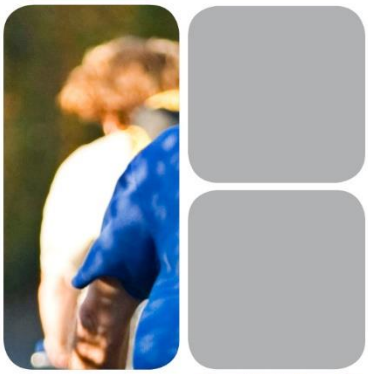




Proposed Residential Development at Bayfields, Chepstow

Transport Assessment

Report for

Barratt David Wilson Homes South Wales

November 2018

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APPENDICES

1.0 INTRODUCTION

1.1 Overview

1.1.1 Hydrock has been commissioned by Barratt David Wilson Homes to prepare a Transport Assessment (TA) to accompany an outline planning application. The proposals are for a residential development of up to approximately 200 residential dwellings on Land to the south of the B4235 Usk Road in Chepstow.

1.1.2 35% of the dwellings will be affordable units.

1.1.3 Vehicular access is proposed from a new priority junction with the B4235 on the northern perimeter of the site. Further pedestrian and cyclist accesses will be provided to the east and south of the site linking to existing residential areas.

1.2 Scope of Report

1.2.1 A Transport Pre-Application Report (TPAR) was produced and submitted to Monmouthshire County Council (MCC) to inform pre-application discussions. The TPAR set out the methodology for undertaking the TA, including trip rates, trip distribution, growth factors, extent of junction assessments and software to be used, survey periods, year of future assessments, principle of access, committed developments and travel planning inputs.

1.2.2 A pre-application meeting was then held with MCC following which a pre-application written response was provided, including comments from highway officers on 2nd October 2017. Following this, MCC highway officers confirmed the TA approach was acceptable by email. A Draft version of the TA was then submitted to MCC highway officers for comment and followed up on a number of occasions, but no response was received. The pre-application written response and relevant emails to and from highway officers have been included within **Appendix A**.

1.2.3 In addition, the Welsh Government (WG) has also been consulted due to the study area including the High Beech roundabout which forms part of the trunk road network and is maintained by WG. Based on the information provided to WG, the methodology for assessing the trunk road was considered acceptable and WG concluded that they would not object to the proposal. The relevant email discussions have also been shown in **Appendix A.**

1.2.4 This TA has been set out in accordance with various local and national guidance including Technical Advice Note 18: Transport (TAN18), the MCC Local Development Plan (Adopted February 2014), the MCC Parking Standards SPG, as well as considering our previous experience of other similar sites.

1.2.5 The TA also considers guidance from the Department for Transport (DfT) and the Chartered Institution of Highways and Transportation (CIHT) including Manual for Streets, Manual for Streets 2, Local Transport Note 2/08: Cycle Infrastructure Design and Providing for Journeys on Foot.

1.2.6 The TA broadly includes the following:

1) Description of the location of the site as well as a review of the existing conditions of the surrounding local highway network including access and parking, existing traffic flow patterns and highway safety;

2) Audit of walking and cycling routes in accordance with the Active Travel Act and a review of public transport provision and the proximity of the site to local facilities and amenities;

3) Description of the development proposals, in particular demonstrating access by all modes, site design principles, car parking and servicing and delivery arrangements;
4) Review of the trip generation which is likely to be associated with the existing and proposed users of the site;
5) Full details of trip distribution, future year growth, committed developments and future year assessments;
6) Analysis of the impact of the proposed development on the local highway network;
7) Transport Implementation Strategy including mitigation measures, where required.

2.0 EXISTING CONDITIONS

2.1 Site Location and Use

2.1.1 The site is currently used for agricultural purposes and is located on the north-western periphery of Chepstow approximately 1.4km from the town centre.

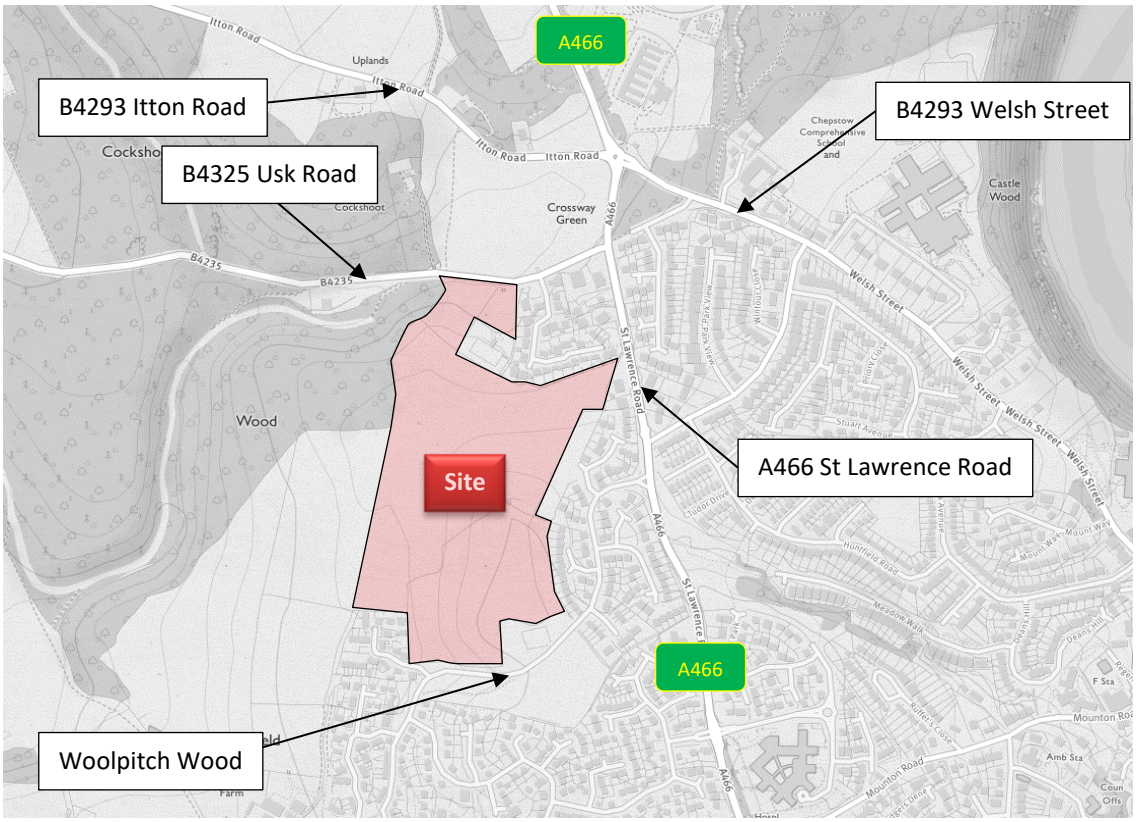
2.1.2 It is bordered by the B4235 Usk Road to the north, residential properties along the A466 St Lawrence Road and the recently completed 'The Grange' development to the east, the residential area of Bayfield to the south and woodland and agricultural land to the west.

2.1.3 Vehicular access to the site is proposed to be obtained from the B4235 Usk Road.

2.1.4 An access has been provided within the site boundary for the construction compound for the adjacent 'The Grange' development, which is situated directly north east of the site. This access is also currently used to provide access to a covered reservoir and substation located directly adjacent to both the site and neighbouring The Grange development.

2.1.5 The location of the site in its local context is shown in **Figure 2.1**.

Figure 2.1: Site Location Plan



2.2 Local Highway Network

2.2.1 The local highway network within the vicinity of the site is generally well lit and well maintained. The extent of the adopted highway within the vicinity of the site access on the B4235 is shown in **Appendix B**.

B4235 Usk Road

2.2.2 The B4235 Usk Road within the vicinity of the site is a c.6 metre wide single carriageway road which is subject to a 30mph speed restriction. On the site frontage (just to the west of the proposed site access) the speed limit increases to national speed restrictions (60mph).

2.2.3 To the east of the site the B4235 Usk Road connects with the A466 St Lawrence Park via a simple priority junction and to the west it forms a primarily rural route connecting to Usk.

2.2.4 There is a footway provided on the southern side of the carriageway and street lighting is present between the A466 and the site access (within the 30mph section).

A466 St Lawrence Road / Wye Valley Link Road

2.2.5 The A466 St Lawrence Road / Wye Valley Link Road runs in a north – south alignment on the western periphery of Chepstow. It connects the site with the A48 and M48 to the south and Monmouth and the A40 to the north. It forms a key route into and through Chepstow.

2.2.6 The A466 within the vicinity of the site is a c.7.5 metre wide single carriageway road subject to a 30mph speed limit. There is minimal direct frontage and it is generally well lit. There are footways on both sides of the carriageway.

2.2.7 The A466 forms two arms of the High Beech roundabout which is maintained by the Welsh Government and forms part of the strategic road network. To the south of High Beech, the A466 carriageway widens to provide three lanes in total and is subject to the national speed limit.

B4293

2.2.8 The B4293 is a local distributor road which connects the A466 St Lawrence Road at the Racecourse Roundabout with Chepstow Town Centre. It continues west from the Racecourse roundabout as Itton Road, connecting to areas to the northwest of Chepstow.

2.2.9 The B4293 to the east of the Racecourse roundabout (Welsh Street) is a single carriageway road with a c.6 metre wide carriageway and a speed limit of 30mph. It has intermittent traffic calming in the form of raised tables and speed cushions to reduce vehicle speeds and footways on at least one side of the carriageway along it is length. The B4293 provides access to both Chepstow Comprehensive School and The Dell Primary School.

2.2.10 The carriageway is generally well lit and is fronted by some residential properties with driveway access. There are also a number of controlled and uncontrolled pedestrian crossings to ease pedestrian movement.

2.2.11 To the west of the Racecourse roundabout the B4293 (Itton Road) is of a more rural nature with no footways or lighting and is subject to national speed restrictions.

A48

2.2.12 The A48 is a key distributor road into and through Chepstow and connects to Gloucester to the north and Newport to the southwest.

2.2.13 Within the vicinity of Chepstow, the A48 connects with the A466 St Lawrence Road / Wye Valley Link Road at the High Beech roundabout. It also connects with the B4293 within Chepstow Town Centre. The A48 for a short section to the east of the High Beech roundabout forms part of the trunk road network and is maintained by the Welsh Government.

2.3 Existing Traffic Flow Conditions

2.3.1 To establish a baseline traffic position on the network against which the development proposals can be assessed, traffic surveys were obtained at a number of key junctions on the local highway network. These included Manual Classified Turning Counts (MCTC) and an Automated Traffic Count (ATC) survey on the B4235.

2.3.2 The extent of survey area was sent to MCC on a number of occasions, as well as being set out within the Scoping Report submitted for consideration at the pre-application meeting. MCC stated that the TA "*take account of all junctions between the proposed access onto the B4293 and the High Beech roundabout*". As such, the junction assessments undertaken within this TA include the Racecourse Roundabout at the northern end of the A466, the A466 / B4235 junction, the Tempest Way signals and the High Beech Roundabout. It is not considered the development traffic would have a material impact at any of the other junctions as there would be minimal site traffic turning into and out of the other junctions along this section of the A466.

2.3.3 An independent traffic survey specialist (Road Data Services) was commissioned to carry out the surveys at the identified junction locations. The MCTC surveys were carried out between the hours of 0700 - 1000 and 1600 - 1900 on Thursday 30th November 2017. The ATC was undertaken for a continuous seven day period between 7th July 2017 and 13th July 2017. In summary, the junction turning counts undertaken were as follows:

- B4235 / A466 Priority Junction
- A466 / B4293 Racecourse Roundabout
- A466 / Tempest Way / St Lawrence Park Signal Controlled Junction
- A466 / A48 High Beech Roundabout

2.3.4 The obtained survey data has been used to establish a baseline traffic position on the network against which the development proposals can be assessed.

ATC Surveys

2.3.5 Traffic survey information has been obtained on the B4235 Usk Road to the west of the site within the existing 40mph area (broadly at the end of the visibility splay to the west from the proposed site access location). The survey included vehicle movements and speeds in both directions. A summary of the recorded flows and speeds are presented in **Table 2.1**. Full results of the ATC are included within **Appendix C**.

Table 2.1 – 2017 Traffic Flow and Speed Survey Results – B4235 Usk Road

Direction	AM Peak (0800-0900)		PM Peak (1700-1800)		Average Speed (mph)	85th Percentile Speed (mph)
	Total	HGV	Total	HGV		
Eastbound	114	1	77	2	33.8	38.5
Westbound	97	3	117	2	32.9	38.6
Two-Way	**211**	**4**	**194**	**4**	N/A	N/A

2.3.6 Traffic flows of between 194 and 211 two-way movements in the AM and PM peak hours were recorded on the B4235 Usk Road between 08:00 and 09:00 and 17:00 and 18:00. These flows have been used as the basis against which to assess the suitability of the proposed site access.

2.3.7 The speed survey showed 85th percentile speeds at less than 39mph and average speeds of 33mph to 34mph.

2.3.8 By way of comparison, the adjacent application by Charles Church (Ref: DC/2013/00648) had speed and traffic surveys undertaken on the B4235 as part of the Transport Statement submitted with the application (Vectos – July 2013). The surveys were undertaken in November 2012 and although these are over three years old and do not include the residential development itself, they provide a useful comparison. These surveys were undertaken east and west of the Charles Church site access, with the west one broadly at the location of the proposed Bayfields site access. The survey results are shown in **Table 2.2**.

Table 2.2 – 2013 Traffic Flow and Speed Survey Results – B4235 Usk Road (from adjacent Charles Church application)

ATC	Direction	AM Peak (0800-0900) Total	PM Peak (1500-1600) Total	Average Speed (mph)	85th Percentile Speed (mph)
1 (west of Charles Church site access)	Eastbound	86	88	37.9	43.3
	Westbound	108	82	37.1	42.6
	Two-Way	**194**	**170**	N/A	N/A
2 (east of Charles Church site access)	Eastbound	88	88	31.5	36.8
	Westbound	109	82	29.2	34.6
	Two-Way	**197**	**170**	N/A	N/A

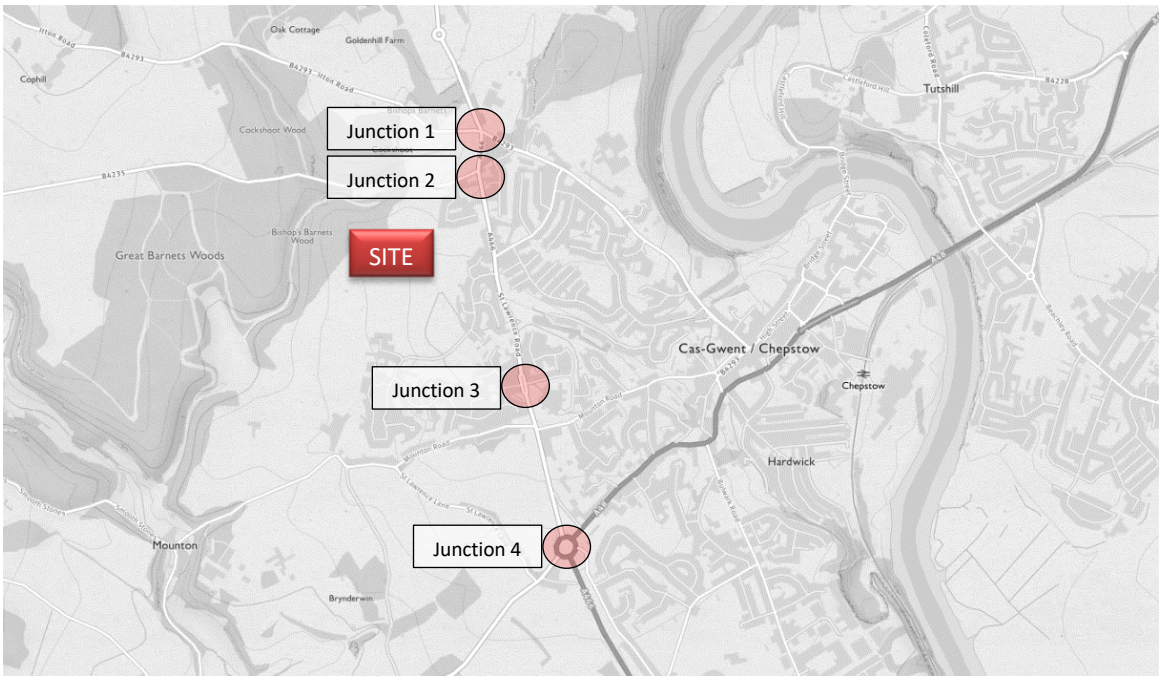
2.3.9 The traffic flow data between the 2013 and 2017 surveys is broadly consistent, with slight increases in two-way flows occurring in 2017. As such, the flow data is considered robust.

2.3.10 As part of the Charles Church application, the 30mph TRO was extended further west from their site access, with signage moved adjacent to the boundary of the Bayfields site. Rumble strips were also provided for eastbound movements to the west of the proposed Bayfields site access. As such, this is likely to have resulted in reducing speeds adjacent to and west of the site boundary. This is demonstrated through the reduction in vehicle speeds observed in the 2017 surveys in comparison with the 2013 surveys. Due to the 30mph extension, visibility to the right from the proposed Bayfields site access is now fully contained within a 30mph area (as is the proposed site access junction itself) and applying visibility based on the speeds shown in **Table 2.1** (which is in the national speed limit area) is considered robust and appropriate.

MCTC Surveys

2.3.11 The MCTC survey locations are shown in **Figure 2.2** with full results included in **Appendix C**.

Figure 2.2: Turning Count Survey Location Plan



2.3.12 Queue length surveys were also obtained at all of the surveyed junctions to assist in junction modelling validation and assist in interpreting capacity and operation of the key junctions. The results of the queue length surveys are also included in **Appendix C**.

2.3.13 Using the turning count data derived from the surveys, network peak hours of between 0800 and 0900 were observed in the AM peak period. Peak PM hours occurred between 1600 – 1700 at junctions 1 – 3 (local highway network) and 1630 and 1730 at junction 4 (WG junction). As such, the worst case hourly flows at each of junctions has been assessed for the PM peak hour.

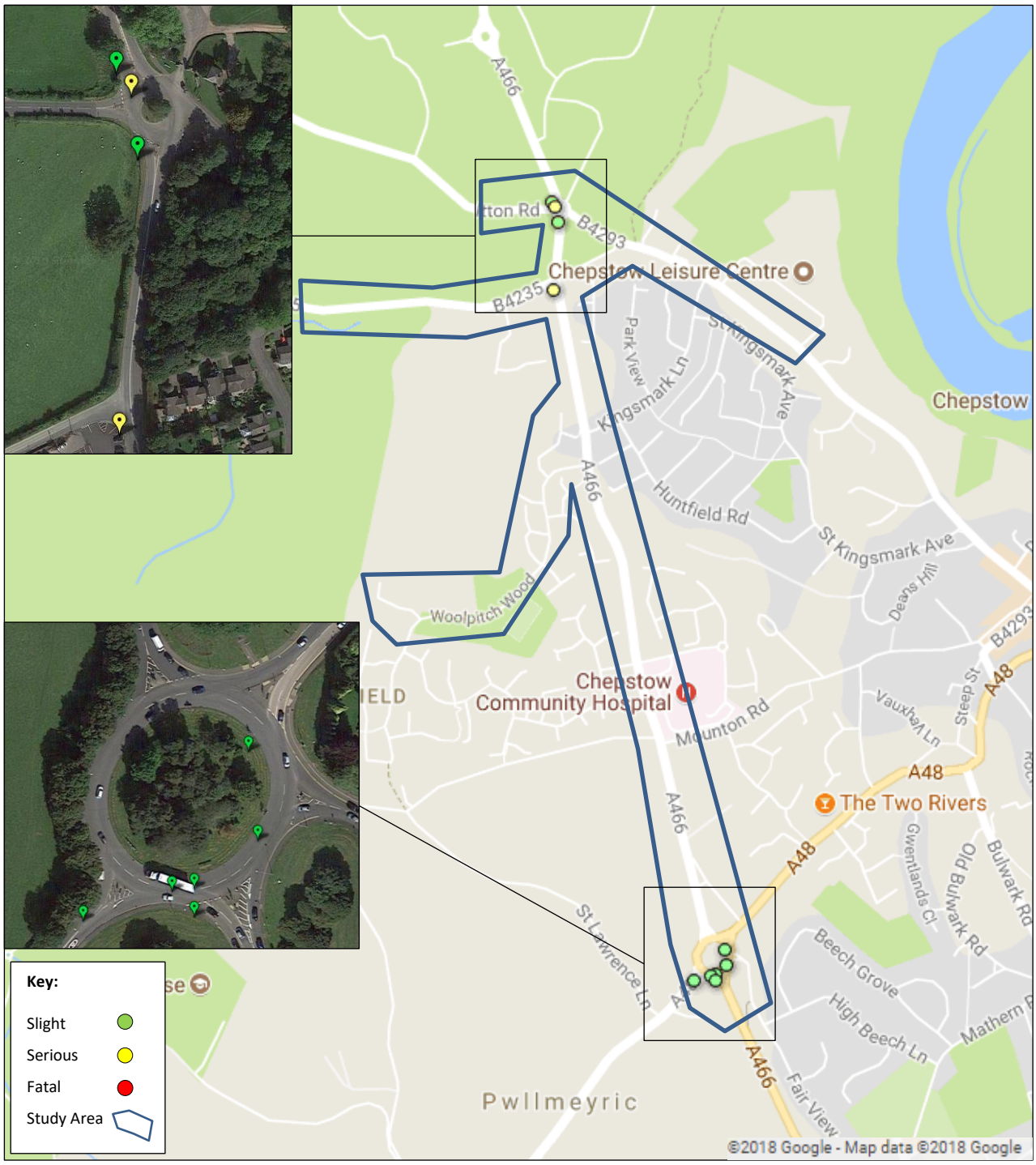
2.3.14 Traffic flow diagrams showing the 2017 baseline vehicle movements across the network during the AM and PM peak hours are included as **Figures 2.3 and 2.4** at the rear of this report.

2.4 Highway Safety

2.4.1 Personal Injury Accident (PIA) data has been obtained from recorded road safety data published annually by the Department for Transport (DfT). The statistics provide recorded PIA data reported in each local authority recorded using the STATS19 accident reporting form. The annual dataset is usually released in June each year. As such, the most recently available five-year dataset covers between January 1st 2012 and 31st December 2016.

2.4.2 **Figure 2.5** contains a plot of the accidents within the study area over the recorded five year period (between 2012 and 2016). A summary of the STATS19 outputs is shown within **Appendix D**.

Figure 2.5: Personal Injury Accident Locations



2.4.3 A total of 10 PIAs were recorded within the study area during the five year period. Of these, two were classified as serious injury accidents and the remaining eight as slight injury accidents. None of the PIAs were fatal.

2.4.4 Three of the PIAs involved cyclists and four involved a motorcycle. No PIAs involved pedestrian movements or HGVs. As such, the road safety data does not suggest that there is an existing safety issue for pedestrians crossing the A466 or Welsh Street.

2.4.5 Six PIAs occurred at the High Beech roundabout, all of which resulted in slight injuries. Three of the PIAs occurred within the vicinity of the A466 South arm entry to the roundabout. Two of these PIAs involved a motorcycle and one involved a cyclist. Two occurred when the cyclist / motorcyclist circulating the roundabout was struck by a vehicle entering the roundabout. The third was a rear end shunt between a motorcyclist and a vehicle waiting to enter the roundabout.

2.4.6 The remaining three PIAs at the High Beech roundabout were the result of a rear end shunt between vehicles queuing on an entry arm, a rear end shunt between vehicles circulating on the roundabout and a collision between circulating vehicles changing lanes on the roundabout. The PIAs occurred at different locations on the roundabout and do not constitute a cluster of accidents. The PIA's do not indicate a pattern or commonality that would represent a specific safety issue relating to the geometric layout at the roundabout. These types of incidents occur commonly at roundabout junctions due to the nature of the uncontrolled entries and circulatory carriageway operation, in particular at a roundabout with high traffic flows such as High Beech.

2.4.7 Three of the PIAs occurred at the A466 St Lawrence Road / B4293 Itton Road Roundabout. Two resulted in slight injuries and one in serious injury. The serious PIA involved a vehicle entering the roundabout colliding with a cyclist circulating the roundabout. As with High Beech, the PIA's do not indicate a pattern or commonality that would represent a specific safety issue relating to the geometric layout at the roundabout.

2.4.8 The obtained data indicates that no PIAs occurred along the B4235 along the site boundary or between the site and the A466. In particular, there have been no PIAs at the proposed site access location or at the access location of the adjacent Charles Church site. As such the data does not indicate that there is an existing safety issue which would preclude an access to the site onto the B4235.

2.4.9 Although all incidents are regrettable, the PIAs that occurred do not indicate an issue with the geometry of the highway that would be exacerbated by the proposals and there were no PIA's within the vicinity of the proposed site access.

3.0 SITE ACCESSIBILITY

3.1 Overall Site Accessibility

3.1.1 The importance of the location of a site in relation to encouraging sustainable travel is set out within TAN18: Transport (March 2007). Paragraph 3.3 states *"The location of new residential development has a significant influence on travel patterns as the majority of trips start or finish at home… It should be a key aim of development plans to identify residential sites that are accessible to jobs, shops and services by modes other than the car".*

3.1.2 TAN18 then continues within 3.4 to state that "*Settlement policies and residential allocations in development plans should therefore - promote housing development at locations with good access by walking and cycling to primary and secondary schools and public transport stops*."

3.1.3 Finally, paragraph 3.8 states "*Locations that are highly accessible by a variety of travel modes offer significant opportunities to make travel patterns more sustainable."* As such it is recognised by TAN18 that the sustainable location of a site can assist in facilitating sustainable travel habits.

3.1.4 This chapter sets out the connectivity of the site to the surrounding area by sustainable modes of travel and demonstrates its proximity to schools, public transport, services and employment. The site location is considered consistent with the aims of TAN18.

3.2 Walking and Cycling Introduction

3.2.1 The importance of walking and cycling in contributing towards sustainable travel patterns is detailed in TAN18. The guidance emphasises not only the role walking and cycling can have as main modes of transport for local journeys but also the considerable contribution they play in forming parts of longer journeys by public transport. Paragraph 6.2 of TAN18 states that Local Authorities should promote walking as the main mode of transport for shorter trips.

3.2.2 This section of the TA sets out both the walking and cycling infrastructure and key routes from the site to facilities as well as the location of the site in proximity to key facilities. The routes to the surrounding facilities and services have been considered in the context of the Welsh Government Active Travel Act Design Guidance (ATADG) (2013).

3.3 Walking Infrastructure and Routes

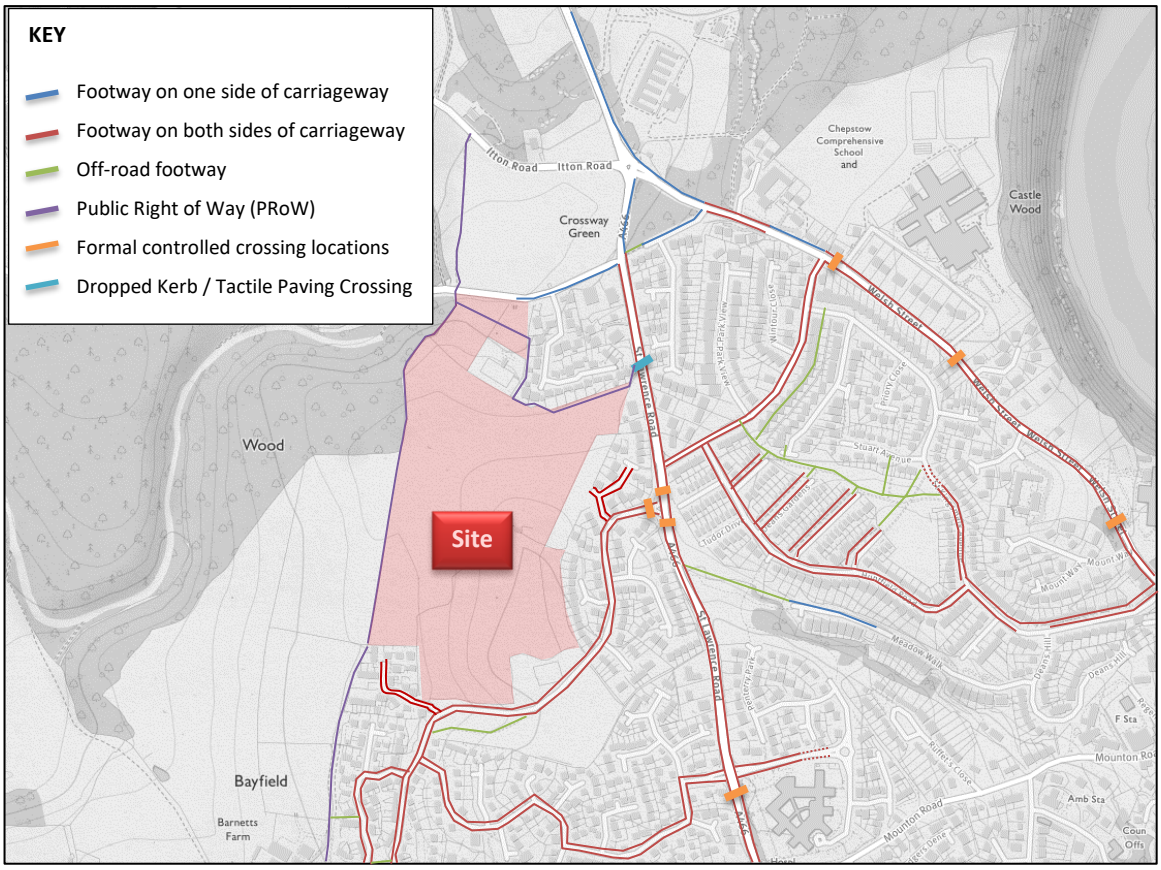
3.3.1 A detailed review of the walking and cycling infrastructure within the vicinity of the site has been conducted as part of the TA in accordance with the ATADG.

3.3.2 This includes a review of footways, crossing facilities, surface quality, lighting provision, whether there is natural surveillance, any obstacles and topography. The review considers key routes to the local bus stops, schools, facilities and amenities.

3.3.3 Good quality footway provision is generally in place on both sides of the carriageway within the vicinity of the site as would be expected for a residential area accommodating existing pedestrian movements.

3.3.4 An overview plan of the existing footway and public right of way provision is shown in **Figure 3.1**.

Figure 3.1 – Walking Infrastructure surrounding site

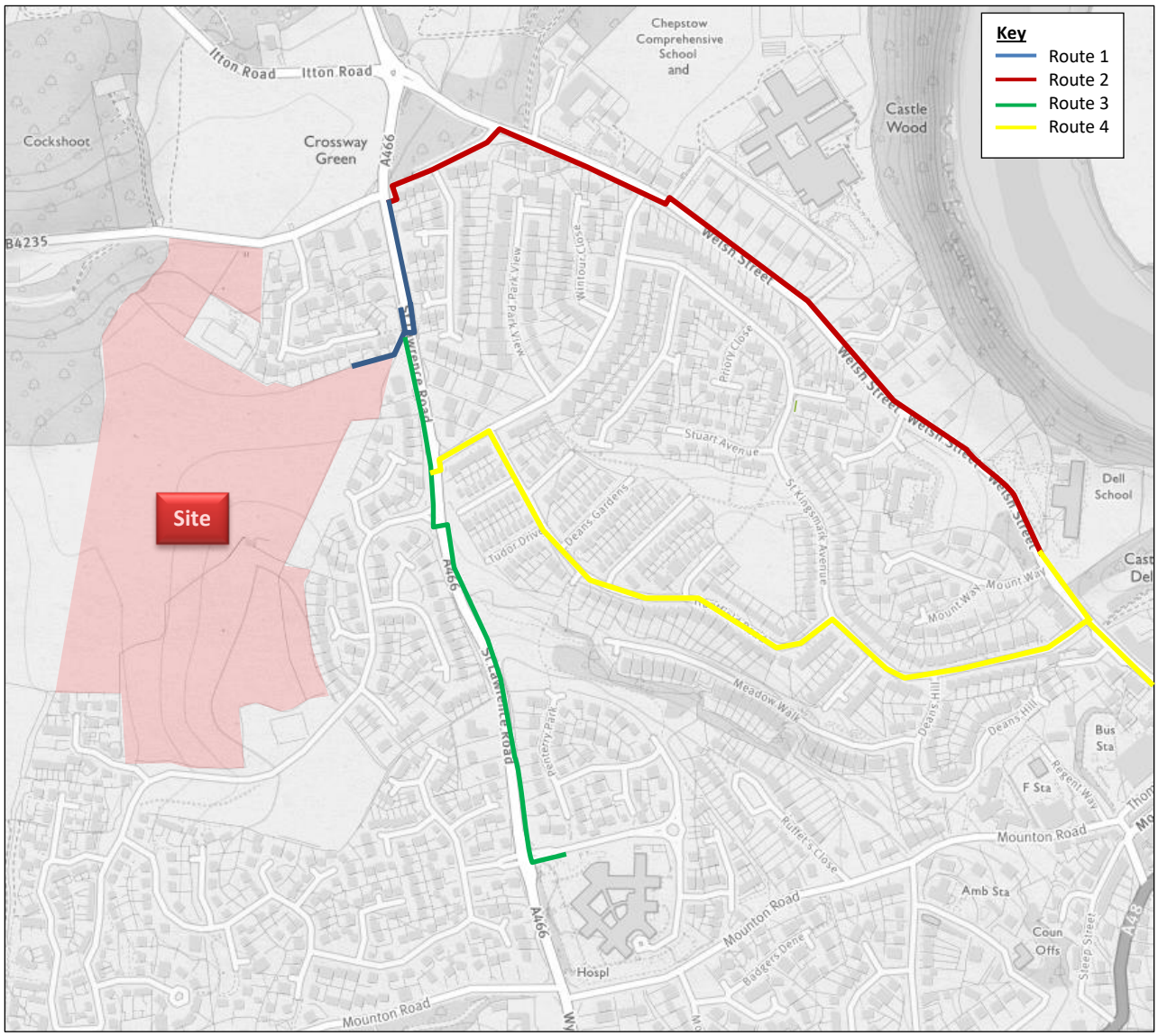


3.3.5 The routes to key facilities which have been reviewed within this TA have been set out as follows:

- **Route 1:** To A466 St Lawrence Road Bus Stops
- **Route 2:** To Chepstow Comprehensive School and The Dell Primary School (and Chepstow Leisure Centre)
- **Route 3:** To Chepstow Community Hospital
- **Route 4:** To Chepstow Town Centre

3.3.6 The routes have been shown on **Figure 3.2**.

Figure 3.2 – Key Walking Routes



Route 1: To A466 St Lawrence Road Bus Stops

3.3.7 The key route to the bus stops and St Lawrence Road is via an unsurfaced public right of way (PRoW) as shown in **Plate 3.1**. This PRoW connects to the northern corner of the site and provides a more direct route for some parts of the site to connect to the closest bus stops.

Plate 3.1: PRoW Footpath

3.3.8 This route is currently unlit and does not benefit from natural surveillance, although the proposed development itself would provide an improvement in this regard.

3.3.9 Where the PRoW adjoins St Lawrence Road there is a dropped kerb and tactile paving crossing which aids crossing of the carriageway directly to the south of the bus stops. This provides a crossing for pedestrian movements linking to the southbound bus stops and beyond to Welsh Street. This crossing is shown in **Plate 3.2**.

Plate 3.2: Dropped kerb and tactile paving crossing facility

Route Summary

3.3.10 Based on a review of this route, it is considered to be an acceptable and appropriate route to accommodate walking movements. The enhancement of the PRoW as a result of the development itself would provide a benefit for existing residents and potential future residents associated with the proposed development.

Route 2: To Chepstow Comprehensive School and The Dell Primary School

3.3.11 This route would continue from Route 1 from the eastern side of the A466 St Lawrence Road and as such this review does not cover what has been assessed as part of Route 1. It links to the closest primary and secondary schools, as well as the leisure centre.

3.3.12 From the eastern side of the A466 St Lawrence Road, pedestrians would use the pedestrian link which connects to the footways on Piercefield Avenue, which in turn connect to the footways on the B4235 Welsh Street.

3.3.13 The pedestrian link between the A466 and Piercefield Avenue is located directly opposite to the B4235 junction. This footway is approximately three metres wide, is surfaced and well lit. This section had vegetation overgrowth which reduced the effective width and this could make the route less desirable. The pedestrian link is shown in **Plate 3.3**.

3.3.14 The footways on Piercefield Avenue are at least 1.5 metres in width, with the majority of the route being 1.8 metres wide. The footways are good quality, have a flat gradient, and there is no evidence of ponding or issues with drainage at dropped kerbs along this section of the route. There is good street lighting provided on at least one side of the carriageway and the route benefits from good natural surveillance. Dropped kerb crossings are provided at the side road crossing and the crossfall on the footway leading to driveway access is at an acceptable gradient. The footways on Piercefield Avenue are shown in **Plate 3.4**.

Plate 3.3: Pedestrian link between A466 and Piercefield Avenue

Plate 3.4: Footways Piercefield Avenue

3.3.15 The footway on Piercefield Avenue continues onto Welsh Street. There are footways on both sides of Welsh Street, the southwestern footway is generally between around 1.5 metres and 2 metres and the northeastern footway is at least two metres in width and wider than this in places. The footways have good quality surfacing, are well lit and there is frontage development which offers some natural surveillance.

3.3.16 The footways along the length of Welsh Street have been considered suitable as an Active Travel Route by MCC on their existing network map. These have been deemed relevant for everyday journeys (journeys to work, school, to access shops or services, etc. i.e. not purely recreational) and have been audited and found complying with the standards set out in the Welsh Government's Active Travel Act Design Guidance. The Chepstow Active Travel Act existing pedestrian routes map is shown in **Appendix E**.

3.3.17 The footway on the southwestern side of the carriageway terminates approximately 100 metres to the southeast of Piercefield Avenue. At this point there is a raised table which serves as a traffic calming measure slowing vehicles and easing pedestrian crossing movements. Although it is not a formal pedestrian crossing, the kerbs are flush with the raised carriageway and this eases movements for those with mobility impairments.

3.3.18 The carriageway at this location of Welsh Street is approximately 6.2 metres in width. Visibility for pedestrians at this crossing is around 120 metres in each direction which is in excess of the stopping sight distances for a 30mph speed limit area. This is appropriate forward visibility for drivers to see pedestrians crossing and have sufficient time to slow down or stop, if required. It is also appropriate for pedestrians to judge gaps in traffic and allow sufficient time to cross.

