.

4.5.2 **Table 4.4** summarises the net difference in vehicle trips between the allocated and the proposed development of the site in its entirety.

**Table 4.4 – Vehicle Trip Generation Comparison between Allocation (70 dwellings) and Proposals (89 dwellings)**

	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)			Two-Way (0700 – 1900)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Allocation (70 dwellings)	10	47	57	42	22	64	237	238	475
Proposed Overall Development (89 Dwellings)	12	59	71	52	28	80	297	298	596
<b>Net Change</b>	<b>2</b>	<b>12</b>	<b>14</b>	<b>10</b>	<b>6</b>	<b>16</b>	<b>60</b>	<b>60</b>	<b>121</b>

4.5.1 The proposed development is forecast to generate an additional 14 to 16 vehicle trips when compared with the site allocation. This equates to approximately one vehicle every four minutes on the network. This would not have a material impact on the operation of the highway network and would be well within daily variations of traffic flows. The additional vehicles would be imperceptible to existing users.



## 4.6 Pedestrian Trips

- 4.6.1 The number of pedestrian movements has been forecast based on a Technical Note produced by Mayer Brown (January 2015). This was submitted to support Phase 1 following a request for further information post-planning submission. The trip rates for the AM and PM peak hours are set out in Table 4.1 of the Mayer Brown Technical Note.
- 4.6.2 These pedestrian trip rates have been applied to the proposed Phase 2 development and the resultant trip generation for the Phase 1, Phase 2 and overall are summarised in **Table 4.5** for the AM and PM peak hours.

**Table 4.5 – Pedestrian Trip Rates and Generation**

	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Trip Rates	0.032	0.143	0.175	0.084	0.043	0.127
Phase 1 (65 dwellings)	2	9	11	5	3	8
Phase 2 (24 dwellings)	1	3	4	2	1	3
<b>Total</b>	<b>3</b>	<b>12</b>	<b>15</b>	<b>7</b>	<b>4</b>	<b>11</b>

- 4.6.3 The proposed Phase 2 development is forecast to generate approximately three to four two-way pedestrian movements during the network peak (vehicle) AM and PM hours. The overall site is forecast to generate up to 15 pedestrian movements in the peak hour.



## 5.0 TRAFFIC IMPACT ASSESSMENT

### 5.1 Percentage Impact Assessment

- 5.1.1 A percentage impact assessment of the proposed development on the B4265 has been carried consistent with the methodology for the Phase 1 TA.
- 5.1.2 The baseline traffic flow data has been updated to reflect a 2017 survey undertaken approximately at the proposed site access location on the B4295. A seven day Automatic Traffic Count (ATC) was carried out by an independent specialist survey company (Road Data Services Ltd) between Thursday 7<sup>th</sup> December and Wednesday 13<sup>th</sup> December 2017. This recorded both speed and flow data.
- 5.1.3 A summary of the average weekday traffic flows along the B4265 past the site access is summarised in **Table 5.1**. Full traffic flow information is included at **Appendix G**.

**Table 5.1 – 2017 B4265 Traffic Flows**

Time Period	Northbound		Southbound	
	Total	HGV	Total	HGV
AM Peak (0800 – 0900)	368	14	460	7
PM Peak (1700 – 1800)	385	4	357	2

- 5.1.4 Growth factors between 2017 and 2023, five years after the planning application submission, have been calculated using the TEMPro v7 software. This utilises information contained in both the National Trip End Model (NTEM) and National Transport Model (NTM) to derive growth rates in background vehicular movements within the vicinity of the site. These have been calculated using the Middle Layer Super Output Area (MSOA) – Vale of Glamorgan 011 in which the site is based.
- 5.1.5 The growth factors are summarised in **Table 5.2**.

**Table 5.2 – TEMPro Growth Factors**

Years of Growth	AM Peak (0800 – 0900)	PM Peak (1700 – 1800)
2017 – 2023	1.0697	1.0691

- 5.1.6 The resultant 2023 traffic flows with the application of these growth factors are shown in **Table 5.3**.

**Table 5.3 – 2023 B4265 Background Traffic Flows**

Time Period	Northbound		Southbound	
	Total	HGV	Total	HGV
AM Peak (0800 – 0900)	394	15	492	7
PM Peak (1700 – 1800)	412	4	382	2

- 5.1.7 Traffic associated with Phase 1, Phase 2 and the total development has been distributed north and south along the B4265 to and from the site access consistent with the distribution assumptions from the Phase 1 TA. The traffic distribution is shown in **Table 5.4** and **Table 5.5**.



**Table 5.4 – Development Traffic Distribution – AM Peak (0800-0900)**

B4265	%	Phase 1			Phase 2			Total Development		
		Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Tot
North	48%	4	21	<b>25</b>	1	8	<b>9</b>	5	29	<b>34</b>
South	52%	5	22	<b>27</b>	2	8	<b>10</b>	7	30	<b>37</b>

**Table 5.5 – Development Traffic Distribution – PM Peak (1700-1800)**

B4265	%	Phase 1			Phase 2			Total Development		
		Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Tot
North	48%	18	10	<b>28</b>	7	4	<b>11</b>	25	14	<b>39</b>
South	52%	20	10	<b>30</b>	7	4	<b>11</b>	27	14	<b>41</b>

5.1.8 The percentage impact of the Phase 1, Phase 2 and total development traffic movements is summarised in **Table 5.6 and Table 5.7**.

**Table 5.6 – Development Percentage Impact Assessment – B4265 North of Site Access**

B4265	2023 Base Flows	Phase 1	% Impact	Phase 2	% Impact	Total Development	% Impact
AM peak (0800 – 0900)	754	25	3.32%	9	1.2%	34	4.51%
PM peak (1700 – 1800)	846	28	3.31%	11	1.3%	39	4.61%

**Table 5.7 – Development Percentage Impact Assessment – B4265 South of Site Access**

B4265	2023 Base Flows	Phase 1	% Impact	Phase 2	% Impact	Total Development	% Impact
AM peak (0800 – 0900)	754	27	3.58%	10	1.3%	37	4.91%
PM peak (1700 – 1800)	846	30	3.55%	11	1.3%	41	4.85%

5.1.9 The Phase 2 development is forecast to have a maximum of a 1.3% increase in background flows on the B4265 both to the north and south of site access junction.

5.1.10 The overall development is forecast to have less than a 5% increase in flows in all hours to both the north and south of the junction.

5.1.11 This is within the daily variations of traffic flow and would not have a material impact on the operation of the highway network.

## 5.2 Site Access Operational Assessment

5.2.1 An assessment of the site access / B4265 junction has been undertaken as discrepancies were noted in the Phase 1 model in the Technical Note. The Phase 1 model significantly over-estimated the capacity and queueing at the junction as the northbound movements were modelled turning into the site rather than continuing along the B4265.





- 5.2.2 As such, the Junctions 9 model has been re-run using the same geometric parameters but with the revised traffic flows presented in this Transport Note. This is to demonstrate that the site access junction would continue to operate well within capacity with the addition of the Phase 2 site and there would be no impact on delay for through vehicle movements on the B4265.
- 5.2.3 The results of the operational assessment have been summarised within **Table 5.8** with the full outputs presented in **Appendix H**.

**Table 5.8 – B4265 / Site Access 2023 Baseline + Development Junction Analysis Results**

	AM (0800-0900)				PM (1700-1800)			
	RFC	Max Delay (s)	Max queue (veh)	LOS	RFC	Max Delay (s)	Max queue (veh)	LOS
Site Access	0.17	11.59	0	B	0.08	9.89	0	A
B4265 South	0.01	6.02	0	A	0.05	5.95	0	A

- 5.2.4 **Table 5.8** demonstrates that the junction is forecast to operate well within capacity with no queuing from the junction or in the right turn lane. The access proposals are therefore appropriate for accommodating the development traffic associated with the overall site without having an impact on through movements on the B4265.

### 5.3 Pedestrian Impact Assessment

- 5.3.1 As part of the Phase 1 site a pedestrian assessment was carried out and summarised in the January 2015 Technical Note. This was to determine the requirement for a crossing facility on Eglwys Brewis Road on the request of officers at VoGC.
- 5.3.2 The assessment included obtaining a traffic count on Eglwys Brewis Road which showed weekday peak traffic flows were 260 movements per hour equating to 4.3 vehicles per minute on average.
- 5.3.3 A count of pedestrians crossing the B4265 at the Llantwit Road junction demonstrated a demand of 61 pedestrians in the morning peak hour. A similar number of pedestrians was assumed along Eglwys Brewis Road. Within the Technical Note, the base position including the Phase 1 site was assumed as 80 pedestrians.
- 5.3.4 As set out in Section 4.6, the proposed development is forecast to generate 15 pedestrian movements in the morning peak hour, with the Phase 2 development accounting for 4 pedestrian movements. The increase would change the forecast pedestrian flow from 80 to 84 pedestrian movements on Eglwys Brewis Road, if all pedestrians were assumed to route this way (based on the previous Phase 1 analysis). This minimal increase in movements associated with the Phase 2 site would not materially change what crossing facilities would be appropriate on Eglwys Brewis Road.
- 5.3.5 In addition, the Phase 2 site is providing an alternative route into Boverton via a new footway link onto Llantwit Road and then via the existing signalled crossings on the B4265 to the south of the site. This is considered a more likely route for Phase 2 residents walking into Boverton, in addition to some Phase 1 site residents. It is therefore more likely that the number of pedestrians crossing Eglwys Brewis Road would reduce when the Phase 2 site is built.
- 5.3.6 As such, the arrangements proposed and agreed as part of the Phase 1 site would remain appropriate to accommodate the Phase 2 site.



- 5.3.7 This is further supported by the Northern Access Road proposals. Once this has been constructed, that vehicular through movements will be reduced along Eglwys Brewis Road due to this no longer acting as the primary access road from east – west and to the St Athan RAF base.



## **6.0 SUMMARY AND CONCLUSIONS**

### **6.1 Summary**

- 6.1.1 This Transport Note has been prepared by Hydrock Consultants Ltd in support of a planning application for the construction of 24 residential dwellings forming Phase 2 of the Land at B4265, Boverton.
- 6.1.2 This TN has been prepared to provide the necessary information for the Local Highway and Planning Authorities to consider the merits of the development proposal in relation to the transport impacts.
- 6.1.3 The TN has been informed by the work undertaken to support the Phase 1 planning application, which was granted planning consent in January 2018.

### **6.2 Conclusions**

- 6.2.1 The site is suitably located for access by sustainable modes for a residential development and this has been accepted by VoGC through the LDP allocation and the approval of the Phase 1 development. Future residents to be able to travel by sustainable modes of transport to facilities within suitable walking distance. This will reduce the reliance on the private car.
- 6.2.2 Car parking provision is proposed at an appropriate level, consistent with parking standards.
- 6.2.3 Refuse and service vehicles can appropriately enter and exit the site in forward gear.
- 6.2.4 Vehicles can access the site appropriately from the highway network via the agreed Phase 1 junction. The additional Phase 2 vehicle trips would not have a material impact on its operation.
- 6.2.5 The level of vehicle trips generated by Phase 2 would not have a material impact on the wider highway network with minimal increases in traffic flows on key routes.
- 6.2.6 The proposed footway link to the south is likely to accommodate the Phase 2 pedestrian movements linking to Boverton. This link may also accommodate some of the Phase 1 pedestrian movements. As such, the site proposals are unlikely to have any noticeable impact on the use of the Eglwys Brewis Road crossing, indeed they may reduce the level of pedestrians using this crossing. On this basis, the crossing arrangements proposed as part of the Phase 1 site would remain acceptable to accommodate the Phase 2 site and no further mitigation would be required.
- 6.2.7 It is therefore considered that there are no highways and transportation matters that should preclude the Local Planning Authority from approving this planning application.



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## APPENDICES

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## APPENDIX A

### VOGC LDP EXTRACT - SITE MG2 (22) LAND ADJACENT TO LLANTWIT MAJOR BYPASS



<b>MG2 (22)</b> Land adjacent to Llantwit Major Bypass	<b>TOTAL</b>
	70

This 2.4 hectare Greenfield site is located to the northeast of the Llantwit Major By-Pass and adjacent to Vale of Glamorgan railway line. The Council has received a planning application for this site which is currently under consideration (application 2014/00995/OUT refers). Affordable housing will be delivered in accordance with Policy MG4.

