



**BARRATT HOMES  
PROPOSED RESIDENTIAL DEVELOPMENT  
LAND OFF B4265, BOVERTON**

**TRANSPORT ASSESSMENT**

**AUGUST 2014**



**the journey is the reward**

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**AUGUST 2014**

<b>Project Code:</b>	<b>B/BWBoverton.1</b>
<b>Prepared by:</b>	<b>RB/HI</b>
<b>Approved by:</b>	<b>AP</b>
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**Barratt Homes**  
**Proposed Residential Development**  
**Land off B4265, Boverton**  
**Transport Assessment**

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# 1 Introduction

- 1.1 Mayer Brown Limited has been instructed by Barratt Homes to prepare a Transport Assessment in support of a planning application that seeks to develop 64 residential dwellings on land off B4265 adjacent to Boverton, Vale of Glamorgan.
- 1.2 Proposals aim to provide up to 64 new dwellings, made up of a mix of one to four bedroom properties of which 30% will be affordable. Vehicular access will be provided via a new priority junction arrangement off B4265.
- 1.3 The site is allocated in the Deposit Local Development Plan (LDP) for 70 residential units under Policy MD 2 (22). Regarding transport, the LDP states that *“the Council’s Engineers have advised that a suitable safe access is required that conforms to current design criteria to be provided and a comprehensive and robust Transport Assessment that evaluates and determines mitigation measures which alleviate any detrimental impact the development will have on the local highway network and associated road junctions.”*
- 1.4 The site was the subject of a previous planning application for housing in 1996 (96/00590/OUT), which was refused on appeal in 1997. The application was refused by the Vale of Glamorgan Council (VoGC) on grounds of safety and free movement of traffic on the B4265, as well as the effect on the character and appearance of the site. However, the Inspector concluded that access could be provided from the B4265 that would meet modern safety standards and that he would not dismiss the Appeal on these highway grounds.
- 1.5 Pre-application discussions and scoping have taken place with VoGC as the local highway authority, referencing in particular the requirements of the LDP. Key issues that need to be addressed/reviewed within this Transport Assessment have been agreed as:
- i) Review of site location and composition;
  - ii) Assessment of the local highway network and highway safety;
  - iii) Review of relevant planning policy;
  - iv) Site accessibility and opportunities for sustainable travel;
  - v) Review and justification of proposed site development in terms of access, internal layout and parking; and
  - vi) Forecast trip generation and predicted impact upon the operation of the local highway network.

- 1.6 A copy of the scoping correspondence with VoGC is provided in **Appendix A**.
- 1.7 A Residential Travel Plan looking to reduce the reliance of future residents on private car usage has been produced and submitted alongside this Transport Assessment as a separate document.

DRAFT

## 2 The Site and Adjacent Highway Network

### Site Location and Composition

- 2.1 The development site will utilise land located adjacent to the B4265 at Boverton. Boverton is a small town situated to the east of Llantwit Major, in the southern area of Vale of Glamorgan.
- 2.2 The site is located to the north and east of the B4265, and south and west of the Vale of Glamorgan railway line. The site currently comprises agricultural land and as such has no material trip generating capability.
- 2.3 The development site is shown in relation to the local area and highway network on the site location plan in **Appendix B**.

### Local Highway Network

- 2.4 The B4265 is a regional distributor road that runs from Cardiff airport in the east, past the application site and Llantwit Major, and westwards to Bridgend. In the immediate vicinity of the proposed site entrance, it is a two-lane single carriageway with a 50mph speed limit, which forms part of the Llantwit Major bypass. The road is unlit and there is no dedicated footway provision.
- 2.5 To the south of the site, the B4265 forms the major arm of a priority junction with Llantwit Road. There is a ghosted right turn lane and splitter islands on the minor arm. There is a signal controlled pedestrian crossing over the B4265 on the northern arm of the junction, which operates on demand. A pedestrian only link extends west from this junction onto Boverton Road.
- 2.6 Llantwit Road continues to the east, crossing the railway line at a pinchpoint, where priority is given to eastbound traffic. Llantwit Road gives access to some residential areas and to the RAF St Anthan base.
- 2.7 To the north of the site, the B4265 forms the major arm of a four arm signal controlled staggered crossroad. Right turn lanes and acceleration and deceleration lanes are provided for each of the minor arms. Eglwys Brewis Road forms the eastern minor arm, leading towards some residential development and then along the northern boundary of the RAF base. Boverton Road forms the western minor arm and provides a vehicular link towards the village centre. East-west signal controlled pedestrian crossing facilities are provided at this junction.

2.8 Boverton Road has a footway on the southern side for a short distance and has a 30mph speed limit. Part of its route towards the village centre is narrow with no footway, due to houses having been constructed directly adjacent to the road. Within the village centre, there is a narrow footway and street lighting.

### Local Traffic Conditions

2.9 An Automatic Traffic Count (ATC) survey was undertaken on the B4265 in the vicinity of the proposed access, by Benchmark Data Collection Limited, from Monday 14<sup>th</sup> July to Wednesday 23<sup>rd</sup> July 2014. Unfortunately due to damage to the equipment, no data was counted for 14<sup>th</sup> – 16<sup>th</sup> July, and the correctly surveyed period therefore started on Thursday 17<sup>th</sup> July. As a result only two days of data for the school term time was collected. However, this is sufficient to give an indication of traffic flows passing the site, and as traffic on this road is free flowing during term time and holiday time, traffic speeds would not be affected by the holidays.

2.10 Traffic data is included in **Appendix C**, and a summary of the observed traffic flows for peak hours and 12-hour day are set out in **Table 2.1**. This is based on one day of surveyed data for Thursday 17<sup>th</sup> July; observed traffic for Friday 18<sup>th</sup> July was lower, being the last day of term, which may have resulted in lower evening peak hour flows, and so has not been assessed here. Results are therefore considered to be robust.

Time	Northbound	Southbound	Total
08:00-09:00	345	402	747
17:00-18:00	517	377	984
07:00-19:00	4016	4093	8109

**Table 2.1: Summary of traffic flows on B4265 (Thursday 17<sup>th</sup> July 2014)**

2.11 **Table 2.2** provides a summary of the 85<sup>th</sup> percentile speeds measured in the ATCs.

Road	Location	Northbound	Southbound
B4265	West of Llantwit Road	45.9mph	45.6

**Table 2.1: Summary of ATC results**

2.12 The speed data indicates that traffic is generally travelling up to 5mph below the speed limit of 50mph. Traffic speeds indicate that visibility splays of 2.4m x 160m to the north and 2.4m x 160m to the south will be appropriate, commensurate with Manual for Streets 2 (MfS2) guidance.

### Local Highway Safety

2.13 Personal Injury Collision (PIC) data was requested from VoCG for the local highways and connecting junction in the vicinity of the site for the most recent five year period available, covering January 2009 to December 2013. The study area is shown below

in **Figure 2.1**, and a copy of the individual PIC data and location map provided by VoGC is attached as **Appendix D**.



**Figure 2.1: PIC study area**

- 2.14 Two PICs occurred in the study area during this period, both in 2013 and both resulting in slight injuries only.
- 2.15 The first occurred on the B4265, northwest of the junction with Llantwit Road, when a car driver travelled too close to a pedal cyclist and collided with him, knocking the rider onto the verge.
- 2.16 The second occurred at the junction with Llantwit Road. A car stopped suddenly due to an oncoming emergency vehicle on a call and was hit from behind by a third vehicle.
- 2.17 There were no pedestrian injuries, suggesting footway and crossing provisions are safe, and no accidents at the junction to the north of the site.
- 2.18 The low level of PICs indicate no significant safety issues in the vicinity of the site, and with a suitable access arrangement provided (detailed in Section 4) and the low level of forecast traffic generation in real terms (detailed in Section 5) this is expected to continue.



## 3 Site Accessibility

3.1 In order to ensure that the proposed residential development is accessible in terms of minimising the overall level of daily vehicular trips from the site, particularly single-occupancy vehicle trips, it is essential to identify what local services and amenities are located in close proximity of the site, and also what alternative sustainable travel opportunities are present to enable future residents to choose to travel by non-car modes.

### Proximity to Local Services and Amenities

3.2 Existing services and amenities within the village are predominantly located in the small shopping parade in Boverton, approximately 700m walk from the proposed access junction, via a pedestrian crossing at the Eglwys Brewis Road junction and a pedestrian link onto Harding Close. Facilities include a post office, public house, fish and chip shop, vet surgery, hairdresser and garden centre.

3.3 Further afield additional services / amenities situated within Llantwit Major include primary schools (1.1km or 1.7km away) and a secondary school (approximately 1.7km walk or cycle ride), plus additional shops including banks and pharmacies (2km away). These are all located within 30 minute walk or ten minute cycle journey.

### Walking and Cycling

3.4 Walking is the most important mode of travel at a local level as it offers the greatest potential to replace short car trips, particularly under 2km. From the development site the shopping facilities within Boverton, as well as the schools in Llantwit Major, are within a suitable (2km) walking distance.

3.5 Eglwys Brewis Road on the northern side of the site has a footway on the southern side leading to the east, from the eastern edge of the site boundary. This is located adjacent to the application site and therefore residents will not need to cross to access the footway. There are dropped kerbs adjacent to the site boundary which lead to a footway on the northern side of Eglwys Brewis Road which continues to the west to the B4265.

3.6 Pedestrian crossing facilities are provided at the junction of Eglwys Brewis Road with the B4265 towards Boverton. The footway continues for approximately 70m to the north on the western side of the B4265, separated from the road by railings, and then turns westwards to link to Harding Close. From this road, residents can then walk into Boverton and Llantwit Major. Boverton Road itself does not have a footway leading the

full distance into the village and pedestrians using this route would be required to walk in the road for approximately 100m. The route via Harding Close therefore offers a safe alternative route into the village and to facilities including schools. **Figure 3.1** shows pedestrian facilities in the immediate vicinity of the site, as well as the pedestrian route towards Harding Close.



**Figure 3.1: Pedestrian routes in vicinity of site**

- 3.7 Public Right of Way L16/43/2 (footpath) crosses the western corner of the site. This is a short route which links Eglwys Brewis Road to Boverton Road.
- 3.8 There are no dedicated cycling facilities in the vicinity of the site. It is unlikely that many cyclists will choose to travel on the B4265 due to its high speeds. However, cyclists will be able to access Eglwys Brewis Road on the northern side boundary. Confident cyclists will be able to access Boverton and Llantwit Major by cycling on road and using the signal controlled junction to get to Boverton Road. Less confident cyclists will be able to push their bicycles along the footpath following the same route as pedestrians to Harding Close, from where they will be able to cycle on quiet residential streets into the villages and access the services and facilities located there.

## Public Transport Accessibility

- 3.9 The nearest bus stops in relation to the development site are on Eglwys Brewis Road, near its junction with Church Meadow. This is approximately 200m via the western link from the site, which equates to a two to three minute walk.

Number	Route	Operator	Monday - Saturday		Sunday
			Daytime	Evening	
P138	St Athan Starling Road - Llantwit Major St Illtyd's Primary School	Watt's Coaches	One school service	No service	No service
S40	St Athan - Llantwit Major Major Comprehensive School	Watt's Coaches	One school service	No service	No service
S52	Wick Village Green - St Richard Gwyn High School	Watt's Coaches	One school service	No service	No service
X91	Cardiff - Llantwit Major	Cardiff Bus	Five services	No service	No service
X45D	Barry - St Athan - Boverton - Llantwit Major - Wick	Sprint Transport	One service	No service	No service
303	Bridgend - Llantwit Major - Rhoose - Barry	NAT Group	Hourly	Every two hours	Four services

**Table 4.1: Bus services and frequencies**

- 3.10 **Table 4.1** indicates that there are limited frequency local bus services operating in the vicinity of the site. School services provide an opportunity for pupils to access the local schools, while route X91 provides journeys arriving in Cardiff at 08:30 and departing at 17:10 that may be suitable for commuters. Route 303 offers opportunities for commuting to Barry and Bridgend, with services that arrive in both at 09:00 and departs Barry at approximately 17:00 and 18:00, and departs Bridgend approximately 17:40.
- 3.11 Llantwit Major Railway Station, is located around 2km from the site on the Vale of Glamorgan Line, between stations located in Cardiff and Bridgend. Services to this station run hourly between Bridgend, Cardiff and Merthyr Tydfil Monday to Saturday, and every two hours on Sundays.

### Summary

- 3.12 The site offers potential for travel by foot or cycle into both Boverton and Llantwit Major, which contain a range of services and amenities required by future residents on a day to day basis, as well as bus services to local schools and opportunity for commuter journeys by non-car modes to surrounding towns.

## 4 Development Proposals

4.1 Planning permission is sought for the development of up to 64 residential dwellings within the site, made up of a mixture of one to four bed properties, and comprising a range of both open market and affordable dwellings. The mix of housing sizes is as follows:

- One bedroom – 10 units
- Two bedroom – 5 units
- Three bedroom – 19 units
- Four bedroom – 30 units

4.2 Of the 64 proposed dwellings, there are two blocks totalling six apartments, with the remaining properties all being houses.

4.3 A site layout plan is provided in **Appendix E**.

### Site Access

4.4 A new access arrangement is proposed to serve the site from B4265. Based on the forecast level of development traffic, and subsequent capacity analysis provided in Section 6, a priority junction is considered to be the appropriate form for this junction.