3.3.19 The traffic flow data as shown in Figures 2.3 and 2.4 shows peak hour vehicle flows of 500 vehicles in the peak hour. This equates to one vehicle, on average, every 7.2 seconds, although there will be convoys of vehicles and as such gaps in traffic flows would be in excess of this on a regular basis. The Royal Society for the Prevention of Accidents (RoSPA) and Road Safety GB Assessment of *Walked Routes to School* guidance (2012) states that "*Most people will be able to cross two lanes of normal urban traffic in 4 to 6 seconds*." This statement is reiterated within the Welsh Government *Learner Travel Statutory Provision and Operational Guidance* (2014). The Welsh Government guidance also states a number of criteria in relation to visibility and sufficient gaps in traffic which are also considered to be met at this informal crossing.

3.3.20 In addition, the road safety data demonstrates that there have been no incidents at this section of the route over the last five years.

3.3.21 As such, the current arrangements, considering the good visibility, traffic flows and existing accident record are considered to be appropriate and acceptable for accommodating pedestrian movements associated with the site. MCC also consider this to be an acceptable route for Active Travel as indicated on their Existing Active Travel Routes Network Map.

3.3.22 The footway on the north-eastern side of the carriageway from this point to the south provides a continuous link to the Chepstow Comprehensive School, the Chepstow Leisure Centre and The Dell Primary School. This is an existing well used route for school movements and is considered to be of good quality and suitable for accommodating pedestrians.

3.3.23 The section of the route on Welsh Street slopes downhill towards the Town Centre and the gradient is an average of around 4% between Piercefield Avenue and the Dell Primary School. This is within the 1:20 gradient suggested within Inclusive Mobility for the design of new footways and as such appropriate for accommodating walking movements.

Route Summary

3.3.24 Based on the review, this is considered to be an acceptable and appropriate route to accommodate walking movements in its current form. Minor vegetation trimming and maintenance on the pedestrian link between the A466 St Lawrence Road and Piercefield Avenue would be encouraged.

Route 3: To Chepstow Community Hospital

3.3.25 The route to Chepstow Community Hospital would continue from Route 1 to the south along the A466 St Lawrence Road. There are footways on both sides of the carriageway which range from 1.5m to 2m in width and are of adequate surface quality.

3.3.26 On the western side of the carriageway, at the junction with Barnets Wood, dropped kerbs, tactile paving and a central refuge island are provided. On the eastern side of the carriageway at the junction with Kingsmark Lane, dropped kerbs and tactile paving are provided. There is a pedestrian crossing point between Barnets Wood and Kingsmark Lane with dropped kerbs and a central refuge island which facilitates crossing movements. There is also a signal controlled pedestrian crossing just to the south of Barnets Wood. As such, movements to and from the site are likely to use these crossings when walking to the hospital and are less likely to cross at the bellmouth of the Kingsmark Lane junction.

3.3.27 From the crossings to the south, there is a continuous footway on the western side of the carriageway of around 2 metres in width which links to Tempest Way. This forms the hospital

access road and there is signal controlled pedestrian crossing at this location to ease crossing movements and the footway on the southern side of Tempest Way links to the hospital.

3.3.28 The majority of the route is relatively flat and comfortable for walking, although there is a c.150 metre section with an average slope of c.9%. This starts approximately 60 metres south of Barnets Wood. This would likely make this walking route unattractive for those with mobility impairments. However, the pedestrian demand on this route from the proposed development would be low and the majority of movements are likely to be via the other three assessed routes.

Route Summary

3.3.29 The existing route is adequate and appropriate to accommodate the majority of pedestrian movements to the hospital and provides a suitable and realistic alternative to the car.

Route 4: To Chepstow Town Centre

3.3.30 Two key routes have been identified to access Chepstow Town Centre from the site. The likely route would depend on the site access used by pedestrians from the site (either the main access or the PRoW) and also the destination within Chepstow Town Centre. These two routes are well established existing pedestrian routes with Chepstow designed to safely accommodate significant pedestrian flows. As such, they are likely to provide adequate and appropriate routes for pedestrian movements associated with the proposed development.

3.3.31 The first route is via Welsh Street which forms a continuation of Route 2 to the southeast of The Dell Primary School. This links to the facilities and services at the southern end of Welsh Street and to High Street. There are continuous footways to the south of the Dell Primary School as well as a zebra crossing and a signal controlled pedestrian crossing to aid crossing movements.

3.3.32 The second route is via Kingsmark Lane, Huntfield Road and St Kingsmark Avenue, which also links to Welsh Street. This route has footways on both sides of the carriageway and would have lighter traffic flows than along Welsh Street. It also has increased frontage activity and therefore a higher level of natural surveillance. The section from St Johns Gardens to Welsh Street also forms part of a PRoW. There is a steep section with a gradient of 13% along a c.70 metre length at the southern end of Huntfield Road. This would discourage those with mobility impairments from using this route, and they would be more likely to use the Welsh Street route, if walking into the Town Centre. The remainder of the Huntfield Road route has an average gradient of less than 5% and as such is appropriate for accommodating the majority of walking movements.

3.3.33 Both of these routes have surfaced footways of good quality and street lighting along their length.

3.3.34 There is a further alternative to the Huntfield Road route, as pedestrians can use the network of surfaced paths through the park situated to the north of Huntfield Road and linking Kingsmark Lane and St Kingsmark Avenue. This is a slightly longer route than using Huntfield Road, has minimal natural surveillance and so less likely to be used a key route to the Town Centre. However, pedestrians may find it a more pleasant walking environment away from vehicular traffic and as such it provides a suitable alternative option.

Route Summary

3.3.35 There are alternative established routes to access the Town Centre and these are appropriate in their current form and currently accommodate pedestrian movements. The routes would facilitate pedestrian movements to and from the site and provide a suitable and realistic alternative to travelling by car.

3.4 Cycling Infrastructure and Routes

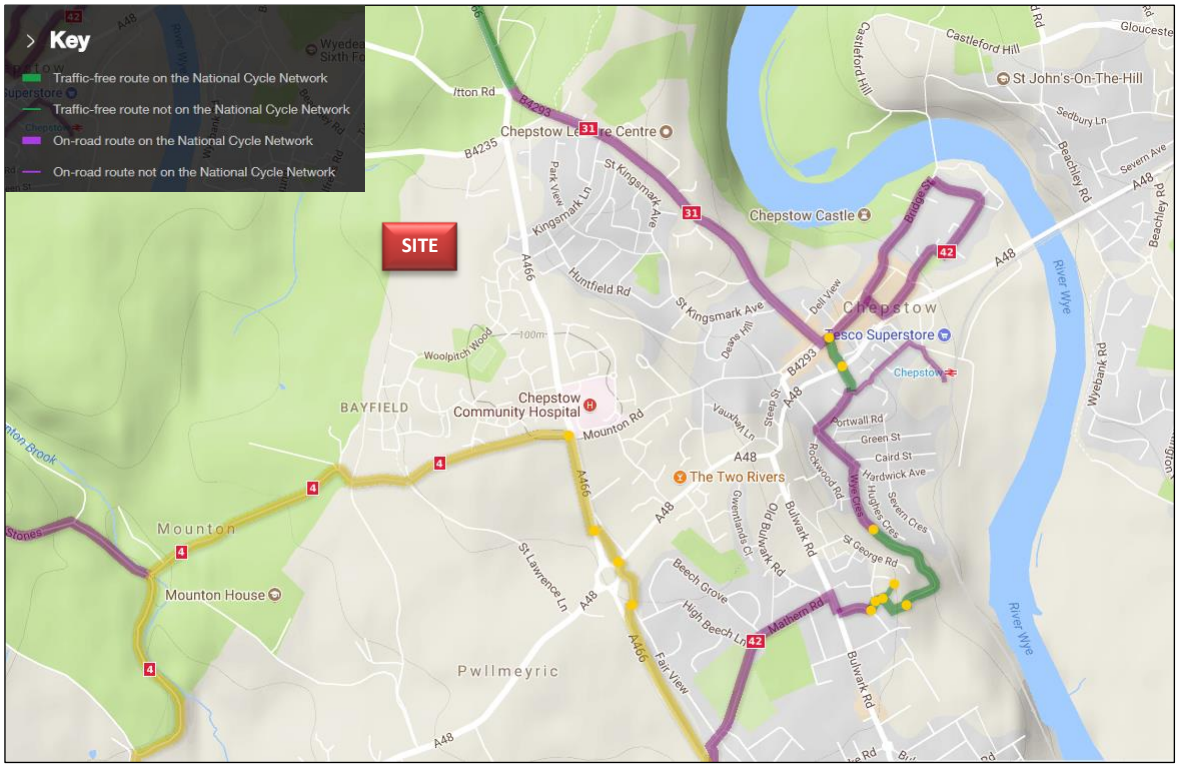
3.4.1 National Cycle Network (NCN) Route 4 and Regional Cycle Route 31 both pass within close proximity of the site.

3.4.2 Regional Route 31 links along the A466 north of the Racecourse roundabout, providing a local off-carriageway route that links to St Arvans. It continues east along the B4293 linking to Chepstow Town Centre and Rail Station.

3.4.3 NCN4 is a long-distance route which connects London with Fishguard. More locally within Chepstow the route runs broadly in an east – west alignment along the A48 from the High Beech roundabout to the west. It also runs south along the A466 connecting to an off-carriageway route over the M48 Severn Bridge and further afield links to Bristol.

3.4.4 The cycle routes within the vicinity of the site are shown in **Figure 3.3**.

Figure 3.3: Cycling Routes within the vicinity of the proposed development site



Source: Sustrans

3.4.5 The B4235 and the A466 within the vicinity of the site are considered suitable to accommodate on-carriageway cycling due to either being of appropriate width for vehicles to comfortably pass cyclists or having low traffic flows. The B4235 and A466 connect to Regional Route 31 and NCN4 to the north and south of the site.

3.4.6 The site location offers some potential for journeys to be made via cycling to and from the proposed development.

3.5 Walking and Cycling Distances

3.5.1 There are a number of publications which suggest guidance for appropriate walking and cycling distances to facilities. For reference, these have been summarised as follows.

1. Welsh Government - *Active Travel (Wales) Act 2013*: Within the Active Travel Act Design Guidance (ATADG) it is stated within paragraph 4.1.4 that "*walking as a mode of travel predominates for journeys of less than two miles whilst cycling is more convenient for longer journeys, typically of up to five miles for regular journeys*". This equates to walking distances of up to 3.2km and cycling distances of up to 8km.

2. Department for Transport (DfT) – *Manual for Streets* (2007): The ATADG continues on to reference MfS guidance. MfS states that 'walkable neighbourhoods' are typically characterised by having a range of facilities within 10 minutes walking distance of residential areas which residents may access comfortably on foot. When assessing the accessibility of a site for pedestrians and the proximity of local facilities, an average walking speed of 1.4m/s (3mph) is generally considered appropriate, which equates to approximately 400m in five minutes or 800m in 10 minutes (Guidelines for Providing for Journeys on Foot, CIHT, 2000).

MfS also states previous planning policy guidance in that it is generally acknowledged that walking offers the greatest potential to replace short car trips, particularly under 2km.

3. Chartered Institution of Highways and Transportation (CIHT) - *Guidelines for Providing for Journeys on Foot (2000):* Table 3.2 contains suggested acceptable walking distances for individuals without mobility impairment to facilities and services. These suggest preferred maximum distances for commuting / sightseeing and school journeys are up to 2km and that the average walking journey is approximately 1km.

4. DfT – *National Travel Survey 2016 Report* (NTS2016)– This suggests on page 16 that 80% of all trips under 1 mile (1.6km) were made by walking. Page 19 suggests that the average walking trip was 16 minutes in time (equating to around 1.3km based on a walking speed of 3mph).

5. DfT - *Local Transport Note (LTN) 2/08*: Further guidance set out in LTN2/08, suggests that the average distance that cyclists will generally travel is approximately 5km (16 minutes based on a cycling speed of 19.2km/h as set out in LTN2/08).

3.5.2 As such, based on the guidance above, it is considered that walking journeys could be up to 3.2km in length but journeys within 2km have a greater potential to be made on foot. A 2km distance equates to around a 25-minute walk travelling at 3mph (4.8kph). A site with a variety of facilities within 800 metres is considered to be situated within a 'walkable neighbourhood', although the majority of journeys within 1.6km are also made by walking.

3.5.3 It has been assumed that journeys of up to 8km are within an acceptable cycling distance, although a more realistic average journey is likely to be up to 5km. A cycling journey of between 5km and 8km would equate to approximately a 16 to 25 minute trip.

3.5.4 Facilities which are within suitable walking and cycling distances, accessed via established routes, have been summarised in **Table 3.1** with the location of these facilities shown in **Figure 3.4**.

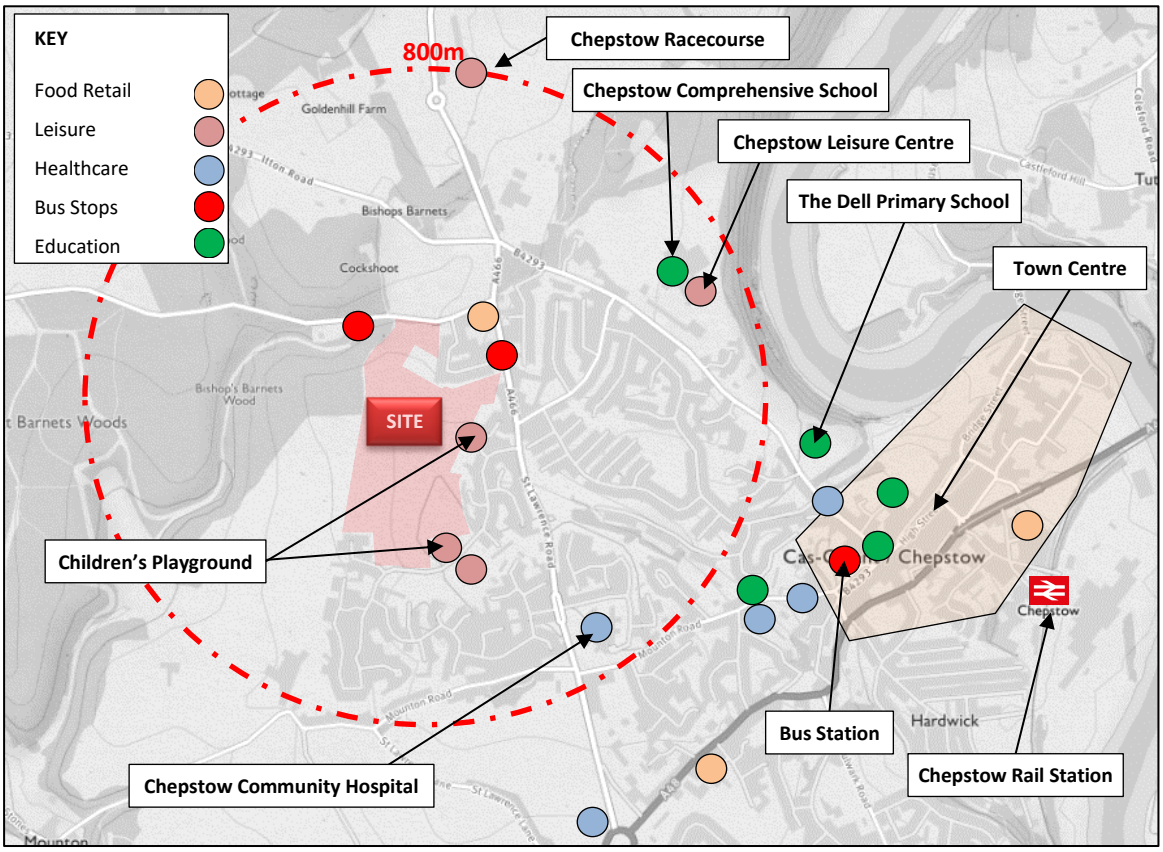
3.5.5 The facilities in **Table 3.1** have been summarised based on approximate distances travelled via walking routes from the centre of the site. To calculate this, distances have been taken from the public right of way access point onto the A466 at the northeastern corner of the site and an additional distance of 300 metres to the centre of the site from this point has been added. For the Children's playground and playing fields on Woolpitch Wood, it is assumed that pedestrians would use the informal pedestrian access linking directly to these areas. Indicative straight-line distances from the site are shown on **Figure 3.4**.

Table 3.1 – Proximity of the site to Local Facilities and Amenities

Facility / Amenity	Walking and Cycling Distance (metres)	Average Travel Time (minutes)	
		Walking	Cycling
Children's Playground	250	3	1
Woolpitch Road Playing Fields	350	4	1
St Lawrence Road Bus Stops	350	4	1
Budgens Convenience Store	400	5	1
Crossway Farm Childminding	600	8	2
Chepstow Racecourse	650	8	2
Chepstow Comprehensive School	850	11	3
Chepstow Community Hospital (including Dental and GP Surgeries x 2)	900	11	3
Chepstow Leisure Centre	1,000	13	3
Chepstow Dental Care	1,250	16	4
The Dell Primary School	1,300	16	4
Vauxhall GP Surgery	1,500	19	5
Post Office	1,500	19	5
Chepstow Library	1,500	19	5
Chepstow Bus Station	1,550	19	5
M&S Foodhall	1,600	20	5
Riverside Day Nursery	1,600	20	5
Chepstow Town Centre	1,600	20	5
Severn View Day Care Centre	1,600	20	5
Countrywide Stores	1,600	20	5
Marlow Vets	1,700	21	5
Tesco Supermarket	1,900	24	6
Chepstow Rail Station	2,000	25	6

* Based on walking speeds of 80 metres per minute and cycling speeds of 320 metres per minute

Figure 3.4 – Local Facilities and Amenities Plan



3.5.6 **Table 3.1** and **Figure 3.4** demonstrate that there are a number and range of local facilities within a suitable walking distance of the proposed residential development site. This includes a local shop, the closest bus stops, a children's playground and playing fields within 400 metres of the centre of the site. The local shop would ensure that for a number of everyday needs trips, potential future residents would not require the use of the car.

3.5.7 Chepstow Comprehensive school is within 850 metres of the centre of the site and The Dell Primary School is within 1,300 metres of the centre of the site. As such, these are both positive features of the development as potential future residents would be able to walk to these locations via the identified suitable and established routes. This is likely to reduce the level of vehicle trips made in relation to education uses from the site.

3.5.8 In addition, there are a significant further number of facilities within 1,600 metres (a 20 minute walk and a distance the NTS states that most journeys are made by walking), this includes; the Town Centre, GP surgeries, a hospital, sports centre, post office, bus station, racecourse, supermarkets and a number of other schools. These are all within a distance over which people are likely to walk (and cycle).

3.5.9 Chepstow Rail Station is also within 2km of the centre of the site and this has the potential for encouraging trips by walking or cycling and then rail to destinations further afield.

3.5.10 All facilities in **Table 3.1** are within the ATADG upper walking distances and can be accessed via suitable walking routes in accordance with the ATADG.

3.5.11 The site is well connected to services and facilities within walking and cycling distance via good quality and appropriate routes and crossings. This will encourage walking and cycling from the proposed residential development and reduce the reliance on the private car, consistent with relevant policy and guidance.

3.6 Accessibility by Public Transport

Bus

3.6.1 The closest bus stops to the site are located on the A466 St Lawrence Road. These are located approximately a 350 metre walk from the centre of the site.

3.6.2 These bus stops are serviced by bus numbers 63, 65, 69 and C4 and benefit from on-carriageway bus cage markings, but do not have shelters. The Monday to Friday services are summarised as follows:

- Bus Service 63 provides a two-hourly service between Cwmbran and Chepstow via Pontypool and Usk.
- Bus Service 65 provides six services per day in each direction between Chepstow, Trellech and Monmouth.
- Bus Service 69 provides an hourly service between Monmouth and Chepstow.
- Bus Service C4 provides a circular service around Chepstow with an hourly frequency (this bus routes via Kingsmark Lane, Barnets Wood and Woolpitch Wood so stops within close proximity of the site but not on the stops on the A466).

3.6.3 A similar level of service is provided on a Saturday with a reduced frequency of service provided on a Sunday.

3.6.4 These services complement each other with arrivals and departures reasonably evenly distributed and the combined services providing access to a variety of destinations. The services are summarised in **Table 3.2**.

Table 3.2: Bus Service Provision

Service	Route	First Service	Morning Peak	Evening Peak	Last Service	Daily Total
63	Cwmbran – Chepstow	0737	2	1	1739	7
	Chepstow – Cwmbran	0825	1	1	1902	7
65	Monmouth – Chepstow	0833	1	0	1810	6
	Chepstow – Monmouth	0703	1	1	1718	7
69	Monmouth – Chepstow	0833	2	1	1854	13
	Chepstow – Monmouth	0746	0	1	1815	13
C4	Chepstow Circular	0859	1	0	1609	7
Combined Services		**-**	**8**	**5**	**-**	**60**

3.6.5 The Chepstow Bus Station is also situated within a 1.6km walk of the site, and provides access to a number of additional services routing to further destinations. In addition, all the services which stop at the closest stops to the site connect to the bus station. The Rail Station can be accessed from the bus station within a 10 minute walk. There is the opportunity for connecting to another service (bus or rail) for access to further destinations using the closest stops to the site.

3.6.6 It is considered that the site has good accessibility by bus and this is a realistic travel option for potential future residents of the site.

Rail

3.6.7 Chepstow Rail Station is located approximately 2km from the site. This can either be accessed by walking (25 minutes), cycling (6 minutes) or by bus (15 minutes including a 10-minute walk from bus station).

3.6.8 This provides access to regional destinations. Chepstow Rail Station is located on the Gloucester to Newport Line with direct services to Gloucester, Cheltenham, Maesteg, Cardiff, Nottingham and Birmingham.

3.6.9 The Rail Station being within walking and cycling distance provides another realistic alternative option to the car for some journeys to and from the site.

3.7 Summary

3.7.1 In summary, the site is considered to be situated in a sustainable location as would be expected for a site situated adjacent to the urban area, within walking distance of a town centre. The site benefits from being connected to established walking, cycling and public transport routes. It is well situated to benefit from access to existing facilities and amenities, reducing the need for a car.

3.7.2 Potential future residents would have a realistic choice of modes of travel for all journey purposes, which will assist in constraining the level of vehicle generation from the site.

3.7.3 The site location is consistent with the policies and guidance as set out in the Monmouthshire County Council Adopted Local Development Plan (LDP). This states in paragraph 5.128 "*The spatial strategy of the LDP is to focus development in those locations that provide the best opportunities for achieving sustainable development, which offer a choice of transport modes*."

3.7.4 In addition, it is consistent with Policy S16 – Transport which states "*Where appropriate, all development proposals shall promote sustainable, safe forms of transport which reduce the need to travel, increase provision for walking and cycling and improve public transport provision. This will be facilitated by:*

- *Reducing the need to travel, especially by car;*
- *Favouring development close to public transport facilities;*

3.7.5 Finally, paragraph 6.1.3 states "*Government policy contained in PPW provides a firm steer that new development should be directed to existing urban areas where there is greatest potential for reducing the need to travel due to the co-location of houses, jobs, shops, services and public transport facilities*."

3.7.6 The site location will encourage and promote sustainable travel behaviour which is fully in accordance with the aims of local policy, TAN18 and the Active Travel Act.

4.0 DEVELOPMENT PROPOSALS

4.1 Overview and Layout

4.1.1 The proposals are for an outline application for a residential development of up to approximately 200 dwellings.

4.1.2 A provision for affordable housing will be agreed with MCC. The level of provision has not been discussed and agreed at this stage, although the proposals are for 35% of the total housing. For the purposes of providing a robust assessment it has been considered within the analysis in this TA that 20% of the dwellings would be affordable (40 dwellings) and the remainder would be private housing (160 dwellings).

4.1.3 The development proposals will also provide open space which would be available for existing residents and would be fully connected with the surrounding area through the provision of pedestrian access points.

4.1.4 The scheme will comprise of a variety of dwelling types with the indicative site masterplan included as **Appendix F**.

4.2 Vehicular Access

Site Access Arrangements

4.2.1 Vehicular access is proposed via a new priority junction from the B4235 Usk Road. The general arrangement design of the junction is shown in **Appendix G**.

4.2.2 The junction has been designed in accordance with TA42/95 with 10m corner radii and an access road width of 6.3 metres. Swept path analysis showing a large refuse vehicle turning into and out of the access is also shown in **Appendix G**.

4.2.3 Visibility splays have been provided in accordance with TAN18 (56 metres would be required and visibility in excess of this can be achieved), with the calculation of visibility set out as follows.

Visibility Splays

4.2.4 TAN18 sets out visibility splay guidance in Annex B. This provides two tables and it is stated that Table B is designed for roads where actual or design speeds are 60km/h (37.3mph) or below. Table A would be where speeds are in excess of this. Table A is based on guidance set out in the Design Manual for Roads and Bridges (DMRB) and Table B replicates guidance given in Manual for Streets (MfS).

4.2.5 The TAN18 guidance was published prior to the CIHT publication *Manual for Streets 2: Wider Application of the Principles* (2010) (MfS2) and as such does not consider the more recent research, updates and evidence which MfS2 presents. In particular, the strict application of DMRB standards on non-trunk roads is not recommended and research is presented showing that there is no evidence of an increased risk of collisions resulting from visibility below recommended levels.

4.2.6 MfS2 states in paragraph 9.4.2 that "*Detailed guidance on the design of priority junctions is given in TD42/95 but (as with **all sections of DMRB**) this is **written specifically for trunk roads** and, **where used in other situations, should not be applied uncritically***" [Hydrock emphasis].

4.2.7 MfS2 builds upon the research undertaken within MfS for visibility splays. This includes a combination of research carried out by TRL and TMS Consultancy, a review of recent research and international standards and the outcome of public inquiries since MfS was published. As such, it

is considered to represent a more up to date and informed position than MfS and TAN18 and is also aimed at the gap between MfS and DMRB (TAN 18 Table A) for which the B4235 in the vicinity of the site access is considered to fall.

4.2.8 The speed survey showed 85th percentile speeds at a maximum of 38.6mph (62.1kph). Paragraph 7.5.2 of MfS states that "*for existing streets, the 85th percentile wet-weather speed is used*". TAN18 also states that a stopping sight distance should relate to an 85th percentile wet weather speed. An adjustment factor for wet weather speeds for single carriageway roads is set out within TA22/81 of the DMRB. This suggests a deduction of 4kph (2.5mph) from dry weather 85th percentile speeds.

4.2.9 The wet weather adjustment reduces the maximum 85th percentile speed to 36.1mph (58.1kph) or 16.144 m/sec. The wet weather speed of 36.1mph would comply with guidance in TAN18 Table B, which recommends a visibility splay of 56 metres at this speed.

4.2.10 By way of further justification, the Chartered Institution of Highways and Transportation publication *Manual for Streets 2: Wider Application of the Principles* (2010) (MfS2) states in paragraph 1.3.6 that:

> *"It is only where actual speeds are above 40mph for significant periods of the day that DMRB parameters for SSD are recommended. Where speeds are lower, Manual for Streets parameters are recommended."*

4.2.11 The speeds are not above 40mph for significant periods of the day. By way of an interpretation of 'significant periods of the day', an Appeal for a proposed residential development in Sywell (Appeal Ref: APP/H2835/A/14/2220599) considered the application of MfS v DMRB standards. The highway network onto which the site access was obtained had speed limits of 30mph and 40mph. Within the 40mph section, the obtained traffic survey data showed 85th percentile speeds of 40mph (this is above the 37.3 mph upper limit stated in TAN18 and higher than the obtained speeds on the B4235). The Inspector stated in paragraph 54 of the Decision that:

> *"At neither location can it be concluded that actual speeds are above 40 mph for **significant periods of the day**. On that basis, bearing in mind the fact that Wellingborough Road is not a trunk road… and what MfS2 says in paragraph 1.3.5 about actual traffic speeds, I see no justification for the application of DMRB standards here" [Hydrock emphasis].*

4.2.12 In relation to applying MfS2 standards on roads subject to a national speed restriction, paragraph 1.3.7 of MfS2 states that:

> *"in rural areas many parts of the highway network are subject to the national speed limit but have traffic speeds significantly below 60mph. (See Figure 1.2) Again in these situations where speeds are lower than 40mph, Manual for Streets SSD parameters are recommended."*

4.2.13 As such the application of MfS2 visibility splays (Table B of TAN18 guidance) are considered appropriate for visibility in both directions.

4.2.14 Visibility can be achieved at around 80 metres in each direction to the nearside kerb from 2.4 metres back from the stop line from the centre of the junction. This is in excess of the TAN18 / MfS requirements (at 56 metres) and as such the visibility to and from the junction is appropriate and acceptable.

Traffic Regulation Order

4.2.15 The applicant is willing to provide reasonable, amended traffic calming arrangements on the B4235 to the west of the access, to further slow vehicle speeds prior to the site access. It is proposed to provide similar arrangements to the existing traffic calming to the west of the proposed site access location (i.e. rumble strips).

4.2.16 A TRO to relocate the 30mph speed limit is not considered to be required to accommodate an acceptable site access junction as appropriate visibility in line with Manual for Streets guidance can be achieved based on existing vehicle speeds.

4.2.17 Indeed, the provision of a new access (and the development itself) could assist with reducing speeds along this section of the B4235, by introducing additional interactions and frontage activity. A potential reduction in speeds could occur as drivers take extra care due to increased movements resulting from a development. This has been accepted by Inspectors at appeals (for example at the Sywell Appeal - Ref: APP/H2835/A/14/2220599).

Single Vehicle Access

4.2.18 A single vehicle access is appropriate for the proposed development site. The proposed vehicle access provides suitable visibility in each direction and can accommodate turning movements into and out of the site appropriately. There is no existing safety issue within the vicinity of the site access. Speeds are also likely to reduce through the provision of the new access itself.

4.2.19 Section 7 of this TA demonstrates the site access would operate well within capacity and that there would be a negligible impact on through movements on the B4235.

4.2.20 The site will be designed to accommodate refuse and emergency vehicles appropriately, with turning heads and loop roads provided that accord with the relevant requirements. The spine road will not allow on-street parking which will ensure that emergency vehicle access within the site is not impeded.

4.2.21 In relation to a single point of vehicle access or a 'cul-de-sac' development, paragraph 4.5.7 of MfS states:

> *"Cul-de-sacs may be required because of topography, boundary or other constraints. Cul-de-sacs can also be useful in keeping motor traffic levels low in a particular area, but any through connections for pedestrians and cyclists should be well overlooked with active frontages. Cul-de-sacs can also provide the best solution for developing awkward sites where through routes are not practical (Fig. 4.9)."*

4.2.22 It also states that caution should be taken on internal design in relation to turning heads and providing for service vehicles. This will be recognised and considered in the design of the site layout. As such, the single point of access and a cul-de-sac arrangement is not contrary with advice in MfS which recognises that on some sites, such as this one, they can provide the best solution and keep traffic flows low. They also reference the provision of additional connections for pedestrians and cyclists.

4.2.23 As part of the development proposals, additional connections will be provided for pedestrians to ensure there are through routes and the site is fully connected to the surrounding existing residential areas. As such, the vehicle access proposals and site layout are in accordance with guidance in MfS relating to cul-de-sacs.

4.3 Pedestrian and Cycling Accessibility

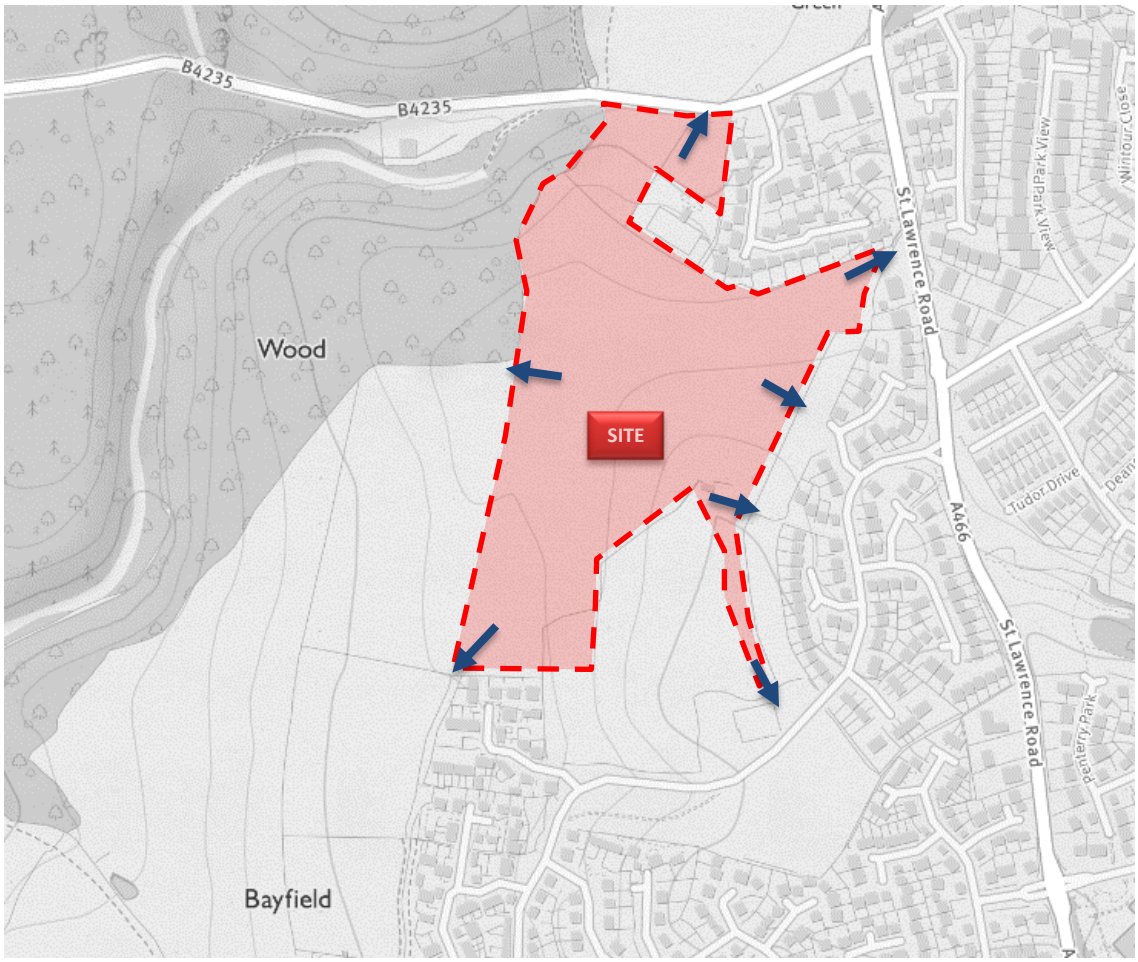
4.3.1 The footway on the B4235 would continue into the site at the site access and run adjacent to the internal spine road. The footway adjacent to the spine road would be 2m wide, well lit and have some frontage activity which would provide natural surveillance.

4.3.2 A further four potential pedestrian accesses are also proposed to ensure that the site is highly permeable by walking and fully connected to the surrounding areas. These are summarised as follows:

- Pedestrian route via the proposed site access junction with the B4235;
- Route linking with the existing Public Rights of Way on the north-eastern and south-western peripheries of the site;
- Informal link to Wallwern Wood to the east;
- Informal link to the Children's playground on Woolpitch Wood;
- Informal link to Barnet Wood; and
- Informal link to the Area of Outstanding Natural Beauty (AONB) associated with Dean Forest and Wye Valley to the west.

4.3.3 The approximate location of these pedestrian accesses are shown in **Figure 4.1**.

Figure 4.1 – Walking and Cycling Access Locations



4.3.4 The number of connections to the surrounding areas would enhance the connectivity for existing residents as well as ensure the site is fully permeable for potential future residents.

4.3.5 It is considered that the connections in all directions will assist in encouraging walking from the site, as well as integrate the site into the urban area, consistent with the aims of the MCC LDP.

4.3.6 In addition, the proposed development site will create new active travel routes linking existing and proposed residential areas to Dean Forest and the Wye Valley.

4.3.7 The provision of these routes will contribute towards MCCs requirements, under the Active Travel Act 2013, to *'take reasonable steps to enhance the provision made for walkers and cyclists and to have regard to the needs of walkers and cyclists in the exercise of certain other functions'*.

4.3.8 The proposed access arrangements will also facilitate access by walking and cycling to local facilities consistent with TAN18 paragraph 3.6 which states "*development will facilitate access by new residents to public transport stops, local shops and facilities by walking and cycling*".

4.4 Internal Layout Principles

4.4.1 The site will be designed in accordance with the principles set out within MfS. Residential properties would front both sides of the streets. The spine road will be designed to adoptable standards with a minimum width of 5.5 metres. Carriageway widths of all internal roads will accord with the MfS guidance (page 80), with widths will range between 4.8 and 5.5m depending on the route hierarchy.

4.4.2 The internal site layout will reduce vehicle speeds and encourage walking and cycling. On-street parking will be restricted on the main spine road to ensure two-way flows are maintained on the key route within the site.

4.4.3 The internal site layout will provide streets designed as 'places' with vehicle use at the bottom of the user hierarchy and walking and cycling at the top.

4.4.4 The alignment of the proposed internal road will ensure that vehicle speeds do not exceed 20mph, thus providing a safe environment for pedestrians and cyclists. A network of footways would be provided and dropped kerbing and tactile pavements will be provided where necessary. There will also be shared surface environments provided within the site.

4.4.5 Where possible, loop road arrangements will be provided to allow HGVs to manoeuvre in forward gear around the site. Where short cul-de-sac arrangements are shown, either suitable turning heads will be provided to facilitate turning movements for HGVs (such as refuse vehicles) or, where possible, the length of the cul-de-sacs will be restricted to 20 metres or less consistent with guidance set out in paragraph 6.8.3 of MfS.

4.4.6 This would ensure that both emergency and public service vehicles would be able to access every dwelling within the site without having to reverse further than the recommended distances. It would also ensure that any bins are located within an appropriate distance of vehicles.

4.5 Parking

Car Parking

4.5.1 Car parking within the development will be provided in accordance with MCC's Supplementary Planning Guidance (SPG) *Parking Standards* as adopted in January 2013.

4.5.2 For a residential development, this guidance states that a maximum provision of one space per bedroom should be provided. However, this should not exceed three spaces per dwelling.

4.5.3 In addition, a total of one space per five units should be provided for visitors to the site.

4.5.4 This is a maximum parking standard and the provision would be carefully considered and agreed with MCC as part of the detailed planning application. At present the housing mix is not known. However, car parking will be provided consistent with guidance, considering the balance between ensuring there is no overspill impact on local streets whilst not which could encourage vehicle use.

4.5.5 In addition, suitable levels of parking will ensure that vehicles do not park inappropriately across the site, restricting through vehicle movements, particularly emergency vehicles.

Cycle Parking

4.5.6 Should any apartments be provided on site, one space for every five bedrooms will be provided in communal, secure and sheltered locations.

4.6 Construction Movements

4.6.1 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. It is proposed that all routes to the site are agreed with MCC prior to construction commencing. However, HGV's will however be advised to follow the primary access route to the site dependent on the direction of travel. All construction vehicles are proposed to access the site from the B4235 to the east and then via the A466 to the south. No construction vehicles would be advised to use Welsh Street. Ideally vehicles would route via the A48, A466 and M4 and avoid all other routes within Chepstow.