The Council's Engineers have advised that a suitable safe access is required that conforms to current design criteria. In addition, future planning applications must be supported by a comprehensive and robust Transport Statement that evaluates and determines mitigation measures which alleviate any detrimental impact the development will have on the local highway network and associated road junctions. A designated main river runs along the southern boundary of the site and known flood risk areas are situated downstream. Consultation with Natural Resources Wales (NRW) will therefore be required and a Flood Consequence Assessment and a Surface Water Assessment, including appropriate consideration of the use of Sustainable Urban Drainage Systems will be necessary to demonstrate that there would be no adverse impacts arising from future development of the site.

Natural Resources Wales (NRW) is aware that a European protected species has been recorded in the vicinity of the site and an ecological assessment will be required in support of any future planning application.

Dŵr Cymru Welsh Water (DCWW) has advised that a water supply can be made available to service the proposed development site; however extensive off-site mains may be required. No problems are envisaged with the public sewerage system for domestic foul discharge from this proposed development however off-site sewers may be required.

The Glamorgan Gwent Archaeological Trust has advised that an archaeological evaluation may be required in order to identify and protect any archaeological resource.



## **APPENDIX B**

### **SITE MASTERPLAN FOR PHASE 1 (PLANNING REF: 2014/00995/FUL)**

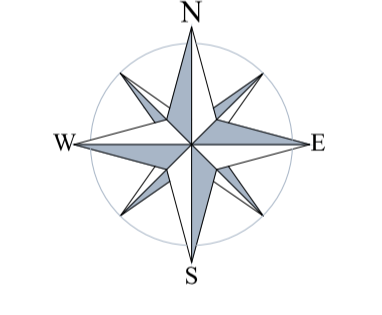




House Type Schedule				
House Net Floor Code Area (ft²)	Number of Bedrooms	House Type Name	Number of Units	Total Net Area of Each Unit (ft²)
MAI 830	3	Maidstone	10	8300
AVR 958	3	Andover	8	7984
RIS 1078	3	Kingstone	8	8624
ALD 1225	4	Alderny	6	7350
HAL 1319	4	Hale	4	5276
TMT 1299	4	Tarnerton	4	5196
RAK 1316	4	Radleigh	6	7896
WAS 615	2	Washington	2	1230
PAL 778	3	Palmerston	2	1552
ESK 1058	3	Exdale	1	1058
HAW 459	3	Hawthorne	6	2754
ALP 514	3	Alder	4	2056
DU 840	3	Drift	4	3360
<b>Total No. of Units on Site &amp; Total Net Area (ft²)</b>				<b>65 62636</b>

- Site Key**
- 1.8m High Timber Close Board Fence
  - 1.8m High Brick Screen Wall
  - 1.1m High Hoopstop Railings
  - 2m High Close Board Fence with 130mm gaps at base for hedgerow movement
  - 1.2m High Post and 3 Rail Fence
  - Proposed Hedgerow (Refer to landscaping layout)
  - Existing Hedgerow Retained (within site layout)
  - Proposed New Trees (Indicative only refer to landscaping layout)
  - Existing Trees (as per name location)
  - 1.8m High Close Board Gate
  - Affordable Unit - Social Rented
  - Affordable Unit - LCHO
  - 12 Plot Numbers
  - Parking space
  - Bin Collection Point
  - 2m wide buffer from existing landscaping outside site boundary. Suitable planting to be proposed within buffer
  - Existing Building (location picked up from C1)

- Local Area of Play (LAP) Proposed Equipment**
- Equipment specified below are supplied from Sublife Play
- SWB062 1.8m Swing 2 x Pod Seats
  - DZW276 Hide & Slide Toddlerzone Unit
  - SSB300 Inclusive Springle Basic
  - DZW276 Hide & Slide Toddlerzone Unit



REV.	DESCRIPTION	DATE
D	Road narrowing now centred off plot 21s driveway. Turning area adjusted adjacent plot 57, shared drive serving plots C3-C6 can be access crossing footpath at 90°, shared drive access point moved slightly towards plot 54.	04.10.17
C	Further minor adjustment to site entrance. Forward visibility splays updated to 17m. Footpaths widened to accommodate new vision splays. Radii of junction at site entrance amended to be 12m. Note added to footpath link to state that footpath is to be to VGD standards.	03.10.17
B	Access Radii revised.	02.10.17
A		21.09.17

CLIENT <b>Barratt Homes South Wales</b>		
JOB TITLE <b>Land North of B4265, Boverton</b>		
DRAWING TITLE <b>Site Layout</b>		
SCALE @ A1 <b>1:500</b>	DATE <b>Sept '17</b>	DRAWN BY <b>RW</b>
JOB NO. <b>1363</b>	DRAWING NO. <b>TP-05</b>	REVISION <b>D</b>

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## APPENDIX C

### NORTHERN ACCESS ROAD, ST ATHAN GENERAL ARRANGEMENT PLAN



ISO A1 594mm x 841mm  
 Project Management Initials: Designer: MH  
 Checked: RM  
 Approved: RM  
 File name: F:\PROJECTS\HIGHWAYS-ST ATHAN\3 EXECUTION\3 DOCUMENTS\308 CAD\01 WORKING DRAWINGS\0100 - GENERAL ARRANGEMENT\60509148-SHT-30-0000-CT-0121-0127.DWG  
 Last saved by: MACCLOUGH  
 Last Plotted: 2017-05-25




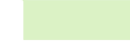








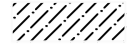






**NOTES**

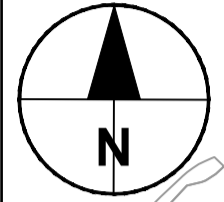
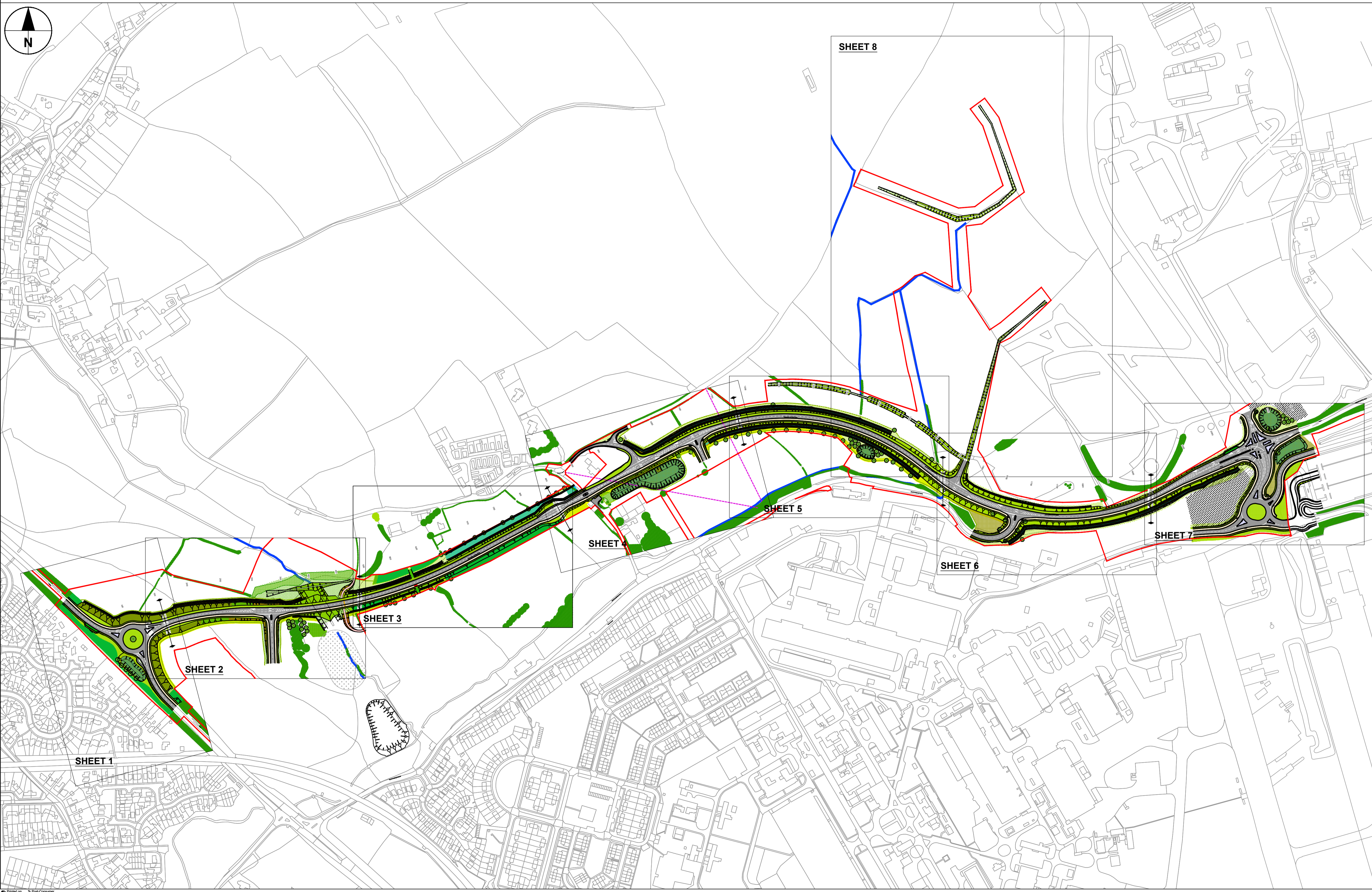
1. ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT SPECIFICATION AND THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS.
2. ALL WORKING HOURS AND TRAFFIC MANAGEMENT MEASURES ARE TO BE AGREED WITH THE LOCAL HIGHWAY AUTHORITY AND DEPLOYED IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.
3. LOCATION OF SITE COMPOUND TO BE AGREED WITH THE LOCAL HIGHWAY AUTHORITY PRIOR TO WORKS COMMENCING. ALL MOVEMENT OF PLANT SHOULD BE IN ACCORDANCE WITH RECOGNISED GOOD INDUSTRY PRACTICE. BANKSMEN SHOULD BE PROVIDED WHEN REQUIRED.
4. THE GENERAL PUBLIC SHOULD BE SEPARATED FROM THE WORKS WITH ADEQUATE LATERAL CLEARANCE AND APPROPRIATE SAFETY ZONES PROVIDED IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.
5. ACCESS TO PRIVATE PROPERTIES MUST BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE AGREED WITH THE AFFECTED PARTY AND THE LOCAL HIGHWAY AUTHORITY.
6. MEASURES SHOULD BE DEPLOYED TO ENSURE NOISE, VIBRATION AND DUST IS MINIMISED.
7. ALL BURIED SERVICES ARE TO BE POSITIVELY LOCATED ON SITE PRIOR TO EXCAVATION. CAT SCANS SHALL BE COMPLETED PRIOR TO EXCAVATION WITH SERVICE LOCATIONS MARKED UP ON SITE. OPERATIVES SHALL

EMPLOY HAND DIGGING METHODS WHEN WORKING IN CLOSE PROXIMITY TO BURIED SERVICES. STATUTORY UNDERTAKER'S PLANT SHALL BE PROTECTED AS NECESSARY. ADDITIONAL TRIAL PITS SHALL BE EXCAVATED AS REQUIRED.