4.5 The access road within the site will comprise a main carriageway width of 5.5m. Junction kerb radii of 6m are proposed. Suitable visibility is achievable to the north and south based on the associated highway speed limit and observed speeds, with 2.4m x 160m to the north and 2.4m x 160m to the south.

4.6 A vehicular access onto Eglwys Brewis Road was considered but limited site frontage on the approach to the traffic signals, combined with steep topography prevents this and would make it difficult to provide appropriate visibility.

4.7 The proposed junction arrangement, showing road markings (white lining), visibility splays and dimensions is shown in drawing 1-01, provided in **Appendix F**.

### Internal site layout

4.8 The roads within the site will be 5.5m in width with 2m footways on the southern side of the main site road. The northern side of the road will have a 0.5m service margin.

4.9 Turning heads will be provided at both ends of the site road. Swept path analysis has been undertaken for the site layout for a large 9.8m refuse vehicle. This is shown on

the plan in **Appendix G**, and confirms the layout is appropriate for accommodating all anticipated vehicle movements.

- 4.10 A pedestrian link will be provided on the northwest boundary of the site towards Eglwys Brewis Road, as shown on the Architect's layout (1363 TP-01 Rev C). This will be designed with maximum gradients of 1:20 and will enable residents to access the footways on this road and the pedestrian crossing towards Boverton.

### Parking

- 4.11 All properties bar the apartments have two parking spaces, and some of the larger properties also have garages, which have minimum internal dimensions of 3m x 6m. The apartments each receive one parking space.
- 4.12 There is space on-street to accommodate visitor parking, without blocking driveways.
- 4.13 VoGC parking standards are in line with the County Surveyors Society (CSS) Wales Parking Standards 2008, which permit one parking space per bedroom up to a maximum of three spaces, plus one visitor space per five units. Garages count as a parking space only if the minimum internal dimensions are 3m x 6m.
- 4.14 Proposed parking is therefore concluded to be acceptable and in line with prevailing standards.



## 5 Base Traffic Flows and Trip Generation

5.1 When considering a residential development, it is generally accepted that the critical periods in terms of traffic impact on the adjacent highway network are the weekday morning and evening peak hours, when traffic flows associated with the site combined with the traffic flows on the adjacent highway network are at their greatest.

5.2 It follows that should the impact of development traffic on the local road network be considered acceptable during these periods then it would also be acceptable during other, less busy, periods of the week.

### Traffic Growth

5.3 Future year traffic flows have been obtained using TEMPRO, as per the Department for Transport (DfT) Transport Analysis Guidance Unit 3.15.2 – ‘Use of TEMPRO Data’. TEMPRO is a programme which utilises the National Transport Model in order to provide predicted local traffic growth factors.

5.4 A summary of the growth rates used are shown in **Table 5.1**.

Local NTEM growth rate (Vale of Glamorgan, Rural area, Minor Road)	2014-2019
AM Peak	1.0689
PM Peak	1.0695

**Table 5.1: Traffic growth factors from TEMPRO 2014-2019**

5.5 These growth factors were applied to the observed traffic flows from 2014 to provide background traffic flows for 2019, being five years after application. These flows are shown on the traffic flow diagram in **Appendix H**.

### Forecast Trip Generation

5.6 Liaison with VoGC was undertaken to agree suitable trip rates to be utilised for assessing the impact proposals are predicted to have upon trip generation.

5.7 In order to determine the level of traffic which will be generated by the new residential development, the TRICS 7.1 database was interrogated. The category of “Houses privately owned” was used as the most appropriate category within TRICS, and sites in edge of town locations were included in the site selection, for all areas except Greater London and Greater Dublin. To ensure a robust assessment, these trip rates were applied to all dwellings including affordable properties.

5.8 At the request of VoGC 85<sup>th</sup> percentile trip rates were used. TRICS recommends a dataset of 20 sites for accurate calculation of the 85<sup>th</sup> percentile. Analysis and filtering

of the database to provide a trip rate suitable for the Boverton location showed that 19 residential sites were reasonably comparable to the proposed development. This is only marginally below the TRICS recommendation and is considered acceptable.

5.9 The TRICS output is included in **Appendix I** and the resultant trip rates summarised in **Table 5.2**.

Time period	Arrivals		Departures		Total	
	Trip rate	Trip numbers	Trip rate	Trip numbers	Trip rate	Trip numbers
08:00-09:00	0.138	9	0.667	43	0.805	52
17:00-18:00	0.600	38	0.313	20	0.912	58
07:00-19:00	3.381	216	3.393	217	6.774	434

**Table 5.2: Generated vehicular trip numbers (64 units)**

5.10 **Table 5.2** indicates that the proposed development is expected to create 52 and 58 additional vehicular trips during the weekday AM and PM peak periods respectively. This equates to approximately one additional vehicle on the B4265 every minute during the peak hours, and equates to a 7.0% and 6.5% increase in traffic in the AM and PM peak hours respectively on the B4265. Once the traffic has been distributed to the north and south, the increase in traffic in each direction will be below 5%.

*Trip Assignment*

5.11 Traffic generated by the proposed development has been distributed onto the Local Highway Network on a pro-rata basis, based on observed directional traffic proportions recorded by the ATC survey. Details of the trip assignment and generated trips are set out on the flow diagram in **Appendix H**.

## 6 Traffic Impact Assessment

6.1 For the purpose of assessing the impact of the proposed access junction on the B4265, the following traffic flow scenarios have been assessed for the Weekday AM and PM peak periods:

i) 2019 + Development: (2019 background flows plus predicted development traffic)

6.2 PICADY (Priority Intersection Capacity and Delay – version 5) junction analysis software has been utilised in order to model the priority junction.

6.3 PICADY utilises junction geometry to assess junction capacity and determine any traffic delay and queuing associated with traffic demand flow data. Geometric parameters required by PICADY have been obtained from measurement of topographical mapping or, where extent is restricted, through measurement of Ordnance Survey mapping.

6.4 When modelling junctions in PICADY the resulting ‘Ratio of Flow to Capacity’ (RFC) value is of particular importance, indicating how the junction will operate based on the traffic flows in relation to junction capacity i.e. overloaded if flow is greater than capacity shown by RFC exceeding 1.00, equivalent to 100%.

6.5 Within the following chapter summary results are provided, with full PICADY outputs of all considered scenarios provided in **Appendix J**.

6.6 **Table 6.1** provides a summary of the PICADY analysis results for the assessed scenarios, detailing the maximum RFC for the peak periods. As there is no junction at the site at present, assessment has only been undertaken for the “with development”

Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Site access	0.142	0	0.063	0
Right turn lane from B4265 into site	0.665	2	0.039	0

**Table 6.1: Site access – PICADY output – 2019 + development traffic**

6.7 **Table 6.1** demonstrates that, although proposals will result in additional traffic accessing the B4265 via a new direct access on to the road, the priority junction will operate well within capacity during peak hour, without blocking through traffic, and hence it has been demonstrated that the proposed development will not have an adverse effect upon the safety or operation of the local highway network. Due to the surplus capacity, the proposed junction would still operate safely if an additional six units were developed on the remainder of the Deposit LDP allocation.



## 7 Summary & Conclusions

- 7.1 Mayer Brown Limited has been instructed by Barratt Homes to prepare a Transport Assessment in support of a planning application that seeks to develop 64 residential dwellings on land off the B4265 at the eastern edge of Boverton in Vale of Glamorgan.
- 7.2 The Transport Assessment has demonstrated the following:
- A review of the local highway network and accident data in the vicinity of the site indicates that there are no apparent problems in relation to the current operation or safety of the local highways;
  - The site is well located for convenient access to a range of services and amenities located within Boverton in addition to public transport linkages to additional facilities further afield;
  - Proposed parking provision onsite will be in line with VoGC guidance to negate any adverse impact upon the local highway network;
  - A new access junction onto the B4265 has been designed in accordance with Manual for Streets 1&2 standards and is concluded to be safe and suitable to serve the development; and
  - Analysis of the proposed site access priority junction with the B4265 demonstrates that the junction operates well within capacity for all assessed scenarios, and hence proposals do not adversely affect the operation of the local highways
- 7.3 To summarise, it can be concluded that the proposed development is unlikely to have any material impact upon the safety or operation of the surrounding local highway network.
- 7.4 Consequently, it is considered that there are no significant highways and transportation matters that would preclude the Local Planning Authority from approving this planning application.

## **APPENDIX A: Correspondence with Vale of Glamorgan Council**

## Helen Iorwerth

---

**From:** Arthur, Steven <sarthur@valeofglamorgan.gov.uk>  
**Sent:** 22 July 2014 15:58  
**To:** Helen Iorwerth  
**Cc:** Adam Padmore; Bevan, Tom F; Howells, Lee M  
**Subject:** RE: New residential development, land to the north of B4265, Boverton

Hi Helen

Apologies I have not been able to respond any earlier.

Please see my comments as below. As discussed my colleagues in Highway Development and Planning will need to provide you with additional information for the items I have skipped over and I would suggest you contact them direct. Formally anything planning/development related should be going through Highway Development team in the first instance. Any questions or queries please feel free to give me a call.

(1) Junction access to the development is limited. Access off Llantwit Road would prove very difficult due to the junction arrangement and bridge. Access off the unnamed road to the northwest of the site may be achievable? There is already an access point there of sorts - albeit probably not in use? Visibility to the right may be compromised due to the bridge? However, I would suggest this is looked at in a little more detail because if achievable I would prefer to see the access at this point rather than off the high speed B4265. If this cannot be safely achieved then the indicative location shown on your plan seems to be on the only suitable location available. I would suggest along the lines of priority controlled - ghost island right turn. It will need to conform to DMRB standards;

(2) Contact for highway boundary mapping is Lee Howells;

(3) Please email a red line boundary plan to my colleague Mark Simpson ([MSimpson@valeofglamorgan.gov.uk](mailto:MSimpson@valeofglamorgan.gov.uk)). Mark will be able to provide you with a quote for the data and a timescale for return;

(4) Full ATC will be required at the location of the proposed site access;

(5) Agree with TRiCs assessment and the trip distribution assumption/method. For information we would require 85<sup>th</sup> %ile rate. However, for both generation and distribution I would see benefit in surveying the nearby Church Meadow development, this would provide some comparable rates and may help justify a robust case?

(6) Growth rates and assessment years acceptable;

(7) Picady is acceptable modelling software. Synthesised profile unless direct input data can be obtained from Church Meadow survey?

(8) Travel Plan – comments will need to be obtained from Transportation & Planning. The best person to contact would be Clare Cameron ([CCameron@valeofglamorgan.gov.uk](mailto:CCameron@valeofglamorgan.gov.uk))

Regards  
Steve

Steven Arthur  
Principal Engineer - Traffic Management  
Visible Services  
Vale of Glamorgan Council / Cyngor Bro Morgannwg  
tel / ffôn: 029 20673138

e-mail / e-bost: [sarthur@valeofglamorgan.gov.uk](mailto:sarthur@valeofglamorgan.gov.uk)

Visit our Website at [www.valeofglamorgan.gov.uk](http://www.valeofglamorgan.gov.uk)

Ewch i'n gwefan yn [www.bromorgannwg.gov.uk](http://www.bromorgannwg.gov.uk)

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**From:** Helen Iorwerth [mailto:[hiorwerth@mayerbrown.co.uk](mailto:hiorwerth@mayerbrown.co.uk)]

**Sent:** 03 July 2014 17:12

**To:** Arthur, Steven

**Cc:** Adam Padmore

**Subject:** New residential development, land to the north of B4265, Boverton

Dear Steven

Further to my earlier email about Wick, we also have been asked to look at a site at Boverton for 63 units for the same client and will need to gain agreement to the scope of works for the TA.

This site is located to the north of the B4265, between that road and the railway line. The site is indicated with an orange dotted line on the plan below. A new access junction will be formed onto the B4265 – this is a 50mph road so we would appreciate your guidance on the junction layout that would be required.