4.6.2 As a Condition of any forthcoming planning permission a Construction Traffic Management Plan (CTMP) would be produced. The CTMP would, as a minimum, include details of the routes of construction traffic, temporary signage including the proposed location of warning signs, delivery timetables, the location of wheel washing facilities on site and the location of the construction compound on the site.

4.6.3 Measures would also be adopted during the construction of the site to minimise the impact of construction traffic movements with potential measures set out as follows:

- The production of a plan detailing measures to reduce the contract duration and the number of trips made
- Techniques and measures will be implemented, where practical, to assist in minimising construction freight trips on the local highway network, particularly during peak times (such as a vehicle booking system)
- All construction worker vehicles would be accommodated on the site to reduce the impact of overspill parking on the local highway network
- 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
- Wheel washing and dust sheeting will be undertaken to reduce the impact of mud, dust and dirt on the local highway network

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 Introduction

5.1.1 This section sets out the trip generation of the proposed development. It also provides details of the proposed methodology for distributing and assigning vehicle trips onto the local highway network and the modal split which could be associated with the site.

5.1.2 The Trip Rate Information Computer System (TRICS 2016 v 7.4.4) online database has been analysed for residential sites with similar characteristics to the proposed development site in terms of scale, location, accessibility and surrounding population numbers.

5.1.3 TRICS is industry standard software, used to forecast trips likely to be generated by development sites. The TRICS database predicts the likely numbers of arrivals and departures by utilising surveys of existing developments of a similar size and characteristics across the UK.

5.1.4 Trip rates have been obtained and applied to establish the forecast trip generation for the proposed residential development during peak hours and over a daily period. For robustness and for the purposes of this assessment, the generation has assumed a development of 200 dwellings, comprised of 40 affordable dwellings and 160 private dwellings.

5.1.5 The peak hours have been calculated as 08:00 to 09:00 and 17:00 to 18:00 within the TRICS database and for robustness these have been assumed to coincide with the peak network hours as observed in the surveys (AM - 08:00 to 09:00 and PM – 16:00 to 17:00 and 16:30 to 17:30).

5.2 Proposed Vehicle Trip Generation

5.2.1 The TRICS database has been interrogated to identify residential sites which would be associated with similar trip patterns.

5.2.2 To account for the mix of privately owned and affordable housing, separate trip rates for each housing tenure type have been derived from the TRICS database.

Privately Owned Houses

5.2.3 The following search criteria have been applied to obtain surveys of similar private housing sites within the TRICS database;

- 03 – Residential; D – Houses Privately Owned;
- Located in England and Wales (excluding London);
- Sites with between 100 to 491 units (the maximum available);
- Suburban Area and Edge of Town locations;
- Multimodal surveys carried out in the last 10 years (since 2007);
- Sites with a population of less than 250,000 within 5 miles;
- Sites with car ownership levels in excess of 1 vehicle per household (this is consistent with the car ownership within the ward in which the site is situated – 1.6 per household in the St Kingsmark ward).

5.2.4 The above search criteria resulted in the identification of nine similar sites. The full TRICS reports are included as **Appendix H**. The vehicle trip rates and trip generation are set out in **Table 5.1**.

Table 5.1: Vehicle Trip Generation – Privately Owned Housing

Time Period	Trip Rates (per dwelling)			Trip Generation (160 Dwellings)		
	ARR	DEP	TOT	ARR	DEP	TOT
AM Peak (0800-0900)	0.170	0.387	0.557	27	62	89
PM Peak (1700-1800)	0.381	0.226	0.607	61	36	97
12 Hour (0700-1900)	2.504	2.585	5.089	401	414	815

5.2.5 **Table 5.1** shows that the private housing is forecast to generate 89 two-way vehicle trips in the AM peak (0800-0900), 97 two-way vehicle trips in the PM peak (1700-1800) and 815 two-way vehicle trips over a 12-hour period (0700-1900).

Affordable Houses

5.2.6 The following search criteria have been applied to obtain surveys of similar sites within the TRICS database;

- 03 – Residential; D – Affordable / Local Authority Houses;
- Located in England and Wales (excluding London);
- Sites with between 14 to 280 units (the maximum available);
- Suburban Area and Edge of Town locations;
- Multimodal surveys carried out in the last 10 years (since 2007);
- Sites with less than a population of 250,000 within 5 miles.

5.2.7 The above search criteria resulted in the identification of three similar sites. The full TRICS reports are included as **Appendix H**. The vehicle trip rates and trip generation are set out in **Table 5.2**.

Table 5.2: Vehicle Trip Generation – Affordable Housing

Time Period	Trip Rates (per dwelling)			Trip Generation (40 Dwellings)		
	ARR	DEP	TOT	ARR	DEP	TOT
AM Peak (0800-0900)	0.106	0.206	0.312	4	8	12
PM Peak (1700-1800)	0.179	0.132	0.311	7	5	12
12 Hour (0700-1900)	1.329	1.362	2.691	53	54	107

5.2.8 **Table 5.2** shows that the affordable housing is forecast to generate 12 two-way vehicle trips in the AM peak (0800-0900) and the PM peak (1700-1800) and 107 two-way vehicle trips over a 12 hour period (0700-1900).

Total Proposed Development Vehicle Trip Generation

5.2.9 The total forecast vehicle trips from the proposed development are shown in **Table 5.3**.

Table 5.3: Vehicle Trip Generation – Total Proposed Development

Time Period	Private Housing (160 units)			Affordable Housing (40 units)			Total Vehicles (200 units)		
	ARR	DEP	TOT	ARR	DEP	TOT	ARR	DEP	TOT
AM Peak (0800-0900)	27	62	89	4	8	12	31	70	101
PM Peak (1700-1800)	61	36	97	7	5	12	68	41	109
12 Hour (0700-1900)	401	414	815	53	54	107	454	468	922

5.2.10 **Table 5.3** shows that the entire proposed development is forecast to generate 101 two-way vehicle trips in the AM peak, equating to one vehicle every 36 seconds, on average, across the hour. In the PM peak the forecast generation is 109 two-way vehicle trips, equating to one vehicle every 33 seconds, on average, across the hour.

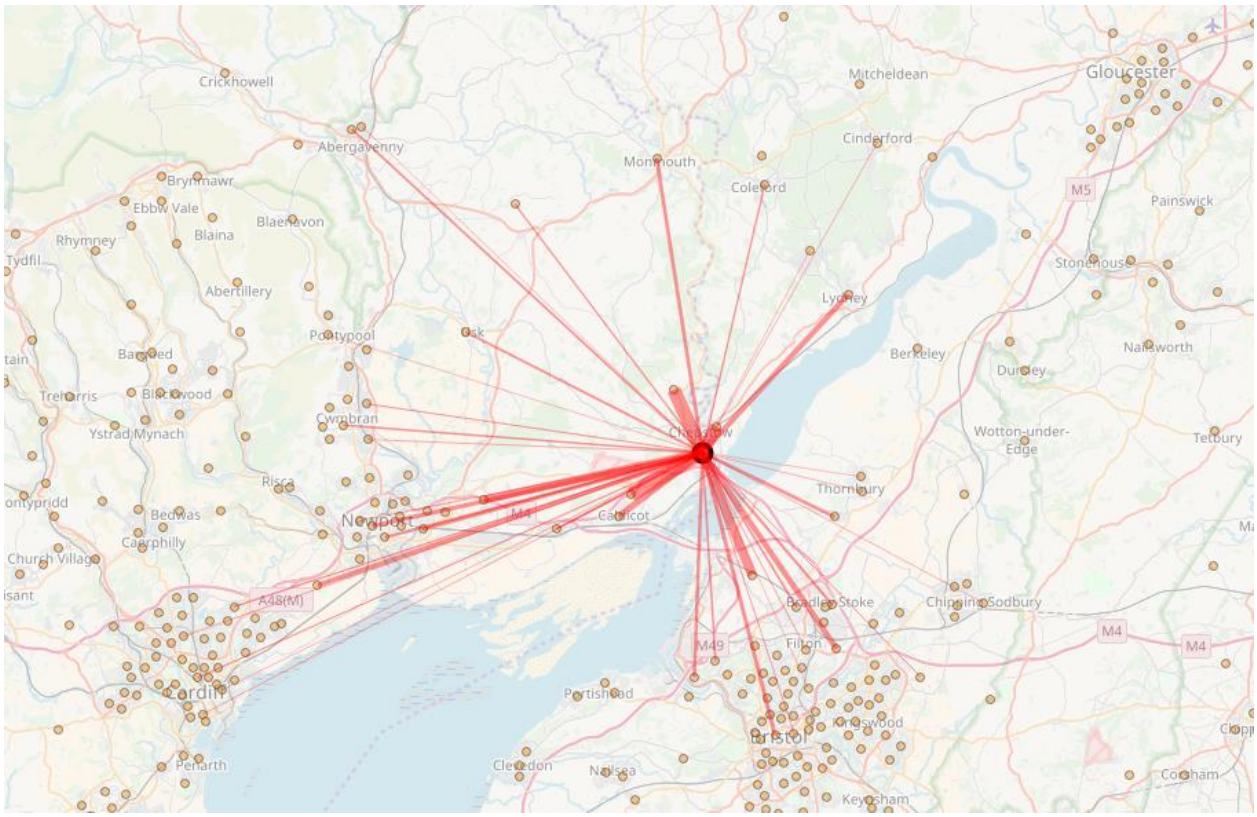
5.2.11 Over a 12-hour period the site is forecast to generate 922 two-way vehicle trips.

5.3 Vehicle Distribution and Assignment

5.3.1 The percentage distribution of vehicles across the network has been based on 2011 Census data contained in Table WU03EW - *Location of usual residence and place of work by method of travel to work (Middle Layer Super Output Area (MSOA) level).* This data is presented visually on the Datashine Commute website for each MSOA by mode with the flows from MSOA Monmouthshire 008 reproduced in **Figure 5.1**.

5.3.2 Although a residential site generates trips for all purposes, not just work purposes, the Census data is considered appropriate for use in distributing traffic associated with the development during the peak hours as a high proportion of vehicle trips would be for commuting purposes.

Figure 5.1 - Car driver commuting flows from Monmouthshire 008



Source: Datashine commute (www.commute.datashine.org.uk)

5.3.3 The site is situated within the MSOA Monmouthshire 007 and MSOA Monmouthshire 008 is adjacent to the site. However, MSOA Monmouthshire 008 is considered more representative of the likely destinations of vehicles from the site, as MSOA Monmouthshire 007 covers a much wider area across rural Monmouthshire. The MSOA Monmouthshire 008 is entirely contained within Chepstow and covers the majority of the town and is therefore more representative of the likely travel behaviour from a site connected to the existing urban area in Chepstow.

5.3.4 In addition, MSOA data has been used as this can be analysed by mode of travel. Data at a more localised level is only available for analysis combining all modes of travel which is not representative of vehicle destinations. The Census data has been taken directly from the Datashine Commute website which lists the total number of journeys between the home area (MSOA Monmouthshire 008) and all other areas where 6 or more journeys are made. As such, this is considered to be a robust representation of the likely destinations for vehicles from the proposed development site and therefore local distribution within the study area.

5.3.5 The most appropriate routes have been identified based on distances and times between the site and destination. For journeys remaining within Monmouthshire 008 and those travelling to Monmouthshire 007, the routing has been based on analysis of lower output area data (which is based on all modes of travel). Vehicles have then been distributed across the local routes accordingly.

5.3.6 The percentage turning movements have been obtained by totalling the number of movements along each route within the study area. The same distribution percentages have been used in the AM and PM peaks. Census data and the full analysis undertaken is included as **Appendix I**. A summary of the distribution within the study area is as follows:

- A466 South of High Beech roundabout – 38.2%
- A48 East of High Beech roundabout – 3.0%
- A48 West of High Beech roundabout – 10.4%
- Fairview – 2.5%
- Tempest Way – 2.0%
- St Lawrence Park – 1.0%
- B4235 West – 3.4%
- B4293 Itton Road – 3.9%
- B4293 Welsh Street – 33.4%
- A466 North of B4293 – 2.3%

5.3.7 The distribution percentages across the network are shown in **Figure 5.2** at the rear of this report, which also shows the percentage turning movements at each junction.

5.3.8 The resultant assigned vehicle movements associated with the proposed development in the AM and PM peaks are provided at the rear of this report as follows:

- **Figure 5.3**: Development Vehicle Assignment – AM Peak (0800 – 0900)
- **Figure 5.4**: Development Vehicle Assignment – PM Peak (1700 – 1800)

5.4 Proposed Development Modal Split

5.4.1 A forecast of the modal split percentages for the proposed development site has been based on the comparable sites within the private housing analysis in TRICS (as presented within the vehicle generation analysis). The trips over 12 hours have been used for a modal split forecast.

5.4.2 A localised context has then been applied, through obtaining modal split data for journeys to work from 2011 Census data for the four lower level super output areas within which the site is situated or adjacent to (W00009803, W00009807, W0009810 and W0009815). The applicable 2011 Census data is shown in *Table QS701EW - Method of travel to work*. As this is just for work related journey purposes, using the Census analysis alone would not be representative of the likely modal split from a residential site.

5.4.3 The modal split information for TRICS and Census data has been shown in **Table 5.4**.

Table 5.4: Proposed Development Forecast Modal Splits

Mode of Travel	Modal Split %	
	TRICS	Census
Public Transport	2.2%	5.1%
Vehicle Driver	60.2%	84.0%
Passenger	18.8%	4.3%
Cycle	2.5%	0.5%
Walk	16.2%	5.8%
Other	0.1%	0.3%
TOTAL	**100.0%**	**100.0%**

5.4.4 The TRICS data allows for trips for all journey purposes and therefore the vehicle modal split (60% of all trips) is considered to be more representative of that likely for the proposals. For example, trips for educational purposes represent a significant proportion of all trips in the AM peak and

generate a high level of car passengers, walking and cycling, which are not reflected in Census data which only considers journeys to work. However, the Census data demonstrates that locally there is a higher level of public transport use than shown in the TRICS data.

5.4.5 On this basis, it is considered that 60.2% of all trips generated by vehicles would be a robust forecast and trips by other modes have been adjusted accordingly to allow for a higher level of public use than shown in the TRICS data. These have been estimated through taking an average of the sustainable travel modes and adjusting so that they equate to 39.8% of all trips.

5.4.6 The adjusted TRICS modal share data is shown in **Table 5.5** and this is considered to robustly forecast the level of trips that could be generated by each mode of travel.

5.4.7 The forecast modal share movements in the AM and PM peak hours based on the TRICS adjusted modal split percentages are detailed in **Table 5.5**.

Table 5.5 - Proposed Development Forecast Modal Splits

Mode of Travel	TRICS Adjusted		
	% Modal Share	AM Peak Person Trips	PM Peak Person Trips
Vehicles	60.2%	101	109
Vehicle Passenger	17.4%	29	31
Walking	15.0%	25	27
Cycling	2.3%	4	4
Public Transport	5.1%	9	9
Total		**168**	**181**

5.4.8 **Table 5.5** shows that within the peak hours the development could generate 29 to 31 vehicle occupant / car share movements, 25 to 27 pedestrian movements, 4 cycling movements and 9 public transport movements.

5.4.9 The modal split percentages and the vehicle trip generation forecast within this analysis do not consider the reduction in car use and increase in trips by other modes which would be targeted through measures within the travel plan. In addition, there will be sustainable measures adopted as part of the site design to facilitate sustainable travel including the provision of cycle parking and connected pedestrian routes.

6.0 FUTURE YEAR TRAFFIC FLOWS

6.1 Overview

6.1.1 This Section outlines the committed development which has been considered within the assessment and TEMPRO growth factors to obtain future year background traffic flows.

6.2 Committed Developments

6.2.1 From discussions with Welsh Government as part of this TA, they have requested that the Mabey Bridge site, also known as Fairfield Mabey, (App Ref:2014/01290) is included within the assessment as a committed development. Planning permission was granted on 27 November 2017 for up to 450 residential dwellings, office and leisure use. This has therefore been considered within the assessments in this report.

6.2.2 In support of the Mabey Bridge planning application a TA was prepared by Vectos in December 2016. This sets out the forecast proposed development trip generation (Section 5 of the Vectos TA) and distribution (Flow Diagram 2) which have been used to establish the committed development traffic flows.

6.2.3 The Mabey Bridge TA did not cover the same study area extent as within this TA. Assumptions have therefore been made with regard to vehicle trips distributed along the A466 from High Beech Roundabout to the north. In addition, it has been assumed that half of vehicles turning right from the A48 to the B4293 travel along Welsh Street and through the Racecourse roundabout.

6.2.4 The extended Mabey Bridge development distribution percentages on the network for the AM and PM peak hours are shown in **Figures 6.1 and 6.2** at the rear of this report.

6.2.5 To establish suitable trip generation for this development and assign the vehicles onto the network, the agreed trip rates within the Vectos TA for the residential uses (Vectos TA – Table 5.1) have been applied to the approved level of 450 dwellings.

6.2.6 The vehicle trips associated with the residential (450 dwellings) and office uses (5,000sqm) on the site have been derived from Table 5.1 and 5.5 of the Vectos TA respectively.

6.2.7 The resultant total Mabey Bridge vehicle trip generation and assignment for the AM and PM peak hours are shown in **Figures 6.3 and 6.4** at the rear of this report.

6.3 Future Year Baseline Traffic Flows

6.3.1 In addition to a base year assessment, a future year of 2023 has been assessed, which is 5 years after the date of registration of the planning application, as agreed through the scoping discussions.

Growth Factors

6.3.2 To take account of background traffic growth on the local highway network within the vicinity of the site between 2017 and 2023, growth factors have been applied to the obtained 2017 base flow data. These growth factors have been calculated using the TemPro (v7.2) computer programme which consider projections in population, employment, car ownership and trip rates based on information derived from the National Trip Ends Model (NTEM) and the 2011 National Travel Survey.

6.3.3 The TemPro projections are applied to MSOA's based on local development plans and growth is distributed across areas based on past trends in housing and growth and may not be reflective of the future plans for a specific area. It is suggested that appropriate adjustments may be required when considering individual applications.

6.3.4 As such, the application of TemPro growth rates and the direct inclusion of the Mabey Bridge site traffic flows would lead to double counting any increase in future year traffic flows. On this basis, the projected future year housing figures within the MSOA Monmouthshire 008 have been reduced to account for the 450 dwellings from the Mabey Bridge site. TemPro makes an allowance for an increase in housing of 112 dwellings during the 2017-2023 period in MSOA Monmouthshire 008. As such, the future year households have been reduced to the 2017 base levels. MSOA Monmouthshire 007 also includes an increase of 132 households. To allow for the increase in vehicles within the study area resulting from Mabey Bridge, the 007 MSOA area households have also been reduced to the 2017 base levels. The alternative assumptions therefore assume a reduction of 244 households which is still below the increase of 450 households from the allocated Mabey Bridge site. As such, the adjustment is considered robust and appropriate.

6.3.5 Based on the alternative assumptions the TemPro growth factors have been obtained for 2017-2023 through obtaining the average growth rates between MSOA Monmouthshire 007 and 008. The resultant AM and PM peak growth rates are set out as follows:

- 2017-2023 – AM Peak – 1.02835
- 2017-2023 – PM Peak – 1.03273

Future Year Traffic Flows and Assessment Scenarios

6.3.6 The base traffic flows shown in Figures 2.3 and 2.4 have been factored by the calculated growth rates. The resultant future year traffic flow diagrams in the AM (0800 – 0900) and PM (1600 – 1700 / 1630 - 1730) peak hours are set out in the following figures at the rear of this report:

- **Figure 6.5:** 2023 Forecast Base – AM Peak Hour
- **Figure 6.6:** 2023 Forecast Base – PM Peak Hour
- **Figure 6.7:** 2023 Forecast Base + Committed – AM Peak Hour
- **Figure 6.8:** 2023 Forecast Base + Committed – PM Peak Hour

6.3.7 The development traffic flows have then been added to the 2023 forecast base plus committed development flows with the resultant base plus committed plus development flows shown in the AM and PM peaks in **Figures 6.9 and 6.10** at the rear of this report.

7.0 TRAFFIC IMPACTS AND OPERATIONAL ASSESSMENTS

7.1 Introduction

7.1.1 This section sets out the scope of the local highway network over which the impact of the proposed development has been assessed, the assessment scenarios, the results of percentage impact assessments considering all movements through each junction and a summary of the operational assessments of key junctions.

7.2 Extent of assessment

7.2.1 The study area has been agreed through scoping and based on pre-application comments from MCC officers. The impact of the development has been considered at the following junctions:

- Junction 1 – Site Access / B4235 Priority Junction
- Junction 2 - B4235 / A466 Priority Junction
- Junction 3 - A466 / B4293 Racecourse Roundabout
- Junction 4 - A466 / Tempest Way / St Lawrence Park Signal Controlled Junction
- Junction 5 - A466 / A48 High Beech Roundabout

7.3 Assessment Scenarios

7.3.1 As set out in Section 2, the peak hours on the network have been calculated based on the observed turning movements on the network. As such, assessments have been undertaken during the network AM (0800 – 0900) and PM (1600 – 1700 / 1630 – 1730) peak hours. The peak hourly development traffic flows as generated in Section 5 have been assumed to occur in the peak network hours for a worst case analysis at each junction. The scenarios which have been assessed within this TA are summarised as follows:

- 2017 Base
- 2023 Forecast Baseline + Committed (without development scenario)
- 2023 Forecast Baseline + Committed + Development (with development scenario)

7.4 Percentage Impact Assessments

7.4.1 An assessment has been carried out of the forecast percentage increase in traffic flows that would be associated with the proposed development. This compares the development traffic flows against the 2017 base flows (without the inclusion of committed development traffic), for a robust worst-case analysis.

7.4.2 The resultant percentage increase in 2017 traffic flows through the individual junctions in the AM and PM peak periods is summarised in **Table 7.1**.

Table 7.1: Percentage Impact Assessment

Junction	AM Peak (0800 – 0900)			PM Peak (1600 – 1700 / 1630 - 1730)		
	2017 Baseline Flows	Dev Traffic Flows	Percentage Increase	2017 Baseline Flows	Dev Traffic Flows	Percentage Increase
Junction 2 - B4235 / A466 Priority Junction	923	98	10.6%	836	107	12.8%
Junction 3 - A466 / B4293 Racecourse Roundabout	1046	40	3.8%	890	45	5.1%
Junction 4 - A466 / Tempest Way / St Lawrence Park Signal Controlled Junction	1329	58	4.4%	1301	62	4.8%
Junction 5 - A466 / A48 High Beech Roundabout	3171	55	1.7%	3330	59	1.8%

7.4.3 **Table 7.1** demonstrates that the development traffic has a minimal percentage increase in flows through the majority of junctions within the study area.

7.4.4 The increase in flows is in excess of 5% at the B4235 / A466 Priority Junction, although this is a consequence of low background traffic flows and a detailed assessment of the junction operation has been undertaken to establish whether the impact of the site is material.

7.4.5 At the High Beech roundabout (Junction 5) the forecast increase is minimal and the site would generate less than one vehicle per minute through the entire roundabout in the peak hours. This equates to a maximum of a 1.8% increase in flows through the junction against 2017 base data.

7.4.6 The Vectos TA for the Mabey Bridge site provides traffic surveys and queue length data which have been compared with those have obtained for Bayfields. The AM peak flows were around 1% higher through the entire junction in the Vectos TA from 2014 (3,491 PCU's) than obtained for Bayfields in 2017 (3,337 PCU's). However, the queue lengths were broadly comparable, with slightly higher queues recorded in 2017 than in 2014. As such, minor variations in traffic flow at this roundabout (which occur on a daily basis) did not result in higher queues when comparing the two surveys. On this basis, the minimal change in flows resulting from the development would be well within daily variations and unlikely to result in perceptible changes to queue lengths.

7.4.7 As a comparison, the Mabey Bridge site was forecast to generate between 146 and 156 vehicle movements through the High Beech roundabout, around three times higher than the vehicle movements from the proposed Bayfields development. The Mabey Bridge application did not provide an assessment of this roundabout and no mitigation was required. As such, a higher level of vehicle movements through the roundabout (just under 5%) has previously been accepted by WG. The proposed development would have a significantly lower impact on the operation of this roundabout than the Mabey Bridge site.

7.4.8 Consistent with the Mabey Bridge development (and as there would not be a material impact), detailed junction modelling has not been undertaken as it is not considered that this is required. This approach has been agreed with WG.

7.4.9 At both the Racecourse Roundabout (Junction 3) and the Tempest Way signals (Junction 4), the development would generate less than one vehicle per minute across all movements with a c.5% (or lower) increase in traffic flows through the junctions. It is therefore considered unlikely that the site would have a material impact on the operation of these junctions. However, as these are key junctions within the vicinity of the site and MCC has requested operational assessments, junction modelling has been undertaken.

7.4.10 Operational assessments have therefore been undertaken at Junctions 2 to 4 and the site access. The study area has not been extended further as the impacts of the development traffic outside of the junctions shown in **Table 7.1** would be well within daily variations of traffic.

7.5 Highway Improvements – High Beech Roundabout

7.5.1 As part of scoping discussions to inform this TA, the Welsh Government have stated that there are no current proposals for improvements at the High Beech roundabout.

7.5.2 As shown in Table 7.1, the impact of the development flows at this roundabout would be minimal (a maximum of 1.8% in the peak hours) and would not be the cause of any operational capacity issues at this location. Considering this minimal increase in traffic flows, it should not fall to the applicant to mitigate an existing and known strategic issue, particularly when proposing to deliver much needed affordable housing. In addition, the developer would be committed to encouraging sustainable travel from the site, through measures within a Travel Plan, and the on-site provision of walking infrastructure to constrain the number of vehicles travelling through this junction.

7.6 Operational Assessments - Introduction

7.6.1 Detailed operational assessments have been carried out to determine the potential impact of the proposed development on the capacity of the local highway network. This has been undertaken using the industry standard software packages Junctions 9 (Priority and Roundabout Junctions) and LinSig V3 (Signal Controlled Junction).

7.6.2 The results of each junction have been set out separately and all models are considered robust due to the following:

- No allowance has been made for vehicle optimisation at the signalled junction. Studies have shown this can offer between a 2.8% to 4% improvement, although improvements at a higher level have been known. This is shown within a TEC article from September 2005 which specifically looks at MOVA operation and has been reproduced within **Appendix J**.
- LinSig operates on a fixed time basis, and therefore does not replicate vehicle optimisation controller systems that may currently be in place.
- The peak hour of development trips has been added to the peak network hour, although these occur at different times in the PM peak.
- No reduction in trip rates has been made for travel planning measures which will be adopted at the proposed development site. The site is in a sustainable location and the vehicle trip rates are considered robust.
- Allowance is made for a 20% proportion of affordable dwellings, which are forecast to generate fewer trips than open market dwellings, however the level of affordable housing is proposed at 35%, so vehicle trip generation is likely to be overestimated.

7.7 Model Inputs

LinSig

7.7.1 A LinSig (V3) assessment has been undertaken at Junction 4 - A466 / Tempest Way / St Lawrence Park.

7.7.2 LinSig is an industry standard tool for assessing the capacity of signalised junctions, and whilst considered appropriate for use in this assessment it is recognised that the software is limited in its ability to model improvements which are provided through vehicle optimisation systems.

7.7.3 Modelling for the signal controlled junction has been undertaken using passenger car units (PCUs) with a value of two PCUs being applied to all bus and HGV movements. All other movements, including motorcycles have been assumed as one PCU.

7.7.4 The following information has been derived from video surveys of the junction carried out during the AM and PM peak periods and used to calibrate the LinSig model with the baseline operation:

- Average cycle time of 78 seconds during the AM peak (0830 – 0930) and 50 seconds during the PM peak (1630 – 1730);
- Average stage timings for the A466 controller of 50 seconds during the AM peak and 24 seconds during the PM;
- Average stage timings for the Tempest Way / St Lawrence Park controller of 12 seconds during the AM peak and 14 seconds during the PM peak; and
- Pedestrian stage infrequently called (less than once every five cycles).

7.7.5 To ensure a robust assessment, within the model it has been assumed that the pedestrian phase runs once every two cycles.

7.7.6 A comparison of the 2017 base modelled queue lengths against the surveyed queue lengths has also been undertaken to further assist with model validation.

Junctions 9

7.7.7 Assessment of the priority junctions and roundabouts have been undertaken using the TRL software Junctions 9. Modelling has been undertaken at these junctions using total traffic flows and HGV percentages.

7.7.8 A comparison of the 2017 base modelled queue lengths against the surveyed queue lengths has been made to assist with model validation and ensure that the models robustly represent existing conditions. It is noted that the queue lengths in both the models and from the surveys represent average conditions on one day and that there are typical daily fluctuations in queues and flows. However, it is considered that this is an appropriate and accepted method to determine the impact of the development at each junction and identify potential mitigation, if required.

7.7.9 In addition, at the High Beech roundabout historic queue length survey information is provided as part of the Mabey Bridge application. This has been referred to as it provides a comparison with queue length data undertaken on an alternative day. The traffic flow data has also been compared to the obtained traffic survey data to ensure that the flows are comparable and queue length comparisons are therefore valid.

7.7.10 The modelling has been based on geometric measurements using OS map data supplemented with on-site measurements, where feasible.

7.8 Model Reporting Outputs

Junctions 9

7.8.1 The outputs of Junctions 9 provide a number of measurements to ascertain information of a junction's operation. The key measurements which are considered in this assessment are:

- 'Ratio of Flow to Capacity' (RFC)
- Maximum queue length in PCUs
- Delay in seconds per vehicle
- Level of Service indicated by a letter between A (well within capacity) and F (at or over capacity)

7.8.2 The main indication of the performance of a junction is given by the RFC for each lane. The peak capacity is realised when the demand flow at the entry is great enough to cause a continuous queue of vehicles to wait on approach to the stop line. This is reached when the RFC attains a value of 1.

7.8.3 Queue lengths provide an indication of how the overall junction performance may affect adjacent junctions on the highway network. The queue lengths are presented as the maximum over an hourly period. Changes in queue lengths provide a useful indicator as to the proposed developments impact on the operation of a junction.

LinSig V3

7.8.4 The output from LinSig V3 provides a number of measurements to provide information of a junction's operation. The key outputs considered in this assessment are;

- Practical Reserve Capacity (PRC)
- Degree of Saturation (DoS)
- Mean Maximum Queue (MMQ) length in PCU's
- Delay in seconds per PCU

7.8.5 The 'PRC' gives the main indicator of the overall operation of a junction and this is reported for the junction as a whole as a positive or negative value. A value above '0' is therefore normally accepted as being within capacity. A Degree of Saturation (DoS) is reported for each junction arm, with a value of less than 90% generally considered acceptable. A value of 100% indicates that traffic demand is equal to capacity and represents the theoretical capacity of the junction.

7.8.6 As with the Junctions 9 analysis, queue lengths provide a useful indication of the operation of a junction and the interaction with upstream and downstream junctions. The queues are presented as MMQ's across the entire hourly period by lane.

Overall

7.8.7 When considering the change in the operation of junctions across the network all of these factors will be considered to form a view as to whether the impact of development generated traffic would be material and require mitigation.

7.9 Operational Assessment Results Summary

7.9.1 All junction capacity modelling reports are included as **Appendix K** and the results have been discussed and summarised by junction as follows.

Junction 1: B4235 Usk Road / Site Access Priority Junction

7.9.2 The results of the 2023 with development assessment are summarised in **Table 7.2**. As this junction does not currently exist, a 2017 base assessment has not been undertaken.

Table 7.2 – B4235 Usk Road / Site Access - 2023 Base + Com + Dev Analysis Results

Arm	2023 Base + Com + Dev							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Site Access (left turn)	0	8.39	0.14	A	0	7.92	0.08	A
B4235 Usk Road (Right Turn)	0	5.41	0.00	A	0	5.74	0.01	A

7.9.3 The junction modelling results demonstrate that the junction will operate well within capacity.

Junction 2: B4235 / A466 Priority Junction

7.9.4 This junction has been modelled with a synthesised peak using the 'one-hour' traffic profile type. It has also been modelled as a one lane minor arm. Both of these ensure that that the model presents a robust worst case. The results of the 2017 Base assessment are summarised in **Table 7.3**.

Table 7.3 – B4235 Usk Road / A466 St Lawrence Road – 2017 Base Junction Analysis Results

Arm	2017 Base							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
B4235	1	11.78	0.34	B	0	11.53	0.30	B
A466 St Lawrence Road Right Turn	1	5.48	0.20	A	0	6.58	0.19	A

7.9.5 The model indicates that this junction is operating well within capacity with minimal queuing. The queue lengths in Table 7.3 have been compared with the observed queues at the junction to assist with model validation. This comparison is shown in **Table 7.4**.

Table 7.4 – Queue length comparison – B4235 Usk Road / A466 St Lawrence Road

Arm	AM Peak (0800 – 0900)			PM Peak (1600 – 1700)		
	Observed (vehicles)	Model (vehicles)	+ / -	Observed (vehicles)	Model (vehicles)	+ / -
B4235	3	1	**-2**	3	0	**-3**
A466 St Lawrence Road Right Turn	2	1	**-1**	2	0	**-2**

7.9.6 The results of the queue analysis, as set out in **Table 7.4**, demonstrate that modelled and observed queues are within typical daily variations in queue lengths. There is minimal queuing at the junction and that is reflected in the model. The model is already robust as it has been run with a synthesised peak and assuming a one lane entry on the minor arm.

7.9.7 As such, it is considered that the base model reasonably reflects the existing operation of the junction and is therefore valid and suitable to assess future year conditions and the impact of the proposed development.

7.9.8 The results of the operational assessments for the 2023 forecast base plus committed (without development) scenario and the forecast base plus committed with the inclusion of development flows are summarised in **Table 7.5**.

Table 7.5 – B4235 Usk Road / A466 St Lawrence Road – 2023 Results (with and without development)

Arm	2023 Forecast Base + Committed							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
B4235	1	12.25	0.36	B	1	12.04	0.32	B
A466 St Lawrence Road Right Turn	1	5.49	0.21	A	0	6.60	0.20	A

Arm	2023 Forecast Base + Committed + Development							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
B4235	1	17.34	0.54	C	1	14.88	0.43	B
A466 St Lawrence Road Right Turn	1	5.74	0.25	A	1	7.39	0.27	A

7.9.9 **Table 7.5** demonstrates that the junction is forecast to operate with a maximum RFC of 0.54 with the inclusion of the development traffic with no significant change to the operation and minimal queuing. It is forecast to operate well within theoretical capacity in all scenarios. The development would not have a material impact at this junction and no mitigation is required.

Junction 3: A466 / B4293 Racecourse Roundabout

7.9.10 This roundabout has been modelled with no effective flare lengths, assuming one lane on entry for each arm as this reflects the observed operation. In addition, it has been modelled with a synthesised peak using the 'one-hour' traffic profile type. The model is therefore considered to be robust. The results of the 2017 Base assessment are summarised in **Table 7.6**.

Table 7.6 – A466 / B4293 Racecourse Roundabout – 2017 Base Junction Analysis Results

Arm	2017 Base							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
A466 North	1	9.17	0.48	A	0	5.50	0.26	A
Welsh Street	0	7.37	0.29	A	0	6.04	0.26	A
A466 South	1	6.45	0.40	A	1	7.48	0.48	A
Itton Road	1	8.52	0.35	A	0	6.55	0.14	A

7.9.11 The model indicates that this junction is operating well within capacity with minimal queuing.

7.9.12 The queue lengths in Table 7.6 have been compared with the observed queues at the junction to assist with model validation. This comparison is shown in **Table 7.7**.

Table 7.7 – Queue length comparison – A466 / B4293 Racecourse Roundabout

Arm	AM Peak (0800 – 0900)			PM Peak (1600 – 1700)		
	Observed (vehicles)	Model (vehicles)	+ / -	Observed (vehicles)	Model (vehicles)	+ / -
A466 North	3	1	**-2**	2	0	**-2**
Welsh Street	2	0	**-2**	1	0	**-1**
A466 South	2	1	**-1**	2	1	**-1**
Itton Road	4	1	**-3**	2	0	**-2**

7.9.13 The results of the queue analysis, as set out in **Table 7.7**, demonstrate that modelled and observed queues are within typical daily variations in queue lengths. There is minimal queuing at the roundabout and that is reflected in the model. The model is already robust as it has been set up

without effective flare lengths on any of the lanes to reflect how it currently operates. As such, no adjustments are considered necessary.

7.9.14 It is considered that the base model reflects the existing operation of the junction and is therefore valid and acceptable to assess future year conditions.

7.9.15 The results of the operational assessments for the 2023 forecast base plus committed (without development) scenario and the forecast base plus committed with the inclusion of development flows are summarised in **Table 7.8**.

Table 7.8 – A466 / B4293 Racecourse Roundabout – 2023 Results (with and without development)

Arm	2023 Forecast Base + Committed							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
A466 North	1	9.75	0.51	A	0	5.64	0.28	A
Welsh Street	0	7.63	0.31	A	0	6.21	0.27	A
A466 South	1	6.69	0.42	A	1	7.93	0.51	A
Itton Road	1	8.87	0.37	A	0	6.71	0.16	A

Arm	2023 Forecast Base + Committed + Development							
	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
A466 North	1	10.16	0.52	B	0	5.74	0.28	A
Welsh Street	1	7.83	0.32	A	0	6.53	0.31	A
A466 South	1	7.07	0.45	A	1	8.26	0.53	A
Itton Road	1	9.19	0.38	A	0	6.83	0.16	A

7.9.16 **Table 7.8** demonstrates that the junction is forecast to operate well within capacity with a maximum RFC of 0.53 with the inclusion of the development traffic. There would be no material change to the operation and minimal queuing. It is forecast to operate well within theoretical capacity in all scenarios.

7.9.17 The development would not have a material impact at this junction and no mitigation is required.

Junction 4: A466 / Tempest Way / St Lawrence Park Signal Controlled Junction

7.9.18 The results of the 2017 Base assessment are summarised in **Table 7.9**.

Table 7.9 – A466 / Tempest Way / St Lawrence Park – 2017 Base Junction Analysis Results

Arm	Link No.	AM Peak (0800 – 0900)			PM Peak (1600 – 1700)		
		DoS (%)	Av. Delay per PCU (s/pcu)	MMQ	DoS (%)	Av. Delay per PCU (s/pcu)	MMQ
A466 North	1/1+1/2	51.9%	10.3	9	47.6%	13.9	6
Tempest Way	2/1	21.8%	36.2	2	31.1%	21.0	2
A466 South	3/1+3/2	44.3%	10.1	6	76.5%	20.2	11
St Lawrence Park	4/1	20.6%	36.6	1	6.6%	19.0	0

7.9.19 The model demonstrates that the junction is operating well within capacity in both the AM and PM peak hours.

7.9.20 The queue lengths in Table 7.9 have been compared with the observed queues at the junction to assist with model validation. This comparison is shown in **Table 7.10**.