8. FINAL LAYOUT OF PUBLIC RIGHT OF WAY TO BE AGREED.

**KEY**

-  PROPOSED WHITE ROAD MARKINGS
-  PROPOSED CARRIAGEWAY
-  PROPOSED SHARED FOOTWAY/CYCLEWAY
-  PROPOSED VERGE
-  PROPOSED CUT
-  PROPOSED EMBANKMENT
-  PROPOSED TRAFFIC ISLAND
-  PROPOSED MAINTENANCE HARDSTANDING
-  PROPOSED DRAINAGE FEATURE
-  PROPOSED UTILITIES CORRIDOR
-  PLANNING APPLICATION BOUNDARY
-  EXISTING WATER COURSE
-  AREA FOR CONTRACTOR'S COMPOUND
-  EXISTING PUBLIC RIGHT OF WAY
-  PROPOSED TACTILE PAVING
-  PROPOSED CHAINAGE 150
-  PROPOSED BOLLARD
-  PROPOSED ACCESS TRACK
-  PROPOSED OVERRUN AREA



**AECOM**

**PROJECT**  
**ST. ATHAN NORTHERN ACCESS ROAD**

**CLIENT**  
 WELSH GOVERNMENT



**Llywodraeth Cymru  
 Welsh Government**

**CONSULTANT**  
 AECOM  
 1 CALLAGHAN SQUARE  
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 CF10 5BT  
 TEL: (029) 20674600  
 FAX: (029) 20674699

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following specific residual risks (Reference shall also be made to the design hazard log).

Construction
UNDERGROUND UTILITIES IN THIS AREA (INC. GAS)
WORKING ADJACENT TO WATERCOURSE
WORKING ON AND ADJACENT TO LIVE CARRIAGEWAY
MOD ACTIVITIES IN ADJACENT LAND

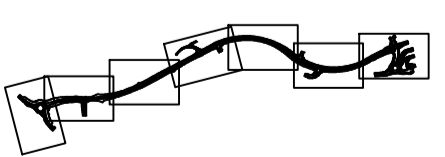
**STATUS**

PLANNING SUBMISSION ISSUE

ISSUE/REVISION	

NO	DATE	DESCRIPTION
A	25-05-17	PLANNING SUBMISSION ISSUE

**KEY PLAN**



**PROJECT NUMBER**  
 60509148

**SHEET TITLE**  
 ST.ATHAN  
 GENERAL ARRANGEMENT  
 OVERALL PLAN  
 N.T.S  
 SHEET NUMBER  
 60509148-SHT-30-0000-CT-0120

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## **APPENDIX D**

### **PHASE 2 MASTERPLAN**



House Type Schedule					
House Code	Net Floor Area (ft <sup>2</sup> )	Number of Bedrooms	House Type Name	Number of Units	Total Net Area of Each Unit (ft <sup>2</sup> )
ALR	514	1	Alder	4	2056
WAS	615	2	Washington	4	2460
RIC	731	2	Richmond	5	3655
FOL	830	3	Folkestone	2	1660
MAI	830	3	Maidstone	7	5810
BUC	874	3	Buchanan	1	874
ENN	916	3	Ennerdale	1	916
<b>Total No. of Units on Site &amp; Total Net Area (ft<sup>2</sup>)</b>				<b>24</b>	<b>17431</b>

- Site Key**
- 1.8m High Timber Close Board Fence
  - 1.8m High Brick Screen Wall
  - 1.1m High Hootop Railings
  - Existing Hedgerow Retained (Refer to landscaping layout)
  - Proposed New Trees (Indicative only refer to landscaping layout)
  - 1.8m High Close Board Gate
  - Plot Numbers
  - Parking space

**DRAFT - 3**  
For Discussion

REV.	DESCRIPTION	DATE
------	-------------	------

CLIENT  
**Barratt Homes South Wales**

JOB TITLE  
**Land North of B4265, Boverton, Phase 2**

DRAWING TITLE  
**Phase 2, Site Layout**

SCALE @ A3	DATE	DRAWN BY
1:500	Jan '18	RW

JOB NO.	DRAWING NO.	REVISION
1753	TP-01	-



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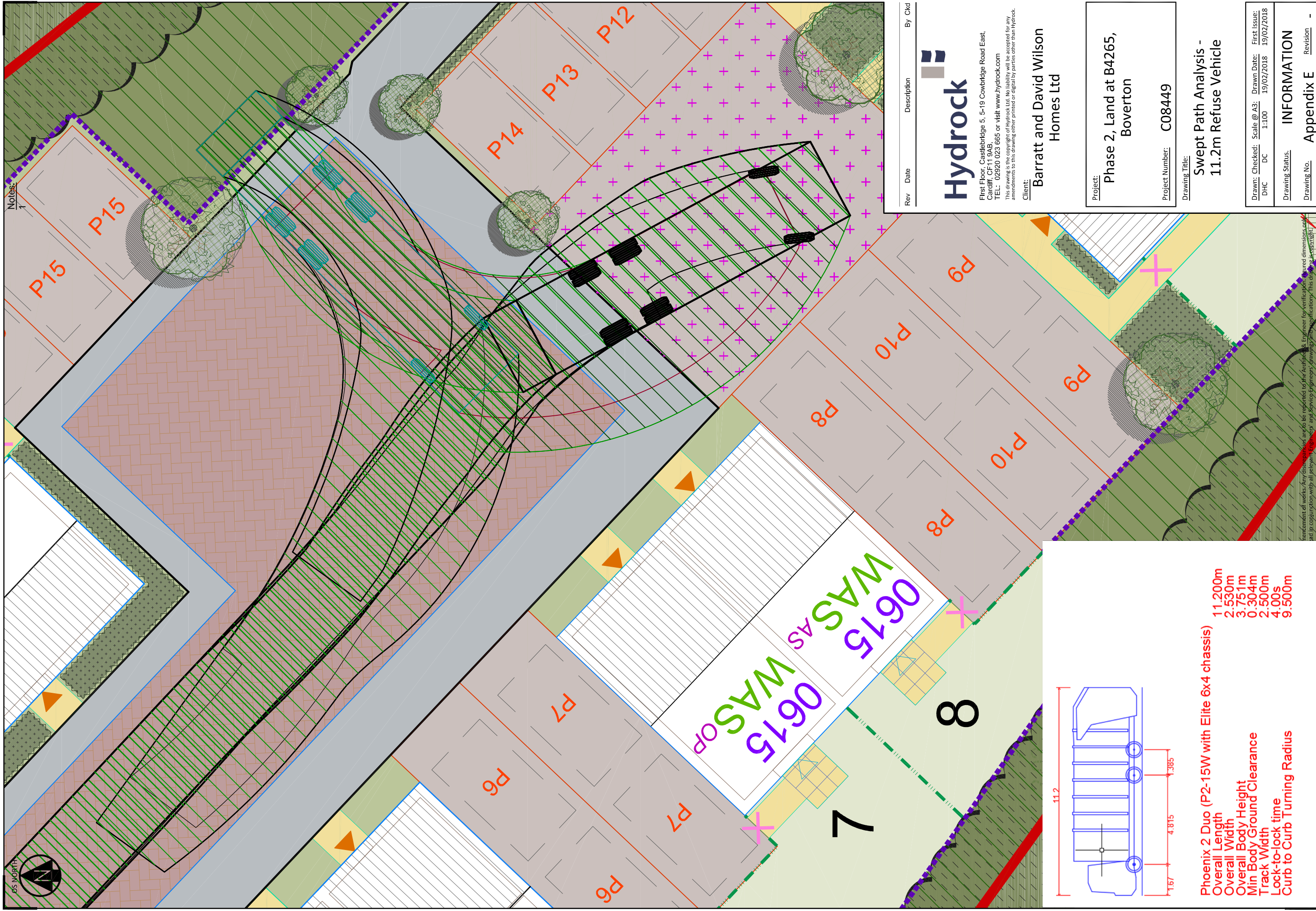
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## **APPENDIX E**

### **SWEPT PATH ANALYSIS – 11.2 METRE REFUSE VEHICLE**





Notes:  
1

Rev	Date	Description	By	Ckd



First Floor, Castlebridge 5, 5-19 Cowbridge Road East,  
Cardiff, CF11 9AB,  
TEL: 02920 023 665 or visit [www.hydrock.com](http://www.hydrock.com)  
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Client:  
**Barratt and David Wilson  
Homes Ltd**

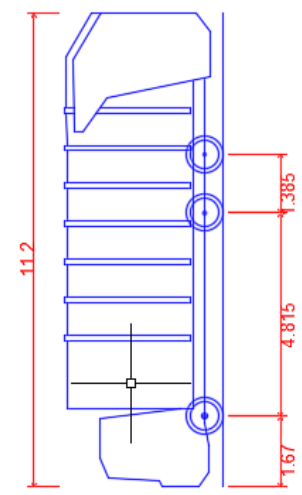
Project:  
**Phase 2, Land at B4265,  
Boverton**

Project Number: **C08449**

Drawing Title:  
**Swept Path Analysis -  
11.2m Refuse Vehicle**

Drawn: Checked: Scale @ A3:	Drawn Date: 19/02/2018	First Issue: 19/02/2018
DHC DC	1:100	

Drawing Status:	<b>INFORMATION</b>
Drawing No.	<b>Appendix E</b>
Revision	-



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

All dimensions are to be reported to the Architect & Engineer for verification. The drawing is the copyright of Hydrock Ltd. No liability will be accepted for any amendments to this drawing either printed or digital by parties other than Hydrock.



## **APPENDIX F**

### **TRICS OUTPUT REPORTS**

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : A - HOUSES PRIVATELY OWNED  
 VEHICLES

## Filtering Stage 2 selection:

Parameter: Number of dwellings  
 Actual Range: 10 to 123 (units: )  
 Range Selected by User: 10 to 130 (units: )

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 07/10/13

Selected survey days:

Monday	5 days
Tuesday	6 days
Wednesday	2 days
Thursday	3 days
Friday	3 days

Selected survey types:

Manual count	19 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	19
--------------	----

Selected Location Sub Categories:

Residential Zone	10
Out of Town	1
No Sub Category	8

## Filtering Stage 3 selection:

Use Class:

C3	19 days
----	---------

Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	6 days
10,001 to 15,000	6 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	3 days
25,001 to 50,000	4 days
50,001 to 75,000	2 days
75,001 to 100,000	4 days
100,001 to 125,000	3 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	12 days



Filtering Stage 3 selection (Cont.):

Travel Plan:

Yes

1 days

No

18 days

LIST OF SITES relevant to selection parameters

1	CB-03-A-03 SEMI DETACHED HAWKSHEAD AVENUE  WORKINGTON Edge of Town Residential Zone Total Number of dwellings: 40 Survey date: THURSDAY 20/11/08	CUMBRIA	Survey Type: MANUAL
2	CB-03-A-04 SEMI DETACHED MOORCLOSE ROAD SALTERBACK WORKINGTON Edge of Town No Sub Category Total Number of dwellings: 82 Survey date: FRIDAY 24/04/09	CUMBRIA	Survey Type: MANUAL
3	CH-03-A-05 DETACHED SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings: 17 Survey date: TUESDAY 14/10/08	CESHIRE	Survey Type: MANUAL
4	CV-03-A-01 DETACHED DUBLIN ROAD  CAVAN Edge of Town No Sub Category Total Number of dwellings: 37 Survey date: TUESDAY 18/12/12	CAVAN	Survey Type: MANUAL
5	EA-03-A-01 DETACHED TALISKER AVENUE  KILMARNOCK Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: THURSDAY 05/06/08	EAST AYRSHIRE	Survey Type: MANUAL
6	ES-03-A-02 PRIVATE HOUSING SOUTH COAST ROAD  PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11	EAST SUSSEX	Survey Type: MANUAL
7	GA-03-A-01 SEMI DETACHED HEADFORD ROAD KNOCKAYARRAGH GALWAY Edge of Town No Sub Category Total Number of dwellings: 123 Survey date: WEDNESDAY 20/09/06	GALWAY	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	HI-03-A-11	BUNGALOWS		HIGHLAND
	STEVENSON ROAD			
	INSHES			
	INVERNESS			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		85	
	Survey date:	MONDAY	05/06/06	Survey Type: MANUAL
9	KK-03-A-03	MIXED HOUSING		KILKENNY
	FRESHFORD ROAD			
	FRIARSINCH			
	KILKENNY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		70	
	Survey date:	WEDNESDAY	26/11/08	Survey Type: MANUAL
10	LC-03-A-22	BUNGALOWS		LANCASHIRE
	CLIFTON DRIVE NORTH			
	BLACKPOOL			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		98	
	Survey date:	TUESDAY	18/10/05	Survey Type: MANUAL
11	LE-03-A-01	DETACHED		LEICESTERSHIRE
	REDWOOD AVENUE			
	MELTON MOWBRAY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		11	
	Survey date:	TUESDAY	03/05/05	Survey Type: MANUAL
12	NY-03-A-05	HOUSES AND FLATS		NORTH YORKSHIRE
	BOROUGHBRIDGE ROAD			
	RIPON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		71	
	Survey date:	MONDAY	22/09/08	Survey Type: MANUAL
13	NY-03-A-07	DETACHED & SEMI DET.		NORTH YORKSHIRE
	CRAVEN WAY			
	BOROUGHBRIDGE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		23	
	Survey date:	TUESDAY	18/10/11	Survey Type: MANUAL
14	RO-03-A-01	MIXED HOUSES		ROSCOMMON
	GALWAY ROAD			
	ROSCOMMON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		80	
	Survey date:	THURSDAY	07/05/09	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	SF-03-A-03	MIXED HOUSES		SUFFOLK
	BARTON HILL			
	FORNHAM ST MARTIN			
	BURY ST EDMUNDS			
	Edge of Town			
	Out of Town			
	Total Number of dwellings:		101	
	Survey date: MONDAY		15/05/06	Survey Type: MANUAL
16	SH-03-A-03	DETACHED		SHROPSHIRE
	SOMERBY DRIVE			
	BICTON HEATH			
	SHREWSBURY			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		10	
	Survey date: FRIDAY		26/06/09	Survey Type: MANUAL
17	WL-03-A-01	SEMI D./TERRACED W.	BASSETT	WILTSHIRE
	MAPLE DRIVE			
	WOOTTON BASSETT			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		99	
	Survey date: MONDAY		02/10/06	Survey Type: MANUAL
18	WM-03-A-03	MIXED HOUSING		WEST MIDLANDS
	BASELEY WAY			
	ROWLEYS GREEN			
	COVENTRY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		84	
	Survey date: MONDAY		24/09/07	Survey Type: MANUAL
19	WO-03-A-02	SEMI DETACHED		WORCESTERSHIRE
	MEADOWHILL ROAD			
	REDDITCH			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		48	
	Survey date: TUESDAY		02/05/06	Survey Type: MANUAL