We would propose to include the following content in the early chapters:

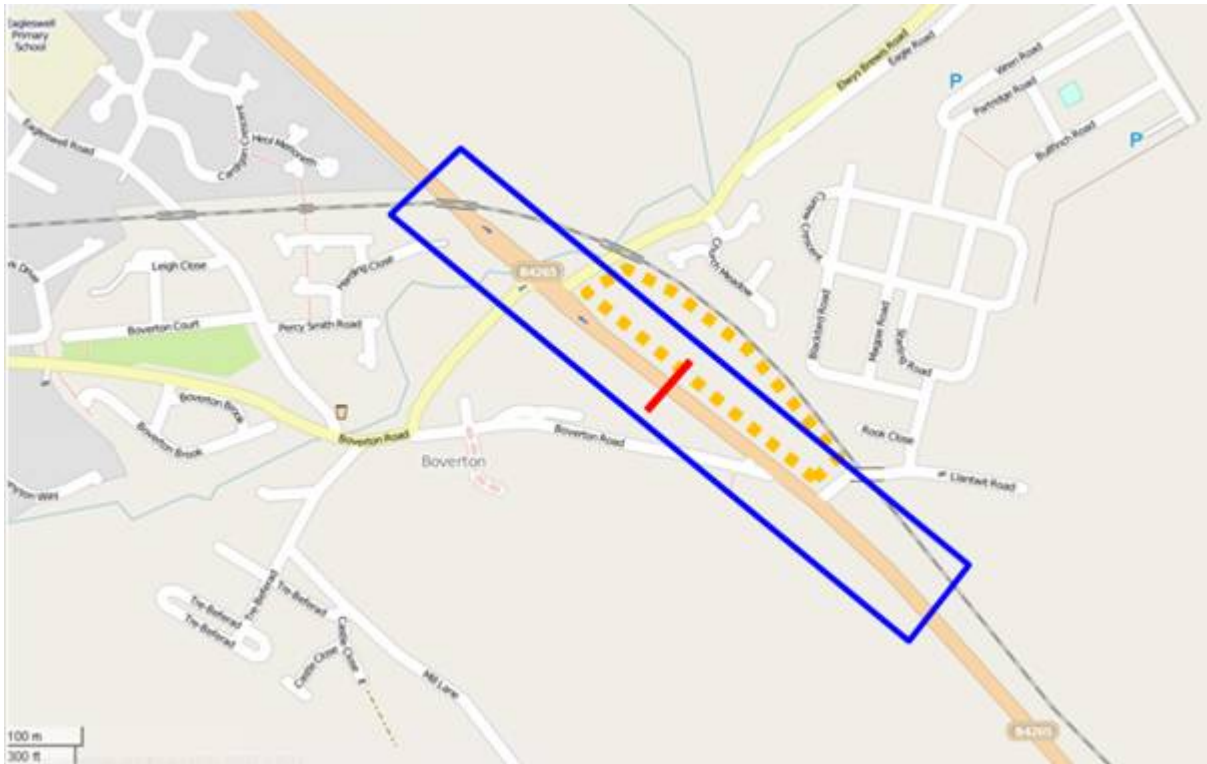
- Provision of a site location plan, setting the site in context;
- A description of the local highway network including sustainable transport options and traffic flow characteristics;
- A description of the proposed land use, scale of development and confirmation of the number of dwellings, as appropriate;
- Identification, and justification, of the proposed pedestrian and vehicular access points;
- A review of the proposed car and cycle parking, and internal highway layout issues i.e. refuse collection and road layout/turning heads with a view to eventual offering for adoption by the highway authority. Please could you advise on the current VoGC parking standards for residential uses, as well as any design guidance that will apply to the site and the new access junction.

#### *Highway boundary mapping*

Please could you confirm the contact name and details for ordering highway boundary mapping.

#### *Accident data*

We propose looking at the following area shown in blue for the latest five years of data [red indicates survey locations, orange shows site]. Please could you advise on the contact name and details for ordering this data.



*Traffic counts*

We propose to undertake a volume/speed/classification ATC at the proposed site entrance (see red line on plan above), before the school holidays start.

*Trip generation*

We propose to use the TRICS database to calculate trip rates for the housing, using the “houses privately owned” for all units, to ensure a robust assessment. Attached is the multi-modal TRICS summary we would intend to use.

*Trip distribution*

We intend to use the results of the ATCs to determine the north/south split along the B4265 for each peak hour.

*Junctions to be assessed*

We propose to assess the site access junction only for morning and evening peak hours only, using average weekday data from the ATCs for the B4265.

*Growth rates*

We will test for 2019, being five years after application. We intend to apply the following TEMPRO growth rates to observed traffic for Vale of Glamorgan (rural) – Rural – Minor Road as follows:

- AM: 1.0689
- PM: 1.0695

*Junction assessment*

We will use Picady as appropriate for the site access junction using the ODTAB (or equivalent) option.

**Travel Plan**

A draft Residential Travel Plan will be provided setting out an appropriate range of initiatives (such as travel information pack for residents), targets and monitoring. Please advise on VoGC guidance documents on Travel Plans, or any requirements you will have for this document.

I hope this scope is acceptable to you. Please let me know if there are any additional elements you will require, or any changes to the proposed methodology.

Regards  
Helen

Helen Iorwerth,  
Senior Transport Planner  
Mayer Brown Limited  
Suite 103  
CityPoint  
Temple Gate  
Bristol  
BS1 6PL

T: 0117 925 1027  
F: 0117 373 5555  
E: [hiorwerth@mayerbrown.co.uk](mailto:hiorwerth@mayerbrown.co.uk)

[www.mayerbrown.co.uk](http://www.mayerbrown.co.uk)



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## **APPENDIX B: Site location plan**







## **APPENDIX C: Traffic Data**

Benchmark Data Collection Ltd

Thu 17 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0600	123	123	0	3	110	0	7	0	2	0	0	1	0	0	0	11.8	40	73.2	7	5.7	43.8
0700	463	586	2	6	414	2	31	1	1	0	1	2	3	0	0	13.9	39.4	65.1	24	5.2	45
0800	402	988	2	3	345	2	36	4	2	0	0	1	6	0	1	14.6	37.9	63.2	6	1.5	43.4
0900	310	1298	1	2	268	2	27	0	2	0	0	2	6	0	0	12.7	37.9	56.7	7	2.3	42.9
1000	289	1587	2	2	242	5	24	2	4	0	1	0	6	0	1	9.3	38.3	63.2	7	2.4	44.3
1100	292	1879	3	1	252	5	21	2	6	0	0	0	2	0	0	8.3	38.7	61.6	6	2.1	44.1
1200	304	2183	2	6	252	2	27	3	2	1	1	1	6	0	1	9.4	37.9	60.6	8	2.6	43.4
1300	305	2488	1	6	261	0	26	1	1	0	1	3	4	1	0	13.4	39.4	70.1	13	4.3	45.4
1400	279	2767	2	5	227	5	27	1	4	0	0	1	6	1	0	7.9	39.3	55	6	2.2	44.3
1500	353	3120	5	7	299	2	29	2	0	0	1	1	7	0	0	9.7	37.5	65	11	3.1	43.6
1600	379	3499	0	4	347	2	22	0	0	0	0	0	4	0	0	20.2	38.2	62	4	1.1	42.9
1700	377	3876	2	5	348	2	17	1	1	1	0	0	0	0	0	11.5	39.2	72.2	14	3.7	44.5
1800	263	4139	2	5	239	1	13	0	0	0	0	2	1	0	0	13.4	40.7	59.7	15	5.7	46.8
1900	220	4359	1	5	204	2	6	0	1	1	0	0	0	0	0	13.9	40.5	61.6	11	5	46.3
2000	178	4537	0	8	164	2	3	0	1	0	0	0	0	0	0	28	40.8	60.9	11	6.2	45.6
2100	132	4669	0	5	123	0	4	0	0	0	0	0	0	0	0	30.1	42.2	71.5	13	9.8	47
2200	70	4739	0	2	64	0	3	0	1	0	0	0	0	0	0	30.2	43.5	74.6	12	17.1	50.6
2300	42	4781	0	0	36	0	3	2	0	1	0	0	0	0	0	28.9	45.5	66.1	14	33.3	55.3
<b>07-19</b>	<b>4016</b>	<b>4781</b>	<b>24</b>	<b>52</b>	<b>3494</b>	<b>30</b>	<b>300</b>	<b>17</b>	<b>23</b>	<b>2</b>	<b>5</b>	<b>13</b>	<b>51</b>	<b>2</b>	<b>3</b>	<b>7.9</b>	<b>38.7</b>	<b>72.2</b>	<b>121</b>	<b>3</b>	<b>44.1</b>
06-22	4669	4781	25	73	4095	34	320	17	27	3	5	14	51	2	3	7.9	39	73.2	163	3.5	44.5
06-00	4781	4781	25	75	4195	34	326	19	28	4	5	14	51	2	3	7.9	39.1	74.6	189	4	44.7
<b>00-00</b>	<b>4781</b>	<b>4781</b>	<b>25</b>	<b>75</b>	<b>4195</b>	<b>34</b>	<b>326</b>	<b>19</b>	<b>28</b>	<b>4</b>	<b>5</b>	<b>14</b>	<b>51</b>	<b>2</b>	<b>3</b>	<b>7.9</b>	<b>39.1</b>	<b>74.6</b>	<b>189</b>	<b>4</b>	<b>44.7</b>

Benchmark Data Collection Ltd

Fri 18 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	13	4794	0	0	12	0	1	0	0	0	0	0	0	0	0	31.1	43	60.6	4	30.8	53.2
0100	3	4797	0	0	3	0	0	0	0	0	0	0	0	0	0	39.9	44	48	0	0	-
0200	15	4812	0	0	13	0	2	0	0	0	0	0	0	0	0	11.5	41.4	71.9	1	6.7	47.9
0300	22	4834	0	0	18	0	4	0	0	0	0	0	0	0	0	34.4	44.9	66	6	27.3	53.5
0400	22	4856	0	0	19	1	2	0	0	0	0	0	0	0	0	31.3	44.8	56.7	6	27.3	51.9
0500	90	4946	0	1	78	1	10	0	0	0	0	0	0	0	0	31.3	45.3	69.3	18	20	51.2
0600	180	5126	1	4	166	1	7	0	0	0	0	1	0	0	0	14.6	42.4	78.5	17	9.4	48.3
0700	432	5558	2	6	393	0	26	1	0	0	0	1	3	0	0	8.7	39.5	57.2	21	4.9	44.7
0800	374	5932	0	2	319	2	31	4	4	0	0	3	6	0	3	25.8	38	56.6	9	2.4	43.2
0900	298	6230	0	0	268	3	20	0	3	0	0	0	4	0	0	25.4	38.3	52.9	6	2	43.8
1000	249	6479	1	1	211	4	21	1	2	0	1	6	0	0	0	11.8	39.2	56.5	4	1.6	44.5
1100	259	6738	3	3	221	4	23	0	2	0	1	0	2	0	0	11.4	38	60.4	5	1.9	43.6
1200	332	7070	2	1	296	7	15	0	4	0	1	2	4	0	0	12.1	37.8	56.5	10	3	43.2
1300	327	7397	1	5	287	3	24	1	2	0	0	1	3	0	0	12.2	37.3	58.7	5	1.5	43.2
1400	320	7717	1	8	266	4	30	0	4	0	0	1	6	0	0	14.7	38.4	61.1	14	4.4	43.4
1500	377	8094	4	6	327	1	26	1	2	0	1	3	5	0	1	10	38.2	59	9	2.4	43.4
1600	352	8446	3	1	316	0	25	0	0	0	0	0	7	0	0	11.2	39.2	62.9	6	1.7	43.4
1700	344	8790	1	10	302	6	22	2	1	0	0	0	0	0	0	10.6	39.5	75.1	14	4.1	43.8
1800	249	9039	2	4	226	3	13	0	0	0	0	0	1	0	0	10	41.4	69.7	19	7.6	47
1900	193	9232	0	4	180	1	6	2	0	0	0	0	0	0	0	28.8	41.2	59.8	13	6.7	47.4
2000	165	9397	0	2	155	2	6	0	0	0	0	0	0	0	0	33	42.6	65.2	19	11.5	47.6
2100	123	9520	0	2	118	0	3	0	0	0	0	0	0	0	0	29	43.3	60.5	12	9.8	47.6
2200	88	9608	0	0	81	1	6	0	0	0	0	0	0	0	0	29.1	41.4	63.7	9	10.2	48.3
2300	47	9655	0	0	44	0	3	0	0	0	0	0	0	0	0	29.4	41.8	56.1	8	17	50.1
07-19	3913	9655	20	47	3432	37	276	10	24	0	4	12	47	0	4	8.7	38.7	75.1	122	3.1	43.8
06-22	4574	9655	21	59	4051	41	298	12	24	0	4	13	47	0	4	8.7	39.2	78.5	183	4	44.5
06-00	4709	9655	21	59	4176	42	307	12	24	0	4	13	47	0	4	8.7	39.3	78.5	200	4.2	44.7
00-00	4874	9655	21	60	4319	44	326	12	24	0	4	13	47	0	4	8.7	39.5	78.5	235	4.8	45