Table 7.10 – Queue length comparison – A466 / Tempest Way / St Lawrence Park

Arm	AM Peak (0800 – 0900)			PM Peak (1600 – 1700)		
	Observed (vehicles)	Model (vehicles)	+ / -	Observed (vehicles)	Model (vehicles)	+ / -
A466 North	18	9	**-9**	4	6	**+2**
Tempest Way	1	2	**+1**	3	2	**-1**
A466 South	7	6	**-1**	6	11	**+5**
St Lawrence Park	2	1	**-1**	1	0	**-1**

7.9.21 Although a LinSig junction should not be validated based purely on queue length surveys, the modelled results are broadly consistent with the queues and the operation as observed on the video surveys.

7.9.22 The likely reason for the difference in queuing on the A466 North is due to vehicles blocking back from the downstream junction through the A466 South exit arm, which effects the operation of the junction. This cannot be effectively replicated within this standalone LinSig model. As such, it is considered that the base model appropriately reflects how this junction operates. It is therefore considered valid and suitable to provide a basis on which to assess future year conditions.

7.9.23 The results of the operational assessments for the 2023 forecast base plus committed (without development) scenario and the forecast base plus committed with the inclusion of development flows are summarised in **Table 7.11**.

Table 7.11 – A466 / Tempest Way / St Lawrence Park – 2023 Results (with and without development)

2023 Forecast Base + Committed							
Arm	Link No.	AM Peak (0800 – 0900)			PM Peak (1600 – 1700)		
		DoS (%)	Av. Delay per PCU (s/pcu)	MMQ	DoS (%)	Av. Delay per PCU (s/pcu)	MMQ
A466 North	1/1+1/2	53.7%	10.6	10	49.9%	14.2	6
Tempest Way	2/1	22.5%	36.3	2	32.2%	21.1	2
A466 South	3/1+3/2	46.0%	10.3	7	80.0%	21.9	13
St Lawrence Park	4/1	21.2%	36.8	1	6.8%	19.0	0

2023 Forecast Base + Committed + Development							
Arm	Link No.	AM Peak (0800 – 0900)			PM Peak (1600 – 1700)		
		DoS (%)	Av. Delay per PCU (s/pcu)	MMQ	DoS (%)	Av. Delay per PCU (s/pcu)	MMQ
A466 North	1/1+1/2	56.9%	11.0	11	52.5%	14.6	6
Tempest Way	2/1	22.8%	36.3	2	32.4%	21.1	2
A466 South	3/1+3/2	47.3%	10.6	7	84.1%	24.6	14
St Lawrence Park	4/1	21.2%	36.8	1	7.0%	19.0	0

7.9.24 **Table 7.11** demonstrates that the junction is forecast to operate within a maximum DoS of 84.1% with the inclusion of the development traffic. The development traffic is demonstrated to have a minimal impact on the operation of the junction with slight changes in queue length, delay and DoS. It is forecast to operate well within theoretical capacity in all scenarios. As such, the development would not have a material impact at this junction and no mitigation is required.

8.0 TRANSPORT IMPLEMENTATION STRATEGY

8.1 Overview

8.1.1 The objective of the Transport Implementation Strategy (TIS) is to promote sustainable modes including walking, cycling and public transport and set out mitigation required to accommodate the development on the highway network.

8.2 Walking

8.2.1 Walking has the potential of providing an alternative mode of transport to undertake shorter journeys typically under 2km in distance, although the Active Travel Act suggests journeys of up to 3.2km are acceptable.

8.2.2 The benefits of walking include that it is free, convenient, good for health and environmentally friendly.

8.2.3 The proposed development facilitates journeys on foot through the provision of numerous convenient pedestrian access points which connect to the surrounding area. Pedestrian accesses have been included in a number of directions from the site to enable full connectivity with the surrounding areas. These routes link to existing footways which provide access to surrounding local facilities and amenities including Chepstow Town Centre within suitable walking distances. The walking routes also link to other modes including bus and rail.

8.2.4 The existing public right of way on the northern boundary of the site will be improved as part of the development. The site will provide lighting and surfacing and will also improve natural surveillance which will encourage its use. This forms a key route from the site to local facilities and bus stops.

8.2.5 Footways will also be provided within the site to allow for a highly permeable environment. This will reflect the user hierarchy as set out in Manual for Streets guidance.

8.3 Cycling

8.3.1 Cycling has the potential of providing an alternative mode of transport for journeys up to a distance of approximately 5km, although the Active Travel Act suggests up to 8km.

8.3.2 The site has linkages to good cycling infrastructure, including Regional Route 31 and NCN 4 which provide links locally to Chepstow Town Centre, as well as to more regional destinations including Bristol City Centre.

8.3.3 Safe and secure cycle parking will be provided within the curtilage of each individual dwelling to encourage travel by cycling with a secure cycle parking area provided for apartments, if provided.

8.3.4 A Travel Plan will provide measures to encourage cycling, such as information on cycling routes and cycling clubs. In addition, a Travel Plan Coordinator will seek to obtain discounts for residents for the purchase of cycling equipment from local cycling shops.

8.4 Public Transport

8.4.1 Public Transport provides a good opportunity to replace private car trips with the site conveniently located close to bus stops (within 350 metres) served by a choice of routes and a high combined frequency of service. The site is also within walkable distance of Chepstow Bus and Rail Station, offering services to further regional destinations.

8.4.2 Potential future residents of the site would be situated within acceptable walking distance from a number of stops and services. However, walking distances are part of the overall journey by public transport and therefore only one aspect to encourage travel via buses. Other important factors are information, waiting time, frequency of services, quality of walking routes and the bus journey time itself.

8.4.3 With the proposed pedestrian connections from the site, the majority of residents of the site would be within a 400 metre distance of a bus stop. The small number of remaining households would be well within an 800 metre 'walkable neighbourhood' distance (consistent with Manual for Streets and the Active Travel Act).

8.4.4 As important as the walking distance to a stop are information on services available (for example real time information and timetable information), waiting time at stops (which can be influenced by the provision of real time information and the frequency of services), the directness and quality of the walking route to stops and the directness and journey time of the bus service itself.

8.4.5 Walking routes from the site are direct, of good quality and flat and the high combined frequency of services will reduce waiting times for buses.

8.4.6 Services will be fully promoted to potential future residents. Any websites or mobile applications at the time of occupation which provide real time information will be promoted to residents. This will ensure that the wait time at the stop will be minimised as residents can leave their house at the correct time to meet their preferred service. This will reduce the overall travel time from the origin to the end destination.

8.4.7 There are a number of services with short travel times to Chepstow Town Centre (accessed within 5 minutes), Monmouth and Cwmbran direct from the closest stops and further services to Newport and Cardiff are offered via interchange at the bus station. As such the bus journeys themselves offer direct and convenient routes.

8.4.8 Measures will also be set out within a Travel Plan to encourage travel via public transport, including any discounts which have been obtained on public transport for residents of the site.

8.4.9 Based on the three strands of a journey (walking, waiting and on-bus travel) and allowing for the promotion of public transport and real-time information, bus travel is considered to be a highly attractive mode of travel from the site.

8.5 Vehicular Access and Site Layout

8.5.1 The vehicular access into the site will be provided from the B4235 Usk Road. It has been demonstrated that this can be provided with appropriate visibility splays and geometry, that there is no existing accident issue on the B4235 and that the junction will not have a material impact on the operation or capacity of the highway.

8.5.2 It has also been demonstrated that a single point of vehicle access is both appropriate and acceptable into the proposed development site. On-street parking will be restricted on the internal spine road to ensure two-way vehicle movements (particularly for emergency vehicles) are not impeded.

8.5.3 The internal site layout will allow suitable access for refuse and service vehicles and vehicles will be able to enter and exit the site in forward gear. Where possible, loop road arrangements will be provided to allow HGVs to manoeuvre in forward gear around the site. Where short cul-de-sac arrangements are shown, either suitable turning heads will be provided to facilitate turning

movements for HGVs (such as refuse vehicles) or the length of the cul-de-sacs will be restricted to 20 metres or less consistent with guidance in Manual for Streets.

8.5.4 It has been demonstrated that the proposed development would not have a material impact on the highway network. As such, no highway mitigation is required to accommodate vehicles generated by the site.

8.6 Travel Plan

8.6.1 To further promote sustainable means of travel the applicant will accept a condition to provide a Travel Plan, which would be submitted to, discussed and agreed with MCC prior to first occupation. This would promote the use of alternative modes of transport through the implementation of measures and initiatives.

8.6.2 A Travel Plan could include the provision of a resident welcome pack for each household. This will advise residents of local facilities and safe and suitable walking routes. These packs will be kept up to date by the travel plan coordinator. These packs will also include details of cycle routes and public transport timetables and any discounts which may have been obtained with local retailers or public transport operators.

9.0 SUMMARY AND CONCLUSIONS

9.1 Summary

9.1.1 This Transport Assessment (TA) accompanies an outline planning application for a residential development of up to approximately 200 residential dwellings on land to the south of the B4235 Usk Road in Chepstow.

9.1.2 The site is currently used for agricultural purposes and is located on the north-western periphery of Chepstow approximately 1.4km from the town centre.

9.1.3 The proposals are for 130 private dwellings (65%) and 70 affordable units (35%). However, for a robust assessment this TA has considered that 20% of the dwellings would be affordable (40 dwellings) and the remainder would be private housing (160 dwellings).

9.1.4 Vehicular access is proposed from a new priority junction with the B4235 on the northern perimeter of the site. Visibility splays can be achieved in accordance with relevant design guidance considering recorded vehicle speeds. Further pedestrian and cyclist accesses will be provided to the east and south of the site linking to existing residential areas.

9.1.5 Obtained road safety data does not indicate that there is an existing safety issue which would be exacerbated by the proposals and there were no PIA's within the vicinity of the proposed site access.

9.1.6 The site is considered to be situated in a sustainable location as would be expected for a site situated adjacent to the urban area, within walking distance of a town centre. The site benefits from being connected to established walking, cycling and public transport routes. It is well situated to benefit from access to existing facilities and amenities, reducing the need for a car. This is consistent with policies and guidance in the MCC LDP (paragraph 5.128, Policy S16 and paragraph 6.1.3).

9.1.7 The proposed development is forecast to generate 101 two-way vehicle trips in the AM peak, equating to one vehicle every 36 seconds, on average, across the hour. In the PM peak the forecast generation is 109 two-way vehicle trips, equating to one vehicle every 33 seconds, on average, across the hour. These vehicle trips have been distributed across the network based on 2011 Census Data for journeys to work.

9.1.8 The forecast percentage increase in traffic flows on the key routes in relation to the proposals has been assessed. This showed that the development traffic has a minimal percentage increase in flows through the majority of junctions within the study area. In particular, at the High Beech roundabout the forecast increase is minimal and the site would generate less than one vehicle per minute through the entire roundabout in the peak hours. Detailed junction modelling of this junction has not been undertaken as it is not considered that this is required. This approach has been discussed and agreed with Welsh Government.

9.1.9 Operational assessments have been undertaken on the key junctions on the local highway network, as requested by MCC. The assessments are robust and have been undertaken in a 2023 future year considering traffic growth and committed developments. The assessment demonstrated that the development would not have a material impact at any junction and no mitigation is required to accommodate the development traffic.

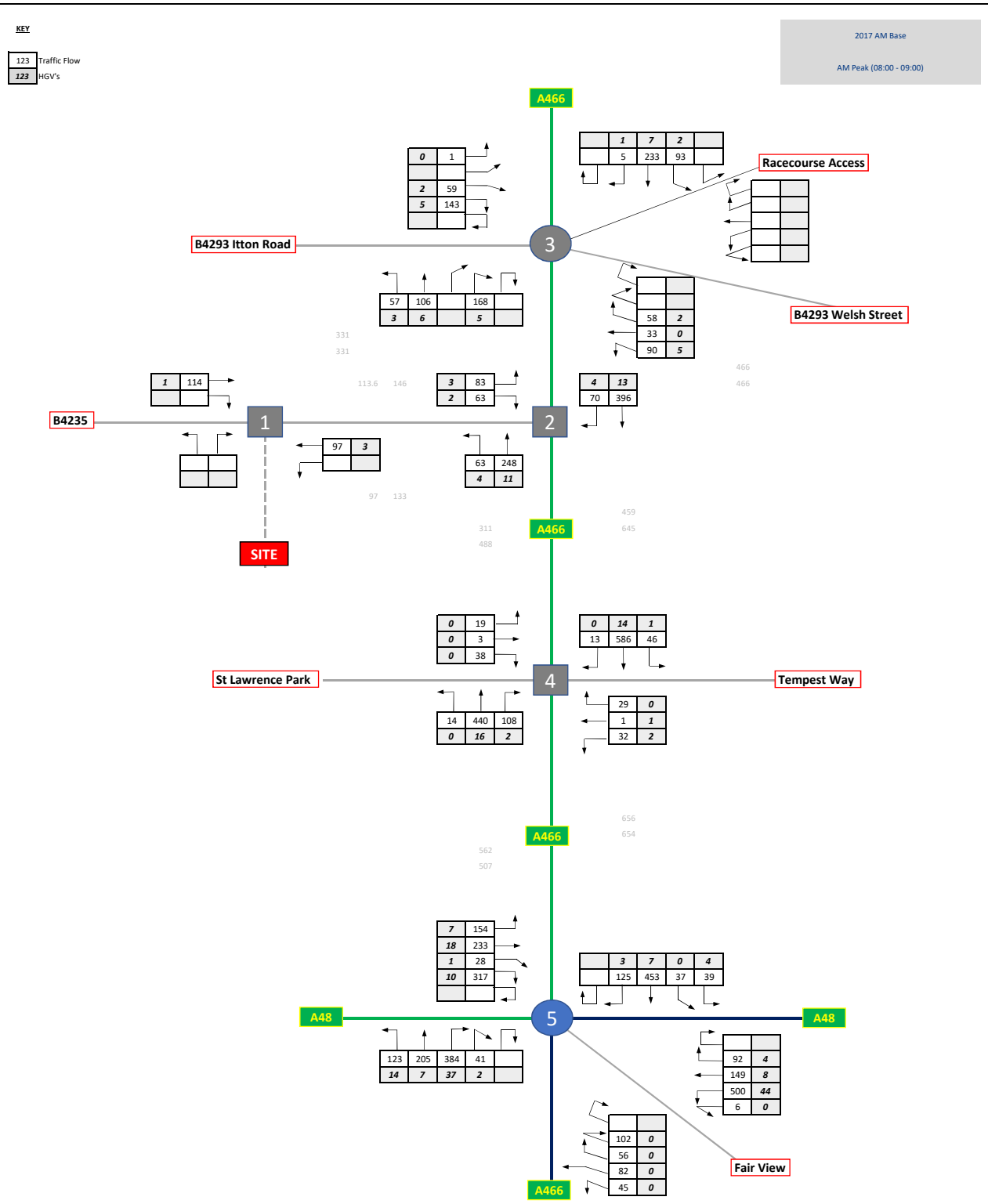
9.2 Conclusions

9.2.1 It is considered that there are good opportunities for future residents to be able to travel by sustainable modes of transport by established routes. This will reduce the reliance on the private car for potential future users of the site.

9.2.2 Robust assessments demonstrate that the proposed development will not have a material impact on the operation of the local highway or trunk road networks or on road safety.

9.2.3 It is therefore considered that there are no significant highways and transportation matters that should preclude the Local Planning Authority from approving this planning application.

FIGURES



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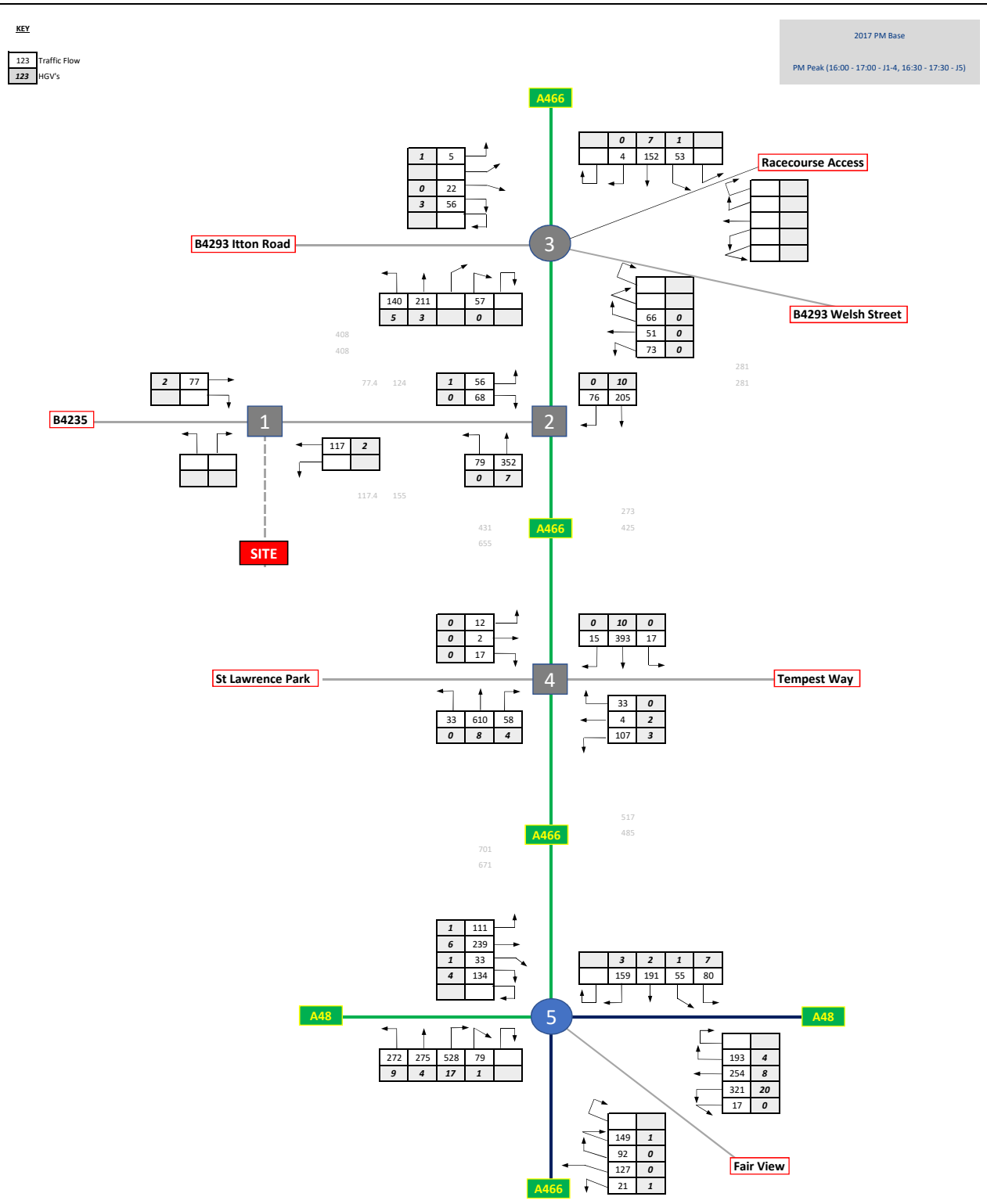
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 2.3



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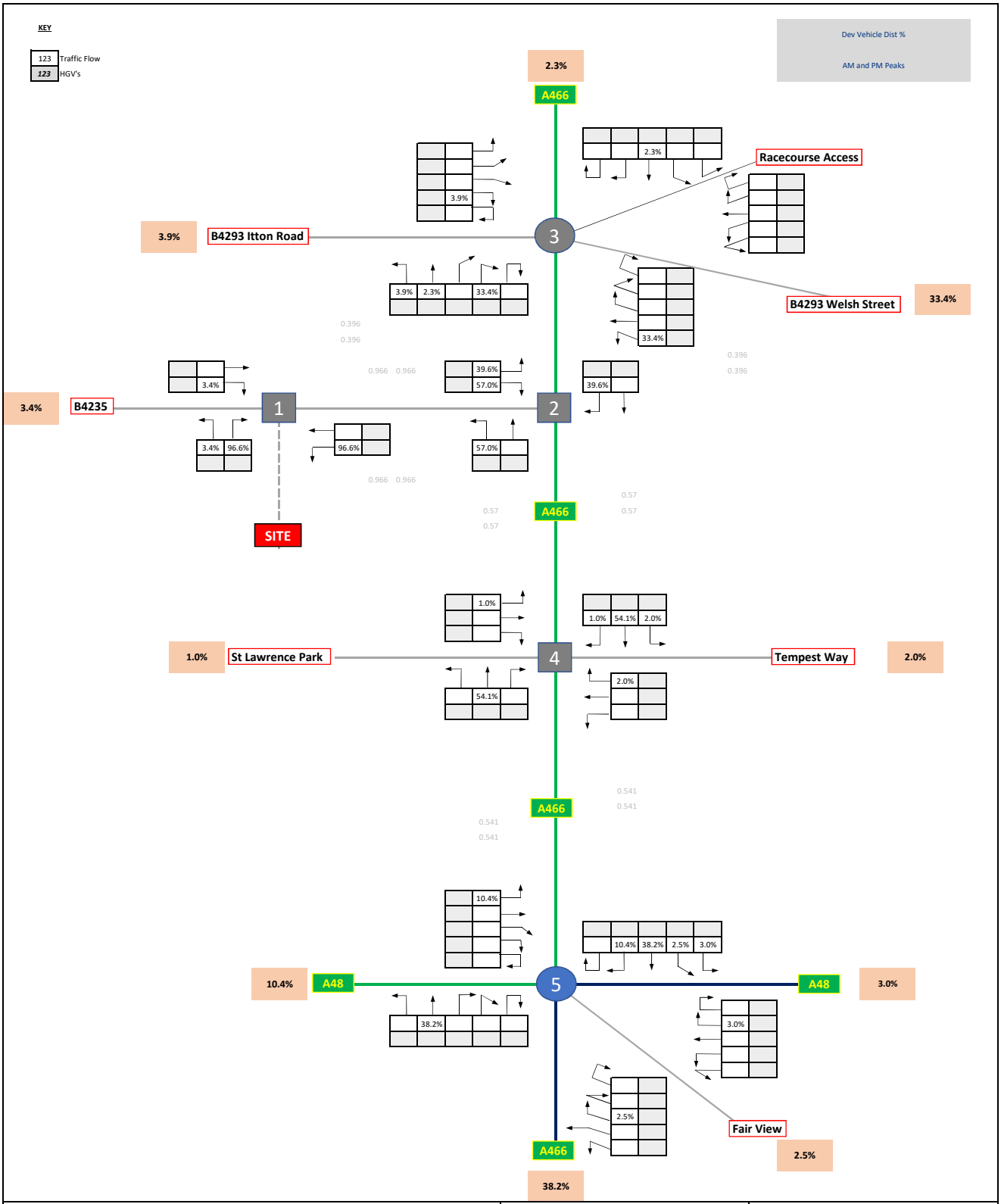

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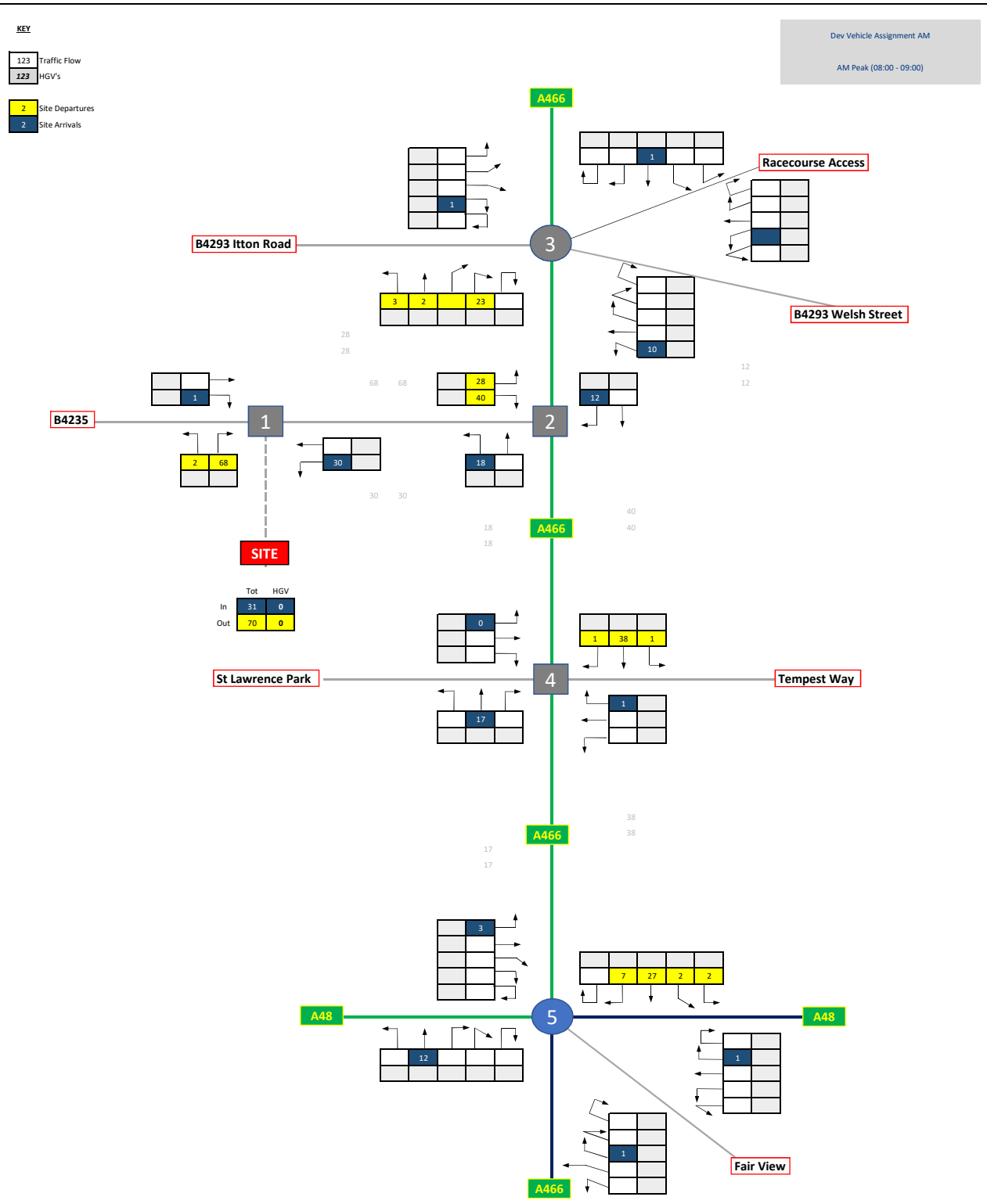

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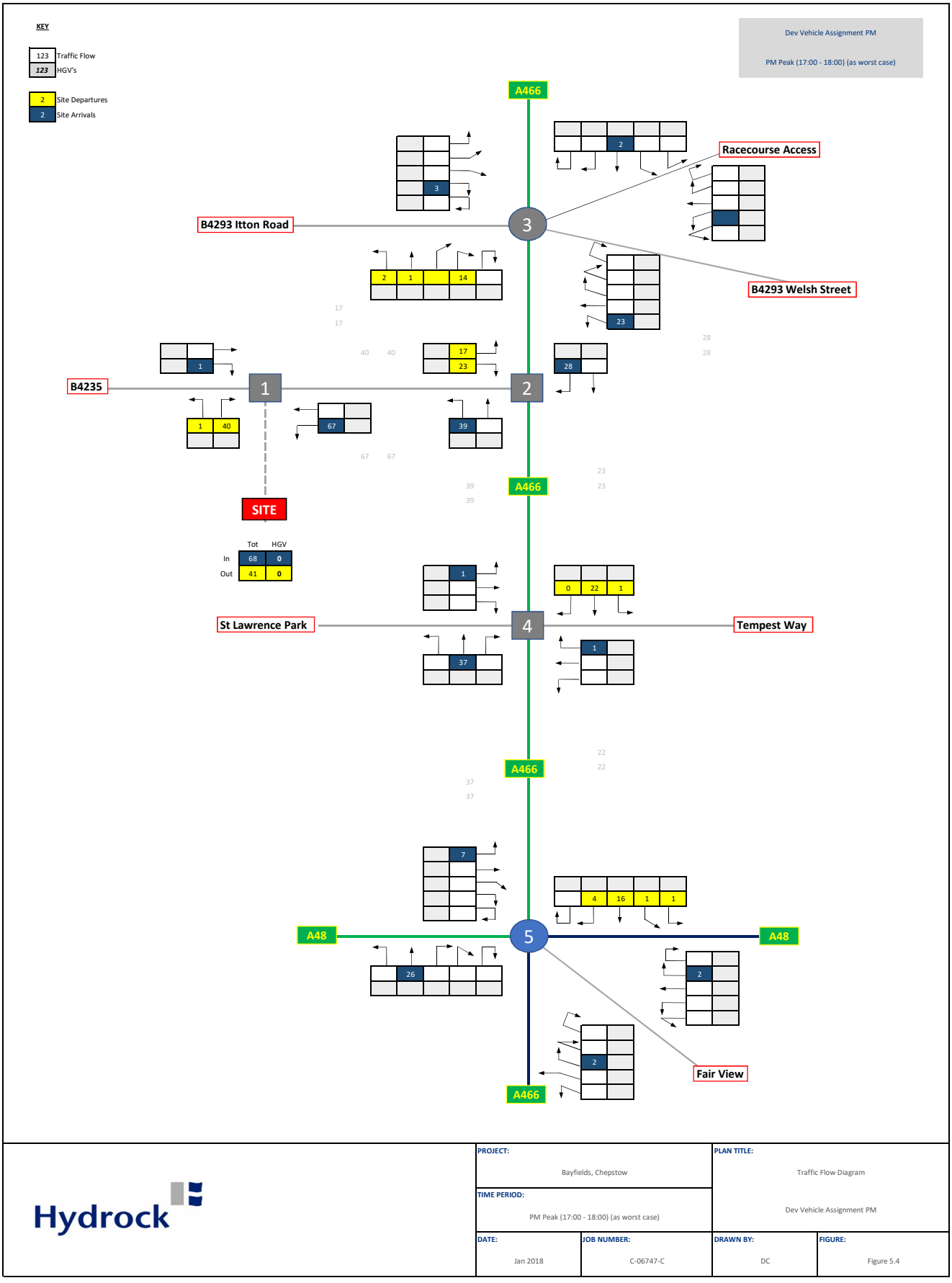


Hydrock	PROJECT: Bayfields, Chepstow		PLAN TITLE: Traffic Flow Diagram
	TIME PERIOD: PM Peak (17:00 - 18:00) (as worst case)		Dev Vehicle Assignment PM
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 5.4

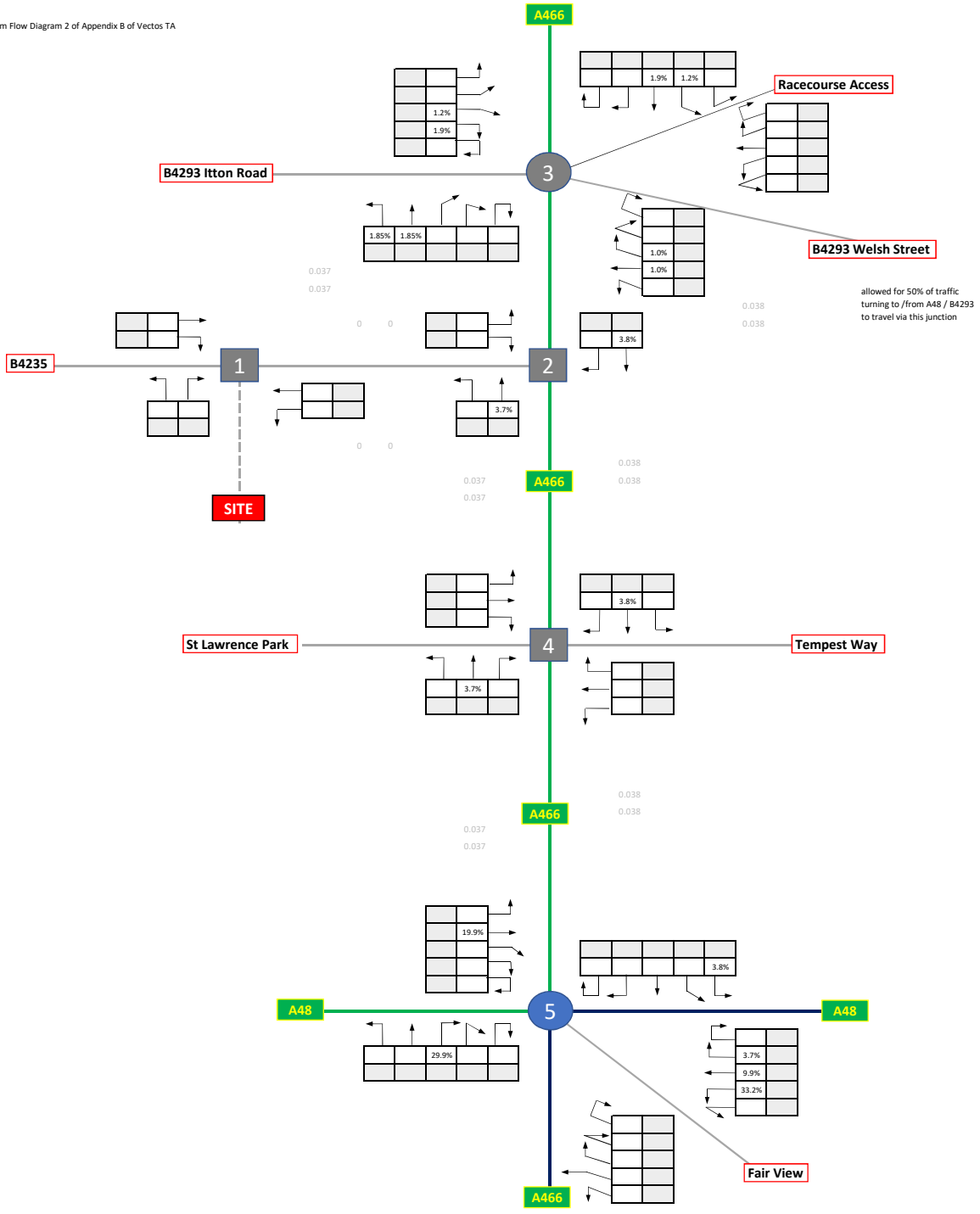
KEY

123 Traffic Flow
123 HGV's

Taken from Flow Diagram 2 of Appendix B of Vectos TA

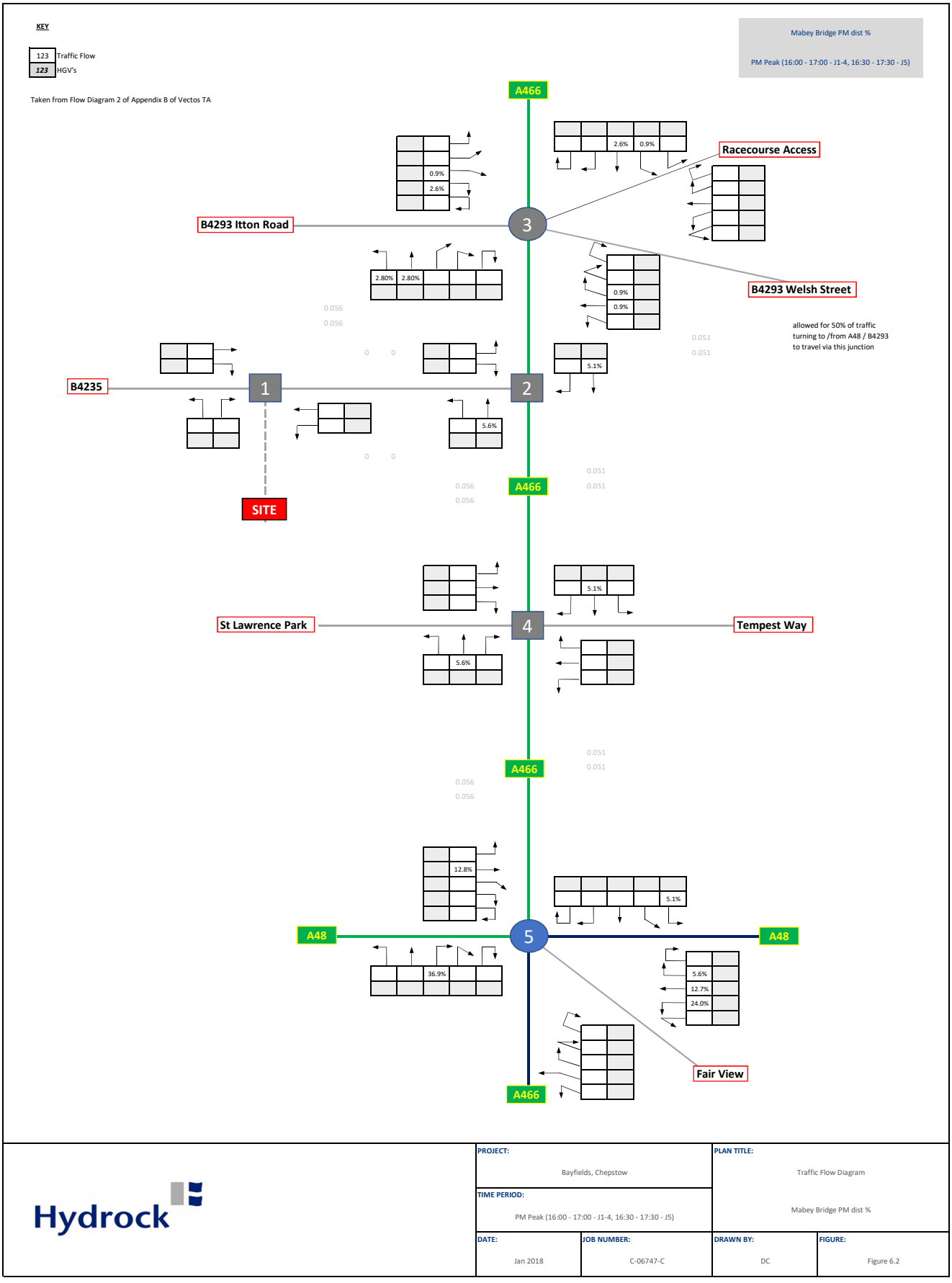
Mabey Bridge AM dist %

AM Peak (08:00 - 09:00)



allowed for 50% of traffic turning to /from A48 / B4293 to travel via this junction

Hydrock	PROJECT: Bayfields, Chepstow		PLAN TITLE: Traffic Flow Diagram Mabey Bridge AM dist %
	TIME PERIOD: AM Peak (08:00 - 09:00)		
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC FIGURE: Figure 6.1



Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
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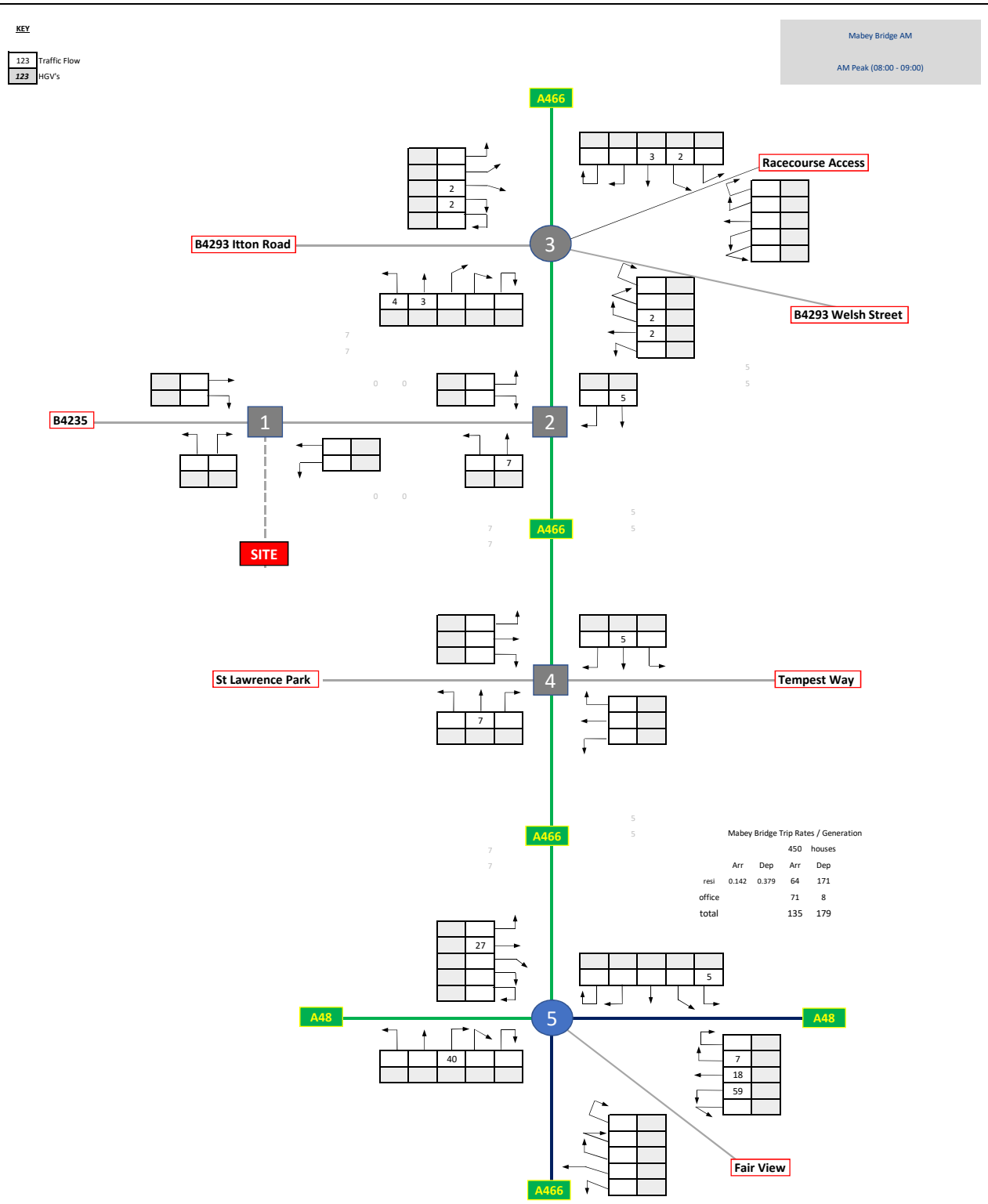

Hydrock	PROJECT: Bayfields, Chepstow		PLAN TITLE: Traffic Flow Diagram
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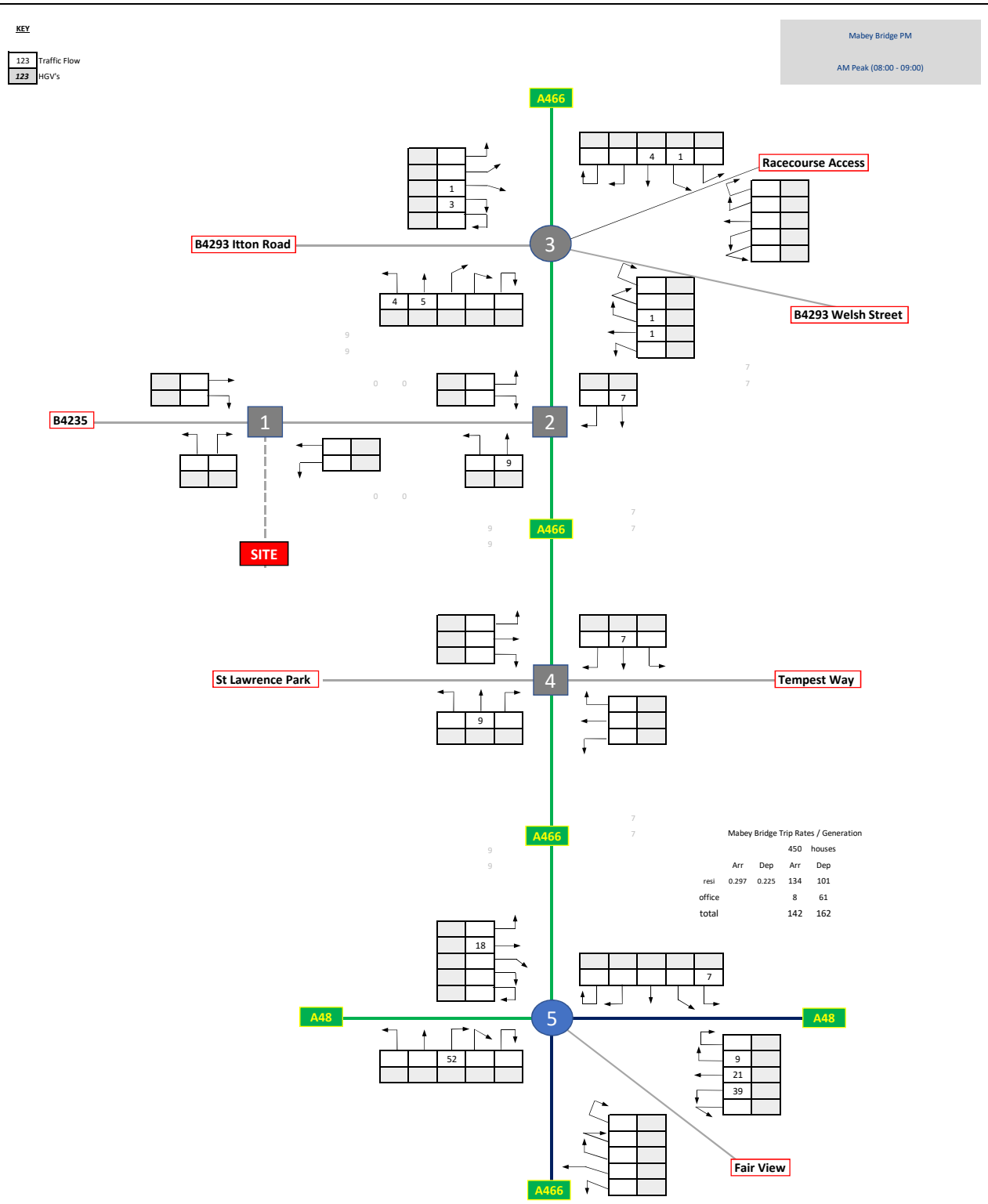
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 6.3



Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
	TIME PERIOD: AM Peak (08:00 - 09:00)	Mabey Bridge PM	
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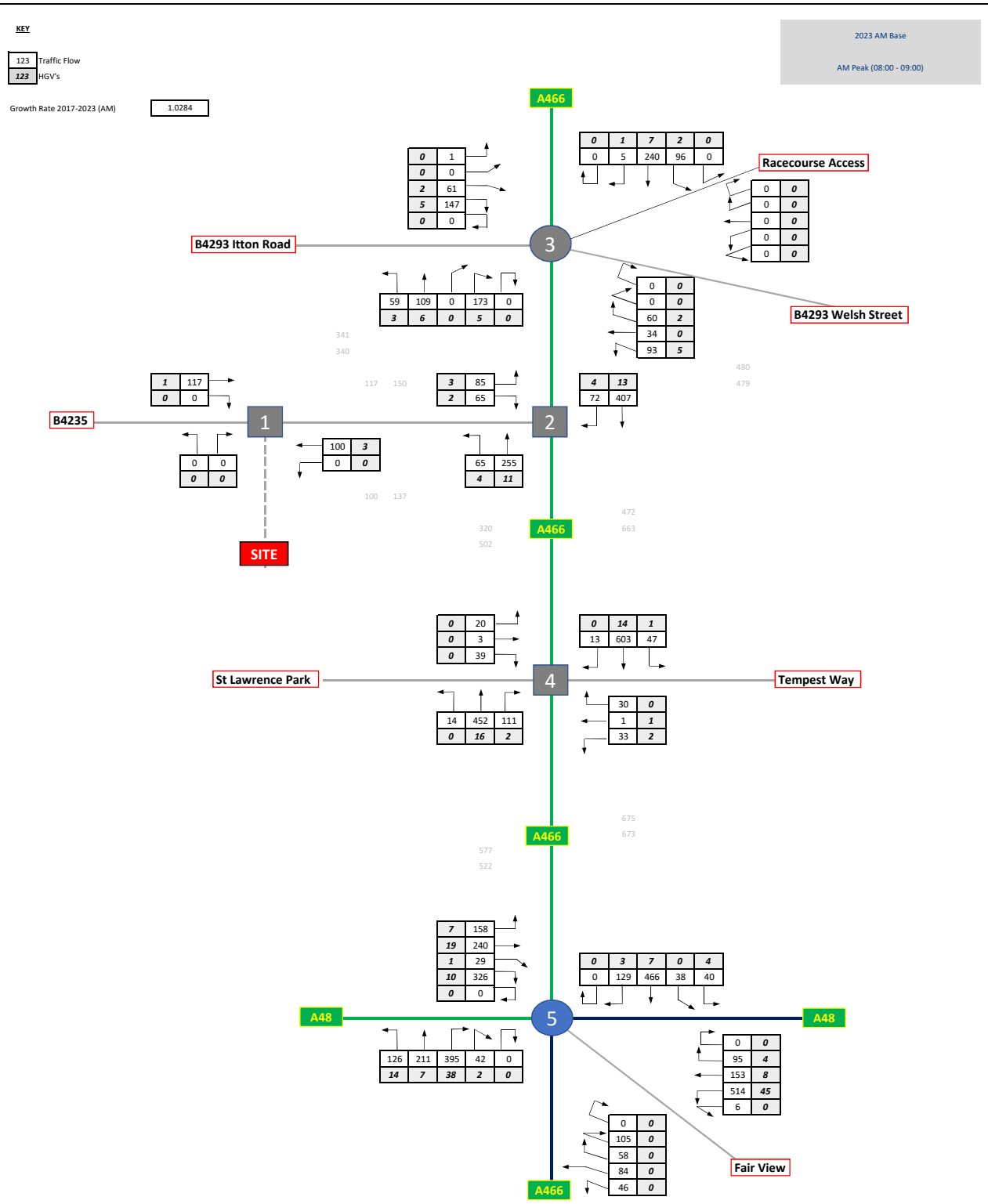

Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
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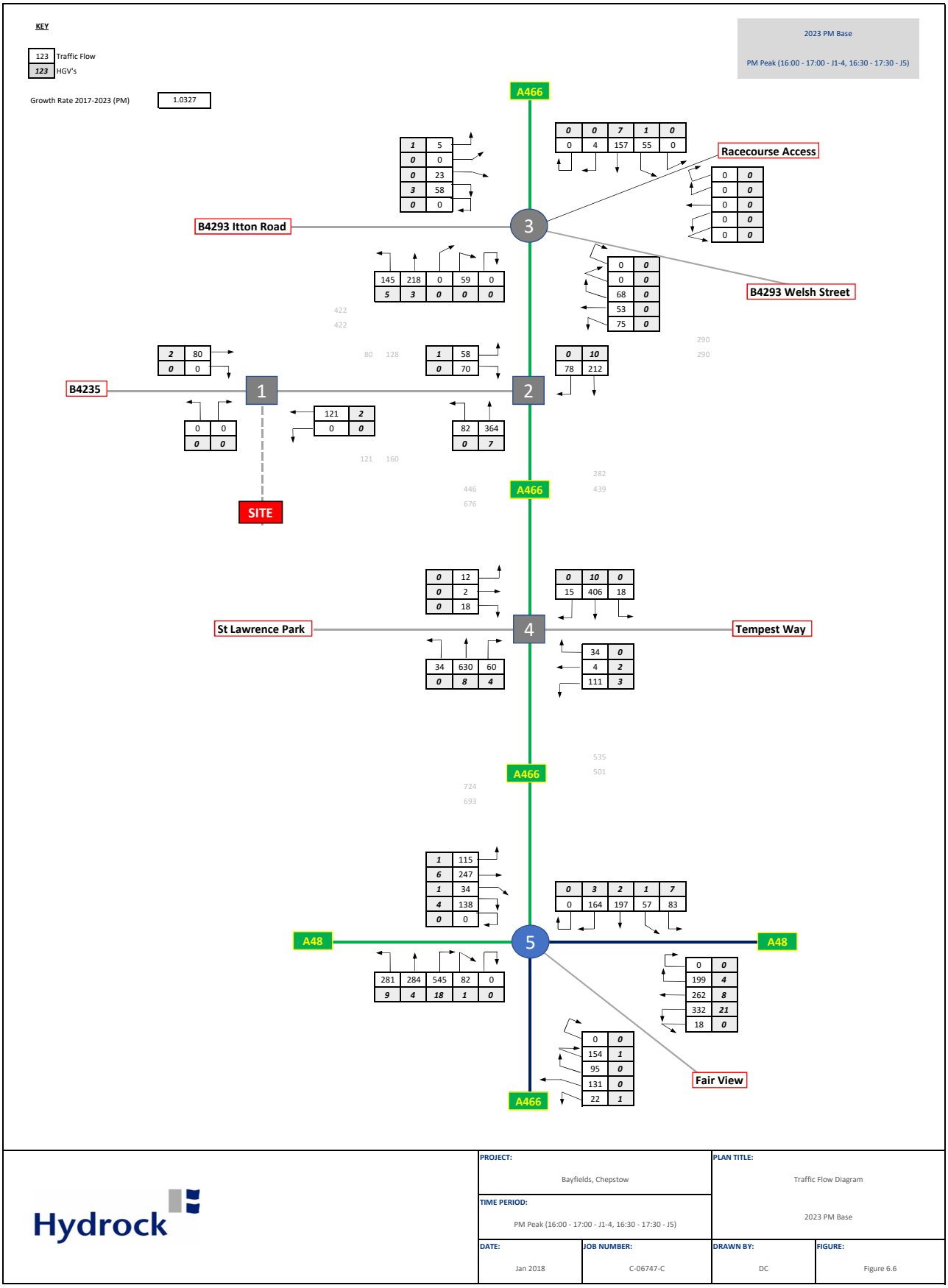

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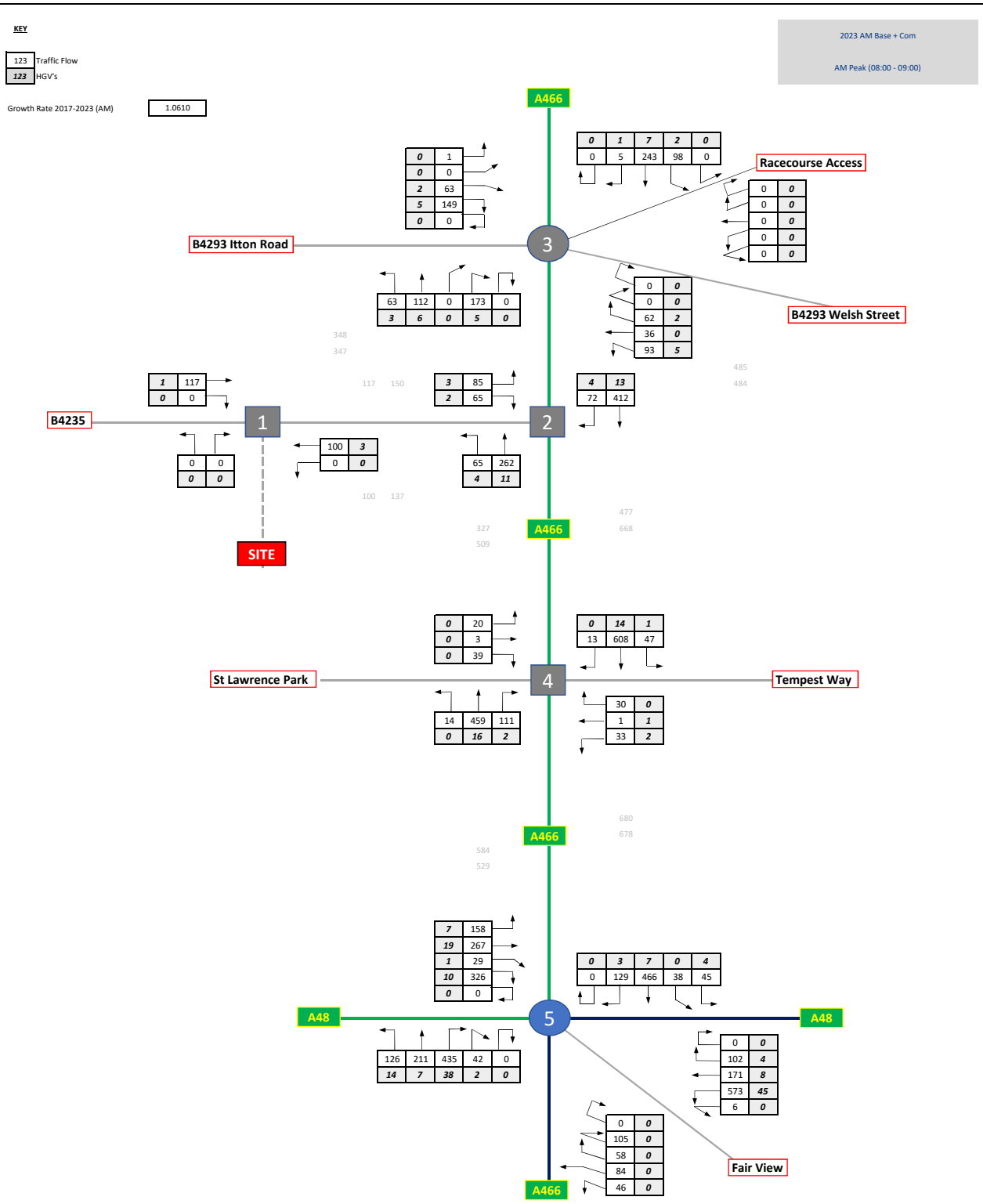
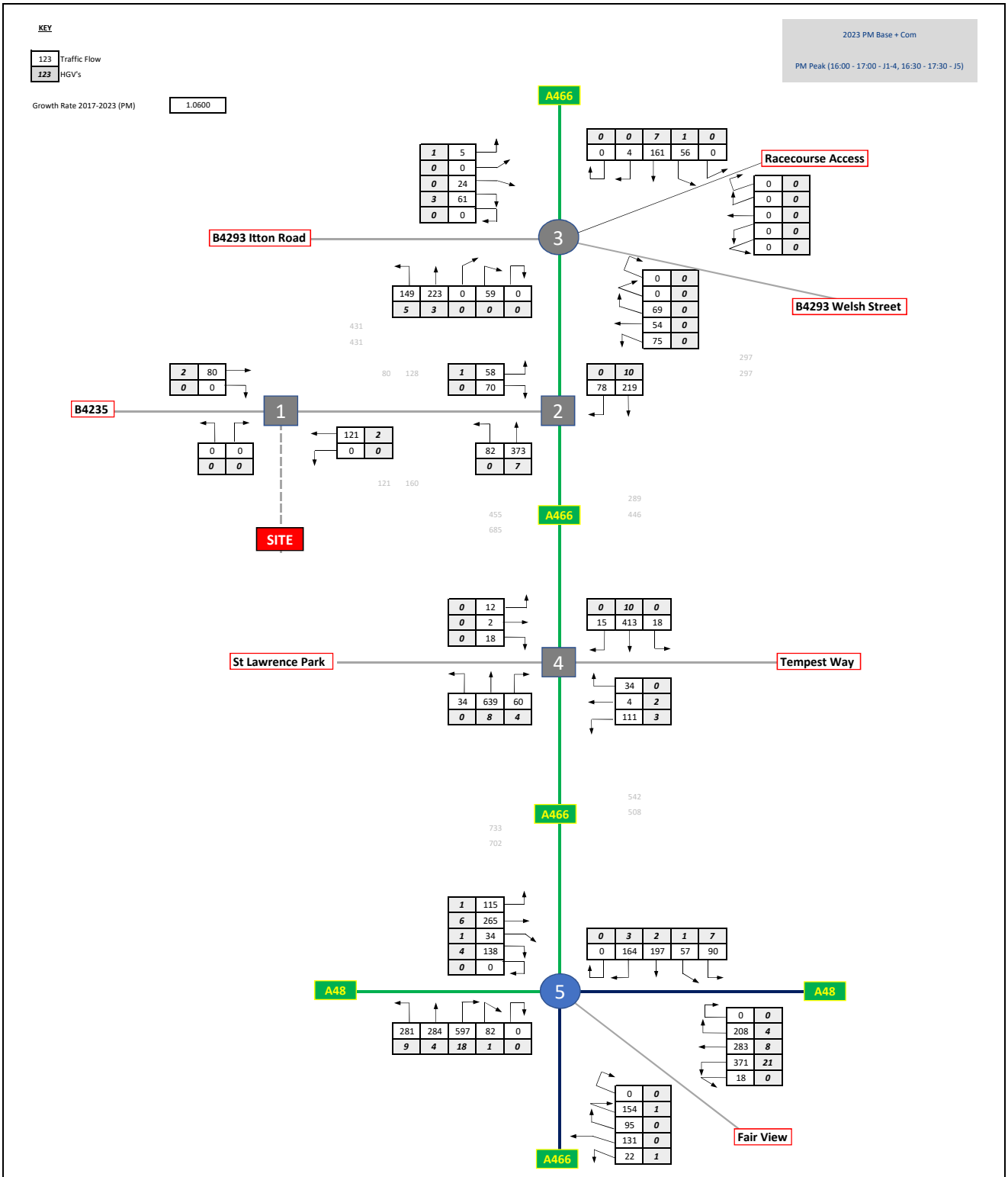
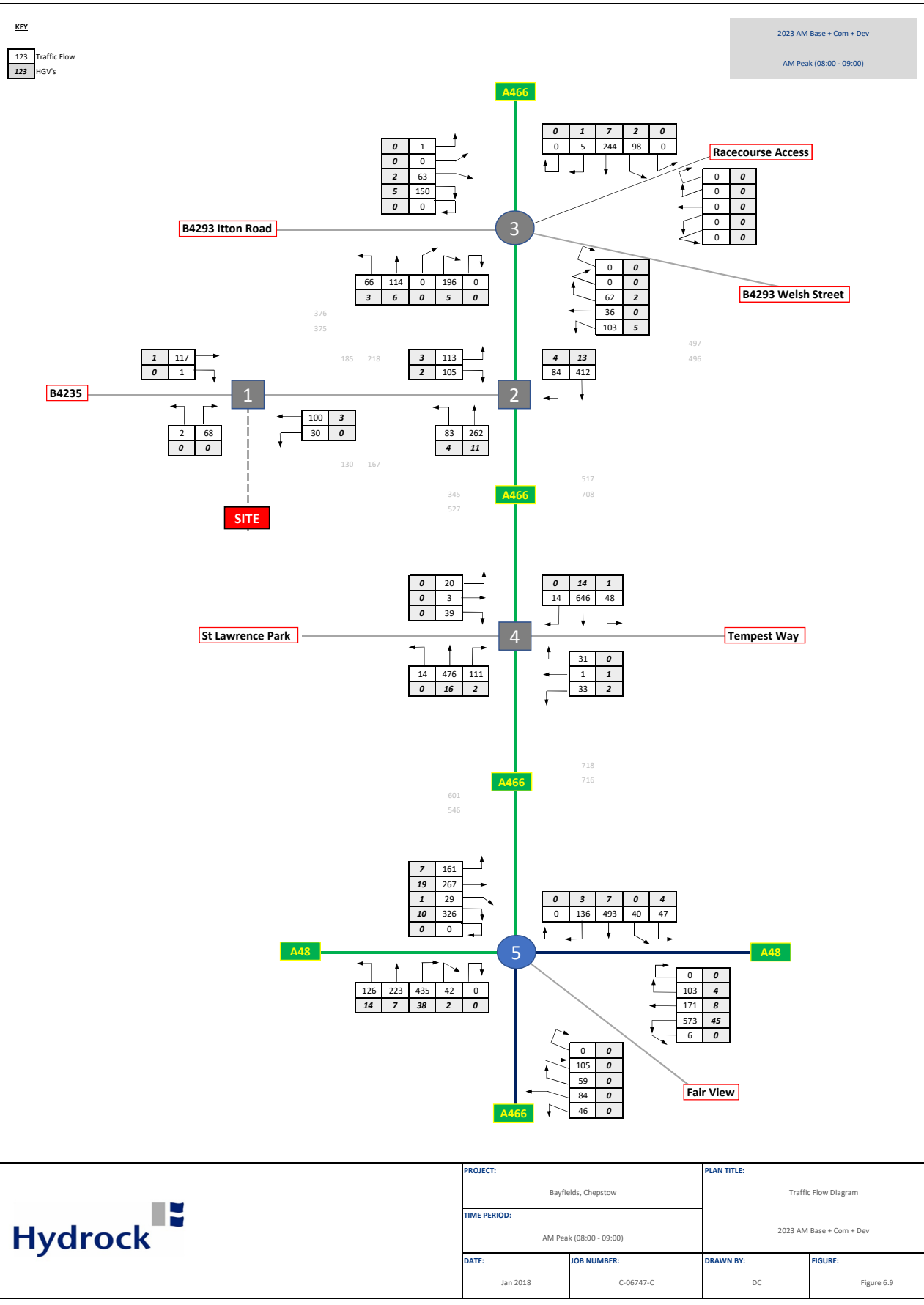
	TIME PERIOD: PM Peak (16:00 - 17:00 - J1-4, 16:30 - 17:30 - J5)		2023 PM Base
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 6.6



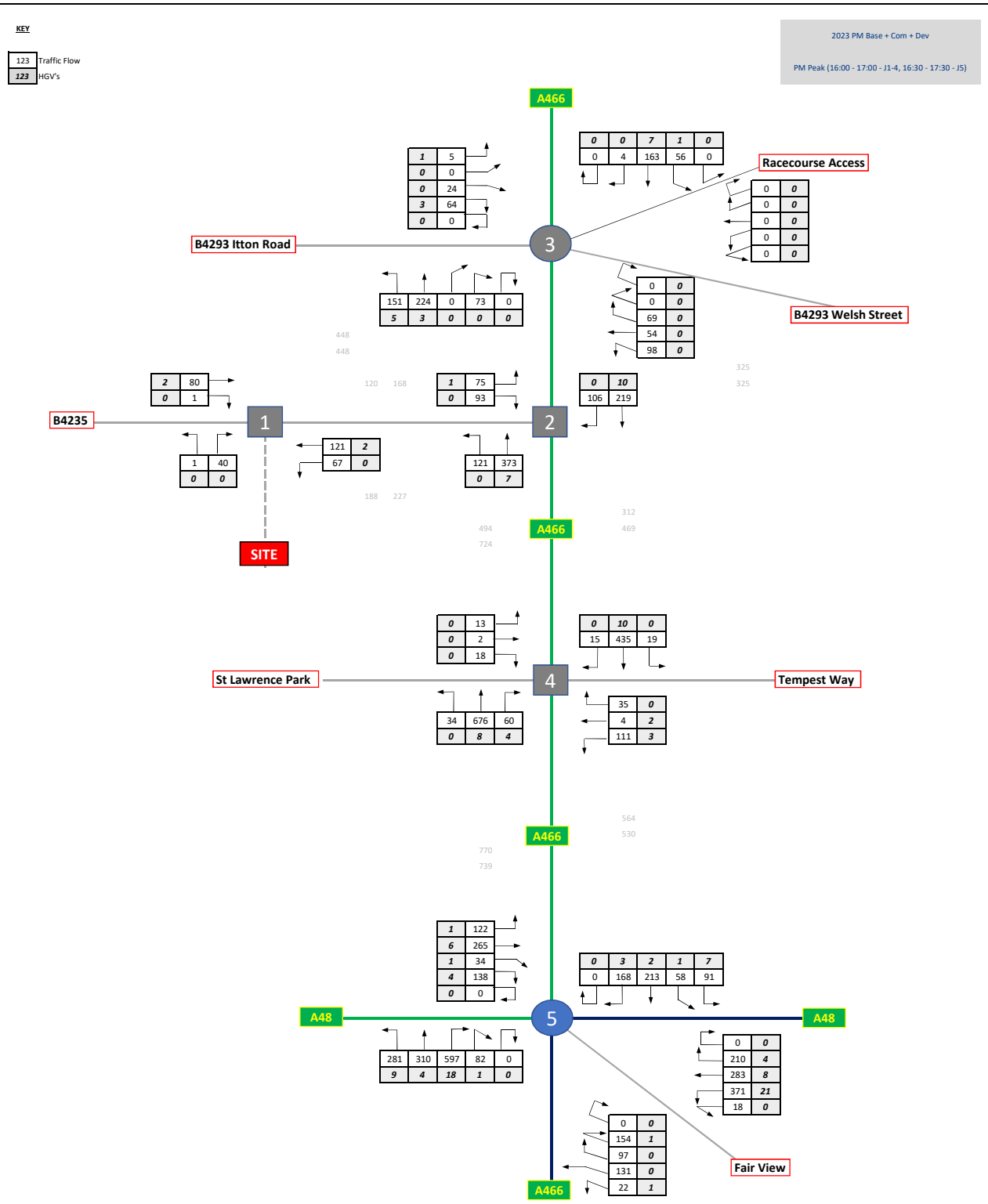
Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
	TIME PERIOD: AM Peak (08:00 - 09:00)	2023 AM Base + Com	
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 6.7



Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
	TIME PERIOD: PM Peak (16:00 - 17:00 - J1-4, 16:30 - 17:30 - J5)	2023 PM Base + Com	
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 6.8



Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
	TIME PERIOD: AM Peak (08:00 - 09:00)	2023 AM Base + Com + Dev	
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 6.9



Hydrock	PROJECT: Bayfields, Chepstow	PLAN TITLE: Traffic Flow Diagram	
	TIME PERIOD: PM Peak (16:00 - 17:00 - J1-4, 16:30 - 17:30 - J5)	2023 PM Base + Com + Dev	
	DATE: Jan 2018	JOB NUMBER: C-06747-C	DRAWN BY: DC	FIGURE: Figure 6.10

APPENDICES

APPENDIX A

PRE-APPLICATION CORRESPONDENCE

CYNGOR monmouthshire COUNTY COUNCIL sir fynwy

Highways Development Control
Planning Application Consultation Response Form

	To : MCC Development Control Planning **DC Officer : Kate Young** **Planning Application Number : DC/2013/00571** **Site : Land at Mounton Road Chepstow** **Proposal: Residential Development Comprising up to 200 Dwellings** **Highway Engineer : Christian Lowe** **Date : 27/09/2013**
	PROPOSALS AND COMMENTS
	The purpose of the application is to seek outline approval for the development of the existing greenfield site to provide up to 200 dwellings with a new vehicular access junction onto the adjacent Class 1 A466 Highway known as the Wye Valley Link Road. The plans and supporting information have been assessed and in particular the submitted Transport Assessment prepared by Transport Planning Associates (TPA). We would comment as follows:- 1. The site is described as land at Mounton Road however the site has minimal frontage onto Mounton Road. The only vehicular and principal pedestrian access point is proposed from the A466 Wye Valley Link Road therefore it should be appropriately described as Proposed Development of Land off the A466 Wye Valley Link Road. 2. The current Transport Assessment refers to an interim Transport Assessment prepared by TPA dated November 2011. Comparing the two it is notable that the current TA's two-way trip generation rates are lower than those quoted in the interim TA. The current TA, Appendix E Page 5 shows 60% compared with Table 5 of the Interim TA which shows 66% in a.m. peak and 66% compared with 74% in the p.m. peak. The current figures should reflect those contained within the interim TA. 3. The principal finding of the TA is that no allowance has been made for traffic generated by the site reserved for the hotel/restaurant site. The master plan indicates that vehicular access to this area would be via the housing site. If the site is not used for these purposes it is likely that additional housing would be sought. The TA should therefore be amended to include the additional traffic generated from this part of the site whether it is developed for a Hotel and Restaurant or

	housing. 4. There are concerns regarding the current traffic flows along the A466. The TA demonstrates that current peak period queuing is modest, except for the A48 eastern arm in the a.m. peak where a maximum queue of 50 vehicles is quoted. Existing a.m. peak period queues on the A466 Wye Valley Link are known to extend way beyond the proposed junction, whereas the analysis quotes maximum queues of 6 vehicles. This suggests that the base year has been hugely understated. This must be reassessed with base year conditions validated by accurate site observations. 5. Further to the above the TA suggests that there will be no queuing at the A466/site access junction in any future scenario. However the table only lists two approaches to the junction, Arm B site access and Arm C A466. It is not stated which A466 approach is Arm C. In practice and as outlined above current a.m. peak queues on the A466 north approach to High Beech Roundabout extend far beyond the sites junction, such that vehicles exiting right from the site can only rely on southbound drivers voluntarily conceding priority. Drivers exiting the site could be delayed for several minutes and noticeable queues may develop. Furthermore, the distribution of traffic exiting the site is stated as 62% to the south and 38% north in a.m. peak, 41% south and 59% north in p.m. peak. The rationale is stated in para 7.6 of the TA but is not logical. In practice it is expected the percentage turning right (i.e. to the south) would be much higher at both peak periods. The TA does not realistically reflect current conditions at the proposed junction therefore must be reassessed and validated by accurate site observations. I would refer to an email from Mark Davies dated 08/04/2013 addressed to Charlotte Wintgens of TPA in connection with the scoping of the TA "The use of actual local trip rate generation data from existing developments in Chepstow is preferred to the use of data derived from the TRICS database". The existing development north of the proposed site known as Barnet's Wood is a prime example as the development is of similar size and junction design with a high percentage of vehicles turning right in the peak periods. 6. The TA refers to proposals submitted by Capita on behalf of Welsh Government (WG) for improvements to the High Beech Roundabout (Para 8.14 and drawing no. 1306-61 figure 8.1). The inference is that the proposed works to be undertaken by WG will overcome any capacity limitations at the roundabout however to our knowledge WG have not commissioned any type of study of High Beech Roundabout therefore improvements to the roundabout would not be included in any WG Capital Budget so there is no commitment to such a scheme. The proposals to which the TA refers were in fact based on a study commissioned by MCC. In light of this clarification on WG's position is required and should there be no short term commitment to such a scheme then MCC would require the developer to fund the roundabout improvement works. 7. An emergency access and pedestrian/cycle access from the A466 Wye Valley Link Road is proposed south of the main site junction. Emergency accesses are unsightly, usually abused by motorists if relying on signing and/or frangible posts, and too unreliable if controlled by hydraulic bollards. They are not required by emergency services therefore any access at this point should cater for pedestrians/cyclists only.

8. General Layout – The proposed junction is a priority junction with a left turn filter lane and a right turn ghost lane from the A466. However, there does not appear to be any details on what visibility is available from the proposed junction. A visibility splay shall be provided in accordance with Technical Advice Note 18 (Tan 18).

8.1 Although the application is for outline permission the TA states that the internal layout of the proposed development will accord to the guidance as set out in Manual for Streets. It shall be ensured that a standard sized refuse vehicle can adequately access and turn within the estate. A swept path analysis shall be submitted for approval together with a refuse audit. Refuse collection is based on kerb side collection therefore no bin stores shall be provided unless there is justification for their use in communal areas of apartment buildings.
Careful consideration should be given to the proposed use of highway construction materials as any material which is over and above what is conventional materials a commuted sum will therefore be required for its future maintenance.

9. Pedestrian/Cycle Movement – The TA refers to existing pedestrian infrastructure north and south of the site. It is considered that the desirable pedestrian routes from the site to the town centre would be via the A48 Newport Road (South) and Mounton Road (North). Southwards there is an existing uncontrolled pedestrian crossing facility with a pedestrian refuge. Northwards there is an existing uncontrolled pedestrian crossing over the A466 linking to the Chepstow Community Hospital. Further north there is a controlled pedestrian crossing facility at the signalised junction of St. Lawrence Road and Penterry Park. Appendix D drawing 1301-61 PL01 'Proposed Access Road and Right Turn Lane' shows an additional uncontrolled pedestrian crossing facility and pedestrian refuge immediately south of the junction linking to the cul-de-sac off the A48 Newport Road, also known as St Lawrence Road, however no consideration has been given to the provision of a similar facility immediately north of the junction for pedestrians desiring to walk via Mounton Road. Also, no consideration has been given to the provision of additional pedestrian crossing facilities north of the junction linking to the northeast corner of the site allowing direct access to the A466 for pedestrians. Furthermore, no consideration has been given to the provison/improvement of crossing facilities at the A466/Mounton Road crossroads junction.

9.1 It is noted the current site boundary does not abut Mounton Road, but a pedestrian access from Mounton Road to the POS is highly desirable to provide convenient access from St. Lawrence Park and Woolpitch Wood to encourage wider use of the POS. It is worth noting that the previously identified site did abut Mounton Road and the interim TA indicated there would be a pedestrian access at the northwest corner of the site (para 4.8 refers).

9.2 A pedestrian link to St Lawrence Lane should be provided to cater for recreational walking, possibly from the proposed public open space.

9.3 If the cycle route is diverted through the site in any way it should continue from the proposed access in a broadly east to west direction past the play area to connect with St. Lawrence Lane.