Mayer Brown Victoria Street Bristol

Licence No: 807403

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
VEHICLES

Ranking Type: TOTALS Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 16

85th Percentile = No. 4

Median Values

Arrivals: 0.231

Departures: 0.359

Totals: 0.590

Mean Values

Arrivals: 0.168

Departures: 0.456

Totals: 0.625

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Travel Plan
								Arrivals	Departures	Totals	
1	KK-03-A-03	MIXED HOUSING	KILKENNY	KILKENNY	70	Wed	26/11/08	0.314	0.657	0.971	
2	CV-03-A-01	DETACHED	CAVAN	CAVAN	37	Tue	18/12/12	0.243	0.595	0.838	
3	CH-03-A-05	DETACHED	CREWE	CHESHIRE	17	Tue	14/10/08	0.235	0.588	0.823	
4	GA-03-A-01	SEMI DETACHED	GALWAY	GALWAY	123	Wed	20/09/06	0.138	0.667	0.805	
5	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	0.321	0.405	0.726	
6	SH-03-A-03	DETACHED	SHREWSBURY	SHROPSHIRE	10	Fri	26/06/09	0.200	0.500	0.700	
7	CB-03-A-03	SEMI DETACHED	WORKINGTON	CUMBRIA	40	Thu	20/11/08	0.225	0.450	0.675	
8	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	0.109	0.554	0.663	
9	RO-03-A-01	MIXED HOUSES	ROSCOMMON	ROSCOMMON	80	Thu	07/05/09	0.150	0.475	0.625	
10	EA-03-A-01	DETACHED	KILMARNOCK	EAST AYRSHIRE	39	Thu	05/06/08	0.231	0.359	0.590	
11	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	0.113	0.465	0.578	
12	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	0.129	0.424	0.553	
13	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	0.183	0.366	0.549	
14	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	0.173	0.337	0.510	
15	ES-03-A-02	PRIVATE HOUSIN	PEACEHAVEN	EAST SUSSEX	37	Fri	18/11/11	0.081	0.405	0.486	Yes
16	NY-03-A-07	DETACHED & SEM	BOROUGHBRIDGE	NORTH YORKSHIRE	23	Tue	18/10/11	0.087	0.391	0.478	
17	LE-03-A-01	DETACHED	MELTON MOWBRAY	LEICESTERSHIRE	11	Tue	03/05/05	0.091	0.364	0.455	
18	WO-03-A-02	SEMI DETACHED	REDDITCH	WORCESTERSHIRE	48	Tue	02/05/06	0.104	0.333	0.437	
19	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	0.071	0.333	0.404	

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : A - HOUSES PRIVATELY OWNED  
 VEHICLES

## Filtering Stage 2 selection:

Parameter: Number of dwellings  
 Actual Range: 10 to 123 (units: )  
 Range Selected by User: 10 to 130 (units: )

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 07/10/13

Selected survey days:

Monday	5 days
Tuesday	6 days
Wednesday	2 days
Thursday	3 days
Friday	3 days

Selected survey types:

Manual count	19 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	19
--------------	----

Selected Location Sub Categories:

Residential Zone	10
Out of Town	1
No Sub Category	8

## Filtering Stage 3 selection:

Use Class:

C3	19 days
----	---------

Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	6 days
10,001 to 15,000	6 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	3 days
25,001 to 50,000	4 days
50,001 to 75,000	2 days
75,001 to 100,000	4 days
100,001 to 125,000	3 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	12 days

Filtering Stage 3 selection (Cont.):

Travel Plan:

Yes	1 days
No	18 days

LIST OF SITES relevant to selection parameters

1	CB-03-A-03 SEMI DETACHED HAWKSHEAD AVENUE  WORKINGTON Edge of Town Residential Zone Total Number of dwellings: 40 Survey date: THURSDAY 20/11/08	CUMBRIA	Survey Type: MANUAL
2	CB-03-A-04 SEMI DETACHED MOORCLOSE ROAD SALTERBACK WORKINGTON Edge of Town No Sub Category Total Number of dwellings: 82 Survey date: FRIDAY 24/04/09	CUMBRIA	Survey Type: MANUAL
3	CH-03-A-05 DETACHED SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings: 17 Survey date: TUESDAY 14/10/08	CESHIRE	Survey Type: MANUAL
4	CV-03-A-01 DETACHED DUBLIN ROAD  CAVAN Edge of Town No Sub Category Total Number of dwellings: 37 Survey date: TUESDAY 18/12/12	CAVAN	Survey Type: MANUAL
5	EA-03-A-01 DETACHED TALISKER AVENUE  KILMARNOCK Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: THURSDAY 05/06/08	EAST AYRSHIRE	Survey Type: MANUAL
6	ES-03-A-02 PRIVATE HOUSING SOUTH COAST ROAD  PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11	EAST SUSSEX	Survey Type: MANUAL
7	GA-03-A-01 SEMI DETACHED HEADFORD ROAD KNOCKAYARRAGH GALWAY Edge of Town No Sub Category Total Number of dwellings: 123 Survey date: WEDNESDAY 20/09/06	GALWAY	Survey Type: MANUAL



LIST OF SITES relevant to selection parameters (Cont.)

8	HI-03-A-11	BUNGALOWS		HIGHLAND
	STEVENSON ROAD			
	INSHES			
	INVERNESS			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		85	
	Survey date:	MONDAY	05/06/06	Survey Type: MANUAL
9	KK-03-A-03	MIXED HOUSING		KILKENNY
	FRESHFORD ROAD			
	FRIARSINCH			
	KILKENNY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		70	
	Survey date:	WEDNESDAY	26/11/08	Survey Type: MANUAL
10	LC-03-A-22	BUNGALOWS		LANCASHIRE
	CLIFTON DRIVE NORTH			
	BLACKPOOL			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		98	
	Survey date:	TUESDAY	18/10/05	Survey Type: MANUAL
11	LE-03-A-01	DETACHED		LEICESTERSHIRE
	REDWOOD AVENUE			
	MELTON MOWBRAY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		11	
	Survey date:	TUESDAY	03/05/05	Survey Type: MANUAL
12	NY-03-A-05	HOUSES AND FLATS		NORTH YORKSHIRE
	BOROUGHBRIDGE ROAD			
	RIPON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		71	
	Survey date:	MONDAY	22/09/08	Survey Type: MANUAL
13	NY-03-A-07	DETACHED & SEMI DET.		NORTH YORKSHIRE
	CRAVEN WAY			
	BOROUGHBRIDGE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		23	
	Survey date:	TUESDAY	18/10/11	Survey Type: MANUAL
14	RO-03-A-01	MIXED HOUSES		ROSCOMMON
	GALWAY ROAD			
	ROSCOMMON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		80	
	Survey date:	THURSDAY	07/05/09	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	SF-03-A-03	MIXED HOUSES		SUFFOLK
	BARTON HILL			
	FORNHAM ST MARTIN			
	BURY ST EDMUNDS			
	Edge of Town			
	Out of Town			
	Total Number of dwellings:		101	
	Survey date: MONDAY		15/05/06	Survey Type: MANUAL
16	SH-03-A-03	DETACHED		SHROPSHIRE
	SOMERBY DRIVE			
	BICTON HEATH			
	SHREWSBURY			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		10	
	Survey date: FRIDAY		26/06/09	Survey Type: MANUAL
17	WL-03-A-01	SEMI D./TERRACED W.	BASSETT	WILTSHIRE
	MAPLE DRIVE			
	WOOTTON BASSETT			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		99	
	Survey date: MONDAY		02/10/06	Survey Type: MANUAL
18	WM-03-A-03	MIXED HOUSING		WEST MIDLANDS
	BASELEY WAY			
	ROWLEYS GREEN			
	COVENTRY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		84	
	Survey date: MONDAY		24/09/07	Survey Type: MANUAL
19	WO-03-A-02	SEMI DETACHED		WORCESTERSHIRE
	MEADOWHILL ROAD			
	REDDITCH			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		48	
	Survey date: TUESDAY		02/05/06	Survey Type: MANUAL

Mayer Brown Victoria Street Bristol

Licence No: 807403

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
VEHICLES

Ranking Type: TOTALS Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under  
20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 16

85th Percentile = No. 4

Median Values

Arrivals: 0.475

Departures: 0.250

Totals: 0.725

Mean Values

Arrivals: 0.473

Departures: 0.274

Totals: 0.747

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Travel Plan
								Arrivals	Departures	Totals	
1	CV-03-A-01	DETACHED	CAVAN	CAVAN	37	Tue	18/12/12	0.811	0.730	1.541	
2	SH-03-A-03	DETACHED	SHREWSBURY	SHROPSHIRE	10	Fri	26/06/09	0.700	0.600	1.300	
3	KK-03-A-03	MIXED HOUSING	KILKENNY	KILKENNY	70	Wed	26/11/08	0.629	0.357	0.986	
4	RO-03-A-01	MIXED HOUSES	ROSCOMMON	ROSCOMMON	80	Thu	07/05/09	0.600	0.313	0.912	
5	EA-03-A-01	DETACHED	KILMARNOCK	EAST AYRSHIRE	39	Thu	05/06/08	0.667	0.179	0.846	
6	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	0.405	0.369	0.774	
7	CH-03-A-05	DETACHED	CREWE	CHESHIRE	17	Tue	14/10/08	0.353	0.412	0.765	
8	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	0.525	0.228	0.753	
9	NY-03-A-07	DETACHED & SEMI	BOROUGHBRIDGE	NORTH YORKSHIRE	23	Tue	18/10/11	0.478	0.261	0.739	
10	CB-03-A-03	SEMI DETACHED	WORKINGTON	CUMBRIA	40	Thu	20/11/08	0.475	0.250	0.725	
11	WO-03-A-02	SEMI DETACHED	REDDITCH	WORCESTERSHIRE	48	Tue	02/05/06	0.458	0.229	0.687	
12	GA-03-A-01	SEMI DETACHED	GALWAY	GALWAY	123	Wed	20/09/06	0.382	0.260	0.642	
13	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	0.437	0.169	0.606	
14	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	0.354	0.207	0.561	
15	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	0.347	0.173	0.520	
16	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	0.376	0.141	0.517	
17	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	0.374	0.141	0.515	
18	LE-03-A-01	DETACHED	MELTON MOWBRAY	LEICESTERSHIRE	11	Tue	03/05/05	0.273	0.182	0.455	
19	ES-03-A-02	PRIVATE HOUSIN	PEACEHAVEN	EAST SUSSEX	37	Fri	18/11/11	0.351	0.000	0.351	Yes