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Sat 19 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	35	9690	0	0	31	0	4	0	0	0	0	0	0	0	0	29.7	42.2	59.7	5	14.3	49.7
0100	12	9702	0	0	11	0	1	0	0	0	0	0	0	0	0	34.1	43.4	51.8	1	8.3	47.4
0200	13	9715	0	0	13	0	0	0	0	0	0	0	0	0	0	11.5	46.1	65.1	5	38.5	53.9
0300	41	9756	0	0	34	0	7	0	0	0	0	0	0	0	0	30.6	44.6	58.8	7	17.1	49.9
0400	23	9779	0	0	20	0	3	0	0	0	0	0	0	0	0	26.6	46.8	72.4	7	30.4	54.8
0500	55	9834	0	1	45	0	8	0	0	0	0	1	0	0	0	35.6	44.9	57.9	14	25.5	53
0600	97	9931	0	3	84	3	3	0	1	0	0	2	1	0	0	22.4	43.4	69.7	13	13.4	49.4
0700	136	10067	0	1	129	0	4	1	0	0	0	0	1	0	0	18.3	42.3	64.2	18	13.2	49
0800	133	10200	1	1	118	2	11	0	0	0	0	0	0	0	0	12.9	41.5	78.6	14	10.5	48.8
0900	181	10381	0	0	167	1	12	0	1	0	0	0	0	0	0	30.2	41.9	65.3	16	8.8	47.4
1000	280	10661	1	0	266	1	9	0	2	0	0	1	0	0	0	15.5	38.7	62.3	8	2.9	45
1100	288	10949	1	1	272	1	12	0	1	0	0	0	0	0	0	13.3	38.7	53.8	5	1.7	43.4
1200	281	11230	0	0	264	3	12	1	1	0	0	0	0	0	0	12.8	38.8	55.9	10	3.6	44.1
1300	265	11495	1	1	250	5	8	0	0	0	0	0	0	0	0	16.5	39.7	59.4	11	4.2	44.7
1400	255	11750	1	7	235	1	9	0	1	0	0	1	0	0	0	28.1	38.7	64	6	2.4	44.1
1500	259	12009	2	6	236	2	11	0	1	0	0	0	0	0	1	13.2	39.9	64.4	12	4.6	45
1600	252	12261	2	4	233	2	11	0	0	0	0	0	0	0	0	9.3	38.6	64.7	8	3.2	44.5
1700	260	12521	1	3	241	5	8	0	0	0	2	0	0	0	0	9.5	40	61.7	15	5.8	46.5
1800	271	12792	0	12	243	1	12	1	0	0	0	1	1	0	0	21	40.2	67.5	17	6.3	45.6
1900	155	12947	0	3	145	0	7	0	0	0	0	0	0	0	0	24.4	41.6	66	14	9	47.2
2000	116	13063	0	1	111	2	2	0	0	0	0	0	0	0	0	24.6	40.3	64.5	6	5.2	45.2
2100	89	13152	0	2	85	0	2	0	0	0	0	0	0	0	0	27.5	42.4	67	13	14.6	49.7
2200	67	13219	0	0	65	1	0	1	0	0	0	0	0	0	0	28.1	41.2	60.3	6	9	48.3
2300	62	13281	0	0	60	0	1	1	0	0	0	0	0	0	0	29.8	43.4	62.6	12	19.4	50.3
<b>07-19</b>	<b>2861</b>	<b>13281</b>	<b>10</b>	<b>36</b>	<b>2654</b>	<b>24</b>	<b>119</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>9.3</b>	<b>39.7</b>	<b>78.6</b>	<b>140</b>	<b>4.9</b>	<b>45.4</b>
06-22	3318	13281	10	45	3079	29	133	3	8	0	2	5	3	0	1	9.3	40	78.6	186	5.6	45.9
06-00	3447	13281	10	45	3204	30	134	5	8	0	2	5	3	0	1	9.3	40.1	78.6	204	5.9	45.9
<b>00-00</b>	<b>3626</b>	<b>13281</b>	<b>10</b>	<b>46</b>	<b>3358</b>	<b>30</b>	<b>157</b>	<b>5</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>9.3</b>	<b>40.3</b>	<b>78.6</b>	<b>243</b>	<b>6.7</b>	<b>46.3</b>

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Sun 20 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	41	13322	0	0	36	0	5	0	0	0	0	0	0	0	0	26.5	44.4	72.8	7	17.1	52.6
0100	25	13347	0	0	24	0	1	0	0	0	0	0	0	0	0	27.6	45.6	74.1	7	28	52.6
0200	16	13363	0	0	16	0	0	0	0	0	0	0	0	0	0	28.2	46.9	65.4	6	37.5	56.6
0300	17	13380	0	0	16	0	1	0	0	0	0	0	0	0	0	30.9	47	63.4	7	41.2	53
0400	22	13402	0	0	18	0	4	0	0	0	0	0	0	0	0	32.6	44.6	55.1	3	13.6	49.4
0500	63	13465	0	1	59	1	2	0	0	0	0	0	0	0	0	31.8	47.2	75.7	19	30.2	54.1
0600	84	13549	0	1	79	0	4	0	0	0	0	0	0	0	0	30.5	44.6	68.4	21	25	52.1
0700	141	13690	5	2	130	0	4	0	0	0	0	0	0	0	0	12.3	44.3	66.5	34	24.1	53
0800	118	13808	7	3	96	4	5	1	1	0	0	1	0	0	0	10.8	40.7	67.8	10	8.5	49
0900	149	13957	2	2	139	1	3	0	2	0	0	0	0	0	0	10.8	41.4	74.3	11	7.4	46.8
1000	244	14201	4	7	216	5	9	0	3	0	0	0	0	0	0	12.1	40.5	69.5	17	7	46.5
1100	276	14477	8	10	246	1	7	1	3	0	0	0	0	0	0	11.6	38.5	67.1	12	4.3	45
1200	286	14763	8	20	246	0	9	0	1	0	0	0	2	0	0	9.2	39.2	61	12	4.2	45.2
1300	308	15071	5	13	275	3	7	1	3	0	0	0	0	1	0	7.9	39	68.9	12	3.9	44.3
1400	264	15335	4	7	239	3	8	0	3	0	0	0	0	0	0	13.1	39.9	58.3	14	5.3	45.6
1500	337	15672	3	13	305	3	8	0	2	0	1	0	2	0	0	12.2	38.7	77.9	13	3.9	44.3
1600	298	15970	4	12	276	2	3	0	1	0	0	0	0	0	0	11.4	39.4	76	12	4	45
1700	279	16249	3	6	259	2	7	1	0	0	0	1	0	0	0	12.5	40	68.9	12	4.3	44.3
1800	221	16470	2	6	202	2	7	0	0	0	1	1	0	0	0	15.9	40.2	74.3	13	5.9	45.4
1900	183	16653	2	3	171	1	6	0	0	0	0	0	0	0	0	13.9	40.5	59.1	12	6.6	45.6
2000	134	16787	1	3	123	2	5	0	0	0	0	0	0	0	0	19.4	41.8	79.3	11	8.2	46.5
2100	115	16902	0	1	111	0	3	0	0	0	0	0	0	0	0	27.5	42.4	69.6	19	16.5	50.3
2200	51	16953	0	2	48	0	1	0	0	0	0	0	0	0	0	30.6	43.3	64	8	15.7	49
2300	38	16991	0	1	34	0	3	0	0	0	0	0	0	0	0	29.3	43	66.2	6	15.8	49
07-19	2921	16991	55	101	2629	26	77	4	19	0	2	3	4	1	0	7.9	39.8	77.9	172	5.9	45.6
06-22	3437	16991	58	109	3113	29	95	4	19	0	2	3	4	1	0	7.9	40.1	79.3	235	6.8	46.1
06-00	3526	16991	58	112	3195	29	99	4	19	0	2	3	4	1	0	7.9	40.2	79.3	249	7.1	46.1
00-00	3710	16991	58	113	3364	30	112	4	19	0	2	3	4	1	0	7.9	40.5	79.3	298	8	46.5

Benchmark Data Collection Ltd

Mon 21 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	11	17002	0	0	11	0	0	0	0	0	0	0	0	0	0	28.7	47.2	65.5	5	45.5	52.3
0100	6	17008	0	0	5	0	0	1	0	0	0	0	0	0	0	11.5	43.1	71.4	2	33.3	-
0200	11	17019	0	0	9	0	2	0	0	0	0	0	0	0	0	10.9	45.6	61.8	4	36.4	51
0300	14	17033	0	0	13	0	1	0	0	0	0	0	0	0	0	35.6	49.7	62.6	9	64.3	58.8
0400	33	17066	0	0	29	0	3	0	0	0	0	1	0	0	0	32	47	59.9	12	36.4	55.5
0500	94	17160	1	3	82	0	7	0	0	0	0	1	0	0	0	14.4	45.4	75.1	22	23.4	54.1
0600	184	17344	0	5	159	3	12	0	0	0	0	4	1	0	0	26.1	42.4	70.4	18	9.8	48.8
0700	421	17765	3	6	380	1	20	3	1	0	0	1	6	0	0	12	40.4	58.9	31	7.4	45.9
0800	318	18083	2	3	278	3	20	3	1	1	0	3	4	0	0	12.8	39.8	58.2	11	3.5	45.4
0900	236	18319	1	3	196	1	23	2	4	0	2	0	4	0	0	10.6	38.8	67.7	18	7.6	46.3
1000	281	18600	1	3	239	1	21	1	7	1	1	2	4	0	0	9.4	37.9	62.2	10	3.6	44.5
1100	263	18863	2	5	221	3	18	2	5	0	1	1	4	1	0	12.6	39	70.4	6	2.3	43.8
1200	259	19122	2	2	222	4	20	0	2	0	2	0	5	0	0	12.3	38.7	61.9	10	3.9	44.3
1300	276	19398	0	6	241	3	17	1	2	0	1	2	3	0	0	22.6	38.9	61.5	5	1.8	43.4
1400	296	19694	3	6	246	2	25	0	4	1	0	2	7	0	0	7.5	38	55	8	2.7	42.9
1500	305	19999	1	7	265	1	18	0	2	0	2	4	5	0	0	10.4	40.2	55.1	12	3.9	45.9
1600	331	20330	2	7	281	4	28	1	0	0	1	2	5	0	0	13.6	38.6	61	14	4.2	44.1
1700	346	20676	4	3	323	5	10	0	0	0	0	1	0	0	0	12.7	40	58	13	3.8	45.9
1800	260	20936	2	0	243	2	12	0	1	0	0	0	0	0	0	10.6	39.9	56.2	12	4.6	45
1900	190	21126	2	5	174	1	8	0	0	0	0	0	0	0	0	16.1	41.2	58.1	14	7.4	46.1
2000	149	21275	1	3	140	1	4	0	0	0	0	0	0	0	0	13.9	41.7	62.9	23	15.4	50.3
2100	110	21385	0	3	101	2	2	1	1	0	0	0	0	0	0	18.3	42.6	59.2	11	10	48.3
2200	63	21448	0	2	61	0	0	0	0	0	0	0	0	0	0	30.9	43.7	59.9	9	14.3	49.9
2300	23	21471	0	0	22	0	1	0	0	0	0	0	0	0	0	29.3	44.6	66.1	6	26.1	51.9
07-19	3592	21471	23	51	3135	30	232	13	29	3	10	18	47	1	0	7.5	39.3	70.4	150	4.2	45
06-22	4225	21471	26	67	3709	37	258	14	30	3	10	22	48	1	0	7.5	39.7	70.4	216	5.1	45.4
06-00	4311	21471	26	69	3792	37	259	14	30	3	10	22	48	1	0	7.5	39.7	70.4	231	5.4	45.6
00-00	4480	21471	27	72	3941	37	272	15	30	3	10	24	48	1	0	7.5	40	75.1	285	6.4	45.9

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Tue 22 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	12	21483	0	0	11	0	1	0	0	0	0	0	0	0	0	29	42.5	62.2	3	25	50.3
0100	7	21490	0	0	4	0	3	0	0	0	0	0	0	0	0	30.8	41	46.2	0	0	-
0200	12	21502	0	0	11	0	1	0	0	0	0	0	0	0	0	36.3	48	71	4	33.3	51.9
0300	26	21528	0	0	22	0	3	0	0	1	0	0	0	0	0	35.9	45.9	64.3	6	23.1	53.7
0400	31	21559	0	0	27	0	3	0	0	0	1	0	0	0	0	33.3	47.3	60.7	14	45.2	53.7
0500	82	21641	0	2	75	0	4	1	0	0	0	0	0	0	0	32.3	46.7	67.2	25	30.5	53.5
0600	179	21820	0	6	160	0	11	1	0	0	0	1	0	0	0	29.6	43.7	66.9	27	15.1	49.7
0700	443	22263	0	10	391	3	30	2	0	0	0	0	7	0	0	24.7	39.4	73.3	13	2.9	44.1
0800	345	22608	1	3	298	4	23	2	5	0	0	2	7	0	0	15	38.9	61.6	6	1.7	44.1
0900	237	22845	0	6	197	1	22	1	3	0	0	1	5	0	1	12.6	39.5	64.2	7	3	44.3
1000	291	23136	2	3	249	1	26	1	1	0	0	3	5	0	0	13.4	37.9	57	7	2.4	43.6
1100	292	23428	1	3	249	0	26	0	4	0	0	3	5	0	1	8.3	38	61.8	9	3.1	43.8
1200	310	23738	7	6	254	3	28	1	4	0	1	0	4	1	1	7.6	38.2	61.1	11	3.5	44.1
1300	286	24024	4	5	254	2	14	2	2	0	0	2	1	0	0	8.1	40	65.6	17	5.9	45
1400	292	24316	3	6	251	4	18	2	4	0	1	1	2	0	0	15.1	39.2	65.9	15	5.1	43.4
1500	336	24652	1	8	298	1	26	0	0	0	0	1	1	0	0	13.4	39.7	57.7	15	4.5	44.1
1600	320	24972	2	6	292	6	13	0	0	0	0	1	0	0	0	12	40.5	65.4	24	7.5	45.9
1700	366	25338	3	6	337	3	12	2	0	0	0	1	2	0	0	8.9	39.8	73.7	18	4.9	45.6
1800	253	25591	4	5	230	4	8	0	0	0	0	2	0	0	0	11.9	40.1	62.8	15	5.9	45.9
1900	185	25776	1	2	166	5	10	0	0	0	0	1	0	0	0	10.6	41.6	66	18	9.7	47.4
2000	148	25924	2	2	134	3	6	0	0	0	1	0	0	0	0	12.2	41.3	73.5	13	8.8	47
2100	115	26039	0	2	109	0	4	0	0	0	0	0	0	0	0	27.6	42.7	63.6	18	15.7	50.1
2200	77	26116	0	4	70	0	3	0	0	0	0	0	0	0	0	21.2	43	65.8	12	15.6	49.9
2300	39	26155	0	0	33	0	6	0	0	0	0	0	0	0	0	28.2	42.2	56.1	7	17.9	50.6
07-19	3771	26155	28	67	3300	32	246	13	23	0	2	17	39	1	3	7.6	39.3	73.7	157	4.2	44.5
06-22	4398	26155	31	79	3869	40	277	14	23	0	3	19	39	1	3	7.6	39.7	73.7	233	5.3	45.2
06-00	4514	26155	31	83	3972	40	286	14	23	0	3	19	39	1	3	7.6	39.8	73.7	252	5.6	45.4
00-00	4684	26155	31	85	4122	40	301	15	23	1	4	19	39	1	3	7.6	40	73.7	304	6.5	45.9