10. Parking – The TA suggests that the parking provision will accord to the Monmouthshire Parking Standards 2012 i.e. 1 parking space per bedroom (maximum of 3) plus 1 visitor parking space per 5 units. However, the TA states that the development will include some homeowners with no cars which suggests that an allowance will be made for a reduction on parking provision where

	applicable. It shall be noted that car ownership and proximity to local amenities will not dictate the level of parking provision. Although some homeowners may chose not to own a car this does not preclude them from ever owning one and similarly homeowners choosing to walk/cycle to local amenities or to use public transport in the area does mean they do not have ownership of a car. Therefore, parking provision in accordance with Monmouthshire Parking Standards 2012 shall be applied to every property with consideration also given to the supplementary planning guidance 'Domestic Garages'. It shall be noted that integral garage parking does not count towards the level of parking provision for individual units. **11. Cycle Parking** - TA para 4.5 states 'The residential cycle parking will be located in the garage or curtilage of houses'. If located in garages then they should be constructed to larger than the minimum standards as set out in the Supplementary Planning Guidance 'Domestic Garages'. **17/08/2015** In response to the aforementioned comments the applicant has undertaken a further analysis of the capacity constraints on the A466 Wye Valley Link Road (northern arm) of the High Beech Roundabout. Having considered the additional data it is noted that the analysis is solely reliant upon improvements to the A466/A48 High Beech Roundabout (Welsh Government Trunk Road) as detailed in The transport Assessment dated June 2013, Section 8.13 – 8.29 and Fig 8.1. Subject to delivery of those improvements we as Highway Authority we would offer no adverse comments regarding the suitability of the proposed means of access onto the A466 via a simple T junction and right turn ghost island. It is considered that development will not have a significant impact on the local network subject to the mitigation measures proposed on High Beech Roundabout being implemented prior to commencement of development. It is accepted that the proposed mitigation measures proposed on High Beech Roundabout are not in the control or remit of Monmouthshire Highways therefore the developer will be required to liaise with Welsh Government for its delivery.
	RECOMMENDATION
	In light of the aforementioned comments there are no highway grounds to sustain an objection to outline planning approval subject to the following condition being applied:- 1. No development shall take place until the mitigation measures proposed on High Beech Roundabout have been agreed and secured and implemented through a highway agreement with Welsh Government. 2. The site access shall be designed in accordance with the visibility requirements as set out in TAN 18. 3. The general site layout as included in this outline application is indicative therefore a detailed site layout shall be submitted for approval at the reserved matters application. 4. The car parking provision for each individual dwelling shall be in accordance with the SPG Monmouthshire Parking Standards 2012.

David Chapman

From: Lowe, Christian P. <ChristianLowe@monmouthshire.gov.uk>
Sent: 28 February 2018 10:10
To: Aubrey, Zoe
Cc: Hand, Mark; Young, Kate; David Chapman
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Zoe,

Thank you for your email. I apologise to you and David for the delay in responding to the proposed scope of the TA for the above site.

I can confirm that your proposed scope for the TA is acceptable and should be sufficient for us to provide substantive comments as part of the consultation process in respect of the forthcoming planning application. In light of this I trust that allows you to progress further with the TA.

Notwithstanding the above comments you will appreciate that on receipt of the TA we may request further information should it be required.

Kind regards,

Christian

Christian Lowe
Senior Development Engineer (Highways)
Monmouthshire County Council / Cyngor Sir Fynwy
Tel / Ffôn: 01633 644732
Email / Ebost: christianlowe@monmouthshire.gov.uk
Website / Gwefan: www.monmouthshire.gov.uk

monmouthshire
sir fynwy

From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 28 February 2018 09:56
To: Lowe, Christian P. <ChristianLowe@monmouthshire.gov.uk>
Cc: Hand, Mark <MarkHand@monmouthshire.gov.uk>; Young, Kate <KateYoung@monmouthshire.gov.uk>; David Chapman <DavidChapman@hydrock.com>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Christian

Thank you for your time at the meeting yesterday and please see below and attached in terms of the submitted Scoping Request.

We look forward to receiving your response shortly.

Kind regards

Zoe

Zoe Aubrey
Planning Manager

Barratt & David Wilson Homes South Wales
(a trading name of BDW Trading Ltd)
Oak House| Village Way| Tongwynlais| Cardiff| South Wales| CF15 7NE
Tel: 02920 544 744| Mob: 07872816347

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 27 February 2018 21:23
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Zoe

As requested, please see my emails to the highway authority below.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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From: David Chapman
Sent: 13 February 2018 15:15
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

FYI

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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From: David Chapman
Sent: 15 January 2018 20:08
To: christianlowe@monmouthshire.gov.uk
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian / Mark

I have been trying to discuss the scope of work required for the below project for a while with no success. We have assumed that the scope of works are acceptable and have proceeded on that basis as our report is required by the client imminently.

In addition, I was looking to discuss / confirm the access arrangements with yourself. On this basis, I would welcome a discussion, so if you could give me a call that would be much appreciated.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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From: David Chapman
Sent: 09 January 2018 14:58
To: 'christianlowe@monmouthshire.gov.uk' <christianlowe@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

I'm just following up on the below email to agree the scope of work required to support the application.

We have now received traffic and queue length data which was undertaken on Thursday 30th November at junctions 2 to 5 as outlined in my original email.

As we have had no further comment on the approach provided in the Scoping Report, we assume the scope of works are acceptable and we have proceeded with our technical work on this basis.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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From: David Chapman
Sent: 21 November 2017 10:10
To: christianlowe@monmouthshire.gov.uk
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

I am just following up your pre-app advice. We submitted a Transport Scoping Report to assist with the provision of advice – and I have re-attached for your information.

At this stage – I am just seeking to agree the junction assessments which would be required for this development. I note you have stated a requirement for junction assessments at all junctions between the proposed access onto the B4293 and the High Beech roundabout.

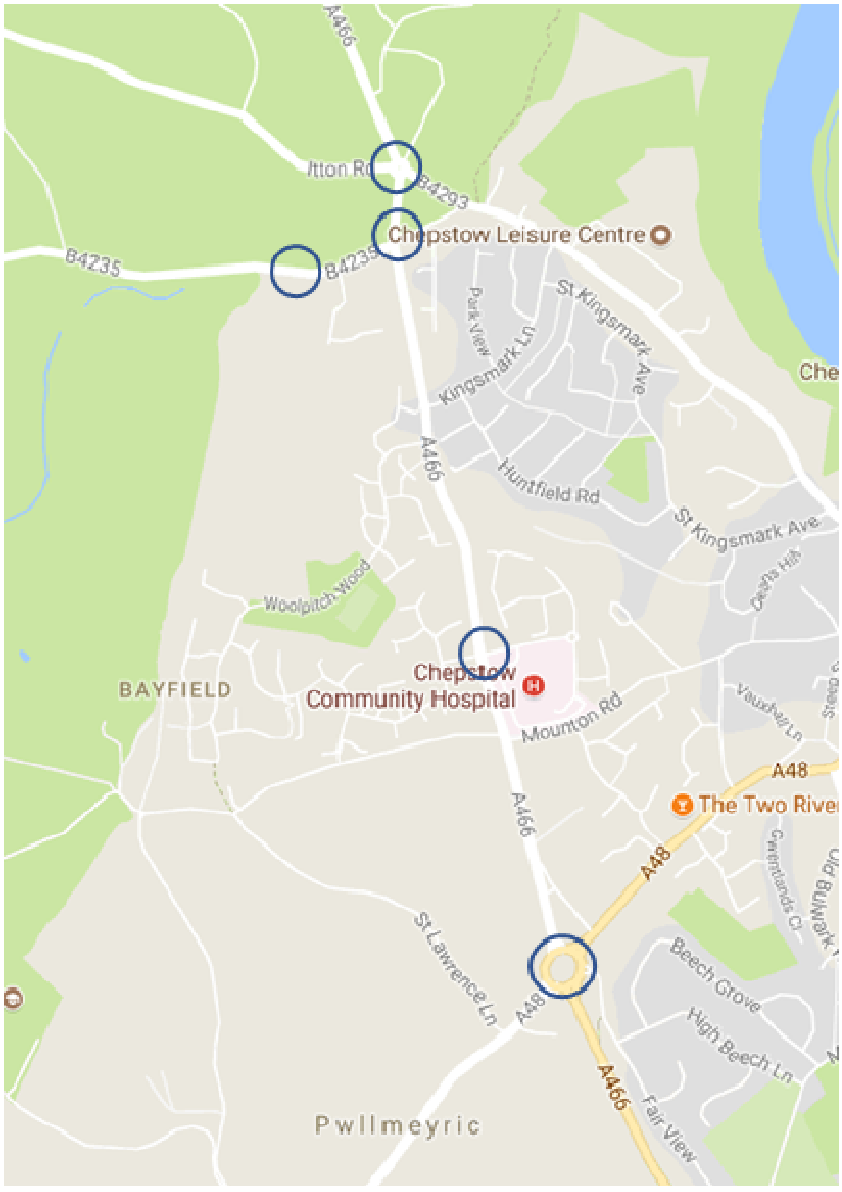
We propose to undertake the following assessments (as shown on the plan):

1) Site Access / A466
2) B4235 / A466
3) A466 / B4293 St Lawrence roundabout
4) Tempest Way / A466
5) High Beech roundabout

Do MCC hold any suitable traffic survey data at these junctions?

We are proposing to undertake traffic surveys on 28th, 29th or 30th November (Tues to Thurs).

Having reviewed the Taylor Wimpey application for land south of Mounton Road, the other junctions along the A466 operated well within capacity and the impact of the site at these junctions would be minimal.



If you could get back to me to confirm our approach is acceptable, that would be much appreciated.

Thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 08 November 2017 11:00
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

---

From: Young, Kate [mailto:KateYoung@monmouthshire.gov.uk]
Sent: 23 October 2017 11:14
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Zoe,
Please find below a copy of the Highway comments relating to the above pre-application request.

Regards

Kate Young

From: Lowe, Christian P.
Sent: 23 October 2017 10:48
To: Young, Kate <KateYoung@monmouthshire.gov.uk>
Subject: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Kate,

Further to the above pre-app please find our highway comments below. I apologise for the delay.

The proposal is for a residential development of up to 300 dwellings on land to the south of the B4235 (Usk Road). The concept plan submitted for consideration shows the development being served from a single access point directly onto the B4235. The Highway Authority are very concerned that the proposed development is essentially a 300 dwelling cul-de-sac which contradicts current design practices for new estate roads. The Highway Engineer raised these concerns during the pre-app meeting and suggested giving consideration to the provision of a secondary access that provides permeability through the development for both vehicles and pedestrians/cyclists. The Highway Engineer suggested creating a secondary access via the neighbouring Wallwern Wood/Barnets Wood development which is accessed from the A466 St Lawrence Road however, it was brought to our attention that access to Wallwern Wood was not achievable due to a parcel of land between the site and Wallwern Wood being sold by the Council to a third party preventing future access, which is concerning. However, having looked at the area in more detail the Highway Engineer is of the opinion that a secondary access may still be achieved through the existing open space/play area. We would therefore recommended that the applicant consider this in more detail prior to submitting an application.

Notwithstanding the above comments/concerns should the application wish to submit a planning application we would expect a detailed and robust transport assessment to be submitted which takes account of all junctions between the proposed access onto the B4293 and the High Beech roundabout. In the absence of a secondary access there are concerns that the level of traffic generated from such a development will have a detrimental impact on

the junction of the B4293 onto the A466. Furthermore, consideration should be given to potential mitigation measures on High Beech Roundabout which were considered as part of a nearby development proposal under planning application DC/2013/00571. It should be noted however that any mitigation measures on the High Beech roundabout are not in the control or remit of Monmouthshire County Council therefore the applicant is required to engage with Welsh Government in this regard.

Many thanks,

Christian

Christian Lowe
Senior Development Engineer (Highways)
Monmouthshire County Council / Cyngor Sir Fynwy
Tel / Ffôn: 01633 644732
Email / Ebost: christianlowe@monmouthshire.gov.uk
Website / Gwefan: www.monmouthshire.gov.uk

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From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 17 October 2017 11:35
To: Young, Kate <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

Any update on the Highway comments?

Thanks

Zoe

From: Aubrey, Zoe
Sent: 12 October 2017 11:28
To: 'Young, Kate' <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

Thanks for the draft Pre-app response. Can you confirm when you are expecting the Highway comments?

Kind regards

Zoe

From: Young, Kate [mailto:KateYoung@monmouthshire.gov.uk]
Sent: 11 October 2017 16:37
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Zoe,

Here is a draft of the pre app report. Highway comments to follow. Also we will let you know if we receive a response from the Health Board.

Regards

Kate Young

From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 10 October 2017 13:58
To: Young, Kate <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

I was just wondering when we can expect the pre-application advice?

Thanks

Zoe

From: Aubrey, Zoe
Sent: 15 September 2017 15:04
To: 'Young, Kate' <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

Thank you for your email. I can confirm we have no problems with the Councillor attending. I presume they are aware we have asked for the pre-application enquiry to be treated as confidential?

I look forward to discussing the site with you on Tuesday.

Kind regards

Zoe

From: Young, Kate [mailto:KateYoung@monmouthshire.gov.uk]
Sent: 15 September 2017 09:35
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Zoe,
I am looking forward to our pre application meeting on Tuesday. The Council is currently trialling a system where we invite the elected local member to pre application meetings where the development is major in scale, this is at the discretion of the developer. In my experience it is useful to help gauge the local political view at this early stage. In this case the local member for St Kingsmark Ward is David Dovey. Would you be happy for him to attend the meeting on Tuesday.

Regards

Kate Young

Mae'r neges e-bost yma a'r ffeiliau a anfonir gyda hi yn gyfrinachol ac fe'i bwriedir ar gyfer yr unigolyn neu gorff y'u cyfeiriwyd atynt yn unig. Gall gynnwys gwybodaeth freintiedig a chyfrinachol ac os nad chi yw'r derbynnydd bwriadedig, rhaid i chi beidio copïo, dosbarthu neu gymryd unrhyw gamau yn seiliedig arni. Os cawsoch y neges e-bost yma drwy gamgymeriad hysbyswch ni cyn gynted ag sydd modd os gwelwch yn dda drwy ffonio 01633 644644. Cafodd y neges e-bost yma sgan firws Microsoft Exchange Online Protection.

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Mae'r Cyngor yn croesawu gohebiaeth yn Gymraeg, Saesneg neu yn y ddwy iaith. Byddwn yn cyfathrebu â chi yn ôl eich dewis. Ni fydd gohebu yn Gymraeg yn arwain at oedi.

The Council welcomes correspondence in English or Welsh or both, and will respond to you according to your preference. Corresponding in Welsh will not lead to delay.

The sender of this e-mail is a member of the Barratt Developments PLC group of companies, the ultimate

The Council welcomes correspondence in English or Welsh or both, and will respond to you according to your preference. Corresponding in Welsh will not lead to delay.

David Chapman

From: David Chapman
Sent: 26 June 2018 15:43
To: 'Lowe, Christian P.'
Cc: 'Hand, Mark'; 'Young, Kate'; 'Aubrey, Zoe'; David Cooke
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

I am following up again on our report issued in March, have you had a chance to review and do you have any comments?

Thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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From: David Chapman
Sent: 09 May 2018 13:55
To: Lowe, Christian P. <ChristianLowe@monmouthshire.gov.uk>
Cc: Hand, Mark <MarkHand@monmouthshire.gov.uk>; Young, Kate <KateYoung@monmouthshire.gov.uk>; Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>; David Cooke <DavidCooke@hydrock.com>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

Just following up on the below report again and wondering if you have any comments at this stage?

Thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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From: David Chapman
Sent: 13 April 2018 15:17
To: 'Lowe, Christian P.' <ChristianLowe@monmouthshire.gov.uk>
Cc: 'Hand, Mark' <MarkHand@monmouthshire.gov.uk>; 'Young, Kate' <KateYoung@monmouthshire.gov.uk>; 'Aubrey, Zoe' <zoe.aubrey@barratthomes.co.uk>; David Cooke <DavidCooke@hydrock.com>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

I just thought I'd follow up the below email, hopefully our report was clear and responded to all the queries raised.

Please give me a call if you have any comments or wish to discuss further.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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Tel: 02920 023 665 Mob: 07469 856 959
hydrock.com

From: David Chapman
Sent: 21 March 2018 14:23
To: Lowe, Christian P. <ChristianLowe@monmouthshire.gov.uk>
Cc: Hand, Mark <MarkHand@monmouthshire.gov.uk>; Young, Kate <KateYoung@monmouthshire.gov.uk>; Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>; David Cooke <DavidCooke@hydrock.com>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

In advance of submission, please find our Draft Transport Assessment for your information and review. Noting your comments below in relation to your request for further information on receipt of the TA, we thought it would be helpful to send this through, without prejudice, to try and gain an in principle agreement on the scope (and comment on the conclusions, if possible).

Please note that the development proposals section is due to be updated once the masterplan (and resultant site access drawings) are finalised.

If you have any queries or would like to chat through anything, please feel free to give me a call.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

Hydrock
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hydrock.com

From: Lowe, Christian P. <ChristianLowe@monmouthshire.gov.uk>
Sent: 28 February 2018 10:10
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Cc: Hand, Mark <MarkHand@monmouthshire.gov.uk>; Young, Kate <KateYoung@monmouthshire.gov.uk>; David Chapman <DavidChapman@hydrock.com>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Zoe,

Thank you for your email. I apologise to you and David for the delay in responding to the proposed scope of the TA for the above site.

I can confirm that your proposed scope for the TA is acceptable and should be sufficient for us to provide substantive comments as part of the consultation process in respect of the forthcoming planning application. In light of this I trust that allows you to progress further with the TA.

Notwithstanding the above comments you will appreciate that on receipt of the TA we may request further information should it be required.

Kind regards,

Christian

Christian Lowe
Senior Development Engineer (Highways)
Monmouthshire County Council / Cyngor Sir Fynwy
Tel / Ffôn: 01633 644732
Email / Ebost: christianlowe@monmouthshire.gov.uk
Website / Gwefan: www.monmouthshire.gov.uk

monmouthshire
sir fynwy

From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 28 February 2018 09:56
To: Lowe, Christian P. <ChristianLowe@monmouthshire.gov.uk>
Cc: Hand, Mark <MarkHand@monmouthshire.gov.uk>; Young, Kate <KateYoung@monmouthshire.gov.uk>; David Chapman <DavidChapman@hydrock.com>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Christian

Thank you for your time at the meeting yesterday and please see below and attached in terms of the submitted Scoping Request.

We look forward to receiving your response shortly.

Kind regards

Zoe

Zoe Aubrey
Planning Manager

Barratt & David Wilson Homes South Wales
(a trading name of BDW Trading Ltd)
Oak House| Village Way| Tongwynlais| Cardiff| South Wales| CF15 7NE
Tel: 02920 544 744| Mob: 07872816347

DAVID WILSON HOMES
WHERE QUALITY LIVES

BARRATT HOMES

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 27 February 2018 21:23
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Zoe

As requested, please see my emails to the highway authority below.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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From: David Chapman
Sent: 13 February 2018 15:15
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

FYI

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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From: David Chapman
Sent: 15 January 2018 20:08
To: christianlowe@monmouthshire.gov.uk
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian / Mark

I have been trying to discuss the scope of work required for the below project for a while with no success. We have assumed that the scope of works are acceptable and have proceeded on that basis as our report is required by the client imminently.

In addition, I was looking to discuss / confirm the access arrangements with yourself. On this basis, I would welcome a discussion, so if you could give me a call that would be much appreciated.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

Hydrock

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hydrock.com

From: David Chapman
Sent: 09 January 2018 14:58
To: 'christianlowe@monmouthshire.gov.uk' <christianlowe@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

I'm just following up on the below email to agree the scope of work required to support the application.

We have now received traffic and queue length data which was undertaken on Thursday 30th November at junctions 2 to 5 as outlined in my original email.

As we have had no further comment on the approach provided in the Scoping Report, we assume the scope of works are acceptable and we have proceeded with our technical work on this basis.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

Hydrock
Tel: 02920 023 665 Mob: 07469 856 959
hydrock.com

From: David Chapman
Sent: 21 November 2017 10:10
To: christianlowe@monmouthshire.gov.uk
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Christian

I am just following up your pre-app advice. We submitted a Transport Scoping Report to assist with the provision of advice – and I have re-attached for your information.

At this stage – I am just seeking to agree the junction assessments which would be required for this development. I note you have stated a requirement for junction assessments at all junctions between the proposed access onto the B4293 and the High Beech roundabout.

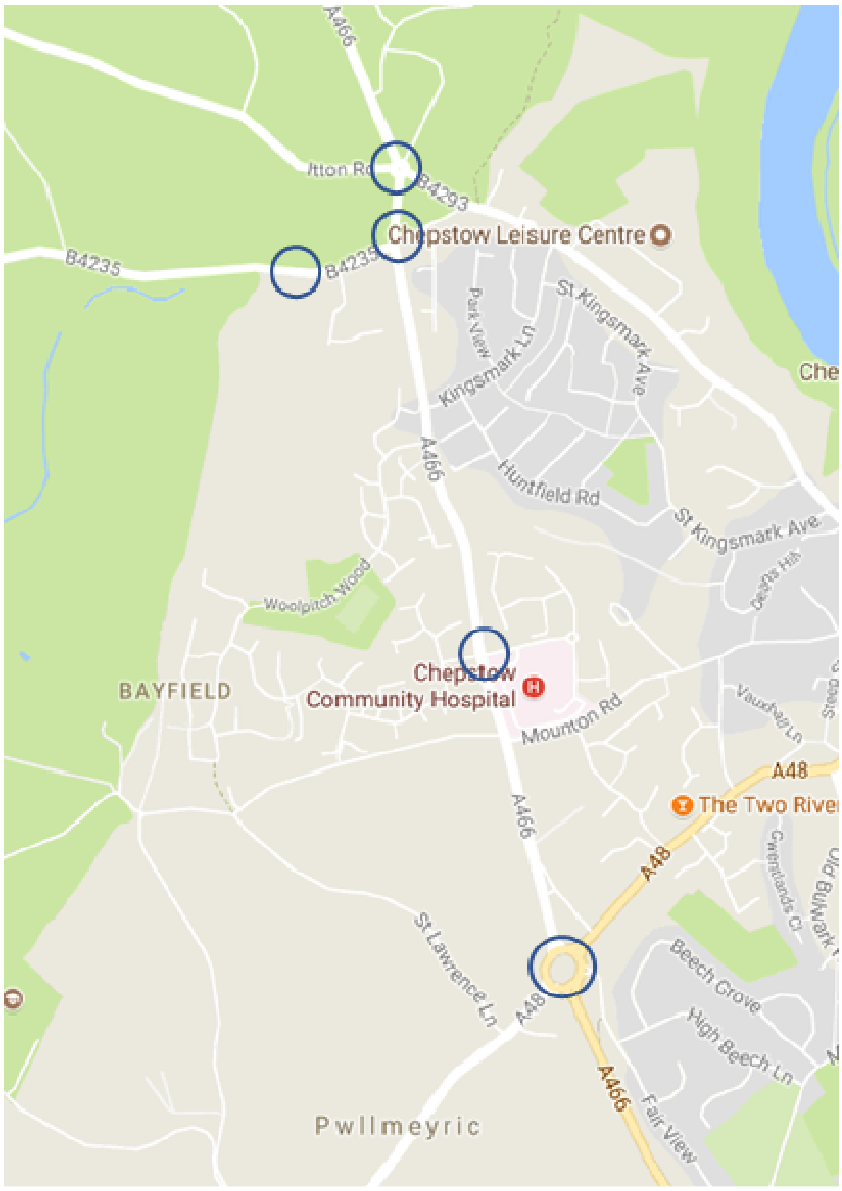
We propose to undertake the following assessments (as shown on the plan):

1) Site Access / A466
2) B4235 / A466
3) A466 / B4293 St Lawrence roundabout
4) Tempest Way / A466
5) High Beech roundabout

Do MCC hold any suitable traffic survey data at these junctions?

We are proposing to undertake traffic surveys on 28th, 29th or 30th November (Tues to Thurs).

Having reviewed the Taylor Wimpey application for land south of Mounton Road, the other junctions along the A466 operated well within capacity and the impact of the site at these junctions would be minimal.



If you could get back to me to confirm our approach is acceptable, that would be much appreciated.

Thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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hydrock.com

From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 08 November 2017 11:00
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

---

From: Young, Kate [mailto:KateYoung@monmouthshire.gov.uk]
Sent: 23 October 2017 11:14

To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: FW: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Zoe,
Please find below a copy of the Highway comments relating to the above pre-application request.

Regards

Kate Young

From: Lowe, Christian P.
Sent: 23 October 2017 10:48
To: Young, Kate <KateYoung@monmouthshire.gov.uk>
Subject: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Hi Kate,

Further to the above pre-app please find our highway comments below. I apologise for the delay.

The proposal is for a residential development of up to 300 dwellings on land to the south of the B4235 (Usk Road). The concept plan submitted for consideration shows the development being served from a single access point directly onto the B4235. The Highway Authority are very concerned that the proposed development is essentially a 300 dwelling cul-de-sac which contradicts current design practices for new estate roads. The Highway Engineer raised these concerns during the pre-app meeting and suggested giving consideration to the provision of a secondary access that provides permeability through the development for both vehicles and pedestrians/cyclists. The Highway Engineer suggested creating a secondary access via the neighbouring Wallwern Wood/Barnets Wood development which is accessed from the A466 St Lawrence Road however, it was brought to our attention that access to Wallwern Wood was not achievable due to a parcel of land between the site and Wallwern Wood being sold by the Council to a third party preventing future access, which is concerning. However, having looked at the area in more detail the Highway Engineer is of the opinion that a secondary access may still be achieved through the existing open space/play area. We would therefore recommended that the applicant consider this in more detail prior to submitting an application.

Notwithstanding the above comments/concerns should the application wish to submit a planning application we would expect a detailed and robust transport assessment to be submitted which takes account of all junctions between the proposed access onto the B4293 and the High Beech roundabout. In the absence of a secondary access there are concerns that the level of traffic generated from such a development will have a detrimental impact on the junction of the B4293 onto the A466. Furthermore, consideration should be given to potential mitigation measures on High Beech Roundabout which were considered as part of a nearby development proposal under planning application DC/2013/00571. It should be noted however that any mitigation measures on the High Beech roundabout are not in the control or remit of Monmouthshire County Council therefore the applicant is required to engage with Welsh Government in this regard.

Many thanks,

Christian

Christian Lowe
Senior Development Engineer (Highways)
Monmouthshire County Council / Cyngor Sir Fynwy
Tel / Ffôn: 01633 644732
Email / Ebost: christianlowe@monmouthshire.gov.uk
Website / Gwefan: www.monmouthshire.gov.uk

From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 17 October 2017 11:35
To: Young, Kate <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

Any update on the Highway comments?

Thanks

Zoe

From: Aubrey, Zoe
Sent: 12 October 2017 11:28
To: 'Young, Kate' <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

Thanks for the draft Pre-app response. Can you confirm when you are expecting the Highway comments?

Kind regards

Zoe

From: Young, Kate [mailto:KateYoung@monmouthshire.gov.uk]
Sent: 11 October 2017 16:37
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Zoe,
Here is a draft of the pre app report. Highway comments to follow. Also we will let you know if we receive a response from the Health Board.

Regards

Kate Young

From: Aubrey, Zoe [mailto:zoe.aubrey@barratthomes.co.uk]
Sent: 10 October 2017 13:58
To: Young, Kate <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

I was just wondering when we can expect the pre-application advice?

Thanks

Zoe

From: Aubrey, Zoe
Sent: 15 September 2017 15:04
To: 'Young, Kate' <KateYoung@monmouthshire.gov.uk>
Subject: RE: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Kate

Thank you for your email. I can confirm we have no problems with the Councillor attending. I presume they are aware we have asked for the pre-application enquiry to be treated as confidential?

I look forward to discussing the site with you on Tuesday.

Kind regards

Zoe

From: Young, Kate [mailto:KateYoung@monmouthshire.gov.uk]
Sent: 15 September 2017 09:35
To: Aubrey, Zoe <zoe.aubrey@barratthomes.co.uk>
Subject: *EXTERNAL: Pre application MC/2017/ENQ/00828 Housing Development in Chepstow

Zoe,
I am looking forward to our pre application meeting on Tuesday. The Council is currently trialling a system where we invite the elected local member to pre application meetings where the development is major in scale, this is at the discretion of the developer. In my experience it is useful to help gauge the local political view at this early stage. In this case the local member for St Kingsmark Ward is David Dovey. Would you be happy for him to attend the meeting on Tuesday.

Regards

Kate Young

Mae'r Cyngor yn croesawu gohebiaeth yn Gymraeg, Saesneg neu yn y ddwy iaith. Byddwn yn cyfathrebu â chi yn ôl eich dewis. Ni fydd gohebu yn Gymraeg yn arwain at oedi.

The Council welcomes correspondence in English or Welsh or both, and will respond to you according to your preference. Corresponding in Welsh will not lead to delay.

Mae'r Cyngor yn croesawu gohebiaeth yn Gymraeg, Saesneg neu yn y ddwy iaith. Byddwn yn cyfathrebu â chi yn ôl eich dewis. Ni fydd gohebu yn Gymraeg yn arwain at oedi.

The Council welcomes correspondence in English or Welsh or both, and will respond to you according to your preference. Corresponding in Welsh will not lead to delay.

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The Council welcomes correspondence in English or Welsh or both, and will respond to you according to your preference. Corresponding in Welsh will not lead to delay.

David Chapman

From: Richard.Jones7@gov.wales
Sent: 30 May 2018 09:03
To: David Chapman
Cc: Claudia.Currie@gov.wales; planning@monmouthshire.gov.uk; Aqib.Afzal@gov.wales
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

David,

Following review of the details included in the TA and Air Quality Assessment, the Welsh Government (WG - Network Management Division) are satisfied that the Bayfield's development would be unlikely to significantly impact on trunk road infrastructure or the Chepstow AQMA.

On the basis of the current pre-app submission, WG would not object to the proposal.

Regards
Richard

Richard Jones
Peiriannydd Ffyrdd / Route Engineer

Is-adran Rheoli'r Rhwydwaith - Network Management Division
Trafnidiaeth / Transport
Llywodraeth Cymru / Welsh Government
Parc Cathays / Cathays Park
Caerdydd / Cardiff

Ffôn / Tel: 03000 256573

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 16 April 2018 08:18
To: Jones, Richard (EST - Transport) <Richard.Jones7@gov.wales>
Cc: Currie, Claudia (ESNR-Transport-Network Management) <Claudia.Currie@gov.wales>; David Cooke <DavidCooke@hydrock.com>
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Hi Richard

Further to your email below, please find attached the Draft AQA for your review.

Please let me know if you have any comments.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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From: Richard.Jones7@gov.wales <Richard.Jones7@gov.wales>
Sent: 29 March 2018 11:50
To: David Chapman <DavidChapman@hydrock.com>
Cc: Claudia.Currie@gov.wales
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Morning David,

I have received the following details from my colleague, Claudia Currie and am aware that air quality is an important part of this application in terms of this site not impacting on the existing AQMA. Would you please supply details for the air quality strategy associated with the TA as both should be reviewed together.

Many thanks
Richard

Richard Jones
Route Engineer

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 21 March 2018 14:17
To: Currie, Claudia (ESNR-Transport-Network Management); Jones, Richard (EST - Transport)
Cc: David Cooke; Emmett, Mark (ESNR-Transport-Network Management)
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Hi Claudia

Thank you very much for your response. As requested, in advance of submission, please find our Draft Transport Assessment for your information and review. Please note that the development proposals section is due to be updated as the masterplan (and resultant site access drawings) are finalised.

This has been sent without prejudice to hopefully obtain an in principle agreement on the scope and conclusions.

If you have any queries or would like to chat through anything, please feel free to give me a call.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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hydrock.com

From: Claudia.Currie@gov.wales <Claudia.Currie@gov.wales>
Sent: 13 March 2018 17:09
To: David Chapman <DavidChapman@hydrock.com>; Richard.Jones7@gov.wales
Cc: David Cooke <DavidCooke@hydrock.com>; Mark.Emmett2@gov.wales
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Thanks David

The TA will obviously be reviewed formally as part of the Planning Application as will the Air Quality Assessment, but based on the comments below it would suggest at this stage that the

proposed development would not impact on the operation/capacity of the High Beech Roundabout.

If you could send an advanced copy of the TA we would be able to review in advance of the formal Planning Application.

Claudia

Claudia Currie

Rheolwr Diogelwch ar y Ffyrdd – Road Safety Manager

Is-adran Rheoli'r Rhwydwaith - Network Management Division

Trafnidiaeth - Transport

Seilwaith yr Economi Economy & Infrastructure

Llywodraeth Cymru - Welsh Government

Ffon - Tel 03000 25 6446 / 07500060834

e-bost - e-mail: Claudia.Currie@llyw.cymru / Claudia.Currie@gov.wales

---

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 09 March 2018 14:14
To: Currie, Claudia (ESNR-Transport-Network Management); Jones, Richard (EST - Transport)
Cc: David Cooke; Emmett, Mark (ESNR-Transport-Network Management)
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Hi Claudia

I am just picking up on our email correspondence from last month in relation to the Bayfield site. Since our discussions, the proposals have reduced from 250 to 200 dwellings due to on-site constraints. The development traffic through the High Beech roundabout would subsequently be reduced.

The revised forecasts demonstrate that the site would generate less than one vehicle per minute through the entire High Beech roundabout in the peak hours. This equates to a maximum of a 1.8% increase in flows through the junction against 2017 base data.

As a comparison, the committed Mabey Bridge site was forecast to generate up to 156 vehicle movements through the High Beech roundabout, around three times higher than the proposed Bayfields development.

The Vectos TA for the Mabey Bridge site provides traffic surveys and queue length data which we have compared with those we have obtained for Bayfields. The AM peak flows were around 1% higher through the entire junction in the Vectos TA from 2014 (3,491 PCU's) than obtained for Bayfields in 2017 (3,337 PCU's). However, the queue lengths were broadly comparable, with slightly higher queues recorded in 2017 than in 2014. As such, minor variations in traffic flow at this roundabout (which occur on a daily basis) did not result in higher queues when comparing the two surveys.

On the basis of the above, the minimal change in flows resulting from the development would be well within daily variations and unlikely to result in perceptible changes to queue lengths.

Although generating significantly higher traffic flows through the junction, the Mabey Bridge site did not provide an assessment of High Beech and no mitigation was required. On this basis and referring to the above analysis, the Bayfields proposals would not have a material impact on the capacity at High Beech. Consistent with the High Beech development (and as there would not be a material impact), we have not undertaken detailed junction modelling as we do not consider that this would be required.

We have presented our full analysis within a TA to allow WG to provide an informed response, but I wanted to share a summary of our analysis with you in advance of submission. If you could confirm our approach is acceptable (or let me know if you have any comments) it would be much appreciated.

A separate Air Quality Assessment is being produced by others which is fully considering the impact on AQ from generated traffic. We have provided the traffic flows to inform their detailed model.

Please feel free to give me a call to chat through, if you have any queries.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate | Transportation

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hydrock.com

From: Claudia.Currie@gov.wales <Claudia.Currie@gov.wales>
Sent: 06 February 2018 13:51
To: David Chapman <DavidChapman@hydrock.com>; Richard.Jones7@gov.wales
Cc: David Cooke <DavidCooke@hydrock.com>; Mark.Emmett2@gov.wales
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

David

Very sorry for the confusion…there was a 'just' missing in my last email.

Sorry I cannot provide a definitive answer, but its because it is not just a traffic capacity issue.

Just to be clear you need to demonstrate that there is no capacity or operational issue at the High Beach roundabout with the proposed development in place AND that there is no detrimental impact on the air quality. I don't think I made it very clear that you need to deal with both capacity and air quality as either could trigger a refusal from WG. I meant to say even if capacity is not an issue that the air quality may be and therefore both need to be considered.

Any modelling / technical note presented in support of the development must contain sufficient information for WG Officials to make an informed decision.

Regards

Claudia

Claudia Currie

Rheolwr Diogelwch ar y Ffyrdd – Road Safety Manager

Is-adran Rheoli'r Rhwydwaith - Network Management Division

Trafnidiaeth - Transport

Seilwaith yr Economi Economy & Infrastructure
Llywodraeth Cymru - Welsh Government
Ffon - Tel 03000 25 6446 / 07500060834
e-bost - e-mail: Claudia.Currie@llyw.cymru / Claudia.Currie@gov.wales

---

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 05 February 2018 08:56
To: Currie, Claudia (ESNR-Transport-Network Management); Jones, Richard (EST - Transport)
Cc: David Cooke; Emmett, Mark (ESNR-Transport-Network Management)
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Thanks Claudia – we will discuss with the AQ consultants and, if required, get back to you.

I think if isn't a traffic capacity issue – we will not undertake a model assessing the traffic capacity impacts as part of the Transport Assessment. However, the AQ assessment will fully consider the changes from the traffic flows.

Regards

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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hydrock.com

From: Claudia.Currie@gov.wales [mailto:Claudia.Currie@gov.wales]
Sent: 02 February 2018 16:39
To: David Chapman <DavidChapman@hydrock.com>; Richard.Jones7@gov.wales
Cc: David Cooke <DavidCooke@hydrock.com>; Mark.Emmett2@gov.wales
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

David

As the air quality is the main issue I cannot really recommend a solution at this time. The official stance is that any decrease in the quality of the air as a result of increased congestion from a proposed development would require a direction on any planning application to be refused. Your 68 additional vehicles could be the trigger that shows the air quality has deteriorated – I can only suggest you seek advice from your air quality experts on this.

Sorry I cannot provide a definitive answer, but its because it is not a traffic capacity issue.

Claudia

Claudia Currie

Rheolwr Diogelwch ar y Ffyrdd – Road Safety Manager
Is-adran Rheoli'r Rhwydwaith - Network Management Division
Trafnidiaeth - Transport
Seilwaith yr Economi Economy & Infrastructure

Llywodraeth Cymru - Welsh Government
Ffon - Tel 03000 25 6446 / 07500060834
e-bost - e-mail: Claudia.Currie@llyw.cymru / Claudia.Currie@gov.wales

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 29 January 2018 14:39
To: Currie, Claudia (ESNR-Transport-Network Management); Jones, Richard (EST - Transport)
Cc: David Cooke; Emmett, Mark (ESNR-Transport-Network Management)
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Thanks Claudia / Richard

On the basis of the below, the issue mainly relates to AQ and I believe a full AQ assessment is being taken by others in our team.

On the basis of our minimal traffic flows through the junction, which will be provided to the AQ team and utilised in their AQ impact models, would this be enough information for you to make a judgement as to the impacts of the development on AQ?

Thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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Tel: 02920 023 665 Mob: 07469 856 959
hydrock.com

From: Claudia.Currie@gov.wales [mailto:Claudia.Currie@gov.wales]
Sent: 29 January 2018 14:27
To: David Chapman <DavidChapman@hydrock.com>
Cc: David Cooke <DavidCooke@hydrock.com>; Richard.Jones7@gov.wales; Mark.Emmett2@gov.wales
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

David

The High Beach Roundabout is in an air quality area and as such any change in traffic flows will need to be carefully modelled and considered in terms of increased congestion and impact on air quality. I have attached a link to the latest document that is available that highlights the issues for you to consider. Therefore, you will need to demonstrate in the TA the level of traffic generation and increases in queue lengths at this roundabout to ensure WG has the evidence in front of them to enable a conclusion to be drawn that the proposed development would or would not impact on the air quality.

http://gov.wales/docs/det/report/160329-a48-chepstow-air-quality.pdf

I have also copied in my colleague Richard Jones who will be dealing with this in the future as I have changed my role within WG and the Area Manager

Regards

Claudia

Claudia Currie

Rheolwr Diogelwch ar y Ffyrdd – Road Safety Manager

Is-adran Rheoli'r Rhwydwaith - Network Management Division

Trafnidiaeth - Transport

Seilwaith yr Economi Economy & Infrastructure

Llywodraeth Cymru - Welsh Government

Ffon - Tel 03000 25 6446 / 07500060834

e-bost - e-mail: Claudia.Currie@llyw.cymru / Claudia.Currie@gov.wales

---

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 26 January 2018 10:09
To: Currie, Claudia (ESNR-Transport-Network Management)
Cc: David Cooke
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Hi Claudia

I just wanted to catch up on this site in relation to the High Beech roundabout. I understand that my colleague (cc'd) spoke to you before Christmas in relation to our proposals for modelling etc. I have tried calling but couldn't get through so thought I'd send an email.