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : A - HOUSES PRIVATELY OWNED  
 VEHICLES

## Filtering Stage 2 selection:

Parameter: Number of dwellings  
 Actual Range: 10 to 123 (units: )  
 Range Selected by User: 10 to 130 (units: )

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 07/10/13

Selected survey days:

Monday	5 days
Tuesday	6 days
Wednesday	2 days
Thursday	3 days
Friday	3 days

Selected survey types:

Manual count	19 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	19
--------------	----

Selected Location Sub Categories:

Residential Zone	10
Out of Town	1
No Sub Category	8

## Filtering Stage 3 selection:

Use Class:

C3	19 days
----	---------

Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	6 days
10,001 to 15,000	6 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	3 days
25,001 to 50,000	4 days
50,001 to 75,000	2 days
75,001 to 100,000	4 days
100,001 to 125,000	3 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	12 days

Filtering Stage 3 selection (Cont.):

Travel Plan:

Yes

1 days

No

18 days

LIST OF SITES relevant to selection parameters

1	CB-03-A-03 SEMI DETACHED HAWKSHEAD AVENUE  WORKINGTON Edge of Town Residential Zone Total Number of dwellings: 40 Survey date: THURSDAY 20/11/08	CUMBRIA	Survey Type: MANUAL
2	CB-03-A-04 SEMI DETACHED MOORCLOSE ROAD SALTERBACK WORKINGTON Edge of Town No Sub Category Total Number of dwellings: 82 Survey date: FRIDAY 24/04/09	CUMBRIA	Survey Type: MANUAL
3	CH-03-A-05 DETACHED SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings: 17 Survey date: TUESDAY 14/10/08	CESHIRE	Survey Type: MANUAL
4	CV-03-A-01 DETACHED DUBLIN ROAD  CAVAN Edge of Town No Sub Category Total Number of dwellings: 37 Survey date: TUESDAY 18/12/12	CAVAN	Survey Type: MANUAL
5	EA-03-A-01 DETACHED TALISKER AVENUE  KILMARNOCK Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: THURSDAY 05/06/08	EAST AYRSHIRE	Survey Type: MANUAL
6	ES-03-A-02 PRIVATE HOUSING SOUTH COAST ROAD  PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11	EAST SUSSEX	Survey Type: MANUAL
7	GA-03-A-01 SEMI DETACHED HEADFORD ROAD KNOCKAYARRAGH GALWAY Edge of Town No Sub Category Total Number of dwellings: 123 Survey date: WEDNESDAY 20/09/06	GALWAY	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	HI-03-A-11	BUNGALOWS		HIGHLAND
	STEVENSON ROAD			
	INSHES			
	INVERNESS			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		85	
	Survey date:	MONDAY	05/06/06	Survey Type: MANUAL
9	KK-03-A-03	MIXED HOUSING		KILKENNY
	FRESHFORD ROAD			
	FRIARSINCH			
	KILKENNY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		70	
	Survey date:	WEDNESDAY	26/11/08	Survey Type: MANUAL
10	LC-03-A-22	BUNGALOWS		LANCASHIRE
	CLIFTON DRIVE NORTH			
	BLACKPOOL			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		98	
	Survey date:	TUESDAY	18/10/05	Survey Type: MANUAL
11	LE-03-A-01	DETACHED		LEICESTERSHIRE
	REDWOOD AVENUE			
	MELTON MOWBRAY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		11	
	Survey date:	TUESDAY	03/05/05	Survey Type: MANUAL
12	NY-03-A-05	HOUSES AND FLATS		NORTH YORKSHIRE
	BOROUGHBRIDGE ROAD			
	RIPON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		71	
	Survey date:	MONDAY	22/09/08	Survey Type: MANUAL
13	NY-03-A-07	DETACHED & SEMI DET.		NORTH YORKSHIRE
	CRAVEN WAY			
	BOROUGHBRIDGE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		23	
	Survey date:	TUESDAY	18/10/11	Survey Type: MANUAL
14	RO-03-A-01	MIXED HOUSES		ROSCOMMON
	GALWAY ROAD			
	ROSCOMMON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		80	
	Survey date:	THURSDAY	07/05/09	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	SF-03-A-03	MIXED HOUSES		SUFFOLK
	BARTON HILL			
	FORNHAM ST MARTIN			
	BURY ST EDMUNDS			
	Edge of Town			
	Out of Town			
	Total Number of dwellings:		101	
	Survey date: MONDAY		15/05/06	Survey Type: MANUAL
16	SH-03-A-03	DETACHED		SHROPSHIRE
	SOMERBY DRIVE			
	BICTON HEATH			
	SHREWSBURY			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		10	
	Survey date: FRIDAY		26/06/09	Survey Type: MANUAL
17	WL-03-A-01	SEMI D./TERRACED W.	BASSETT	WILTSHIRE
	MAPLE DRIVE			
	WOOTTON BASSETT			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		99	
	Survey date: MONDAY		02/10/06	Survey Type: MANUAL
18	WM-03-A-03	MIXED HOUSING		WEST MIDLANDS
	BASELEY WAY			
	ROWLEYS GREEN			
	COVENTRY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		84	
	Survey date: MONDAY		24/09/07	Survey Type: MANUAL
19	WO-03-A-02	SEMI DETACHED		WORCESTERSHIRE
	MEADOWHILL ROAD			
	REDDITCH			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		48	
	Survey date: TUESDAY		02/05/06	Survey Type: MANUAL



Mayer Brown Victoria Street Bristol

Licence No: 807403

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
VEHICLES

Ranking Type: TOTALS Time Range: 07:00-19:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 16

85th Percentile = No. 4

Median Values

Arrivals: 2.553

Departures: 3.171

Totals: 5.724

Mean Values

Arrivals: 3.073

Departures: 3.103

Totals: 6.176

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Travel Plan
								Arrivals	Departures	Totals	
1	CV-03-A-01	DETACHED	CAVAN	CAVAN	37	Tue	18/12/12	8.351	8.568	16.919	
2	KK-03-A-03	MIXED HOUSING	KILKENNY	KILKENNY	70	Wed	26/11/08	3.543	3.829	7.372	
3	LE-03-A-01	DETACHED	MELTON MOWBRAY	LEICESTERSHIRE	11	Tue	03/05/05	3.455	3.455	6.910	
4	WM-03-A-03	MIXED HOUSING	COVENTRY	WEST MIDLANDS	84	Mon	24/09/07	3.381	3.393	6.774	
5	LC-03-A-22	BUNGALOWS	BLACKPOOL	LANCASHIRE	98	Tue	18/10/05	3.653	3.082	6.735	
6	SH-03-A-03	DETACHED	SHREWSBURY	SHROPSHIRE	10	Fri	26/06/09	3.000	3.100	6.100	
7	CH-03-A-05	DETACHED	CREWE	CHESHIRE	17	Tue	14/10/08	2.706	3.294	6.000	
8	RO-03-A-01	MIXED HOUSES	ROSCOMMON	ROSCOMMON	80	Thu	07/05/09	2.875	3.075	5.950	
9	SF-03-A-03	MIXED HOUSES	BURY ST EDMUNDS	SUFFOLK	101	Mon	15/05/06	2.950	2.950	5.900	
10	GA-03-A-01	SEMI DETACHED	GALWAY	GALWAY	123	Wed	20/09/06	2.553	3.171	5.724	
11	CB-03-A-03	SEMI DETACHED	WORKINGTON	CUMBRIA	40	Thu	20/11/08	2.950	2.600	5.550	
12	EA-03-A-01	DETACHED	KILMARNOCK	EAST AYRSHIRE	39	Thu	05/06/08	2.846	2.462	5.308	
13	CB-03-A-04	SEMI DETACHED	WORKINGTON	CUMBRIA	82	Fri	24/04/09	2.573	2.610	5.183	
14	NY-03-A-07	DETACHED & SEM	BOROUGHBRIDGE	NORTH YORKSHIRE	23	Tue	18/10/11	2.870	2.304	5.174	
15	WO-03-A-02	SEMI DETACHED	REDDITCH	WORCESTERSHIRE	48	Tue	02/05/06	2.563	2.542	5.105	
16	NY-03-A-05	HOUSES AND FLA	RIPON	NORTH YORKSHIRE	71	Mon	22/09/08	2.423	2.493	4.916	
17	HI-03-A-11	BUNGALOWS	INVERNESS	HIGHLAND	85	Mon	05/06/06	2.235	2.447	4.682	
18	WL-03-A-01	SEMI D./TERRAC	WOOTTON BASSETT	WILTSHIRE	99	Mon	02/10/06	2.051	2.202	4.253	
19	ES-03-A-02	PRIVATE HOUSIN	PEACEHAVEN	EAST SUSSEX	37	Fri	18/11/11	1.405	1.378	2.783	Yes



## APPENDIX G

### AUTOMATED TRAFFIC COUNT (ATC) DATA

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# Boverton ATC

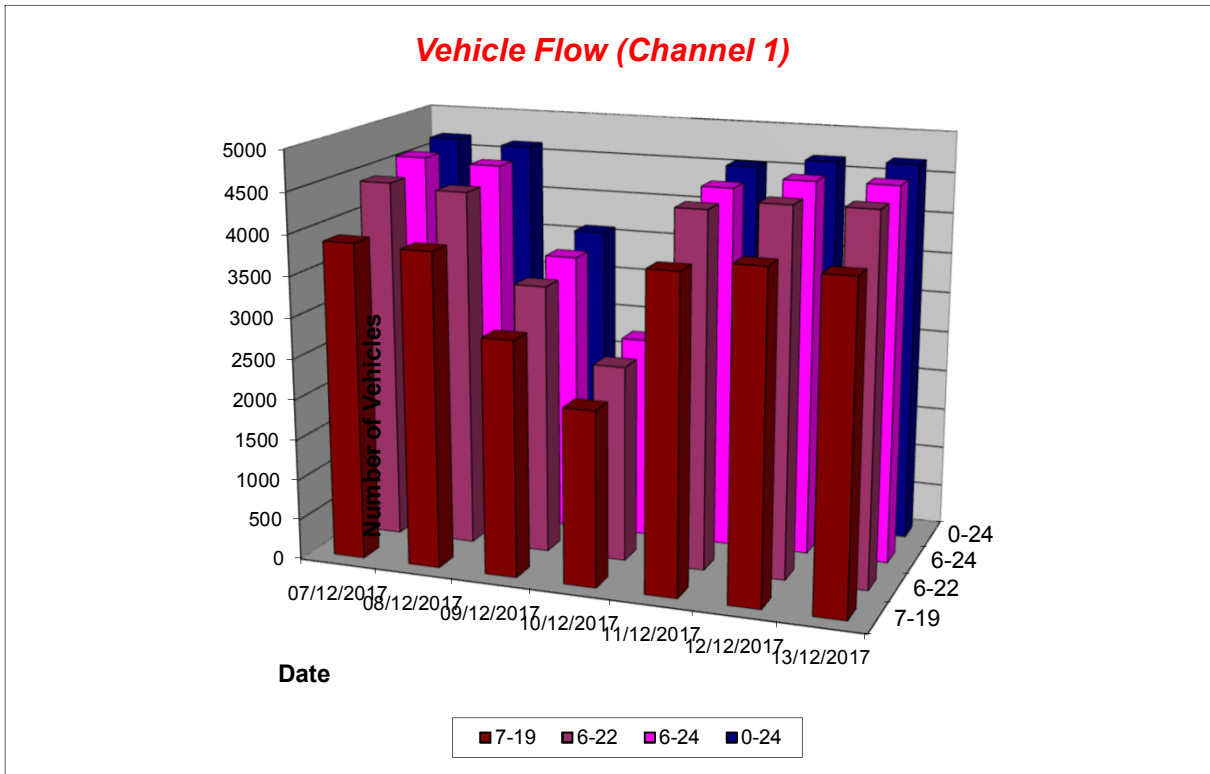
Produced by Road Data Services Ltd.