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Wed 23 Time	July Total	2014 RunTot	Eastbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	18	26173	0	0	15	0	3	0	0	0	0	0	0	0	0	30.3	48.1	72	8	44.4	61.3
0100	5	26178	0	0	4	0	1	0	0	0	0	0	0	0	0	31.7	42.7	53.4	1	20	-
0200	11	26189	0	0	11	0	0	0	0	0	0	0	0	0	0	13	44.4	71	2	18.2	48.5
0300	19	26208	0	0	15	0	4	0	0	0	0	0	0	0	0	35	47.3	63.2	5	26.3	52.6
0400	31	26239	0	0	29	0	2	0	0	0	0	0	0	0	0	34.8	46.7	61.5	8	25.8	52.1
0500	69	26308	0	3	63	0	3	0	0	0	0	0	0	0	0	31.8	46	62.9	20	29	52.6
0600	173	26481	0	3	158	0	9	1	0	0	0	0	2	0	0	31.6	43	67.6	23	13.3	49
0700	422	26903	1	7	379	1	23	2	1	1	0	3	2	2	0	14.3	39.8	70.5	17	4	45.2
0800	297	27200	0	2	257	3	24	3	3	0	0	2	3	0	0	15.3	40.1	67.1	14	4.7	45.9
0900	267	27467	0	4	236	1	16	6	0	1	1	0	2	0	0	25.9	39.3	56.7	12	4.5	44.5
1000	282	27749	1	3	240	2	22	2	5	0	0	2	5	0	0	12.7	38.6	54.5	10	3.5	44.1
1100	270	28019	2	0	224	5	30	1	4	0	0	0	4	0	0	13.4	38.7	64.6	10	3.7	45
1200	271	28290	4	1	238	2	20	1	1	0	2	1	1	0	0	10	38.3	57.7	7	2.6	44.3
1300	283	28573	2	10	238	2	22	1	2	0	0	2	4	0	0	8.7	39.8	73.6	10	3.5	44.5
1400	282	28855	1	4	248	0	21	0	2	1	0	1	4	0	0	9.3	38.3	71.1	9	3.2	44.1
1500	330	29185	2	7	288	1	22	2	4	0	1	0	3	0	0	10.2	38.3	72.3	8	2.4	43.6
1600	360	29545	1	4	320	6	24	2	0	0	1	0	2	0	0	8.2	38.3	73.7	18	5	43.8
1700	408	29953	1	7	383	5	11	0	1	0	0	0	0	0	0	15.4	39.2	65.4	18	4.4	44.5
1800	279	30232	5	4	251	2	13	1	0	0	1	1	1	0	0	11.6	40.4	68.7	19	6.8	45.9
1900	235	30467	3	8	203	0	16	0	2	0	0	1	1	1	0	11.1	40.4	66.9	19	8.1	47.4
2000	161	30628	1	5	150	1	4	0	0	0	0	0	0	0	0	11.8	41.4	69.8	13	8.1	45.9
2100	130	30758	0	5	114	3	8	0	0	0	0	0	0	0	0	22.9	41.9	67.6	9	6.9	47.2
2200	62	30820	0	1	58	0	3	0	0	0	0	0	0	0	0	32	44.7	67	13	21	52.6
2300	47	30867	0	0	44	0	3	0	0	0	0	0	0	0	0	29.6	43.5	59.4	9	19.1	50.8
07-19	3751	30867	20	53	3302	30	248	21	23	3	6	12	31	2	0	8.2	39.1	73.7	152	4.1	44.7
06-22	4450	30867	24	74	3927	34	285	22	25	3	6	13	34	3	0	8.2	39.5	73.7	216	4.9	45.2
06-00	4559	30867	24	75	4029	34	291	22	25	3	6	13	34	3	0	8.2	39.6	73.7	238	5.2	45.4
00-00	4712	30867	24	78	4166	34	304	22	25	3	6	13	34	3	0	8.2	39.8	73.7	282	6	45.9
<b>Total</b>	<b>July Total</b>	<b>2014 RunTot</b>	<b>Eastbound Bicycle</b>	<b>Motor Cycle</b>	<b>Car / Van</b>	<b>Car / Van (T)</b>	<b>R2 / Bus</b>	<b>R3 / Bus</b>	<b>R4</b>	<b>A3</b>	<b>A4</b>	<b>A5</b>	<b>A6</b>	<b>A6 [2]</b>	<b>A7 [2]</b>	<b>Vmin</b>	<b>Mean</b>	<b>Vmax</b>	<b>&gt;PSL 50</b>	<b>&gt;PSL% 50</b>	<b>Vpp 85</b>
--	30867	30867	196	529	27465	249	1798	92	157	11	33	92	226	8	11	7.5	39.8	79.3	1836	5.9	45.6



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Thu 17 Time	July Total	2014 RunTot	Westbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	-
0600	70	70	0	0	58	0	6	0	1	0	2	2	1	0	0	15.9	40.7	63	10	14.3	49.4
0700	233	303	0	4	194	4	24	3	2	0	1	1	0	0	0	23.2	41.4	70.1	19	8.2	47.4
0800	345	648	0	1	303	0	31	3	2	1	1	2	1	0	0	29.2	40	66.5	14	4.1	44.3
0900	282	930	0	2	248	0	25	1	1	0	1	3	1	0	0	23.4	40.6	62.5	16	5.7	45.9
1000	255	1185	0	4	225	1	17	2	1	0	2	2	1	0	0	27.8	40.2	59.3	7	2.7	44.3
1100	283	1468	0	4	244	2	24	1	2	0	5	1	0	0	0	22.2	37.6	52.5	3	1.1	42.9
1200	314	1782	0	1	282	1	19	2	5	0	1	0	2	0	1	23.1	38.7	54	3	1	43.4
1300	307	2089	0	5	277	2	15	1	2	0	2	2	1	0	0	21.5	38.5	53.5	2	0.7	43.6
1400	340	2429	0	6	300	0	24	2	3	0	2	1	2	0	0	26	38.8	56.8	7	2.1	43.6
1500	381	2810	2	4	339	0	29	3	0	1	1	1	0	0	1	1.1	39.2	66.4	10	2.6	43.8
1600	459	3269	0	10	419	3	21	3	2	0	1	0	0	0	0	23.1	39.2	65.6	5	1.1	44.5
1700	517	3786	1	10	484	3	16	2	0	0	0	0	1	0	0	15.6	38.6	62.3	16	3.1	43.8
1800	377	4163	2	8	354	1	11	1	0	0	0	0	0	0	0	24	39.7	59	11	2.9	44.7
1900	198	4361	1	3	186	0	5	2	0	1	0	0	0	0	0	1.9	39.3	61.8	8	4	45.4
2000	191	4552	0	4	184	0	2	0	1	0	0	0	0	0	0	25	41.5	59.7	20	10.5	46.3
2100	124	4676	0	5	115	1	2	0	1	0	0	0	0	0	0	27	41.7	69.6	5	4	46.1
2200	95	4771	0	1	92	1	1	0	0	0	0	0	0	0	0	29.1	41.9	68.3	4	4.2	45.6
2300	44	4815	0	1	42	0	0	1	0	0	0	0	0	0	0	29.3	45.3	78.1	12	27.3	53.7
<b>07-19</b>	<b>4093</b>	<b>4815</b>	<b>5</b>	<b>59</b>	<b>3669</b>	<b>17</b>	<b>256</b>	<b>24</b>	<b>20</b>	<b>2</b>	<b>17</b>	<b>13</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>1.1</b>	<b>39.3</b>	<b>70.1</b>	<b>113</b>	<b>2.8</b>	<b>44.5</b>
06-22	4676	4815	6	71	4212	18	271	26	23	3	19	15	10	0	2	1.1	39.5	70.1	156	3.3	44.7
06-00	4815	4815	6	73	4346	19	272	27	23	3	19	15	10	0	2	1.1	39.6	78.1	172	3.6	45
<b>00-00</b>	<b>4815</b>	<b>4815</b>	<b>6</b>	<b>73</b>	<b>4346</b>	<b>19</b>	<b>272</b>	<b>27</b>	<b>23</b>	<b>3</b>	<b>19</b>	<b>15</b>	<b>10</b>	<b>0</b>	<b>2</b>	<b>1.1</b>	<b>39.6</b>	<b>78.1</b>	<b>172</b>	<b>3.6</b>	<b>45</b>

Benchmark Data Collection Ltd

Fri 18 Time	July Total	2014 RunTot	Westbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	35	4850	0	0	34	0	0	0	0	1	0	0	0	0	0	37	45.2	61	7	20	51.9
0100	14	4864	0	0	12	0	1	1	0	0	0	0	0	0	0	30.3	42.8	62.5	3	21.4	53.7
0200	4	4868	0	0	3	0	0	0	0	0	1	0	0	0	0	39.1	45.8	53.8	2	50	-
0300	12	4880	0	0	8	0	4	0	0	0	0	0	0	0	0	39.9	49.4	61	6	50	54.1
0400	20	4900	0	1	15	0	3	0	0	0	0	0	1	0	0	36.9	48	65.4	7	35	53
0500	38	4938	0	0	31	0	4	0	0	0	3	0	0	0	0	32.1	44.9	62	5	13.2	48.5
0600	103	5041	0	5	85	0	7	2	0	0	2	1	1	0	0	31.5	45.2	64.2	16	15.5	50.3
0700	205	5246	0	2	184	1	13	3	0	0	1	1	1	0	0	32.6	43	54.6	15	7.3	47.2
0800	322	5568	0	0	288	0	24	4	0	0	3	1	2	0	0	22.1	39.8	57.1	9	2.8	45
0900	267	5835	0	1	238	0	22	1	1	0	1	1	2	0	0	25.2	40	54.7	8	3	45
1000	239	6074	0	1	207	1	22	2	1	1	2	1	1	0	0	28	40.3	52.6	5	2.1	44.7
1100	327	6401	1	7	288	3	18	1	1	0	4	2	2	0	0	24.5	39.3	64.8	7	2.1	44.1
1200	328	6729	0	2	292	1	26	0	2	0	1	1	3	0	0	20.9	37.9	54.1	3	0.9	43.2
1300	372	7101	0	3	328	1	27	1	5	1	2	4	0	0	0	21.4	39	56.5	10	2.7	43.8
1400	415	7516	1	6	373	1	29	0	1	0	1	2	1	0	0	21.9	38.2	63	9	2.2	43.8
1500	400	7916	1	5	366	0	19	4	1	0	2	2	0	0	0	21.5	38.9	56.8	12	3	44.5
1600	418	8334	0	7	387	2	16	3	0	0	1	0	2	0	0	20.9	38.9	62.9	20	4.8	45.4
1700	387	8721	0	5	362	3	13	1	2	0	0	0	1	0	0	28.4	40.7	61.4	18	4.7	45.4
1800	329	9050	2	5	302	1	17	0	1	0	0	0	1	0	0	22.8	40.7	60.4	20	6.1	45.9
1900	209	9259	0	0	199	2	6	1	0	0	0	0	1	0	0	29.4	42.8	69.7	18	8.6	47.4
2000	153	9412	0	1	146	0	5	1	0	0	0	0	0	0	0	30.3	43.5	63.7	21	13.7	49.2
2100	127	9539	0	2	120	1	3	1	0	0	0	0	0	0	0	28.9	41.6	63.5	5	3.9	47
2200	96	9635	0	1	88	1	6	0	0	0	0	0	0	0	0	29.6	41.5	55	9	9.4	48.3
2300	84	9719	0	1	73	0	9	1	0	0	0	0	0	0	0	26.5	39.8	59.3	8	9.5	44.5
07-19	4009	9719	5	44	3615	14	246	20	15	2	17	15	16	0	0	20.9	39.5	64.8	136	3.4	45
06-22	4601	9719	5	52	4165	17	267	25	15	2	19	16	18	0	0	20.9	40	69.7	196	4.3	45.4
06-00	4781	9719	5	54	4326	18	282	26	15	2	19	16	18	0	0	20.9	40	69.7	213	4.5	45.4
00-00	4904	9719	5	55	4429	18	294	27	15	3	23	16	19	0	0	20.9	40.2	69.7	243	5	45.6