We have now undertaken our trip generation and distribution analysis from the development site and this has shown that there is a c.2% increase in vehicle trips from the development through the roundabout. The 2017 background flows were c. 3,200 to 3,350 vehicles and the development flows c. 68 to 74 vehicles.

In this context, the development would be unlikely to have a material impact on queuing or capacity at this junction and the level of traffic would be well within daily variations. There would likely be an imperceptible impact on queueing and capacity. The level of movements through the junction is also well below those from the consented Mabey Bridge development and no assessment of the roundabout or mitigation was required.

Indeed, the Mabey Bridge TA showed a higher level of baseline traffic through the junction in 2014 (c.1%) and lower (albeit similar) recorded queue lengths.

As such, based on the traffic flows, the minimal impacts and the approaches from other consented developments – we do not consider that an assessment of this roundabout would be required.

We have set out full analysis of trip generation, distribution, assignment and baseline traffic flows within the TA and can provide this information, if required.

The AQ impacts are being considered separately by others, and I understand that this is a key concern for WG.

Would you be able to confirm whether this approach is acceptable?

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

Hydrock
Tel: 02920 023 665 Mob: 07469 856 959
hydrock.com

From: Claudia.Currie@gov.wales [mailto:Claudia.Currie@gov.wales]
Sent: 11 December 2017 18:29
To: David Chapman <DavidChapman@hydrock.com>
Subject: RE: High Beech Roundabout Assessment - Bayfields, Chepstow

Happy to chat – contact details are below

Claudia Currie

Is-adran Rheoli'r Rhwydwaith - Network Management Division
Trafnidiaeth - Transport
Seilwaith yr Economi Economy & Infrastructure
Llywodraeth Cymru - Welsh Government
Ffon - Tel 03000 25 6446 (newydd /new) / 07500060834
e-bost - e-mail: Claudia.Currie@llyw.cymru / Claudia.Currie@gov.wales (newydd /new)

From: David Chapman [mailto:DavidChapman@hydrock.com]
Sent: 04 December 2017 20:18
To: Currie, Claudia (ESNR-Transport-Network Management)
Subject: High Beech Roundabout Assessment - Bayfields, Chepstow

Hi Claudia

I am providing transport support for the proposed development for Barratt Homes at Bayfields, Chepstow (LPA Ref: Ref No: MC/2017/ENQ/00828, Land South Of B4235 (Barnetts Wood) Chepstow).

I understand you have had some discussions in relation to the High Beech roundabout with Zoe Aubrey, however I was wondering if you could give me a call to chat through?

We are proposing to undertake assessments of High Beech with the inclusion of our development traffic. We have obtained revised traffic and queue length surveys which were undertaken last Thursday (30th November). We also have the historic survey information from the Taylor Wimpey and Mabey Bridge sites which we will use to verify and validate any modelling.

In terms of the traffic modelling itself, I was seeking to agree our approach. We propose to undertake analysis in a 2022 assessment year (5 years after planning application submission). However, I wanted to confirm the Welsh Government assessment year requirements as I know that with Highways England they only consider the impact / mitigation for a year of opening and I wanted to know if that was the same for Welsh Government (in which case 2022 would be a more than robust estimate)?

We will growth the background traffic flows by TEMPRO factors based on the local area assumptions.

Finally, I just wondered if you could confirm whether WG have an improvement scheme in place for this roundabout / network? I know that this was stated in relation to the Taylor Wimpey site a few years back, but I wondered if this had got any further? I envisage it would be unlikely that the Bayfields site would as much traffic through the High Beech roundabout as for the Taylor Wimpey site as more vehicles would travel via the Racecourse roundabout.

If you could respond by email or give me a call to chat through the above, that would be much appreciated.

Many thanks

Dave

David Chapman BA(Hons) MSc CMILT
Associate (Transportation)

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Tel: 02920 023 665 Mob: 07469 856 959
hydrock.com

Wrth adael Llywodraeth Cymru sganiwyd y neges yma am bob feirws. Mae'n bosibl y bydd gohebiaeth gyda Llywodraeth Cymru yn cael ei logio, ei monitro ac/neu ei chofnodi yn awtomatig am resymau cyfreithiol. Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi. On leaving the Welsh Government this email was scanned for all known viruses. Communications with Welsh Government may be automatically logged, monitored and/or recorded for legal purposes. We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.
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Wrth adael Llywodraeth Cymru sganiwyd y neges yma am bob feirws. Mae Llywodraeth Cymru yn diogelu eich data o ddifrif. Os cysylltwch â Llywodraeth Cymru Mae ein hysbysiad preifatrwydd esbonio sut rydym yn defnyddio eich gwybodaeth a ffyrdd yr ydym yn diogelu eich preifatrwydd. Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi. On leaving the Welsh Government this email was scanned for all known viruses. The Welsh Government takes the protection of your data seriously. If you contact the Welsh Government then our Privacy Notice explains how we use your information and the ways in which we protect your privacy. We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

APPENDIX B

EXTENT OF ADOPTED HIGHWAY

Area around St Lawrence Park

Monmouthshire County Council, County Hall, The Rhadyr, Usk. NP15 1GA

Scale : 1:3835	Printed : 2/8/2017 at 11:21 AM	Grid Ref: 352266,194030

APPENDIX C

TRAFFIC FLOW AND QUEUE SURVEY RESULTS

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (1) A446 / Welsh Street / Itton Road

Approach: A446 (North)

	Left to Welsh Street								S/B to A446 (South)								Right to Itton Road							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	9	1	0	0	0	**10**	0	0	47	2	1	0	0	**50**	0	0	0	0	0	0	0	**0**
0715 - 0730	0	0	11	0	0	0	0	**11**	0	0	47	2	1	0	0	**50**	0	0	0	0	1	0	0	**1**
0730 - 0745	0	0	12	0	0	0	0	**12**	0	1	51	4	0	0	1	**57**	0	0	0	0	0	0	0	**0**
0745 - 0800	0	0	19	1	0	0	0	**20**	0	2	46	6	2	0	0	**56**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**51**	**2**	**0**	**0**	**0**	**53**	**0**	**3**	**191**	**14**	**4**	**0**	**1**	**213**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
0800 - 0815	0	0	22	0	0	0	0	**22**	0	4	62	4	1	0	0	**71**	0	0	1	0	1	0	0	**2**
0815 - 0830	0	0	23	3	0	0	1	**27**	0	2	41	6	2	0	0	**51**	0	0	1	0	0	0	0	**1**
0830 - 0845	0	0	21	3	0	0	0	**24**	0	1	44	3	1	0	0	**49**	0	0	1	0	0	0	0	**1**
0845 - 0900	0	0	17	2	0	0	1	**20**	0	0	55	4	1	2	0	**62**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**83**	**8**	**0**	**0**	**2**	**93**	**0**	**7**	**202**	**17**	**5**	**2**	**0**	**233**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**5**
0900 - 0915	0	0	21	2	0	0	0	**23**	0	0	51	4	1	0	0	**56**	0	0	1	1	1	0	0	**3**
0915 - 0930	0	0	14	0	1	0	0	**15**	0	1	41	5	2	0	0	**49**	0	0	0	0	0	0	0	**0**
0930 - 0945	0	0	17	1	0	0	0	**18**	0	0	35	5	3	0	0	**43**	0	0	0	0	0	0	0	**0**
0945 - 1000	0	0	18	3	0	0	0	**21**	0	0	38	5	2	0	1	**46**	0	0	3	0	1	0	0	**4**
Hourly Total	**0**	**0**	**70**	**6**	**1**	**0**	**0**	**77**	**0**	**1**	**165**	**19**	**8**	**0**	**1**	**194**	**0**	**0**	**4**	**1**	**2**	**0**	**0**	**7**
Session Total	**0**	**0**	**204**	**16**	**1**	**0**	**2**	**223**	**0**	**11**	**558**	**50**	**17**	**2**	**2**	**640**	**0**	**0**	**8**	**1**	**4**	**0**	**0**	**13**
1600 - 1615	0	0	13	1	0	0	0	**14**	0	0	35	13	1	2	0	**51**	0	0	0	0	0	0	0	**0**
1615 - 1630	0	0	10	1	0	0	1	**12**	0	1	26	5	0	0	0	**32**	0	0	2	0	0	0	0	**2**
1630 - 1645	0	0	11	3	0	0	0	**14**	0	1	33	5	0	0	1	**40**	0	0	1	0	0	0	0	**1**
1645 - 1700	0	0	12	1	0	0	0	**13**	0	0	23	3	1	1	1	**29**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**46**	**6**	**0**	**0**	**1**	**53**	**0**	**2**	**117**	**26**	**2**	**3**	**2**	**152**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**
1700 - 1715	0	0	8	1	0	0	0	**9**	0	0	16	4	1	0	2	**23**	0	0	1	0	0	0	0	**1**
1715 - 1730	0	0	7	1	0	0	0	**8**	0	0	31	2	0	0	0	**33**	0	0	0	0	0	0	0	**0**
1730 - 1745	0	0	14	0	0	0	0	**14**	0	0	29	2	1	0	0	**32**	0	0	0	0	0	0	0	**0**
1745 - 1800	0	0	8	0	0	0	1	**9**	0	0	32	4	1	0	0	**37**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**37**	**2**	**0**	**0**	**1**	**40**	**0**	**0**	**108**	**12**	**3**	**0**	**2**	**125**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**
1800 - 1815	0	0	10	0	0	0	0	**10**	0	1	25	2	0	0	0	**28**	0	0	0	0	0	0	0	**0**
1815 - 1830	0	0	3	0	0	0	0	**3**	0	0	21	4	0	0	0	**25**	0	0	0	0	0	0	0	**0**
1830 - 1845	0	0	3	0	0	0	0	**3**	0	0	14	3	0	0	0	**17**	0	0	0	0	0	0	0	**0**
1845 - 1900	0	0	8	0	0	0	0	**8**	0	0	24	2	2	0	1	**29**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**24**	**0**	**1**	**84**	**11**	**2**	**0**	**1**	**99**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**
Session Total	**0**	**0**	**107**	**8**	**0**	**0**	**2**	**117**	**0**	**3**	**309**	**49**	**7**	**3**	**5**	**376**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**7**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (1) A446 / Welsh Street / Itton Road

Approach: Welsh Street

	Left to A446 (South)								W/B to Itton Road								Right to A446 (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	8	4	0	0	1	**13**	0	0	3	0	0	0	0	**3**	0	0	2	2	0	1	0	**5**
0715 - 0730	0	0	4	0	0	0	0	**4**	0	0	7	1	0	0	0	**8**	0	0	6	2	0	0	0	**8**
0730 - 0745	0	0	5	3	0	0	0	**8**	0	0	6	1	0	0	1	**8**	0	0	2	0	0	0	0	**2**
0745 - 0800	0	0	7	0	1	0	0	**8**	0	0	9	1	0	0	0	**10**	0	0	10	1	0	0	1	**12**
Hourly Total	**0**	**0**	**24**	**7**	**1**	**0**	**1**	**33**	**0**	**0**	**25**	**3**	**0**	**0**	**1**	**29**	**0**	**0**	**20**	**5**	**0**	**1**	**1**	**27**
0800 - 0815	0	0	10	1	0	0	0	**11**	0	0	9	0	0	0	0	**9**	0	0	7	2	1	0	0	**10**
0815 - 0830	0	1	13	2	0	0	0	**16**	0	0	4	0	0	0	0	**4**	0	0	12	8	0	0	0	**20**
0830 - 0845	0	0	33	0	1	0	0	**34**	0	0	11	1	0	0	0	**12**	0	0	12	3	1	0	0	**16**
0845 - 0900	0	0	24	1	1	0	3	**29**	0	0	7	1	0	0	0	**8**	0	0	8	4	0	0	0	**12**
Hourly Total	**0**	**1**	**80**	**4**	**2**	**0**	**3**	**90**	**0**	**0**	**31**	**2**	**0**	**0**	**0**	**33**	**0**	**0**	**39**	**17**	**2**	**0**	**0**	**58**
0900 - 0915	0	0	17	1	0	0	0	**18**	0	0	5	2	0	0	0	**7**	0	0	14	3	1	0	0	**18**
0915 - 0930	0	0	16	1	0	0	0	**17**	0	0	1	0	0	0	0	**1**	0	0	6	0	1	0	0	**7**
0930 - 0945	0	0	13	2	0	0	0	**15**	0	0	4	0	0	0	0	**4**	0	0	6	4	0	0	0	**10**
0945 - 1000	0	0	7	0	0	0	0	**7**	0	0	2	3	0	0	0	**5**	0	0	7	0	0	0	0	**7**
Hourly Total	**0**	**0**	**53**	**4**	**0**	**0**	**0**	**57**	**0**	**0**	**12**	**5**	**0**	**0**	**0**	**17**	**0**	**0**	**33**	**7**	**2**	**0**	**0**	**42**
Session Total	**0**	**1**	**157**	**15**	**3**	**0**	**4**	**180**	**0**	**0**	**68**	**10**	**0**	**0**	**1**	**79**	**0**	**0**	**92**	**29**	**4**	**1**	**1**	**127**
1600 - 1615	0	0	17	3	0	0	0	**20**	0	0	10	2	0	0	0	**12**	0	0	17	7	0	0	0	**24**
1615 - 1630	0	0	17	1	0	0	0	**18**	0	0	10	0	0	0	0	**10**	0	0	12	0	0	0	0	**12**
1630 - 1645	0	0	16	2	0	0	0	**18**	0	0	13	1	0	0	0	**14**	0	0	16	2	0	0	0	**18**
1645 - 1700	0	0	16	1	0	0	0	**17**	0	0	14	1	0	0	0	**15**	0	0	10	2	0	0	0	**12**
Hourly Total	**0**	**0**	**66**	**7**	**0**	**0**	**0**	**73**	**0**	**0**	**47**	**4**	**0**	**0**	**0**	**51**	**0**	**0**	**55**	**11**	**0**	**0**	**0**	**66**
1700 - 1715	0	0	9	1	0	0	0	**10**	0	0	12	1	0	0	0	**13**	0	0	20	2	0	0	0	**22**
1715 - 1730	0	0	15	1	0	0	0	**16**	0	0	12	2	0	0	0	**14**	0	0	18	0	0	0	0	**18**
1730 - 1745	0	0	11	1	0	0	0	**12**	0	0	3	0	0	0	0	**3**	0	0	13	1	0	0	0	**14**
1745 - 1800	0	0	11	1	0	0	0	**12**	0	2	11	0	0	0	0	**13**	0	0	16	0	0	0	0	**16**
Hourly Total	**0**	**0**	**46**	**4**	**0**	**0**	**0**	**50**	**0**	**2**	**38**	**3**	**0**	**0**	**0**	**43**	**0**	**0**	**67**	**3**	**0**	**0**	**0**	**70**
1800 - 1815	0	0	7	0	0	0	1	**8**	0	0	6	1	0	0	0	**7**	0	0	16	1	0	0	0	**17**
1815 - 1830	0	0	11	2	0	0	0	**13**	0	0	13	0	0	0	0	**13**	0	1	13	0	0	0	0	**14**
1830 - 1845	0	0	7	1	0	0	0	**8**	0	0	5	0	0	0	0	**5**	0	0	11	2	0	0	0	**13**
1845 - 1900	0	0	7	0	0	0	0	**7**	0	0	10	1	0	0	0	**11**	0	0	4	0	1	0	0	**5**
Hourly Total	**0**	**0**	**32**	**3**	**0**	**0**	**1**	**36**	**0**	**0**	**34**	**2**	**0**	**0**	**0**	**36**	**0**	**1**	**44**	**3**	**1**	**0**	**0**	**49**
Session Total	**0**	**0**	**144**	**14**	**0**	**0**	**1**	**159**	**0**	**2**	**119**	**9**	**0**	**0**	**0**	**130**	**0**	**1**	**166**	**17**	**1**	**0**	**0**	**185**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (1) A446 / Welsh Street / Itton Road

Approach: A446 (South)

	Left to Itton Road								N/B to A446 (North)								Right to Welsh Street							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	10	2	1	0	0	**13**	0	0	7	1	2	1	1	**12**	0	0	2	0	1	0	0	**3**
0715 - 0730	0	0	10	1	0	0	1	**12**	0	0	14	5	0	0	0	**19**	0	0	3	0	0	0	0	**3**
0730 - 0745	0	0	6	6	1	4	0	**17**	0	0	16	7	3	1	2	**29**	0	0	5	1	0	0	1	**7**
0745 - 0800	0	0	12	1	0	0	0	**13**	0	0	29	2	0	0	0	**31**	0	0	3	1	1	0	0	**5**
Hourly Total	**0**	**0**	**38**	**10**	**2**	**4**	**1**	**55**	**0**	**0**	**66**	**15**	**5**	**2**	**3**	**91**	**0**	**0**	**13**	**2**	**2**	**0**	**1**	**18**
0800 - 0815	0	0	14	5	0	0	0	**19**	0	0	18	6	2	0	0	**26**	0	0	17	4	0	0	0	**21**
0815 - 0830	0	0	9	1	0	1	0	**11**	0	0	26	2	0	0	0	**28**	0	0	38	3	0	1	1	**43**
0830 - 0845	0	0	12	1	0	0	0	**13**	0	0	15	4	0	0	1	**20**	0	0	69	1	0	0	2	**72**
0845 - 0900	0	0	9	3	2	0	0	**14**	0	1	19	9	3	0	0	**32**	0	0	31	0	1	0	0	**32**
Hourly Total	**0**	**0**	**44**	**10**	**2**	**1**	**0**	**57**	**0**	**1**	**78**	**21**	**5**	**0**	**1**	**106**	**0**	**0**	**155**	**8**	**1**	**1**	**3**	**168**
0900 - 0915	0	0	10	1	0	1	0	**12**	0	0	21	3	1	0	0	**25**	0	0	22	1	0	0	0	**23**
0915 - 0930	0	0	18	1	0	0	0	**19**	0	0	20	4	0	0	1	**25**	0	0	11	1	2	0	0	**14**
0930 - 0945	0	0	6	6	0	1	0	**13**	0	0	20	2	4	0	0	**26**	0	0	9	2	0	0	0	**11**
0945 - 1000	0	0	13	2	1	1	0	**17**	0	1	39	6	0	0	0	**46**	0	0	7	1	0	0	0	**8**
Hourly Total	**0**	**0**	**47**	**10**	**1**	**3**	**0**	**61**	**0**	**1**	**100**	**15**	**5**	**0**	**1**	**122**	**0**	**0**	**49**	**5**	**2**	**0**	**0**	**56**
Session Total	**0**	**0**	**129**	**30**	**5**	**8**	**1**	**173**	**0**	**2**	**244**	**51**	**15**	**2**	**5**	**319**	**0**	**0**	**217**	**15**	**5**	**1**	**4**	**242**
1600 - 1615	0	1	35	5	3	1	0	**45**	0	0	34	6	0	0	0	**40**	0	1	17	1	0	0	0	**19**
1615 - 1630	0	0	27	3	1	0	0	**31**	0	0	55	7	0	0	2	**64**	0	0	18	0	0	0	0	**18**
1630 - 1645	0	2	31	4	0	0	0	**37**	0	1	35	9	1	0	0	**46**	0	0	9	2	0	0	0	**11**
1645 - 1700	0	1	25	1	0	0	0	**27**	0	1	56	4	0	0	0	**61**	0	0	7	2	0	0	0	**9**
Hourly Total	**0**	**4**	**118**	**13**	**4**	**1**	**0**	**140**	**0**	**2**	**180**	**26**	**1**	**0**	**2**	**211**	**0**	**1**	**51**	**5**	**0**	**0**	**0**	**57**
1700 - 1715	0	0	33	2	0	0	0	**35**	0	0	38	3	0	0	0	**41**	0	0	20	0	0	0	0	**20**
1715 - 1730	0	0	28	3	0	0	1	**32**	0	2	47	5	0	0	1	**55**	0	0	9	0	0	0	0	**9**
1730 - 1745	0	0	30	2	0	0	0	**32**	0	1	61	5	0	0	0	**67**	0	0	13	1	0	0	0	**14**
1745 - 1800	0	0	45	2	0	0	0	**47**	0	0	58	3	0	0	0	**61**	0	0	10	0	0	0	0	**10**
Hourly Total	**0**	**0**	**136**	**9**	**0**	**0**	**1**	**146**	**0**	**3**	**204**	**16**	**0**	**0**	**1**	**224**	**0**	**0**	**52**	**1**	**0**	**0**	**0**	**53**
1800 - 1815	0	0	23	1	0	0	0	**24**	0	1	53	2	0	0	1	**57**	0	0	5	0	0	0	1	**6**
1815 - 1830	0	0	19	0	0	0	0	**19**	0	0	50	4	0	0	1	**55**	0	0	12	0	0	0	0	**12**
1830 - 1845	0	0	31	0	0	0	0	**31**	0	0	48	0	0	0	0	**48**	0	0	12	0	0	0	0	**12**
1845 - 1900	0	0	23	0	0	0	0	**23**	0	1	35	0	0	0	0	**36**	0	1	3	0	0	0	0	**4**
Hourly Total	**0**	**0**	**96**	**1**	**0**	**0**	**0**	**97**	**0**	**2**	**186**	**6**	**0**	**0**	**2**	**196**	**0**	**1**	**32**	**0**	**0**	**0**	**1**	**34**
Session Total	**0**	**4**	**350**	**23**	**4**	**1**	**1**	**383**	**0**	**7**	**570**	**48**	**1**	**0**	**5**	**631**	**0**	**2**	**135**	**6**	**0**	**0**	**1**	**144**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (1) A446 / Welsh Street / Itton Road

Approach: Itton Road

	Left to A446 (North)								E/B to Welsh Street								Right to A446 (South)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	0	0	0	0	0	**0**	0	0	4	1	0	0	0	**5**	0	1	25	1	1	0	0	**28**
0715 - 0730	0	0	0	0	0	0	0	**0**	0	0	5	0	0	0	0	**5**	0	0	37	0	1	0	0	**38**
0730 - 0745	0	0	0	0	0	0	0	**0**	0	0	8	1	0	0	0	**9**	0	1	24	4	2	0	0	**31**
0745 - 0800	0	0	0	0	0	0	0	**0**	0	0	7	0	0	0	0	**7**	0	0	15	3	2	0	0	**20**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**2**	**0**	**0**	**0**	**26**	**0**	**2**	**101**	**8**	**6**	**0**	**0**	**117**
0800 - 0815	0	0	0	0	0	0	0	**0**	1	0	10	4	0	0	0	**15**	0	0	38	4	1	0	0	**43**
0815 - 0830	0	0	1	0	0	0	0	**1**	0	0	10	5	1	0	0	**16**	0	0	31	4	1	0	0	**36**
0830 - 0845	0	0	0	0	0	0	0	**0**	0	0	17	2	1	0	0	**20**	0	0	23	1	1	0	0	**25**
0845 - 0900	0	0	0	0	0	0	0	**0**	0	0	9	0	0	0	0	**9**	0	0	35	2	0	2	0	**39**
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**46**	**11**	**2**	**0**	**0**	**60**	**0**	**0**	**127**	**11**	**3**	**2**	**0**	**143**
0900 - 0915	0	0	1	0	0	0	0	**1**	0	0	7	2	0	0	0	**9**	0	0	15	4	0	2	0	**21**
0915 - 0930	0	0	0	0	0	0	0	**0**	0	0	2	1	0	0	0	**3**	0	0	20	4	0	3	1	**28**
0930 - 0945	0	0	0	0	0	0	0	**0**	0	0	4	1	0	0	0	**5**	0	0	15	3	0	1	0	**19**
0945 - 1000	0	0	1	0	0	0	0	**1**	0	0	9	1	0	0	0	**10**	0	0	26	3	1	0	0	**30**
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**22**	**5**	**0**	**0**	**0**	**27**	**0**	**0**	**76**	**14**	**1**	**6**	**1**	**98**
Session Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**92**	**18**	**2**	**0**	**0**	**113**	**0**	**2**	**304**	**33**	**10**	**8**	**1**	**358**
1600 - 1615	0	0	0	0	0	0	0	**0**	0	0	1	0	0	0	0	**1**	0	0	7	6	0	0	2	**15**
1615 - 1630	0	0	2	1	0	0	0	**3**	0	0	9	1	0	0	0	**10**	0	0	14	5	0	0	0	**19**
1630 - 1645	0	0	0	1	1	0	0	**2**	0	0	4	2	0	0	0	**6**	0	0	8	2	1	0	0	**11**
1645 - 1700	0	0	0	0	0	0	0	**0**	0	0	5	0	0	0	0	**5**	0	0	6	5	0	0	0	**11**
Hourly Total	**0**	**0**	**2**	**2**	**1**	**0**	**0**	**5**	**0**	**0**	**19**	**3**	**0**	**0**	**0**	**22**	**0**	**0**	**35**	**18**	**1**	**0**	**2**	**56**
1700 - 1715	0	0	1	0	0	0	0	**1**	0	0	2	2	0	0	1	**5**	0	0	10	0	1	0	0	**11**
1715 - 1730	0	0	1	0	0	0	0	**1**	0	0	7	0	0	0	0	**7**	0	0	10	2	0	1	0	**13**
1730 - 1745	0	0	0	0	0	0	0	**0**	0	0	9	0	0	0	0	**9**	0	0	22	3	1	0	0	**26**
1745 - 1800	0	0	0	0	0	0	0	**0**	0	0	2	0	0	0	0	**2**	0	0	8	1	0	1	0	**10**
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**20**	**2**	**0**	**0**	**1**	**23**	**0**	**0**	**50**	**6**	**2**	**2**	**0**	**60**
1800 - 1815	0	0	0	0	0	0	0	**0**	0	0	7	0	0	0	0	**7**	0	0	10	1	0	0	0	**11**
1815 - 1830	0	0	0	0	0	0	0	**0**	0	0	3	0	0	0	0	**3**	0	0	11	0	0	0	0	**11**
1830 - 1845	0	0	2	0	0	0	0	**2**	0	0	2	0	0	0	0	**2**	0	0	12	1	0	0	0	**13**
1845 - 1900	0	0	0	0	0	0	0	**0**	0	0	5	0	0	0	0	**5**	0	0	5	2	1	0	0	**8**
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**38**	**4**	**1**	**0**	**0**	**43**
Session Total	**0**	**0**	**6**	**2**	**1**	**0**	**0**	**9**	**0**	**0**	**56**	**5**	**0**	**0**	**1**	**62**	**0**	**0**	**123**	**28**	**4**	**2**	**2**	**159**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (2) A466 / B4235

Approach: A466 (North)

	S/B to A466 (South)								Right to B4235							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	1	78	5	2	0	1	**87**	0	0	2	2	0	0	0	**4**
0715 - 0730	0	0	83	2	2	0	0	**87**	0	0	5	0	0	0	0	**5**
0730 - 0745	0	2	75	9	2	0	1	**89**	0	0	5	2	0	0	0	**7**
0745 - 0800	0	2	63	8	3	0	0	**76**	0	0	5	1	2	0	0	**8**
Hourly Total	**0**	**5**	**299**	**24**	**9**	**0**	**2**	**339**	**0**	**0**	**17**	**5**	**2**	**0**	**0**	**24**
0800 - 0815	0	4	103	7	0	0	0	**114**	0	0	7	2	2	0	0	**11**
0815 - 0830	0	2	72	10	3	0	0	**87**	0	1	13	2	0	0	0	**16**
0830 - 0845	0	1	80	4	3	0	0	**88**	0	0	20	0	0	0	0	**20**
0845 - 0900	0	0	95	5	1	4	2	**107**	0	0	19	2	1	0	1	**23**
Hourly Total	**0**	**7**	**350**	**26**	**7**	**4**	**2**	**396**	**0**	**1**	**59**	**6**	**3**	**0**	**1**	**70**
0900 - 0915	0	0	65	8	1	2	0	**76**	0	0	18	1	0	0	0	**19**
0915 - 0930	0	1	62	9	2	3	1	**78**	0	0	15	1	0	0	0	**16**
0930 - 0945	0	0	53	8	3	0	0	**64**	0	0	10	2	0	1	0	**13**
0945 - 1000	0	0	62	8	3	0	1	**74**	0	0	9	0	0	0	0	**9**
Hourly Total	**0**	**1**	**242**	**33**	**9**	**5**	**2**	**292**	**0**	**0**	**52**	**4**	**0**	**1**	**0**	**57**
Session Total	**0**	**13**	**891**	**83**	**25**	**9**	**6**	**1027**	**0**	**1**	**128**	**15**	**5**	**1**	**1**	**151**
1600 - 1615	0	0	38	20	1	2	2	**63**	0	0	21	2	0	0	0	**23**
1615 - 1630	0	1	41	11	0	0	0	**53**	0	0	16	0	0	0	0	**16**
1630 - 1645	0	1	36	9	1	0	1	**48**	0	0	21	0	0	0	0	**21**
1645 - 1700	0	0	31	7	1	1	1	**41**	0	0	14	2	0	0	0	**16**
Hourly Total	**0**	**2**	**146**	**47**	**3**	**3**	**4**	**205**	**0**	**0**	**72**	**4**	**0**	**0**	**0**	**76**
1700 - 1715	0	0	26	4	2	0	2	**34**	0	0	9	1	0	0	0	**10**
1715 - 1730	0	0	43	5	0	1	0	**49**	0	0	13	0	0	0	0	**13**
1730 - 1745	0	0	47	4	2	0	0	**53**	0	0	15	2	0	0	0	**17**
1745 - 1800	0	0	38	6	0	1	0	**45**	0	0	13	0	1	0	0	**14**
Hourly Total	**0**	**0**	**154**	**19**	**4**	**2**	**2**	**181**	**0**	**0**	**50**	**3**	**1**	**0**	**0**	**54**
1800 - 1815	0	1	33	3	0	0	0	**37**	0	0	9	0	0	0	1	**10**
1815 - 1830	0	0	31	6	0	0	0	**37**	0	0	12	0	0	0	0	**12**
1830 - 1845	0	0	24	4	0	0	0	**28**	0	0	9	1	0	0	0	**10**
1845 - 1900	0	0	29	3	3	0	1	**36**	0	0	7	1	0	0	0	**8**
Hourly Total	**0**	**1**	**117**	**16**	**3**	**0**	**1**	**138**	**0**	**0**	**37**	**2**	**0**	**0**	**1**	**40**
Session Total	**0**	**3**	**417**	**82**	**10**	**5**	**7**	**524**	**0**	**0**	**159**	**9**	**1**	**0**	**1**	**170**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (2) A466 / B4235

Approach: A466 (South)

	Left to B4235								N/B to A466 (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	5	2	0	0	0	**7**	0	0	18	3	4	1	1	**27**
0715 - 0730	0	0	4	2	0	0	0	**6**	0	0	25	6	0	0	1	**32**
0730 - 0745	0	0	6	2	0	0	0	**8**	0	0	22	12	4	5	2	**45**
0745 - 0800	0	0	7	1	0	0	0	**8**	0	0	33	4	0	0	0	**37**
Hourly Total	**0**	**0**	**22**	**7**	**0**	**0**	**0**	**29**	**0**	**0**	**98**	**25**	**8**	**6**	**4**	**141**
0800 - 0815	0	0	15	3	1	0	0	**19**	0	0	32	12	1	0	0	**45**
0815 - 0830	0	0	11	1	0	0	0	**12**	0	0	49	2	0	2	0	**53**
0830 - 0845	0	0	11	1	2	0	0	**14**	0	0	78	6	0	0	3	**87**
0845 - 0900	0	0	15	2	1	0	0	**18**	0	1	45	12	5	0	0	**63**
Hourly Total	**0**	**0**	**52**	**7**	**4**	**0**	**0**	**63**	**0**	**1**	**204**	**32**	**6**	**2**	**3**	**248**
0900 - 0915	0	0	11	0	0	0	0	**11**	0	0	36	5	1	1	0	**43**
0915 - 0930	0	0	9	0	0	0	0	**9**	0	0	39	6	2	0	1	**48**
0930 - 0945	0	0	8	2	0	0	0	**10**	0	0	29	8	4	1	0	**42**
0945 - 1000	0	0	14	0	0	0	0	**14**	0	1	47	8	1	1	0	**58**
Hourly Total	**0**	**0**	**42**	**2**	**0**	**0**	**0**	**44**	**0**	**1**	**151**	**27**	**8**	**3**	**1**	**191**
Session Total	**0**	**0**	**116**	**16**	**4**	**0**	**0**	**136**	**0**	**2**	**453**	**84**	**22**	**11**	**8**	**580**
1600 - 1615	0	0	14	2	0	0	0	**16**	0	2	75	12	3	1	0	**93**
1615 - 1630	0	0	24	3	0	0	0	**27**	0	0	87	7	1	0	2	**97**
1630 - 1645	0	0	13	2	0	0	0	**15**	0	2	66	14	0	0	0	**82**
1645 - 1700	0	0	20	1	0	0	0	**21**	0	2	72	6	0	0	0	**80**
Hourly Total	**0**	**0**	**71**	**8**	**0**	**0**	**0**	**79**	**0**	**6**	**300**	**39**	**4**	**1**	**2**	**352**
1700 - 1715	0	0	25	0	0	0	0	**25**	0	0	73	4	0	0	0	**77**
1715 - 1730	0	0	33	1	0	0	0	**34**	0	2	69	7	0	0	2	**80**
1730 - 1745	0	2	30	1	0	0	0	**33**	0	1	94	8	0	0	0	**103**
1745 - 1800	0	0	17	3	0	0	0	**20**	0	0	93	5	0	0	0	**98**
Hourly Total	**0**	**2**	**105**	**5**	**0**	**0**	**0**	**112**	**0**	**3**	**329**	**24**	**0**	**0**	**2**	**358**
1800 - 1815	0	0	25	1	0	0	0	**26**	0	1	73	3	0	0	1	**78**
1815 - 1830	0	0	26	3	0	0	0	**29**	0	0	66	3	0	0	1	**70**
1830 - 1845	0	1	17	3	0	0	0	**21**	0	0	78	0	0	0	0	**78**
1845 - 1900	0	0	15	0	0	0	0	**15**	0	2	51	0	0	0	0	**53**
Hourly Total	**0**	**1**	**83**	**7**	**0**	**0**	**0**	**91**	**0**	**3**	**268**	**6**	**0**	**0**	**2**	**279**
Session Total	**0**	**3**	**259**	**20**	**0**	**0**	**0**	**282**	**0**	**12**	**897**	**69**	**4**	**1**	**6**	**989**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (2) A466 / B4235

Approach: B4235

	Left to A466 (North)								Right to A466 (South)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	1	0	0	0	0	**1**	0	0	8	0	0	0	0	**8**
0715 - 0730	0	0	2	0	0	0	0	**2**	0	2	18	1	0	0	0	**21**
0730 - 0745	0	0	5	2	0	0	1	**8**	0	1	7	0	0	0	0	**8**
0745 - 0800	0	0	11	0	1	0	0	**12**	0	0	10	1	0	0	0	**11**
Hourly Total	**0**	**0**	**19**	**2**	**1**	**0**	**1**	**23**	**0**	**3**	**43**	**2**	**0**	**0**	**0**	**48**
0800 - 0815	0	0	17	3	1	0	0	**21**	0	0	10	2	1	0	0	**13**
0815 - 0830	0	0	24	4	0	0	1	**29**	1	0	10	0	0	0	0	**11**
0830 - 0845	0	0	18	0	0	0	0	**18**	0	0	13	4	0	0	0	**17**
0845 - 0900	0	0	14	0	1	0	0	**15**	0	0	18	4	1	0	0	**23**
Hourly Total	**0**	**0**	**73**	**7**	**2**	**0**	**1**	**83**	**1**	**0**	**51**	**10**	**2**	**0**	**0**	**64**
0900 - 0915	0	0	17	0	0	0	0	**17**	0	1	25	8	0	1	0	**35**
0915 - 0930	0	0	10	0	0	0	0	**10**	0	0	17	4	1	0	0	**22**
0930 - 0945	0	0	6	2	0	0	0	**8**	0	0	10	0	1	0	0	**11**
0945 - 1000	0	0	12	1	0	0	0	**13**	0	0	12	3	1	0	0	**16**
Hourly Total	**0**	**0**	**45**	**3**	**0**	**0**	**0**	**48**	**0**	**1**	**64**	**15**	**3**	**1**	**0**	**84**
Session Total	**0**	**0**	**137**	**12**	**3**	**0**	**2**	**154**	**1**	**4**	**158**	**27**	**5**	**1**	**0**	**196**
1600 - 1615	0	0	11	0	0	0	0	**11**	0	0	17	2	0	0	0	**19**
1615 - 1630	0	0	13	3	0	0	0	**16**	0	1	8	1	0	0	0	**10**
1630 - 1645	0	1	9	1	1	0	0	**12**	0	0	16	3	0	0	0	**19**
1645 - 1700	0	0	16	1	0	0	0	**17**	0	0	17	3	0	0	0	**20**
Hourly Total	**0**	**1**	**49**	**5**	**1**	**0**	**0**	**56**	**0**	**1**	**58**	**9**	**0**	**0**	**0**	**68**
1700 - 1715	0	0	18	1	0	0	0	**19**	0	0	13	0	0	0	0	**13**
1715 - 1730	0	0	15	1	0	0	0	**16**	0	0	15	1	0	0	0	**16**
1730 - 1745	0	0	10	0	0	0	0	**10**	0	0	14	0	0	0	0	**14**
1745 - 1800	0	0	20	0	0	0	0	**20**	0	0	10	0	0	0	0	**10**
Hourly Total	**0**	**0**	**63**	**2**	**0**	**0**	**0**	**65**	**0**	**0**	**52**	**1**	**0**	**0**	**0**	**53**
1800 - 1815	0	0	8	0	0	0	1	**9**	0	0	7	1	0	0	0	**8**
1815 - 1830	0	0	15	1	0	0	0	**16**	0	0	8	0	0	0	0	**8**
1830 - 1845	0	0	13	0	0	0	0	**13**	0	0	10	0	0	0	0	**10**
1845 - 1900	0	0	10	0	0	0	0	**10**	0	0	5	0	0	0	0	**5**
Hourly Total	**0**	**0**	**46**	**1**	**0**	**0**	**1**	**48**	**0**	**0**	**30**	**1**	**0**	**0**	**0**	**31**
Session Total	**0**	**1**	**158**	**8**	**1**	**0**	**1**	**169**	**0**	**1**	**140**	**11**	**0**	**0**	**0**	**152**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (3) A466 / Tempest Way / St Lawrence Park

Approach: A466 (North)