Channel 1 - Westbound

Vehicle Flow

Week 1

Hr Ending	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday	5 Day Ave	7 Day Ave
1	18	16	46	60	14	14	28	18	28
2	9	7	21	33	14	6	7	9	14
3	2	7	4	10	10	2	5	5	6
4	7	9	11	13	7	7	4	7	8
5	13	9	15	15	10	9	7	10	11
6	42	41	29	18	38	38	36	39	35
7	117	103	60	56	113	120	107	112	97
8	251	256	91	48	263	224	260	251	199
9	361	361	147	97	345	382	393	368	298
10	236	279	282	96	269	298	261	269	246
11	251	254	261	151	247	298	235	257	242
12	252	261	289	202	265	254	240	254	252
13	319	333	322	211	311	336	290	318	303
14	280	325	281	258	269	295	303	294	287
15	331	323	253	231	316	320	337	325	302
16	390	414	231	253	388	372	379	389	347
17	468	406	248	269	464	468	481	457	401
18	391	328	218	189	398	410	399	385	333
19	358	321	269	148	316	325	369	338	301
20	187	186	178	85	178	190	222	193	175
21	146	132	119	70	157	108	117	132	121
22	97	99	60	50	67	83	102	90	80
23	107	103	68	61	58	74	71	83	77
24	47	57	87	22	23	30	31	38	42
7-19	3888	3861	2892	2153	3851	3982	3947	3906	3511
6-22	4435	4381	3309	2414	4366	4483	4495	4432	3983
6-24	4589	4541	3464	2497	4447	4587	4597	4552	4103
0-24	4680	4630	3590	2646	4540	4663	4684	4639	4205



# Boverton ATC

Produced by Road Data Services Ltd.

## Channel 1 - Westbound

## Average Speed

Week 1

Hr Ending	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday
1	44.8	46.6	40.4	41.7	42.8	47.2	43.4
2	44.8	45.7	44.4	41.8	42.3	51.1	45.1
3	49.7	48.9	46.3	42.3	43.1	46.3	46.3
4	44.8	49.1	46.0	44.4	44.3	49.0	46.1
5	46.4	46.5	45.3	43.2	43.6	47.6	51.4
6	46.7	45.0	40.7	44.4	45.0	45.4	42.6
7	41.0	41.2	42.6	42.6	40.2	40.5	43.3
8	39.7	39.2	42.2	42.7	37.8	39.3	39.2
9	39.3	39.0	42.1	41.9	36.7	34.3	36.9
10	40.0	41.6	38.9	44.2	39.4	40.1	40.0
11	40.5	41.1	40.0	43.0	40.6	38.8	39.3
12	39.1	38.8	40.5	43.1	40.4	40.8	39.3
13	39.9	40.8	41.2	42.1	40.2	38.0	40.4
14	40.8	39.1	41.9	41.5	41.6	41.0	39.6
15	39.7	39.4	41.9	41.7	40.0	39.6	39.4
16	39.5	38.8	42.3	40.0	38.6	39.4	39.3
17	38.8	36.7	38.7	36.7	37.3	34.2	38.7
18	36.9	37.1	39.0	37.7	37.3	36.8	34.9
19	36.9	37.6	37.5	39.9	38.9	37.0	37.9
20	39.9	39.5	38.7	42.3	40.1	38.5	40.7
21	40.1	40.4	41.8	43.0	42.0	41.5	41.5
22	41.3	42.0	43.8	45.9	42.1	44.5	42.3
23	42.2	41.9	43.6	45.4	43.2	44.1	44.3
24	47.0	40.4	41.3	43.1	43.2	44.9	45.7

10-12	39.8	40.0	40.3	43.1	40.5	39.7	39.3
14-16	39.6	39.1	42.1	40.8	39.3	39.5	39.4
0-24	39.6	39.4	40.6	41.2	39.3	38.5	39.2

Average	39.5
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## Channel 1 - Westbound

## 85th Percentile

Hr Ending	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday
1	49.2	50.5	47.5	48.3	47.2	54.2	51.1
2	51.9	50.0	50.9	46.5	48.2	56.1	49.5
3	55.3	50.8	51.9	54.2	49.9	49.0	49.2
4	48.4	56.8	54.4	48.5	44.8	53.4	50.5
5	57.7	56.2	50.4	50.4	49.4	51.6	54.9
6	54.5	51.1	45.3	55.2	51.3	53.3	50.7
7	46.9	47.6	48.3	48.8	47.0	48.1	49.4
8	44.8	44.9	47.4	47.5	43.7	44.5	45.8
9	44.7	45.9	48.1	47.9	43.1	42.3	43.9
10	45.7	47.3	44.9	52.4	46.4	45.9	44.5
11	46.5	46.9	46.7	48.0	45.9	44.2	44.9
12	45.2	44.8	46.6	48.4	45.7	46.9	45.3
13	45.1	46.9	46.5	48.3	46.5	45.2	45.4
14	46.8	44.7	48.3	47.3	47.5	47.4	45.5
15	46.0	45.7	47.4	46.9	46.4	46.4	46.3
16	46.0	45.1	48.5	45.7	45.6	45.5	45.4
17	44.6	42.7	45.2	42.6	43.1	41.9	44.1
18	42.4	42.4	44.5	44.2	43.1	42.2	40.8
19	43.4	42.4	44.0	45.9	44.9	44.4	43.0
20	47.1	44.7	44.0	48.4	45.3	44.2	46.2
21	45.8	47.9	48.2	50.0	47.8	46.7	47.7
22	47.9	48.3	52.0	54.9	47.4	50.6	48.2
23	49.2	48.4	50.8	51.4	49.5	49.9	49.4
24	55.3	43.8	47.7	48.9	51.3	49.3	53.7

10-12	46.1	46.4	46.7	48.2	45.8	45.6	45.1
14-16	46.1	45.4	48.3	46.5	46.2	45.7	45.7
0-24	45.9	45.7	47.1	47.5	45.7	45.5	45.4

85th %ile	46.1
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# Boverton ATC

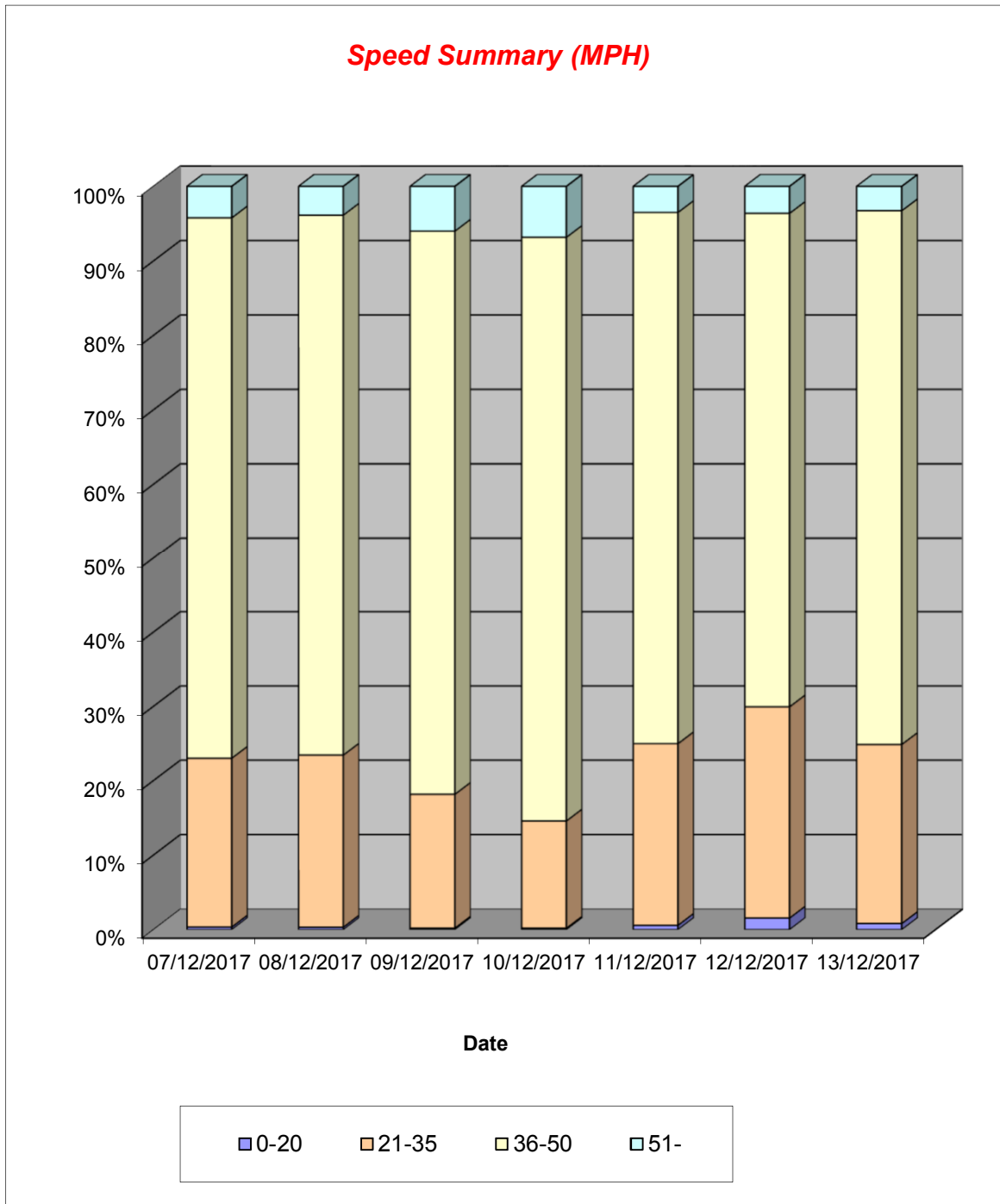
Produced by Road Data Services Ltd.

Channel 1 - Westbound

Speed Summary

Week 1

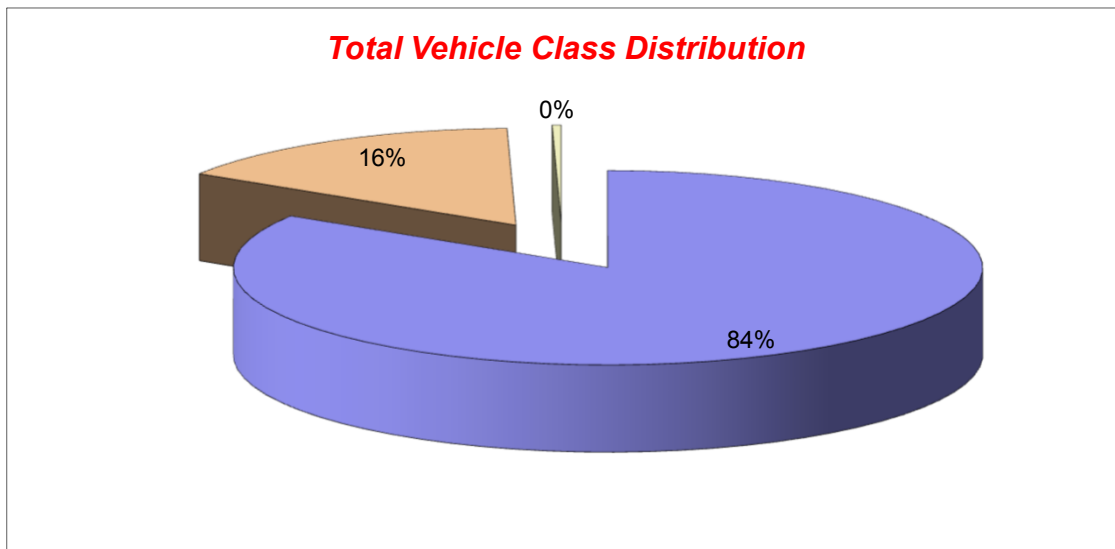
Speed (MPH)	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday
0-20	16	15	7	5	26	72	38
21-35	1060	1069	644	380	1107	1323	1126
36-50	3406	3367	2723	2080	3248	3099	3367
51-	198	179	216	181	159	169	153
<b>TOTAL</b>	<b>4680</b>	<b>4630</b>	<b>3590</b>	<b>2646</b>	<b>4540</b>	<b>4663</b>	<b>4684</b>



# Boverton ATC

Produced by Road Data Services Ltd.