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Sat 19 Time	July Total	2014 RunTot	Westbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	37	9756	0	0	32	0	5	0	0	0	0	0	0	0	0	29.3	45.2	70.3	11	29.7	52.8
0100	23	9779	0	1	20	0	2	0	0	0	0	0	0	0	0	35	46.6	64.7	6	26.1	54.4
0200	22	9801	0	0	21	0	1	0	0	0	0	0	0	0	0	31.1	47.4	65.3	8	36.4	59.3
0300	23	9824	0	0	17	1	5	0	0	0	0	0	0	0	0	34	44.6	69.3	4	17.4	52.6
0400	19	9843	0	0	13	0	6	0	0	0	0	0	0	0	0	39.1	46.6	71.9	3	15.8	48.8
0500	29	9872	0	0	26	0	2	0	0	0	0	0	1	0	0	37.2	47.9	62.7	9	31	53.9
0600	67	9939	0	2	55	1	7	2	0	0	0	0	0	0	0	34.9	44.3	65.4	9	13.4	49.7
0700	82	10021	0	0	70	2	6	3	1	0	0	0	0	0	0	27.2	42.3	60.6	12	14.6	49.7
0800	108	10129	0	1	100	0	5	2	0	0	0	0	0	0	0	30.4	43.9	57.4	8	7.4	48.5
0900	181	10310	0	0	168	0	10	2	0	0	0	0	1	0	0	29.4	42.6	65.8	17	9.4	46.8
1000	251	10561	0	2	236	0	6	5	0	1	1	0	0	0	0	24.9	39.3	62.3	4	1.6	43.6
1100	286	10847	0	1	271	0	12	0	1	0	0	1	0	0	0	25.8	40.4	77	8	2.8	45
1200	337	11184	0	0	320	1	10	5	1	0	0	0	0	0	0	12.8	38.7	59.1	7	2.1	43.2
1300	311	11495	0	2	298	1	8	2	0	0	0	0	0	0	0	24.9	40.1	58.2	9	2.9	44.3
1400	332	11827	0	6	318	0	6	2	0	0	0	0	0	0	0	25.4	39.3	51.4	2	0.6	44.3
1500	255	12082	0	12	231	2	9	0	1	0	0	0	0	0	0	20.1	39.3	61.6	13	5.1	44.7
1600	255	12337	0	8	236	2	6	1	0	0	0	2	0	0	0	23.1	40.1	78.4	12	4.7	45.6
1700	259	12596	0	1	245	3	8	0	1	1	0	0	0	0	0	11.5	40.6	57.5	15	5.8	45.9
1800	253	12849	0	2	240	3	6	2	0	0	0	0	0	0	0	17.5	40.2	60.8	12	4.7	45
1900	187	13036	0	2	179	2	4	0	0	0	0	0	0	0	0	32.1	42.5	57.5	11	5.9	47.2
2000	124	13160	0	1	116	0	6	1	0	0	0	0	0	0	0	29	43.4	63.9	10	8.1	48.3
2100	109	13269	0	0	107	0	1	0	1	0	0	0	0	0	0	33.2	44.1	62.3	20	18.3	50.6
2200	61	13330	0	1	56	0	3	1	0	0	0	0	0	0	0	34.5	43.2	58.4	5	8.2	49
2300	60	13390	0	0	56	0	2	2	0	0	0	0	0	0	0	32.4	42.4	58.2	6	10	49
07-19	2910	13390	0	35	2733	14	92	24	5	2	1	3	1	0	0	11.5	40.2	78.4	119	4.1	45.4
06-22	3397	13390	0	40	3190	17	110	27	6	2	1	3	1	0	0	11.5	40.6	78.4	169	5	45.9
06-00	3518	13390	0	41	3302	17	115	30	6	2	1	3	1	0	0	11.5	40.7	78.4	180	5.1	46.1
00-00	3671	13390	0	42	3431	18	136	30	6	2	1	3	2	0	0	11.5	40.9	78.4	221	6	46.5

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Sun 20 Time	July Total	2014 RunTot	Westbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	43	13433	0	0	41	0	2	0	0	0	0	0	0	0	0	16.6	43	64.6	8	18.6	52.6
0100	18	13451	0	0	17	0	1	0	0	0	0	0	0	0	0	34.6	46.5	60.7	5	27.8	51
0200	23	13474	0	0	21	0	1	1	0	0	0	0	0	0	0	29.2	47.4	71.3	8	34.8	57.7
0300	13	13487	0	0	12	0	1	0	0	0	0	0	0	0	0	35.3	45.8	62	5	38.5	52.8
0400	21	13508	0	0	18	0	2	1	0	0	0	0	0	0	0	39.9	46.6	54.5	4	19	51.7
0500	30	13538	1	0	26	0	2	1	0	0	0	0	0	0	0	0.7	45.3	64.1	10	33.3	52.8
0600	47	13585	0	5	36	0	5	0	1	0	0	0	0	0	0	38.1	50.6	65.4	19	40.4	57.7
0700	48	13633	0	0	43	0	3	1	1	0	0	0	0	0	0	25.5	45.8	59.1	7	14.6	49.9
0800	95	13728	0	2	90	0	2	1	0	0	0	0	0	0	0	28.6	44.4	59.6	14	14.7	49.2
0900	132	13860	1	5	119	3	3	0	0	0	0	1	0	0	0	27.4	41.3	58.4	13	9.8	48.3
1000	218	14078	2	8	190	2	12	0	2	0	0	1	1	0	0	20.9	40.1	59	6	2.8	44.5
1100	260	14338	2	12	234	6	5	0	0	0	0	0	1	0	0	1.6	38.9	61.1	9	3.5	44.3
1200	298	14636	0	9	278	2	9	0	0	0	0	0	0	0	0	26.2	40	63.2	11	3.7	45.4
1300	342	14978	1	18	309	2	9	0	2	0	0	0	1	0	0	13.4	38.1	68.9	11	3.2	43.8
1400	316	15294	0	10	297	2	7	0	0	0	0	0	0	0	0	14.5	39.3	60.1	8	2.5	44.3
1500	271	15565	0	13	252	2	3	1	0	0	0	0	0	0	0	26.5	39.9	62.2	13	4.8	45
1600	330	15895	0	13	304	2	7	2	0	0	1	0	0	0	1	27.5	40.2	59.4	10	3	45.2
1700	278	16173	0	12	258	2	5	0	0	0	0	0	1	0	0	22.8	38.4	60.6	11	4	43.4
1800	263	16436	0	5	249	1	6	0	1	0	0	1	0	0	0	26.6	40.6	58.9	17	6.5	47
1900	176	16612	1	5	161	0	8	1	0	0	0	0	0	0	0	16.3	42.1	61.4	15	8.5	47.4
2000	124	16736	0	2	119	0	3	0	0	0	0	0	0	0	0	30.3	42.6	64.5	15	12.1	49
2100	113	16849	0	1	110	0	2	0	0	0	0	0	0	0	0	26.9	44	69.6	22	19.5	51.4
2200	74	16923	0	0	70	0	4	0	0	0	0	0	0	0	0	29.2	42.9	73.9	9	12.2	47.9
2300	28	16951	0	0	28	0	0	0	0	0	0	0	0	0	0	28.2	44.3	80	8	28.6	50.8
07-19	2851	16951	6	107	2623	24	71	5	6	0	1	3	4	0	1	1.6	39.8	68.9	130	4.6	45.4
06-22	3311	16951	7	120	3049	24	89	6	7	0	1	3	4	0	1	1.6	40.3	69.6	201	6.1	46.1
06-00	3413	16951	7	120	3147	24	93	6	7	0	1	3	4	0	1	1.6	40.4	80	218	6.4	46.1
00-00	3561	16951	8	120	3282	24	102	9	7	0	1	3	4	0	1	0.7	40.6	80	258	7.2	46.5

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Mon 21 Time	July Total	2014 RunTot	Westbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	13	16964	0	0	13	0	0	0	0	0	0	0	0	0	0	35.3	47.9	65.2	4	30.8	53.9
0100	16	16980	0	0	15	0	1	0	0	0	0	0	0	0	0	34.1	48.4	72.2	7	43.8	55.9
0200	5	16985	0	0	3	0	1	1	0	0	0	0	0	0	0	44.3	50	57.2	2	40	-
0300	21	17006	0	0	16	0	4	1	0	0	0	0	0	0	0	34.3	43.5	51.1	1	4.8	47.9
0400	20	17026	0	0	15	0	5	0	0	0	0	0	0	0	0	37.9	50.4	61.8	9	45	58.4
0500	37	17063	0	1	33	0	1	0	0	0	1	1	0	0	0	34.8	45.4	58.9	9	24.3	51
0600	110	17173	0	1	97	1	8	0	0	0	2	1	0	0	0	30.4	46.4	59	27	24.5	51.9
0700	202	17375	0	4	181	1	10	2	2	0	0	2	0	0	0	30.7	43.2	58.9	14	6.9	48.1
0800	239	17614	0	1	203	2	22	4	3	0	3	0	1	0	0	28.4	41.1	55.4	12	5	45.6
0900	241	17855	1	4	207	2	19	2	2	0	1	1	2	0	0	16.9	38.2	56.5	4	1.7	44.5
1000	271	18126	0	5	226	4	23	3	3	0	4	1	1	0	1	14.9	37.5	53.9	3	1.1	42.9
1100	270	18396	0	2	232	1	27	1	2	0	2	2	1	0	0	28.9	40.5	61.6	17	6.3	45.6
1200	308	18704	0	8	265	0	28	0	2	1	2	0	2	0	0	18.1	38	56.4	6	1.9	42.5
1300	279	18983	0	3	246	2	16	2	2	0	2	2	2	1	1	15.3	37.9	59.9	15	5.4	43.4
1400	296	19279	0	9	267	2	15	1	1	0	1	0	0	0	0	21.9	38.7	53.6	4	1.4	43.4
1500	328	19607	0	5	304	3	12	0	2	0	0	0	1	0	1	21.6	38.4	64.2	12	3.7	43.6
1600	399	20006	0	8	372	0	16	1	0	0	1	0	1	0	0	20.9	38.4	63.1	10	2.5	43.6
1700	470	20476	1	8	440	1	15	3	1	0	0	0	1	0	0	17.5	38.6	54.5	11	2.3	44.3
1800	356	20832	0	4	339	0	11	1	1	0	0	0	0	0	0	26.3	40.7	60.9	21	5.9	45.4
1900	191	21023	0	4	176	1	9	0	0	0	0	1	0	0	0	27.8	42	74.2	22	11.5	48.8
2000	150	21173	0	3	144	2	1	0	0	0	0	0	0	0	0	29.3	40.6	53.3	8	5.3	45.4
2100	118	21291	0	1	115	0	2	0	0	0	0	0	0	0	0	29.4	43.9	65.2	22	18.6	51
2200	74	21365	0	2	70	1	1	0	0	0	0	0	0	0	0	31	44.2	70.3	11	14.9	49.9
2300	28	21393	0	1	27	0	0	0	0	0	0	0	0	0	0	26.3	44.4	57.5	5	17.9	49.9
07-19	3659	21393	2	61	3282	18	214	20	21	1	16	8	12	1	3	14.9	39.1	64.2	129	3.5	44.5
06-22	4228	21393	2	70	3814	22	234	20	21	1	18	10	12	1	3	14.9	39.6	74.2	208	4.9	45.4
06-00	4330	21393	2	73	3911	23	235	20	21	1	18	10	12	1	3	14.9	39.7	74.2	224	5.2	45.4
00-00	4442	21393	2	74	4006	23	247	22	21	1	19	11	12	1	3	14.9	39.9	74.2	256	5.8	45.6