Channel 1 - Westbound		Vehicle Class			Week 1
Classes	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13	
Day / Time					
07/12/2017					
7-19	3163	708	17	3888	
6-22	3649	766	20	4435	
6-24	3786	783	20	4589	
0-24	3855	804	21	4680	
08/12/2017					
7-19	3173	665	23	3861	
6-22	3636	722	23	4381	
6-24	3777	741	23	4541	
0-24	3846	761	23	4630	
09/12/2017					
7-19	2538	352	2	2892	
6-22	2909	398	2	3309	
6-24	3048	414	2	3464	
0-24	3156	432	2	3590	
10/12/2017					
7-19	1930	221	2	2153	
6-22	2158	254	2	2414	
6-24	2236	259	2	2497	
0-24	2365	279	2	2646	
11/12/2017					
7-19	3183	651	17	3851	
6-22	3618	729	19	4366	
6-24	3690	738	19	4447	
0-24	3768	753	19	4540	
12/12/2017					
7-19	3263	699	20	3982	
6-22	3693	766	24	4483	
6-24	3794	769	24	4587	
0-24	3854	784	25	4663	
13/12/2017					
7-19	3217	715	15	3947	
6-22	3691	782	22	4495	
6-24	3785	790	22	4597	
0-24	3853	809	22	4684	
Average					
7-19	2924	573	14	3511	
6-22	3336	631	16	3983	
6-24	3445	642	16	4103	
0-24	3528	660	16	4205	



# Boverton ATC

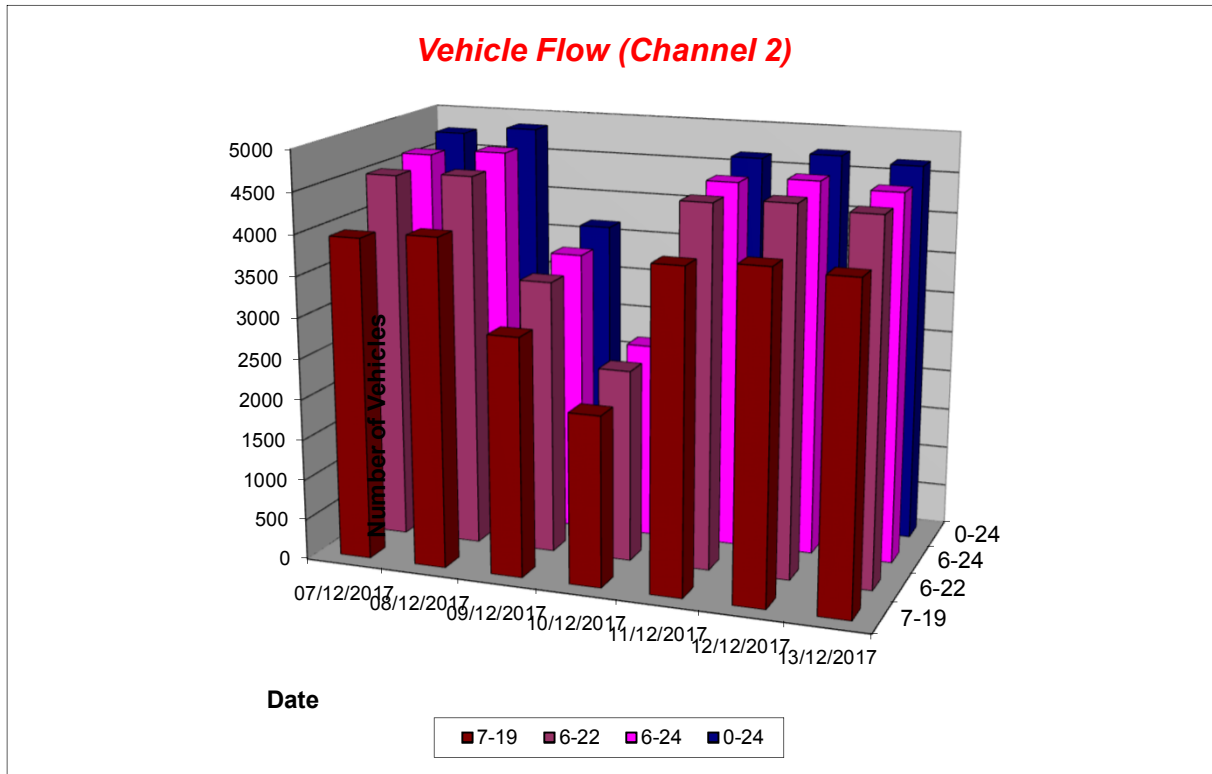
Produced by Road Data Services Ltd.

Channel 2 - Eastbound

Vehicle Flow

Week 1

Hr Ending	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday	5 Day Ave	7 Day Ave
1	7	18	22	35	7	8	14	11	16
2	3	5	20	31	5	7	5	5	11
3	7	7	17	13	11	6	8	8	10
4	8	16	22	14	15	9	10	12	13
5	28	19	19	28	22	31	11	22	23
6	75	85	65	52	75	84	100	84	77
7	168	170	92	80	141	170	144	159	138
8	399	382	89	48	400	386	402	394	301
9	486	449	185	72	465	475	427	460	366
10	330	299	217	120	297	376	314	323	279
11	277	290	266	192	325	324	250	293	275
12	273	291	334	212	298	288	313	293	287
13	308	301	342	241	300	327	279	303	300
14	275	319	287	210	299	279	288	292	280
15	259	308	281	259	258	322	244	278	276
16	358	426	260	214	362	308	381	367	330
17	389	379	253	204	353	322	389	366	327
18	363	350	243	181	353	339	382	357	316
19	231	235	173	140	204	233	266	234	212
20	194	169	157	91	195	168	184	182	165
21	124	108	94	53	123	106	102	113	101
22	90	96	89	48	72	77	73	82	78
23	71	75	75	30	42	59	50	59	57
24	31	56	56	28	28	32	30	35	37
7-19	3948	4029	2930	2093	3914	3979	3935	3961	3547
6-22	4524	4572	3362	2365	4445	4500	4438	4496	4029
6-24	4626	4703	3493	2423	4515	4591	4518	4591	4124
0-24	4754	4853	3658	2596	4650	4736	4666	4732	4273



# Boverton ATC

Produced by Road Data Services Ltd.

## Channel 2 - Eastbound

## Average Speed

Week 1

Hr Ending	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday
1	50.8	44.9	46.5	46.8	48.2	43.3	44.9
2	44.6	44.3	45.6	46.1	41.3	41.6	49.1
3	46.0	44.8	45.5	45.9	40.1	45.7	44.9
4	45.1	45.9	43.3	44.7	46.5	48.3	48.3
5	43.7	48.2	47.0	40.5	47.5	43.6	41.9
6	45.0	46.0	45.3	46.2	45.5	45.4	46.8
7	42.1	44.9	43.4	45.1	40.8	40.3	43.3
8	38.5	39.6	41.6	42.8	38.3	37.5	39.3
9	37.3	39.6	41.1	41.5	38.9	37.1	38.9
10	41.2	40.6	41.2	43.2	40.5	39.5	38.6
11	40.5	41.5	41.1	41.6	41.2	39.4	39.6
12	40.2	41.9	40.9	42.0	39.9	40.8	39.2
13	40.6	41.5	40.2	41.9	40.3	39.4	39.6
14	42.1	41.4	41.1	41.9	41.1	39.7	39.3
15	41.3	41.0	41.7	41.2	41.6	39.6	40.9
16	40.4	40.0	42.0	40.1	40.7	40.5	40.0
17	40.2	40.7	41.0	39.3	39.2	39.4	40.8
18	41.3	40.6	41.3	40.0	41.1	40.3	39.3
19	42.1	41.4	42.4	41.3	42.4	41.9	40.6
20	42.3	43.0	43.0	42.7	41.7	40.7	42.5
21	44.1	43.9	45.0	42.6	43.3	43.2	42.1
22	44.6	43.6	44.2	45.7	45.4	43.8	45.1
23	44.6	46.9	45.4	45.8	44.6	44.7	48.1
24	44.3	45.0	42.4	45.2	44.6	45.4	43.4

10-12	40.3	41.7	41.0	41.9	40.6	40.1	39.4
14-16	40.8	40.4	41.9	40.7	41.1	40.1	40.4
0-24	40.8	41.4	41.8	41.9	40.7	39.9	40.3

Average	40.9
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## Channel 2 - Eastbound

## 85th Percentile

Hr Ending	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday
1	57.2	54.7	51.8	59.5	51.4	52.0	52.9
2	45.8	51.9	52.4	52.1	44.8	45.0	56.1
3	51.2	53.8	54.3	49.1	46.4	50.9	57.2
4	50.1	54.6	51.2	50.5	49.8	52.9	50.0
5	48.5	53.5	53.7	45.7	59.5	47.4	47.9
6	50.3	53.7	53.2	53.4	51.7	51.0	51.7
7	48.8	52.1	47.6	51.3	46.8	46.4	49.7
8	44.4	45.3	48.5	48.6	43.5	43.6	44.8
9	43.5	44.7	46.8	46.2	44.7	43.2	44.5
10	47.3	45.6	45.9	49.7	46.4	44.6	44.8
11	46.7	46.1	45.6	45.8	45.7	44.7	45.0
12	45.8	47.4	45.5	46.5	45.4	45.4	44.6
13	46.7	46.8	45.2	47.7	45.1	44.9	44.4
14	48.1	48.0	47.4	47.8	45.8	45.4	45.3
15	45.9	46.2	47.4	46.7	46.8	45.8	45.7
16	46.2	45.9	47.6	44.9	45.8	45.6	45.3
17	45.5	45.4	45.7	45.3	44.6	44.6	46.2
18	46.6	45.8	47.3	44.7	46.4	45.2	44.9
19	47.8	46.3	47.8	47.9	48.0	47.5	45.8
20	47.5	49.5	49.1	50.0	48.1	45.9	48.1
21	51.5	48.9	52.9	49.5	48.1	50.7	45.6
22	50.4	50.1	49.2	51.5	53.4	50.5	51.8
23	53.2	52.1	51.5	50.4	50.4	50.3	56.5
24	48.8	49.5	48.6	53.5	50.4	51.4	49.4

10-12	46.2	47.2	45.6	46.4	45.5	44.9	44.7
14-16	46.2	46.2	47.5	45.9	46.2	45.7	45.6
0-24	46.8	47.4	47.7	47.9	46.1	45.5	45.9

85th %ile	46.7
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# Boverton ATC

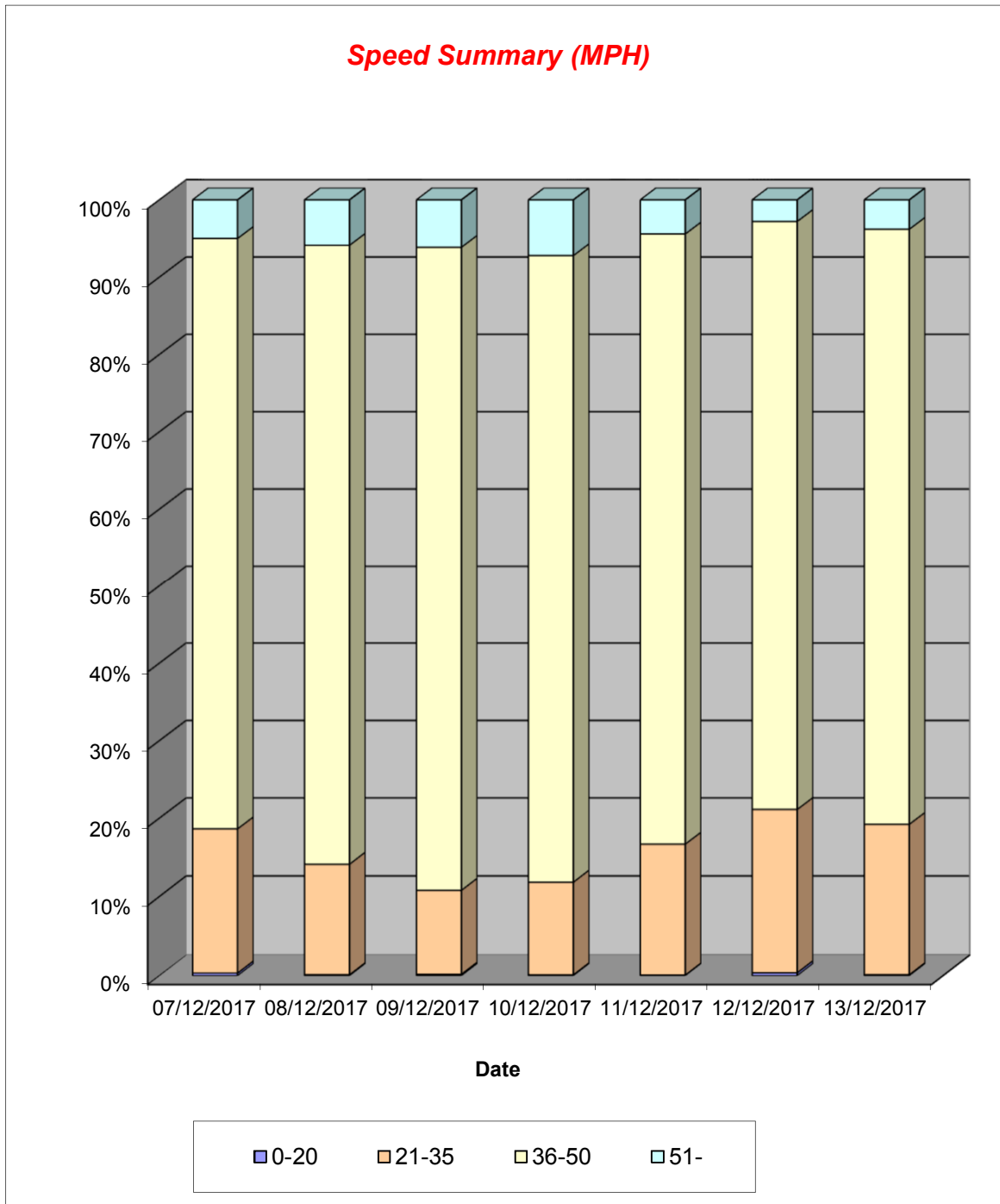
Produced by Road Data Services Ltd.

Channel 2 - Eastbound

Speed Summary

Week 1

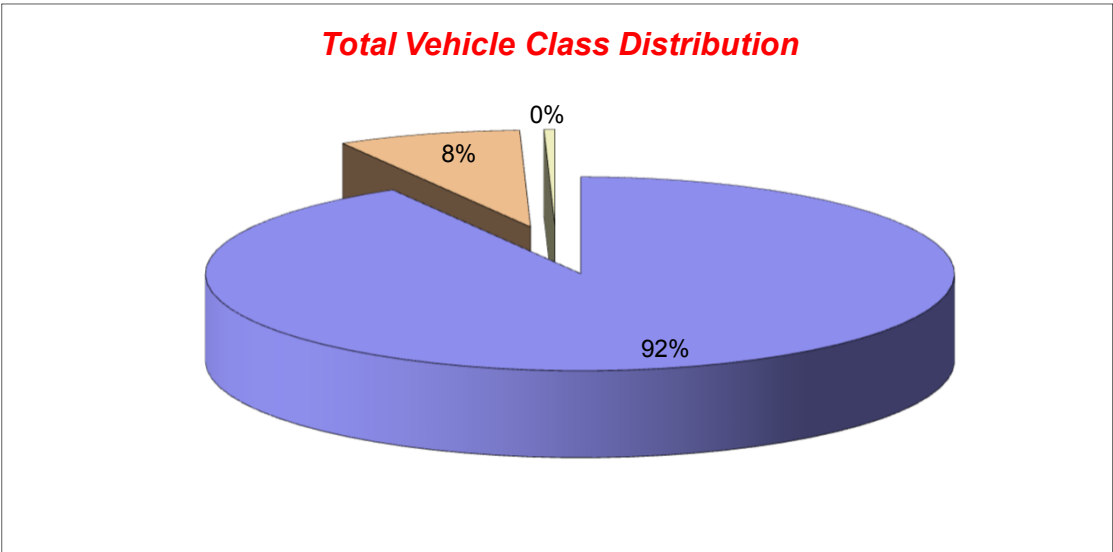
Speed (MPH)	07/12/2017 Thursday	08/12/2017 Friday	09/12/2017 Saturday	10/12/2017 Sunday	11/12/2017 Monday	12/12/2017 Tuesday	13/12/2017 Wednesday
0-20	16	6	7	3	4	18	6
21-35	870	678	388	304	771	983	891
36-50	3631	3884	3039	2102	3670	3603	3592
51-	237	285	224	187	205	132	177
<b>TOTAL</b>	<b>4754</b>	<b>4853</b>	<b>3658</b>	<b>2596</b>	<b>4650</b>	<b>4736</b>	<b>4666</b>



# Boverton ATC

Produced by Road Data Services Ltd.

Channel 2 - Eastbound		Vehicle Class			Week 1
Classes	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13	
Day / Time					
07/12/2017					
7-19	3495	423	30	3948	
6-22	4032	461	31	4524	
6-24	4128	467	31	4626	
0-24	4241	481	32	4754	
08/12/2017					
7-19	3671	342	16	4029	
6-22	4190	366	16	4572	
6-24	4316	371	16	4703	
0-24	4450	387	16	4853	
09/12/2017					
7-19	2764	164	2	2930	
6-22	3166	194	2	3362	
6-24	3290	200	3	3493	
0-24	3443	212	3	3658	
10/12/2017					
7-19	1988	104	1	2093	
6-22	2246	118	1	2365	
6-24	2300	121	2	2423	
0-24	2462	132	2	2596	
11/12/2017					
7-19	3585	302	27	3914	
6-22	4085	332	28	4445	
6-24	4152	335	28	4515	
0-24	4277	343	30	4650	
12/12/2017					
7-19	3656	305	18	3979	
6-22	4142	338	20	4500	
6-24	4232	339	20	4591	
0-24	4367	348	21	4736	
13/12/2017					
7-19	3491	410	34	3935	
6-22	3957	447	34	4438	
6-24	4034	450	34	4518	
0-24	4171	459	36	4666	
Average					
7-19	3236	293	18	3547	
6-22	3688	322	19	4029	
6-24	3779	326	19	4124	
0-24	3916	337	20	4273	





## **APPENDIX H**

### **JUNCTIONS 9 OUTPUT REPORTS – SITE ACCESS**

# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []  
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**The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution**

**Filename:** Jp Site Access Model.j9

**Path:** F:\01 Contracts\C-0000-C\C-08449-C - Land at B4265 Phase 2,  
Boverton\01\_WIP\CA\_Calculation\TP\Site Access

**Report generation date:** 19/02/2018 09:38:36

»2023 Base + Ph1 + Ph2, AM

»2023 Base + Ph1 + PH2, PM

### Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2023 Base + Ph1 + Ph2								
Stream B-AC	0.2	11.59	0.17	B				
Stream C-B	0.0	6.02	0.01	A				
2023 Base + Ph1 + PH2								
Stream B-AC					0.1	9.89	0.08	A
Stream C-B					0.0	5.95	0.05	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

### File summary

#### File Description

Title	(untitled)
Location	
Site number	
Date	16/02/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HYDROCK\davidcooke
Description	

### Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
----------------	-------------	---------------------	-----------------------	------------	---------------------	-------------------	---------------------

m	kph	Veh	Veh	perHour	s	-Min	perMin
---	-----	-----	-----	---------	---	------	--------

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023 Base + Ph1 + Ph2	AM	ONE HOUR	08:00	09:30	15	✓
D2	2023 Base + Ph1 + PH2	PM	ONE HOUR	17:00	18:30	15	✓

## Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

# 2023 Base + Ph1 + Ph2, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.74	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	B4265 N		Major
B	Access		Minor
C	B4265 S		Major

### Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.20		✓	3.50	160.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

### Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	15	15

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	478	0.082	0.208	0.131	0.298
1	B-C	618	0.090	0.227	-	-
1	C-B	761	0.279	0.279	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023 Base + Ph1 + Ph2	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	497	100.000
B		ONE HOUR	✓	59	100.000
C		ONE HOUR	✓	401	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A	B	C
From	A	0	5	492
	B	29	0	30
	C	394	7	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	4	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand	Total Junction Arrivals (Veh)
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					(Veh/hr)	
B-AC	0.17	11.59	0.2	B	54	81
C-A					362	542
C-B	0.01	6.02	0.0	A	6	10
A-B					5	7
A-C					451	677

## Main Results for each time segment

### 08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	44	11	429	0.104	44	0.0	0.1	9.339	A
C-A	297	74			297				
C-B	5	1	655	0.008	5	0.0	0.0	5.540	A
A-B	4	0.94			4				
A-C	370	93			370				

### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	53	13	407	0.130	53	0.1	0.1	10.169	B
C-A	354	89			354				
C-B	6	2	634	0.010	6	0.0	0.0	5.731	A
A-B	4	1			4				
A-C	442	111			442				

### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	65	16	376	0.173	65	0.1	0.2	11.575	B
C-A	434	108			434				
C-B	8	2	606	0.013	8	0.0	0.0	6.017	A
A-B	6	1			6				
A-C	542	135			542				

### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	65	16	376	0.173	65	0.2	0.2	11.591	B
C-A	434	108			434				
C-B	8	2	606	0.013	8	0.0	0.0	6.017	A
A-B	6	1			6				
A-C	542	135			542				

### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	53	13	407	0.130	53	0.2	0.2	10.193	B
C-A	354	89			354				

C-B	6	2	634	0.010	6	0.0	0.0	5.733	A
A-B	4	1			4				
A-C	442	111			442				

#### 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	44	11	429	0.104	45	0.2	0.1	9.373	A
C-A	297	74			297				
C-B	5	1	655	0.008	5	0.0	0.0	5.541	A
A-B	4	0.94			4				
A-C	370	93			370				

## 2023 Base + Ph1 + PH2, PM

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.50	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023 Base + Ph1 + PH2	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	407	100.000
B		ONE HOUR	✓	28	100.000
C		ONE HOUR	✓	439	100.000

## Origin-Destination Data



## Demand (Veh/hr)

		To		
		A	B	C
From	A	0	25	382
	B	14	0	14
	C	412	27	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	0
	C	1	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.08	9.89	0.1	A	26	39
C-A					378	567
C-B	0.05	5.95	0.0	A	25	37
A-B					23	34
A-C					351	526

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	21	5	442	0.048	21	0.0	0.0	8.554	A
C-A	310	78			310				
C-B	20	5	675	0.030	20	0.0	0.0	5.499	A
A-B	19	5			19				
A-C	288	72			288				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	25	6	422	0.060	25	0.0	0.1	9.068	A
C-A	370	93			370				
C-B	24	6	658	0.037	24	0.0	0.0	5.678	A
A-B	22	6			22				

A-C	343	86			343				
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**17:30 - 17:45**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	31	8	395	0.078	31	0.1	0.1	9.890	A
C-A	454	113			454				
C-B	30	7	635	0.047	30	0.0	0.0	5.946	A
A-B	28	7			28				
A-C	421	105			421				

**17:45 - 18:00**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	31	8	395	0.078	31	0.1	0.1	9.894	A
C-A	454	113			454				
C-B	30	7	635	0.047	30	0.0	0.0	5.946	A
A-B	28	7			28				
A-C	421	105			421				

**18:00 - 18:15**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	25	6	422	0.060	25	0.1	0.1	9.076	A
C-A	370	93			370				
C-B	24	6	658	0.037	24	0.0	0.0	5.681	A
A-B	22	6			22				
A-C	343	86			343				

**18:15 - 18:30**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	21	5	442	0.048	21	0.1	0.1	8.564	A
C-A	310	78			310				
C-B	20	5	675	0.030	20	0.0	0.0	5.501	A
A-B	19	5			19				
A-C	288	72			288				