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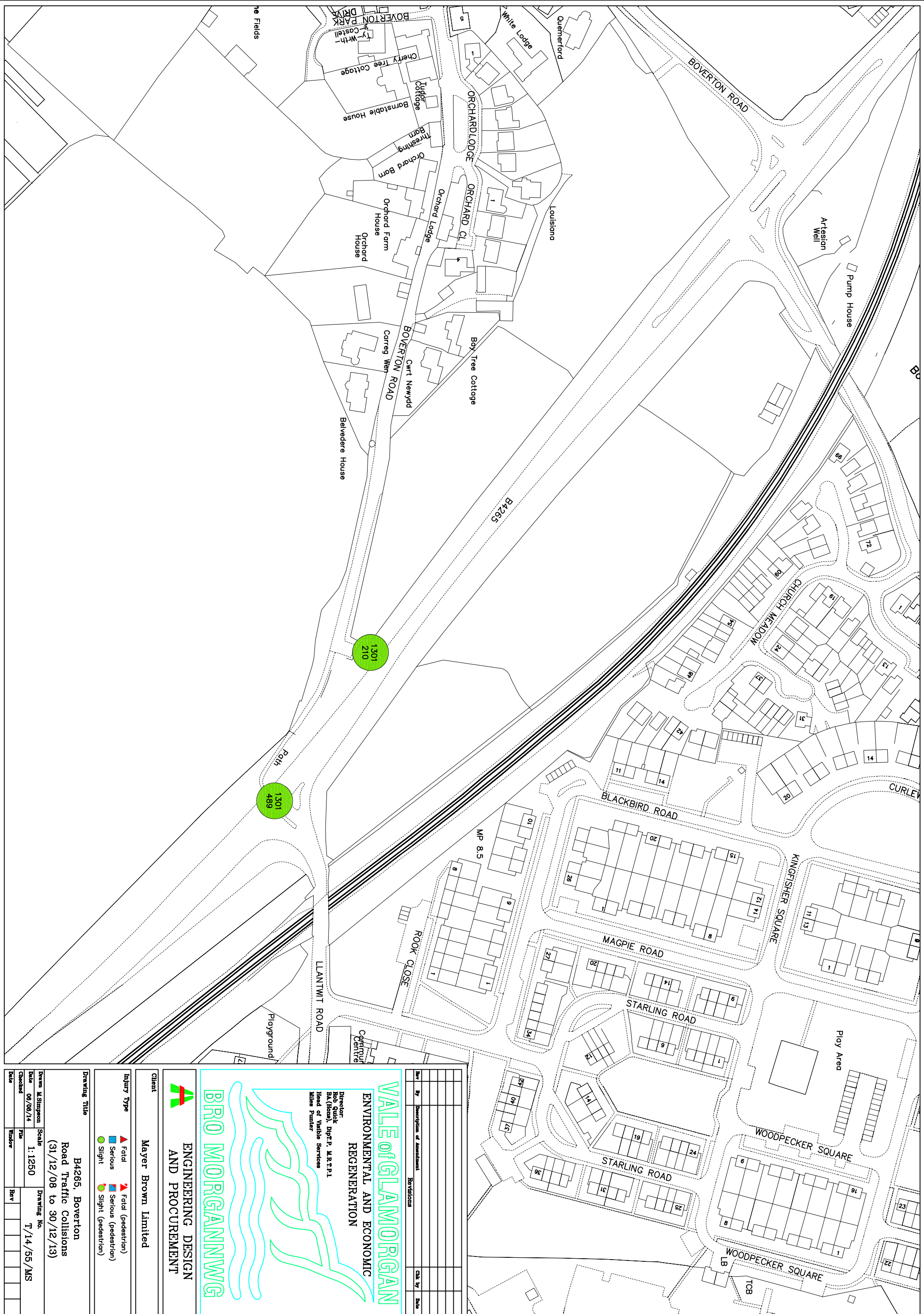
Tue 22 Time	July Total	2014 RunTot	Westbound		Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]	Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle																	
0000	15	21408	0	0	14	0	1	0	0	0	0	0	0	0	0	35.3	45.6	55.8	4	26.7	52.3
0100	19	21427	0	0	18	0	1	0	0	0	0	0	0	0	0	32.3	43.3	65.5	2	10.5	49
0200	13	21440	0	0	12	0	1	0	0	0	0	0	0	0	0	35.7	47.1	56.8	6	46.2	54.6
0300	19	21459	0	0	15	0	4	0	0	0	0	0	0	0	0	33.1	45.9	71.9	6	31.6	52.1
0400	32	21491	0	0	29	0	2	0	0	1	0	0	0	0	0	34.5	46.2	64.1	9	28.1	53.7
0500	40	21531	0	2	31	1	3	0	0	0	1	1	1	0	0	38.5	50.3	67.4	19	47.5	54.1
0600	98	21629	0	0	76	0	14	2	0	0	3	2	1	0	0	35.1	46	74.2	25	25.5	51.9
0700	218	21847	0	4	197	0	12	3	1	0	0	1	0	0	0	23.4	41.4	56.5	17	7.8	46.8
0800	260	22107	0	0	227	1	19	6	1	0	3	3	0	0	0	29.1	40.6	55.3	8	3.1	45.4
0900	283	22390	0	2	247	1	28	2	1	0	0	0	2	0	0	16.6	39.2	64.3	11	3.9	44.1
1000	265	22655	0	1	236	0	19	0	4	0	2	2	1	0	0	27.3	40.4	57.7	15	5.7	45.2
1100	313	22968	1	5	274	2	22	2	1	0	3	1	2	0	0	1.8	37.7	57.1	4	1.3	43.8
1200	311	23279	0	4	274	2	30	0	0	0	1	0	0	0	0	20.4	39.2	63.1	12	3.9	44.3
1300	319	23598	0	4	300	2	10	0	1	1	1	0	0	0	0	17	38.9	72.5	12	3.8	43.8
1400	324	23922	0	4	291	3	19	2	0	1	0	2	2	0	0	22.1	38.6	56.6	7	2.2	44.1
1500	340	24262	0	3	311	5	18	0	1	0	1	0	1	0	0	19.7	39.6	68	9	2.6	44.3
1600	415	24677	1	11	383	3	13	1	1	0	0	0	2	0	0	19.5	38.7	55.7	12	2.9	44.1
1700	462	25139	0	8	431	3	9	0	5	1	0	1	4	0	0	5.5	36.2	65.5	11	2.4	42.9
1800	384	25523	0	8	356	4	11	3	0	0	1	0	1	0	0	25.6	40.1	60.8	19	4.9	45.9
1900	194	25717	0	3	182	0	8	0	0	0	0	0	1	0	0	26.4	41.6	59	12	6.2	47.2
2000	139	25856	0	6	123	3	7	0	0	0	0	0	0	0	0	28.3	42.4	69.8	12	8.6	48.1
2100	121	25977	0	1	113	0	7	0	0	0	0	0	0	0	0	30.8	43.4	70.5	14	11.6	48.5
2200	91	26068	0	1	86	0	3	1	0	0	0	0	0	0	0	25.3	43.4	65.2	16	17.6	50.3
2300	49	26117	0	2	45	0	2	0	0	0	0	0	0	0	0	33.3	42.6	79.5	5	10.2	47.2
07-19	3894	26117	2	54	3527	26	210	19	16	3	12	10	15	0	0	1.8	39	72.5	137	3.5	44.5
06-22	4446	26117	2	64	4021	29	246	21	16	3	15	12	17	0	0	1.8	39.5	74.2	200	4.5	45.2
06-00	4586	26117	2	67	4152	29	251	22	16	3	15	12	17	0	0	1.8	39.6	79.5	221	4.8	45.4
00-00	4724	26117	2	69	4271	30	263	22	16	4	16	13	18	0	0	1.8	39.8	79.5	267	5.7	45.6

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Wed 23 Time	July Total	2014 RunTot	Westbound													Vmin	Mean	Vmax	>PSL 50	>PSL% 50	Vpp 85
			Bicycle	Motor Cycle	Car / Van	Car / Van (T)	R2 / Bus	R3 / Bus	R4	A3	A4	A5	A6	A6 [2]	A7 [2]						
0000	30	26147	0	0	28	0	2	0	0	0	0	0	0	0	0	33.8	48.5	68.7	10	33.3	56.8
0100	11	26158	0	0	11	0	0	0	0	0	0	0	0	0	0	31.6	47.9	66.2	3	27.3	53.7
0200	5	26163	0	0	4	0	1	0	0	0	0	0	0	0	0	44.5	49.9	55	3	60	-
0300	11	26174	0	0	9	0	2	0	0	0	0	0	0	0	0	38.6	47.8	59.3	5	45.5	51
0400	30	26204	0	0	27	0	3	0	0	0	0	0	0	0	0	35.3	50.4	67.1	13	43.3	61.5
0500	43	26247	0	2	30	2	2	2	0	0	3	1	1	0	0	31.1	46.7	62.5	13	30.2	54.1
0600	98	26345	0	0	85	1	10	1	0	0	1	0	0	0	0	32.4	45.5	68.1	29	29.6	51.9
0700	214	26559	0	3	184	1	17	5	1	0	2	1	0	0	0	31.2	42.1	63.1	12	5.6	46.5
0800	242	26801	0	1	214	1	16	2	4	0	2	0	2	0	0	22.3	40.1	56.5	6	2.5	44.7
0900	275	27076	0	9	228	5	23	1	1	0	4	1	3	0	0	14.3	37.7	61.1	9	3.3	44.3
1000	270	27346	1	4	233	1	25	2	1	0	2	0	0	0	1	16	38.3	58.6	6	2.2	44.3
1100	263	27609	0	1	230	1	23	1	2	0	3	1	1	0	0	22.5	38.6	59.9	4	1.5	42.9
1200	335	27944	1	2	304	0	23	0	1	0	1	1	2	0	0	14.4	38.3	55.6	10	3	44.1
1300	289	28233	1	7	249	3	21	2	2	0	1	0	3	0	0	20	39	63.2	5	1.7	44.7
1400	344	28577	0	6	305	0	26	0	2	1	3	1	0	0	0	23.3	39.6	70.5	13	3.8	44.3
1500	317	28894	0	3	283	1	25	0	0	0	4	1	0	0	0	23.8	40.1	71.3	11	3.5	45.2
1600	390	29284	1	5	360	4	18	0	1	0	0	0	1	0	0	22.9	39.7	60.6	14	3.6	45.2
1700	478	29762	1	12	451	0	11	1	1	0	0	1	0	0	0	22.8	38.3	62.4	16	3.3	42.9
1800	371	30133	1	8	345	2	14	0	0	0	0	0	1	0	0	0.7	39.6	57.3	11	3	45.2
1900	235	30368	0	6	211	2	13	1	1	0	0	1	0	0	0	24.1	40.9	63.5	16	6.8	47.4
2000	172	30540	0	3	161	1	7	0	0	0	0	0	0	0	0	28.6	41.8	64.4	15	8.7	47.9
2100	136	30676	0	5	124	1	5	0	1	0	0	0	0	0	0	27	42.9	65	13	9.6	47.9
2200	90	30766	0	6	79	1	4	0	0	0	0	0	0	0	0	29.3	41.9	70.7	12	13.3	49.7
2300	55	30821	0	1	54	0	0	0	0	0	0	0	0	0	0	30.8	46.6	74.4	19	34.5	56.6
07-19	3788	30821	6	61	3386	19	242	14	16	1	22	7	13	0	1	0.7	39.2	71.3	117	3.1	44.7
06-22	4429	30821	6	75	3967	24	277	16	18	1	23	8	13	0	1	0.7	39.7	71.3	190	4.3	45.2
06-00	4574	30821	6	82	4100	25	281	16	18	1	23	8	13	0	1	0.7	39.8	74.4	221	4.8	45.4
00-00	4704	30821	6	84	4209	27	291	18	18	1	26	9	14	0	1	0.7	40	74.4	268	5.7	45.9
<b>Total</b>	<b>Total</b>	<b>RunTot</b>	<b>Bicycle</b>	<b>Motor Cycle</b>	<b>Car / Van</b>	<b>Car / Van (T)</b>	<b>R2 / Bus</b>	<b>R3 / Bus</b>	<b>R4</b>	<b>A3</b>	<b>A4</b>	<b>A5</b>	<b>A6</b>	<b>A6 [2]</b>	<b>A7 [2]</b>	<b>Vmin</b>	<b>Mean</b>	<b>Vmax</b>	<b>&gt;PSL 50</b>	<b>&gt;PSL% 50</b>	<b>Vpp 85</b>
--	30821	30821	29	517	27974	159	1605	155	106	14	105	70	79	1	7	0.7	40.1	80	1685	5.5	45.9

## **APPENDIX D: Accident data**





No.	By	Description of Amendment	Revisions	CHK BY	DATE

**VALE OF GLAMORGAN**  
 ENVIRONMENTAL AND ECONOMIC  
 REGENERATION

Director:  
 Bob Quirk  
 BA (Hons), Dip.P., M.R.P.I.

Head of Variable Services  
 Aileen Furler

**PRO MORGANNWG**

**ENGINEERING DESIGN  
 AND PROCUREMENT**

Client  
**Mayer Brown Limited**

- Injury Type**
- ▲ Fatal (pedestrian)
  - Serious (pedestrian)
  - Slight (pedestrian)
  - ▲ Fatal (cyclist)
  - Serious (cyclist)
  - Slight (cyclist)
  - ▲ Fatal (motorist)
  - Serious (motorist)
  - Slight (motorist)

**Drawing Title**  
 B4265, Boverton  
 Road Traffic Collisions  
 (31/12/08 to 30/12/13)

Drawn: M. Simpson  
 Date: 08/08/14  
 Checked: [ ]  
 Date: [ ]

Scale: 1:1250  
 Drawing No.: T/14/55/MS

Rev: [ ]

SEVERITY <b>SLIGHT</b>	District The Vale of Glamorgan Ref.No 1301210	<b>B4265, Boverton</b>	Grid Reference 298760 / 168420 Police Officer Attend: Yes
---------------------------	--	------------------------	--

Date 14/07/2013 Day Sunday Time 16:05 Weather Fine without high winds Road Surface Dry Street Lighting Daylight	Road B4265 Location B4265 Rhoose, South Glamorgan  Description V1 Drove Too Close to Pedal Cycle V2 and Collided with it Causing it to Knock into the Grass Verge of Accident
---	---

SITE DETAILS		SPECIAL SITE CONDITIONS None
Speed Limit 30 MPH Carriageway Single carriageway Junction Detail Not at or within 20 metres of junction Junction Control 2nd Road Number Pedestrian Facilities None within 50 metres No physical crossing facility within 50 m	CARRIAGEWAY HAZARDS None	

VEHICLES INVOLVED 2	CASUALTIES INVOLVED 1
---------------------	-----------------------

Veh.No. 1 Vehicle type Car Manoeuvre Going ahead other Veh. direction from Northwest to Southeast Towing? No tow or articulation Skidded No skidding, jack-knifing or overturning Veh location at impact (restricted lane) On main carriageway not in restricted lane Junct. location of veh. at 1st impact Not at or within 20m of junction Veh left carriageway? Did not leave carriageway Hit object in c'way? None Hit object off c'way? None First point of impact Nearside	Make Model Hit and run Not hit and run	Cas No 2 Cas Class Driver or Rider Veh ref No 2 Severity SLIGHT Age 49 yrs Sex Male Post code Car Passenger? Not a passenger PSV Passenger? Not a passenger Seat Belt Not applicable Cycle Helmet Ped Movement Not applicable Ped Location Not applicable Ped Direction to Not applicable School Pupil Other Roadworker injured
---	---	---

Veh registration no. Other veh.hit (ref.no) 2 Drivers age 63 yrs Sex Male Breath test Negative Driving Lic Left Hand Drive Unknown Foreign veh. Not foreign registered vehicle Journey purpose Other	Hit and run Not hit and run
---	-----------------------------

Veh.No. 2 Vehicle type Pedal Cycle Manoeuvre Going ahead other Veh. direction from Northwest to Southeast Towing? No tow or articulation Skidded No skidding, jack-knifing or overturning Veh location at impact (restricted lane) On main carriageway not in restricted lane Junct. location of veh. at 1st impact Not at or within 20m of junction Veh left carriageway? Did not leave carriageway Hit object in c'way? None Hit object off c'way? None First point of impact Offside	Make Model Hit and run Not hit and run
Veh registration no. Other veh.hit (ref.no) 1 Drivers age 49 yrs Sex Male Breath test Not Applicable Driving Lic Left Hand Drive Unknown Foreign veh. Not foreign registered vehicle Journey purpose Other	Hit and run Not hit and run

Other Details
---------------

SEVERITY <b>SLIGHT</b>	District The Vale of Glamorgan Ref.No 1301489	<b>B4265, Boverton</b>	Grid Reference 298842 / 168367 Police Officer Attend: Yes
---------------------------	--	------------------------	--

Date 12/08/2013 Day Monday Time 18:16 Weather Fine without high winds Road Surface Dry Street Lighting Daylight	Road B4265 Location B4265 Outside Entrance to Raf St Athan, West Camp, St Athan, South Glamorgan  Description V1 Emergency Coastguard on a Call Caused V2 to Stop Suddenly. V3 Collided with the Rear of V2. of Accident
---	---

SITE DETAILS		SPECIAL SITE CONDITIONS None	CARRIAGEWAY HAZARDS None
Speed Limit 30 MPH Carriageway Single carriageway Junction Detail Not at or within 20 metres of junction Junction Control 2nd Road Number Pedestrian Facilities None within 50 metres Pedestrian phase at traffic signal junction			

VEHICLES INVOLVED 3	CASUALTIES INVOLVED 1
---------------------	-----------------------

Veh.No. 1 Vehicle type Car Make Model Manoeuvre Overtaking moving veh on its offside Veh. direction from Northwest to Southeast Towing? No tow or articulation Skidded No skidding, jack-knifing or overturning Veh location at impact (restricted lane) On main carriageway not in restricted lane Junct. location of veh. at 1st impact Not at or within 20m of junction Veh left carriageway? Did not leave carriageway Hit object in c'way? None Hit object off c'way? None First point of impact Did not impact Veh registration no. Other veh.hit (ref.no) 0 Hit and run Not hit and run Drivers age 29 yrs Sex Male Breath test Not requested Driving Lic Left Hand Drive Unknown Foreign veh. Not foreign registered vehicle Journey purpose Other	Cas No 4 Cas Class Passenger Veh ref No 3 Severity SLIGHT Age 18 yrs Sex Female Post code Car Passenger? Rear seat passenger PSV Passenger? Not a passenger Seat Belt Unknown Cycle Helmet Ped Movement Not applicable Ped Location Not applicable Ped Direction to Not applicable School Pupil Other Roadworker injured
---	--

Veh.No. 2 Vehicle type Car Make Model Manoeuvre Going ahead other Veh. direction from Southeast to Northwest Towing? No tow or articulation Skidded No skidding, jack-knifing or overturning Veh location at impact (restricted lane) On main carriageway not in restricted lane Junct. location of veh. at 1st impact Not at or within 20m of junction Veh left carriageway? Did not leave carriageway Hit object in c'way? None Hit object off c'way? None First point of impact Back Veh registration no. Other veh.hit (ref.no) 3 Hit and run Not hit and run Drivers age 49 yrs Sex Male Breath test Not requested Driving Lic Left Hand Drive Unknown Foreign veh. Not foreign registered vehicle Journey purpose Other	<u>Other Details</u>
--	----------------------

Veh.No.	3	Vehicle type	Car	Make		Model	
Manoeuvre	Going ahead other						
Veh. direction from	Southeast to Northwest		Towing?	No tow or articulation			
Skidded	No skidding, jack-knifing or overturning						
Veh location at impact (restricted lane)	On main carriageway not in restricted lane						
Junct. location of veh. at 1st impact	Not at or within 20m of junction						
Veh left carriageway?	Did not leave carriageway						
Hit object in c'way?	None						
Hit object off c'way?	None						
First point of impact	Front						
Veh registration no.		Other veh.hit (ref.no)	2	Hit and run	Not hit and run		
Drivers age	46 yrs	Sex	Female	Breath test	Not requested Driving Lic		
Left Hand Drive	Unknown		Foreign veh. Not foreign registered vehicle				
Journey purpose	Other						

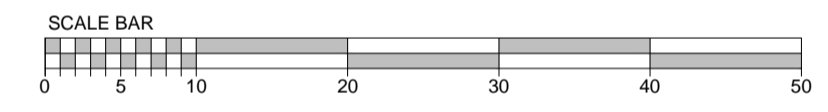
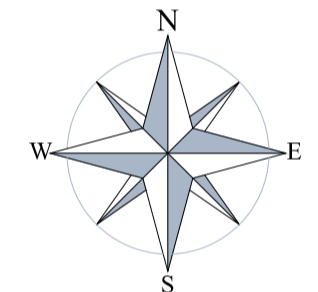
## **APPENDIX E: Site layout**





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> )
FW	811	3	Finchley	9	7279
ALS	1001	3	Alston	6	6006
HEA	1191	4	Heathfield	3	3573
FAV	1194	4	Faversham	8	9552
THO	1203	4	Thornbury	6	7218
LN	1243	4	Lincoln	5	6215
CAM	1401	4	Cambridge	8	11208
ASH	644	2	Ashford	2	1288
DWS	795	3	Dewsbury	2	1590
HAW	459	1	Hawthorn	6	2754
ALD	514	1	Alder	4	2056
OU	807	2	Olne	3	2421
LAR	982	3	Larch	2	1964
<b>Total No. of Units on Site &amp; Total Net Area (ft<sup>2</sup>)</b>					<b>64 63604</b>

- Site Key**
- 1.8m High Timber Close Board Fence
  - 1.8m High Brick Screen Wall
  - Proposed Hedgerow (Refer to landscaping layout)
  - Existing Hedgerow Retained (Refer to landscaping layout)
  - Proposed Planting and New Trees (Refer to landscaping layout)
  - Existing Tree to be Retained
  - 1.8m High Close Board Gate
  - Affordable Unit - Social Rental
  - Affordable Unit - LCHO
  - Plot Numbers
  - Parking space
  - Existing Building (location picked up from OS)



- C: Application boundary added. 12.08.14
- B: Allocation of social rented and LCHO units revised. HT schedule updated. Rear garden gates added to all properties. Plot 38/39 Handled. 06.08.14
- A: Plot 20 brought forward 0.6m, existing vegetation on northeastern boundary removed and replaced with new 1.8mCBF. New hedgerow added to the northeastern boundary of P.O.S. and to the side of plot 15 front garden. 05.08.14

REV.	DESCRIPTION	DATE

CLIENT  
Barratt Homes South Wales

JOB TITLE  
Land North of B4265, Boverton

DRAWING TITLE  
Site Layout

SCALE @ A1	DATE	DRAWN BY
1:500	Aug '14	RW
JOB NO.	DRAWING NO.	REVISION
1363	TP-01	C

**hammond**  
ARCHITECTURAL LTD

Melrose Court  
Melrose Hall  
Cypress Drive  
St. Mellons  
Cardiff CF3 0EG

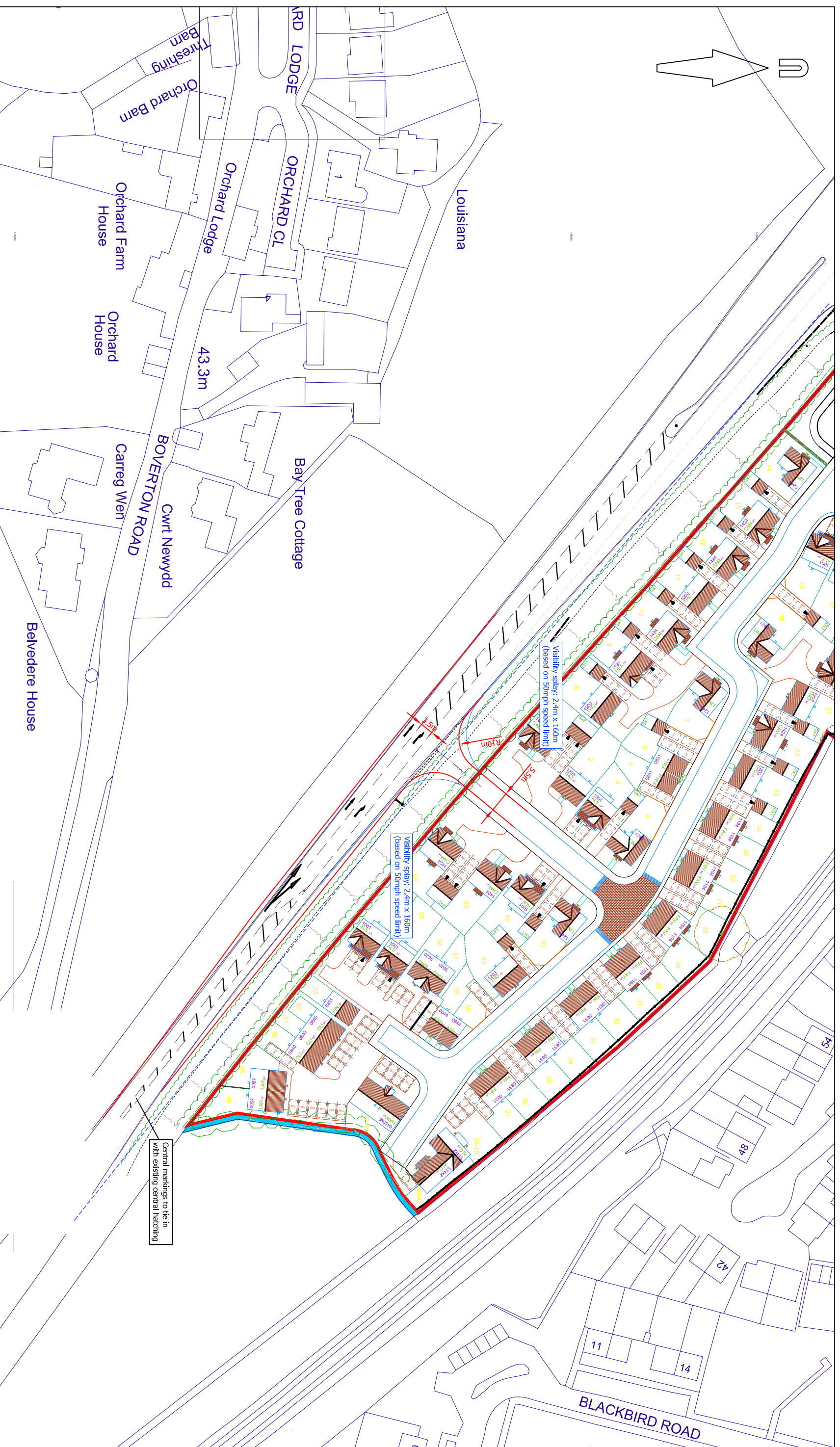
t. 039 2077 6900  
f. 039 2079 9619  
e. info@hammond-ltd.co.uk

[www.hammond-ltd.co.uk](http://www.hammond-ltd.co.uk)

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Figured dimensions must be taken in preference to scaled dimensions and any discrepancies are to be referred to Hammond Architectural Ltd. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any workshop drawings.



## **APPENDIX F: Access junction drawing**



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client

**BARRATT HOMES**

title

**INDICATIVE ACCESS ARRANGEMENT  
GHOSTED RIGHT TURN LANE  
SUBJECT TO CONFIRMATION OF HIGHWAY  
BOUNDARY**

scale 1:1000 @ A3

drawn by HI

checked by PA

date JULY 2014

cad file 1-01.DWG

drawing number

**B/BWBOVERTON.1/01**

rev. -



**Mayer Brown Limited**  
 Suite 103, Oldpoint, Temple Gate, Bristol, BS1 6PL  
 Telephone 0117 9231027 Fax 0117 9231029  
 bristoloffice@mayerbrown.co.uk  
 www.mayerbrown.co.uk

project  
**LAND OFF B4265, BOVERTON**