	Left to Tempest Way								S/B to A466 (South)								Right to St Lawrence Park							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	1	0	0	0	0	**1**	0	2	135	6	2	0	1	**146**	0	0	0	0	0	0	0	**0**
0715 - 0730	0	0	4	0	0	0	0	**4**	0	4	154	4	1	1	0	**164**	0	0	2	0	0	0	0	**2**
0730 - 0745	0	0	1	1	0	0	0	**2**	0	3	109	10	3	0	1	**126**	0	0	1	0	0	0	0	**1**
0745 - 0800	0	0	7	0	0	0	0	**7**	0	4	121	8	2	1	0	**136**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**13**	**1**	**0**	**0**	**0**	**14**	**0**	**13**	**519**	**28**	**8**	**2**	**2**	**572**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**
0800 - 0815	0	0	8	0	0	0	0	**8**	1	4	143	8	0	1	0	**157**	0	0	7	0	0	0	0	**7**
0815 - 0830	0	0	12	0	0	0	1	**13**	1	4	121	9	1	2	0	**138**	0	0	4	0	0	0	0	**4**
0830 - 0845	0	0	10	1	0	0	0	**11**	0	0	134	12	4	0	0	**150**	0	0	1	1	0	0	0	**2**
0845 - 0900	0	0	14	0	0	0	0	**14**	0	0	126	11	1	3	2	**143**	0	0	0	0	0	0	0	**0**
Hourly Total	**0**	**0**	**44**	**1**	**0**	**0**	**1**	**46**	**2**	**8**	**524**	**40**	**6**	**6**	**2**	**588**	**0**	**0**	**12**	**1**	**0**	**0**	**0**	**13**
0900 - 0915	0	0	12	1	0	0	0	**13**	1	1	132	17	3	3	1	**158**	0	0	6	1	0	0	0	**7**
0915 - 0930	0	0	11	0	0	1	0	**12**	0	1	98	10	1	3	0	**113**	0	0	1	0	0	0	0	**1**
0930 - 0945	0	0	3	0	0	0	0	**3**	0	1	89	11	4	1	1	**107**	0	0	2	0	0	0	0	**2**
0945 - 1000	0	0	11	1	0	0	0	**12**	0	1	93	13	3	0	1	**111**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**37**	**2**	**0**	**1**	**0**	**40**	**1**	**4**	**412**	**51**	**11**	**7**	**3**	**489**	**0**	**0**	**10**	**1**	**0**	**0**	**0**	**11**
Session Total	**0**	**0**	**94**	**4**	**0**	**1**	**1**	**100**	**3**	**25**	**1455**	**119**	**25**	**15**	**7**	**1649**	**0**	**0**	**25**	**2**	**0**	**0**	**0**	**27**
1600 - 1615	0	0	4	0	0	0	0	**4**	0	1	71	16	3	1	2	**94**	0	0	4	0	0	0	0	**4**
1615 - 1630	0	0	3	0	0	0	0	**3**	0	1	80	11	0	0	0	**92**	0	0	4	0	0	0	0	**4**
1630 - 1645	0	0	4	0	0	0	0	**4**	0	2	95	12	1	0	1	**111**	0	0	4	0	0	0	0	**4**
1645 - 1700	0	0	6	0	0	0	0	**6**	0	0	80	14	2	0	0	**96**	0	0	2	1	0	0	0	**3**
Hourly Total	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**17**	**0**	**4**	**326**	**53**	**6**	**1**	**3**	**393**	**0**	**0**	**14**	**1**	**0**	**0**	**0**	**15**
1700 - 1715	0	0	2	1	0	0	0	**3**	0	0	64	5	1	0	3	**73**	0	0	5	0	0	0	0	**5**
1715 - 1730	0	0	6	0	0	0	0	**6**	0	0	82	3	1	1	0	**87**	0	0	5	0	0	0	0	**5**
1730 - 1745	0	0	0	0	0	0	0	**0**	0	0	88	5	2	0	0	**95**	0	0	8	0	0	0	0	**8**
1745 - 1800	0	0	2	0	0	0	0	**2**	1	0	70	6	1	0	0	**78**	0	0	2	0	0	0	0	**2**
Hourly Total	**0**	**0**	**10**	**1**	**0**	**0**	**0**	**11**	**1**	**0**	**304**	**19**	**5**	**1**	**3**	**333**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**20**
1800 - 1815	0	0	4	0	0	0	0	**4**	0	1	61	5	0	1	0	**68**	0	0	4	1	0	0	0	**5**
1815 - 1830	0	0	0	1	0	0	0	**1**	0	0	80	3	0	0	0	**83**	0	0	6	0	0	0	0	**6**
1830 - 1845	0	0	2	1	0	0	0	**3**	0	0	57	7	0	0	0	**64**	0	0	1	0	0	0	0	**1**
1845 - 1900	0	0	2	0	0	0	0	**2**	0	0	62	5	3	0	1	**71**	0	0	2	0	0	0	0	**2**
Hourly Total	**0**	**0**	**8**	**2**	**0**	**0**	**0**	**10**	**0**	**1**	**260**	**20**	**3**	**1**	**1**	**286**	**0**	**0**	**13**	**1**	**0**	**0**	**0**	**14**
Session Total	**0**	**0**	**35**	**3**	**0**	**0**	**0**	**38**	**1**	**5**	**890**	**92**	**14**	**3**	**7**	**1012**	**0**	**0**	**47**	**2**	**0**	**0**	**0**	**49**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (3) A466 / Tempest Way / St Lawrence Park

Approach: Tempest Way

	Left to A466 (South)								W/B to St Lawrence Park								Right to A466 (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	8	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**
0715 - 0730	0	1	7	1	0	0	1	**10**	0	0	0	0	0	0	0	**0**	0	0	2	0	0	0	0	**2**
0730 - 0745	0	0	10	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	0	0	1	0	1	0	0	**2**
0745 - 0800	0	0	4	1	0	0	0	**5**	1	0	1	0	0	0	0	**2**	0	0	1	1	0	0	0	**2**
Hourly Total	**0**	**1**	**29**	**2**	**0**	**0**	**1**	**33**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	**1**	**1**	**0**	**0**	**6**
0800 - 0815	0	0	5	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	6	0	0	0	0	**6**
0815 - 0830	0	0	8	0	0	0	2	**10**	0	0	0	0	0	0	0	**0**	0	0	2	0	0	0	0	**2**
0830 - 0845	0	0	6	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	6	0	0	0	0	**6**
0845 - 0900	0	0	10	1	0	0	0	**11**	0	0	0	0	0	0	1	**1**	0	0	13	2	0	0	0	**15**
Hourly Total	**0**	**0**	**29**	**1**	**0**	**0**	**2**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**27**	**2**	**0**	**0**	**0**	**29**
0900 - 0915	0	0	9	1	0	0	0	**10**	0	0	0	0	0	0	0	**0**	0	0	3	1	0	0	0	**4**
0915 - 0930	0	0	26	0	0	0	1	**27**	0	0	0	0	0	0	0	**0**	0	0	1	0	0	0	0	**1**
0930 - 0945	0	0	18	0	0	0	1	**19**	0	0	1	0	1	0	0	**2**	0	0	3	1	1	0	0	**5**
0945 - 1000	0	0	18	0	0	0	0	**18**	0	0	0	0	0	0	1	**1**	0	0	4	0	0	0	0	**4**
Hourly Total	**0**	**0**	**71**	**1**	**0**	**0**	**2**	**74**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**3**	**0**	**0**	**11**	**2**	**1**	**0**	**0**	**14**
Session Total	**0**	**1**	**129**	**4**	**0**	**0**	**5**	**139**	**1**	**0**	**2**	**0**	**1**	**0**	**2**	**6**	**0**	**0**	**42**	**5**	**2**	**0**	**0**	**49**
1600 - 1615	0	0	28	1	0	0	0	**29**	0	0	0	0	0	0	1	**1**	0	0	7	0	0	0	0	**7**
1615 - 1630	0	0	26	1	0	0	0	**27**	0	0	0	0	0	0	1	**1**	0	0	11	0	0	0	0	**11**
1630 - 1645	0	0	24	0	0	0	2	**26**	0	0	2	0	0	0	0	**2**	0	0	9	1	0	0	0	**10**
1645 - 1700	0	1	23	0	0	0	1	**25**	0	0	0	0	0	0	0	**0**	0	0	5	0	0	0	0	**5**
Hourly Total	**0**	**1**	**101**	**2**	**0**	**0**	**3**	**107**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**32**	**1**	**0**	**0**	**0**	**33**
1700 - 1715	0	0	26	5	0	0	0	**31**	0	0	1	1	0	0	0	**2**	0	0	11	0	0	0	0	**11**
1715 - 1730	0	0	12	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	0	0	8	0	0	0	0	**8**
1730 - 1745	0	0	14	0	0	0	0	**14**	0	0	0	0	0	0	0	**0**	0	0	9	0	0	0	0	**9**
1745 - 1800	0	0	9	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	0	0	4	0	0	0	0	**4**
Hourly Total	**0**	**0**	**61**	**5**	**0**	**0**	**0**	**66**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**32**	**0**	**0**	**0**	**0**	**32**
1800 - 1815	0	0	13	1	0	0	0	**14**	0	0	0	0	0	0	0	**0**	0	0	3	0	0	0	0	**3**
1815 - 1830	0	0	7	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	0	0	4	0	0	0	0	**4**
1830 - 1845	0	0	13	2	0	0	0	**15**	0	0	0	0	0	0	0	**0**	0	0	4	0	0	0	0	**4**
1845 - 1900	0	0	11	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	0	0	2	0	0	0	0	**2**
Hourly Total	**0**	**0**	**44**	**3**	**0**	**0**	**0**	**47**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**13**
Session Total	**0**	**1**	**206**	**10**	**0**	**0**	**3**	**220**	**0**	**0**	**3**	**1**	**0**	**0**	**2**	**6**	**0**	**0**	**77**	**1**	**0**	**0**	**0**	**78**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (3) A466 / Tempest Way / St Lawrence Park

Approach: A466 (South)

	Left to St Lawrence Park								N/B to A466 (North)								Right to Tempest Way							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	0	0	0	0	0	**0**	0	0	25	4	5	0	2	**36**	0	0	4	1	0	0	0	**5**
0715 - 0730	0	0	2	0	0	0	0	**2**	0	1	38	8	0	0	2	**49**	0	0	6	0	0	1	1	**8**
0730 - 0745	0	0	2	0	0	0	0	**2**	0	0	41	17	4	5	1	**68**	0	0	6	0	0	0	0	**6**
0745 - 0800	0	0	2	0	0	0	0	**2**	0	0	65	4	1	0	0	**70**	0	0	7	1	0	0	0	**8**
Hourly Total	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**169**	**33**	**10**	**5**	**5**	**223**	**0**	**0**	**23**	**2**	**0**	**1**	**1**	**27**
0800 - 0815	0	0	4	1	0	0	0	**5**	1	0	81	16	1	1	0	**100**	0	0	13	1	0	0	1	**15**
0815 - 0830	0	0	1	0	0	0	0	**1**	0	0	87	10	1	1	0	**99**	0	0	30	1	0	0	0	**31**
0830 - 0845	0	0	3	1	0	0	0	**4**	0	0	127	13	4	0	4	**148**	0	0	26	1	0	0	0	**27**
0845 - 0900	0	0	3	1	0	0	0	**4**	0	1	68	21	4	0	0	**94**	0	0	31	3	0	0	1	**35**
Hourly Total	**0**	**0**	**11**	**3**	**0**	**0**	**0**	**14**	**1**	**1**	**363**	**60**	**10**	**2**	**4**	**441**	**0**	**0**	**100**	**6**	**0**	**0**	**2**	**108**
0900 - 0915	0	0	3	0	0	0	0	**3**	0	0	63	9	3	1	0	**76**	0	0	27	0	0	0	0	**27**
0915 - 0930	0	0	5	2	0	0	0	**7**	0	0	63	10	1	0	1	**75**	0	0	19	0	0	0	1	**20**
0930 - 0945	0	0	2	1	0	0	0	**3**	0	0	47	15	2	2	0	**66**	0	0	16	2	1	0	1	**20**
0945 - 1000	0	0	1	1	1	0	0	**3**	0	1	68	13	2	0	0	**84**	0	0	12	1	1	0	1	**15**
Hourly Total	**0**	**0**	**11**	**4**	**1**	**0**	**0**	**16**	**0**	**1**	**241**	**47**	**8**	**3**	**1**	**301**	**0**	**0**	**74**	**3**	**2**	**0**	**3**	**82**
Session Total	**0**	**0**	**28**	**7**	**1**	**0**	**0**	**36**	**1**	**3**	**773**	**140**	**28**	**10**	**10**	**965**	**0**	**0**	**197**	**11**	**2**	**1**	**6**	**217**
1600 - 1615	0	0	11	0	0	0	0	**11**	0	2	125	18	3	1	0	**149**	0	0	10	0	0	0	1	**11**
1615 - 1630	0	0	5	1	0	0	0	**6**	0	1	135	15	2	0	2	**155**	0	1	17	0	0	0	0	**18**
1630 - 1645	0	1	8	0	0	0	0	**9**	0	3	121	16	0	0	0	**140**	0	0	12	1	0	0	2	**15**
1645 - 1700	0	0	6	1	0	0	0	**7**	0	3	154	9	0	0	0	**166**	0	0	12	1	0	0	1	**14**
Hourly Total	**0**	**1**	**30**	**2**	**0**	**0**	**0**	**33**	**0**	**9**	**535**	**58**	**5**	**1**	**2**	**610**	**0**	**1**	**51**	**2**	**0**	**0**	**4**	**58**
1700 - 1715	0	0	12	1	0	0	0	**13**	0	2	138	9	1	0	0	**150**	0	0	8	4	0	0	0	**12**
1715 - 1730	0	0	4	0	0	0	0	**4**	1	2	139	15	2	0	2	**161**	0	0	6	0	0	0	0	**6**
1730 - 1745	0	0	11	0	0	0	0	**11**	0	3	168	9	0	0	0	**180**	0	0	8	0	0	0	0	**8**
1745 - 1800	1	0	10	0	0	0	0	**11**	0	2	160	5	0	0	1	**168**	0	0	7	0	0	0	0	**7**
Hourly Total	**1**	**0**	**37**	**1**	**0**	**0**	**0**	**39**	**1**	**9**	**605**	**38**	**3**	**0**	**3**	**659**	**0**	**0**	**29**	**4**	**0**	**0**	**0**	**33**
1800 - 1815	0	0	4	0	0	0	0	**4**	0	1	152	6	0	0	0	**159**	0	0	7	0	0	0	0	**7**
1815 - 1830	0	0	7	0	1	0	0	**8**	0	2	113	6	1	0	1	**123**	0	0	3	0	0	0	0	**3**
1830 - 1845	0	0	7	0	0	0	0	**7**	0	1	115	3	1	0	0	**120**	1	0	12	1	0	0	0	**14**
1845 - 1900	0	0	3	0	0	0	0	**3**	1	1	109	5	0	0	0	**116**	0	0	7	0	0	0	0	**7**
Hourly Total	**0**	**0**	**21**	**0**	**1**	**0**	**0**	**22**	**1**	**5**	**489**	**20**	**2**	**0**	**1**	**518**	**1**	**0**	**29**	**1**	**0**	**0**	**0**	**31**
Session Total	**1**	**1**	**88**	**3**	**1**	**0**	**0**	**94**	**2**	**23**	**1629**	**116**	**10**	**1**	**6**	**1787**	**1**	**1**	**109**	**7**	**0**	**0**	**4**	**122**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (3) A466 / Tempest Way / St Lawrence Park

Approach: St Lawrence Park

	Left to A466 (North)								E/B to Tempest Way								Right to A466 (South)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	**TOTAL**
0700 - 0715	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	10	0	0	0	0	**10**
0715 - 0730	0	0	2	0	0	0	0	**2**	0	0	1	0	0	0	0	**1**	0	0	5	0	0	0	0	**5**
0730 - 0745	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	7	0	0	0	0	**7**
0745 - 0800	0	0	9	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	0	0	6	0	0	0	0	**6**
Hourly Total	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**28**	**0**	**0**	**0**	**0**	**28**
0800 - 0815	0	0	6	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	11	0	0	0	0	**11**
0815 - 0830	0	0	5	0	0	0	0	**5**	0	0	1	0	0	0	0	**1**	0	0	6	0	0	0	0	**6**
0830 - 0845	0	0	3	1	0	0	0	**4**	0	0	0	0	0	0	0	**0**	0	0	11	0	0	0	0	**11**
0845 - 0900	0	0	4	0	0	0	0	**4**	0	0	2	0	0	0	0	**2**	0	0	9	1	0	0	0	**10**
Hourly Total	**0**	**0**	**18**	**1**	**0**	**0**	**0**	**19**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**37**	**1**	**0**	**0**	**0**	**38**
0900 - 0915	0	0	6	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	5	0	0	0	0	**5**
0915 - 0930	0	0	3	1	0	0	0	**4**	0	0	0	0	0	0	0	**0**	0	0	6	1	0	0	0	**7**
0930 - 0945	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	6	0	0	0	0	**6**
0945 - 1000	0	0	0	1	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	8	1	1	0	0	**10**
Hourly Total	**0**	**0**	**9**	**2**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**2**	**1**	**0**	**0**	**28**
Session Total	**0**	**0**	**41**	**3**	**0**	**0**	**0**	**44**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**90**	**3**	**1**	**0**	**0**	**94**
1600 - 1615	0	0	3	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	0	0	4	0	0	0	0	**4**
1615 - 1630	0	0	2	1	0	0	0	**3**	0	0	2	0	0	0	0	**2**	0	0	3	0	0	0	0	**3**
1630 - 1645	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	9	0	0	0	0	**9**
1645 - 1700	0	0	4	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	0	0	1	0	0	0	0	**1**
Hourly Total	**0**	**0**	**11**	**1**	**0**	**0**	**0**	**12**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**17**
1700 - 1715	0	0	6	1	0	0	0	**7**	0	0	0	0	0	0	0	**0**	0	0	3	2	0	0	0	**5**
1715 - 1730	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	6	0	0	0	0	**6**
1730 - 1745	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	2	0	0	0	0	**2**
1745 - 1800	0	0	4	1	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	7	0	0	0	0	**7**
Hourly Total	**0**	**0**	**14**	**2**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**2**	**0**	**0**	**0**	**20**
1800 - 1815	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	5	0	0	0	0	**5**
1815 - 1830	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	1	0	1	0	0	**2**
1830 - 1845	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	8	0	0	0	0	**8**
1845 - 1900	0	0	2	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	6	0	0	0	0	**6**
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**1**	**0**	**0**	**21**
Session Total	**0**	**0**	**29**	**3**	**0**	**0**	**0**	**32**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**55**	**2**	**1**	**0**	**0**	**58**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (4) A466 / A48 / Fair View

Approach: A466 (North)

	First Left to A48 (East)								Second Left to Fair View								S/B to A466 (South)								Right to A48 (West)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	5	1	0	0	0	**6**	0	0	4	1	0	0	0	**5**	0	2	153	9	1	1	1	**167**	0	1	12	2	0	0	0	**15**
0715 - 0730	0	1	6	2	1	0	0	**10**	0	0	7	0	0	0	0	**7**	0	3	142	8	0	0	1	**154**	0	0	10	0	0	0	0	**10**
0730 - 0745	0	0	8	1	0	0	1	**10**	0	0	8	0	0	0	0	**8**	0	2	115	8	1	1	0	**127**	0	1	18	1	1	0	0	**21**
0745 - 0800	0	0	9	2	1	0	0	**12**	0	0	6	1	0	0	0	**7**	0	4	103	10	1	0	0	**118**	0	0	15	3	0	0	0	**18**
Hourly Total	**0**	**1**	**28**	**6**	**2**	**0**	**1**	**38**	**0**	**0**	**25**	**2**	**0**	**0**	**0**	**27**	**0**	**11**	**513**	**35**	**3**	**2**	**2**	**566**	**0**	**2**	**55**	**6**	**1**	**0**	**0**	**64**
0800 - 0815	0	0	11	3	1	0	0	**15**	0	0	7	0	0	0	0	**7**	0	4	129	7	1	0	0	**141**	0	0	20	3	0	0	0	**23**
0815 - 0830	0	0	6	0	0	1	0	**7**	0	0	5	3	0	0	0	**8**	0	3	98	3	2	0	0	**106**	0	0	29	3	0	0	1	**33**
0830 - 0845	0	0	5	1	0	0	0	**6**	0	0	6	1	0	0	0	**7**	0	0	113	4	3	0	0	**120**	0	0	36	2	0	0	0	**38**
0845 - 0900	0	0	8	1	2	0	0	**11**	0	0	15	0	0	0	0	**15**	0	0	82	3	0	1	0	**86**	0	0	26	3	0	0	2	**31**
Hourly Total	**0**	**0**	**30**	**5**	**3**	**1**	**0**	**39**	**0**	**0**	**33**	**4**	**0**	**0**	**0**	**37**	**0**	**7**	**422**	**17**	**6**	**1**	**0**	**453**	**0**	**0**	**111**	**11**	**0**	**0**	**3**	**125**
0900 - 0915	0	0	21	5	0	0	0	**26**	0	0	19	3	0	0	0	**22**	0	1	95	6	1	6	0	**109**	0	0	35	5	1	0	1	**42**
0915 - 0930	0	0	28	3	0	0	0	**31**	0	0	10	1	0	0	0	**11**	0	0	67	7	1	2	0	**77**	0	0	23	2	0	1	0	**26**
0930 - 0945	0	0	14	0	2	0	1	**17**	0	0	15	2	1	0	0	**18**	0	1	73	6	0	0	2	**82**	0	0	22	3	2	0	0	**27**
0945 - 1000	0	1	28	2	0	0	1	**32**	0	0	13	2	0	0	0	**15**	0	0	44	7	2	0	1	**54**	0	0	23	5	1	0	0	**29**
Hourly Total	**0**	**1**	**91**	**10**	**2**	**0**	**2**	**106**	**0**	**0**	**57**	**8**	**1**	**0**	**0**	**66**	**0**	**2**	**279**	**26**	**4**	**8**	**3**	**322**	**0**	**0**	**103**	**15**	**4**	**1**	**1**	**124**
Session Total	**0**	**2**	**149**	**21**	**7**	**1**	**3**	**183**	**0**	**0**	**115**	**14**	**1**	**0**	**0**	**130**	**0**	**20**	**1214**	**78**	**13**	**11**	**5**	**1341**	**0**	**2**	**269**	**32**	**5**	**1**	**4**	**313**
1600 - 1615	0	0	25	5	0	0	0	**30**	0	0	12	0	0	0	0	**12**	0	1	43	2	1	2	2	**51**	0	0	28	1	0	0	0	**29**
1615 - 1630	0	0	17	2	0	0	0	**19**	0	0	12	2	0	0	0	**14**	0	1	42	10	0	0	1	**54**	0	0	31	3	1	0	0	**35**
1630 - 1645	0	0	16	5	1	0	0	**22**	0	0	10	1	0	0	1	**12**	0	2	48	7	1	0	0	**58**	0	0	37	2	0	0	1	**40**
1645 - 1700	0	1	14	2	1	0	0	**18**	0	0	9	1	0	0	0	**10**	0	0	33	7	0	0	0	**40**	0	0	27	4	1	0	0	**32**
Hourly Total	**0**	**1**	**72**	**14**	**2**	**0**	**0**	**89**	**0**	**0**	**43**	**4**	**0**	**0**	**1**	**48**	**0**	**4**	**166**	**26**	**2**	**2**	**3**	**203**	**0**	**0**	**123**	**10**	**2**	**0**	**1**	**136**
1700 - 1715	0	0	16	0	0	0	4	**20**	0	0	22	1	0	0	0	**23**	0	0	43	7	1	0	0	**51**	0	0	38	5	1	0	0	**44**
1715 - 1730	0	0	19	0	1	0	0	**20**	0	0	10	0	0	0	0	**10**	0	0	38	4	0	0	0	**42**	0	0	41	2	0	0	0	**43**
1730 - 1745	0	0	16	2	0	0	0	**18**	0	0	9	0	0	0	0	**9**	0	0	53	5	1	1	0	**60**	0	0	39	2	0	0	0	**41**
1745 - 1800	0	0	10	1	0	0	0	**11**	0	0	10	1	0	0	0	**11**	0	0	40	7	1	0	0	**48**	0	0	26	3	0	0	0	**29**
Hourly Total	**0**	**0**	**61**	**3**	**1**	**0**	**4**	**69**	**0**	**0**	**51**	**2**	**0**	**0**	**0**	**53**	**0**	**0**	**174**	**23**	**3**	**1**	**0**	**201**	**0**	**0**	**144**	**12**	**1**	**0**	**0**	**157**
1800 - 1815	0	0	17	0	0	0	0	**17**	0	0	13	0	0	0	0	**13**	0	0	35	4	0	1	0	**40**	0	0	21	2	0	0	0	**23**
1815 - 1830	0	0	11	0	1	0	0	**12**	0	0	9	0	0	0	0	**9**	0	1	38	3	0	0	0	**42**	0	0	21	3	0	0	0	**24**
1830 - 1845	0	0	19	3	0	0	0	**22**	0	0	13	0	0	0	0	**13**	0	0	36	3	0	0	0	**39**	0	0	19	3	0	0	0	**22**
1845 - 1900	0	0	19	0	1	0	1	**21**	0	0	8	1	0	0	0	**9**	0	0	28	4	2	0	0	**34**	0	0	23	2	0	0	0	**25**
Hourly Total	**0**	**0**	**66**	**3**	**2**	**0**	**1**	**72**	**0**	**0**	**43**	**1**	**0**	**0**	**0**	**44**	**0**	**1**	**137**	**14**	**2**	**1**	**0**	**155**	**0**	**0**	**84**	**10**	**0**	**0**	**0**	**94**
Session Total	**0**	**1**	**199**	**20**	**5**	**0**	**5**	**230**	**0**	**0**	**137**	**7**	**0**	**0**	**1**	**145**	**0**	**5**	**477**	**63**	**7**	**4**	**3**	**559**	**0**	**0**	**351**	**32**	**3**	**0**	**1**	**387**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (4) A466 / A48 / Fair View

Approach: A48 (East)

	First Left to Fair View								Second Left to A466 (South)								W/B to A48 (West)								Right to A466 (North)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	1	1	0	0	0	**2**	0	1	99	14	2	3	0	**119**	0	0	6	2	3	0	2	**13**	0	0	4	2	0	0	0	**6**
0715 - 0730	0	0	0	0	0	0	0	**0**	0	1	92	18	1	4	0	**116**	0	0	6	3	0	0	0	**9**	0	1	4	1	0	0	0	**6**
0730 - 0745	0	0	0	0	0	0	0	**0**	0	2	100	15	7	3	0	**127**	0	0	17	3	2	0	1	**23**	0	0	9	9	1	0	0	**19**
0745 - 0800	0	0	0	0	0	0	0	**0**	0	2	118	15	9	5	0	**149**	0	0	20	5	0	0	0	**25**	0	0	10	2	0	0	0	**12**
Hourly Total	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**6**	**409**	**62**	**19**	**15**	**0**	**511**	**0**	**0**	**49**	**13**	**5**	**0**	**3**	**70**	**0**	**1**	**27**	**14**	**1**	**0**	**0**	**43**
0800 - 0815	0	0	0	1	0	0	0	**1**	0	2	102	15	5	2	1	**127**	0	0	17	5	1	0	0	**23**	0	0	13	6	0	0	0	**19**
0815 - 0830	0	0	1	0	0	0	0	**1**	0	2	97	18	11	3	0	**131**	0	0	30	6	2	0	0	**38**	0	0	21	1	1	0	0	**23**
0830 - 0845	0	0	1	0	0	0	0	**1**	0	1	90	13	6	5	0	**115**	0	0	25	11	0	0	0	**36**	0	0	20	4	0	0	1	**25**
0845 - 0900	0	0	2	1	0	0	0	**3**	0	2	104	10	4	7	0	**127**	0	0	35	12	3	0	2	**52**	0	0	19	4	1	0	1	**25**
Hourly Total	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**6**	**0**	**7**	**393**	**56**	**26**	**17**	**1**	**500**	**0**	**0**	**107**	**34**	**6**	**0**	**2**	**149**	**0**	**0**	**73**	**15**	**2**	**0**	**2**	**92**
0900 - 0915	0	0	2	1	0	0	0	**3**	0	2	87	17	2	9	0	**117**	0	0	30	11	2	0	1	**44**	0	0	24	3	1	0	0	**28**
0915 - 0930	0	0	3	0	0	0	0	**3**	0	0	104	13	3	6	1	**127**	0	0	34	3	3	3	0	**43**	0	0	24	6	0	0	1	**31**
0930 - 0945	0	0	1	0	0	0	0	**1**	0	1	121	7	2	10	2	**143**	0	0	44	4	2	0	0	**50**	0	0	21	8	1	0	0	**30**
0945 - 1000	0	0	8	0	1	0	0	**9**	0	1	85	12	7	2	1	**108**	0	0	42	5	2	0	0	**49**	0	0	23	4	1	0	0	**28**
Hourly Total	**0**	**0**	**14**	**1**	**1**	**0**	**0**	**16**	**0**	**4**	**397**	**49**	**14**	**27**	**4**	**495**	**0**	**0**	**150**	**23**	**9**	**3**	**1**	**186**	**0**	**0**	**92**	**21**	**3**	**0**	**1**	**117**
Session Total	**0**	**0**	**19**	**4**	**1**	**0**	**0**	**24**	**0**	**17**	**1199**	**167**	**59**	**59**	**5**	**1506**	**0**	**0**	**306**	**70**	**20**	**3**	**6**	**405**	**0**	**1**	**192**	**50**	**6**	**0**	**3**	**252**
1600 - 1615	0	0	6	2	0	0	0	**8**	0	2	57	22	7	3	0	**91**	0	0	35	5	1	0	0	**41**	0	0	45	6	0	0	1	**52**
1615 - 1630	0	0	2	0	0	0	0	**2**	0	0	55	15	4	2	0	**76**	0	0	41	6	2	0	0	**49**	0	0	43	2	2	0	0	**47**
1630 - 1645	0	0	2	0	0	0	0	**2**	0	0	59	18	2	3	0	**82**	0	0	45	11	2	0	0	**58**	0	0	40	6	0	0	0	**46**
1645 - 1700	0	0	5	0	0	0	0	**5**	0	0	69	10	1	3	0	**83**	0	0	58	11	1	0	1	**71**	0	0	40	6	0	0	0	**46**
Hourly Total	**0**	**0**	**15**	**2**	**0**	**0**	**0**	**17**	**0**	**2**	**240**	**65**	**14**	**11**	**0**	**332**	**0**	**0**	**179**	**33**	**6**	**0**	**1**	**219**	**0**	**0**	**168**	**20**	**2**	**0**	**1**	**191**
1700 - 1715	0	0	9	0	0	0	0	**9**	0	1	62	11	2	4	0	**80**	0	0	48	7	1	0	2	**58**	0	0	36	3	1	0	0	**40**
1715 - 1730	0	0	1	0	0	0	0	**1**	0	0	60	11	0	4	1	**76**	0	0	61	5	1	0	0	**67**	0	0	50	8	2	0	1	**61**
1730 - 1745	0	0	4	0	0	0	0	**4**	0	0	60	9	1	2	0	**72**	0	1	45	3	0	0	1	**50**	0	0	39	3	0	0	0	**42**
1745 - 1800	0	0	2	0	0	0	0	**2**	0	2	69	7	1	2	0	**81**	0	2	46	4	0	0	0	**52**	0	0	45	2	0	0	0	**47**
Hourly Total	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**16**	**0**	**3**	**251**	**38**	**4**	**12**	**1**	**309**	**0**	**3**	**200**	**19**	**2**	**0**	**3**	**227**	**0**	**0**	**170**	**16**	**3**	**0**	**1**	**190**
1800 - 1815	0	0	5	0	0	0	0	**5**	0	0	55	4	2	1	0	**62**	0	1	33	2	1	1	2	**40**	0	0	35	2	0	0	1	**38**
1815 - 1830	0	0	3	0	0	0	0	**3**	0	0	74	2	2	4	0	**82**	0	0	36	4	0	0	0	**40**	0	0	29	4	0	0	0	**33**
1830 - 1845	0	0	5	0	0	0	0	**5**	0	1	49	4	2	2	0	**58**	0	0	29	4	1	0	1	**35**	0	1	29	4	0	0	0	**34**
1845 - 1900	0	0	4	1	0	0	0	**5**	0	0	41	2	2	2	1	**48**	0	0	36	1	0	0	1	**38**	0	0	29	1	0	0	0	**30**
Hourly Total	**0**	**0**	**17**	**1**	**0**	**0**	**0**	**18**	**0**	**1**	**219**	**12**	**8**	**9**	**1**	**250**	**0**	**1**	**134**	**11**	**2**	**1**	**4**	**153**	**0**	**1**	**122**	**11**	**0**	**0**	**1**	**135**
Session Total	**0**	**0**	**48**	**3**	**0**	**0**	**0**	**51**	**0**	**6**	**710**	**115**	**26**	**32**	**2**	**891**	**0**	**4**	**513**	**63**	**10**	**1**	**8**	**599**	**0**	**1**	**460**	**47**	**5**	**0**	**3**	**516**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (4) A466 / A48 / Fair View

Approach: Fair View

	First Left to A466 (South)								Second Left to A48 (West)								Right to A466 (North)								Last Right to A48 (East)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	16	1	0	0	0	**17**	0	0	7	0	0	0	0	**7**	0	0	5	0	0	0	0	**5**	0	0	8	2	0	0	0	**10**
0715 - 0730	0	0	25	4	0	0	0	**29**	0	0	12	0	0	0	0	**12**	0	0	8	0	0	0	0	**8**	0	0	13	5	0	0	0	**18**
0730 - 0745	0	0	15	0	0	1	0	**16**	0	0	6	2	0	0	0	**8**	0	0	5	3	0	0	0	**8**	0	0	13	7	0	0	0	**20**
0745 - 0800	0	0	12	1	0	0	0	**13**	0	0	16	1	0	0	0	**17**	0	0	9	1	0	0	0	**10**	0	0	22	7	0	0	0	**29**
Hourly Total	**0**	**0**	**68**	**6**	**0**	**1**	**0**	**75**	**0**	**0**	**41**	**3**	**0**	**0**	**0**	**44**	**0**	**0**	**27**	**4**	**0**	**0**	**0**	**31**	**0**	**0**	**56**	**21**	**0**	**0**	**0**	**77**
0800 - 0815	0	0	11	1	0	0	0	**12**	0	0	15	2	0	0	0	**17**	0	0	11	2	0	0	0	**13**	0	0	24	6	0	0	0	**30**
0815 - 0830	0	1	13	0	0	0	0	**14**	0	0	21	1	0	0	0	**22**	0	0	14	1	0	0	0	**15**	0	0	22	2	0	0	0	**24**
0830 - 0845	0	0	8	1	0	0	0	**9**	0	0	25	2	0	0	0	**27**	0	0	18	1	0	0	0	**19**	0	0	23	2	0	0	0	**25**
0845 - 0900	0	0	10	0	0	0	0	**10**	0	0	13	3	0	0	0	**16**	0	0	7	2	0	0	0	**9**	0	0	20	3	0	0	0	**23**
Hourly Total	**0**	**1**	**42**	**2**	**0**	**0**	**0**	**45**	**0**	**0**	**74**	**8**	**0**	**0**	**0**	**82**	**0**	**0**	**50**	**6**	**0**	**0**	**0**	**56**	**0**	**0**	**89**	**13**	**0**	**0**	**0**	**102**
0900 - 0915	0	0	7	0	0	0	0	**7**	0	0	18	1	1	0	0	**20**	0	0	13	1	0	0	0	**14**	0	0	30	2	1	0	0	**33**
0915 - 0930	0	0	8	1	2	0	0	**11**	0	0	17	1	0	0	0	**18**	0	0	13	1	0	0	1	**15**	0	0	30	2	0	0	0	**32**
0930 - 0945	0	0	2	0	0	0	0	**2**	0	0	13	1	1	0	0	**15**	0	0	8	2	0	0	0	**10**	0	0	11	2	0	0	0	**13**
0945 - 1000	0	0	4	1	1	0	0	**6**	0	0	13	2	1	0	0	**16**	0	0	6	2	1	0	0	**9**	0	0	16	4	1	0	1	**22**
Hourly Total	**0**	**0**	**21**	**2**	**3**	**0**	**0**	**26**	**0**	**0**	**61**	**5**	**3**	**0**	**0**	**69**	**0**	**0**	**40**	**6**	**1**	**0**	**1**	**48**	**0**	**0**	**87**	**10**	**2**	**0**	**1**	**100**
Session Total	**0**	**1**	**131**	**10**	**3**	**1**	**0**	**146**	**0**	**0**	**176**	**16**	**3**	**0**	**0**	**195**	**0**	**0**	**117**	**16**	**1**	**0**	**1**	**135**	**0**	**0**	**232**	**44**	**2**	**0**	**1**	**279**
1600 - 1615	0	0	3	0	0	0	0	**3**	0	0	13	2	1	0	0	**16**	0	0	19	2	0	0	0	**21**	0	0	32	3	3	0	0	**38**
1615 - 1630	0	0	3	1	0	0	0	**4**	0	0	12	1	2	0	0	**15**	0	0	11	1	0	0	0	**12**	0	0	19	1	0	0	0	**20**
1630 - 1645	0	0	4	0	0	0	0	**4**	0	0	16	2	0	0	0	**18**	0	0	16	1	0	0	0	**17**	0	0	30	5	0	0	0	**35**
1645 - 1700	0	0	3	0	1	0	0	**4**	0	0	26	3	0	0	0	**29**	0	0	18	3	0	0	0	**21**	0	0	28	4	0	0	0	**32**
Hourly Total	**0**	**0**	**13**	**1**	**1**	**0**	**0**	**15**	**0**	**0**	**67**	**8**	**3**	**0**	**0**	**78**	**0**	**0**	**64**	**7**	**0**	**0**	**0**	**71**	**0**	**0**	**109**	**13**	**3**	**0**	**0**	**125**
1700 - 1715	0	0	6	2	0	0	0	**8**	0	0	42	4	0	0	0	**46**	0	0	28	2	0	0	0	**30**	0	0	48	3	0	0	0	**51**
1715 - 1730	0	0	5	0	0	0	0	**5**	0	0	32	2	0	0	0	**34**	1	0	22	2	0	0	0	**25**	0	1	23	6	1	0	0	**31**
1730 - 1745	0	0	3	0	0	0	0	**3**	0	0	35	3	0	0	0	**38**	0	0	29	3	0	0	0	**32**	0	0	40	5	0	0	0	**45**
1745 - 1800	0	0	7	0	0	0	0	**7**	0	0	26	2	0	0	0	**28**	1	0	24	1	0	0	0	**26**	0	0	38	2	0	0	0	**40**
Hourly Total	**0**	**0**	**21**	**2**	**0**	**0**	**0**	**23**	**0**	**0**	**135**	**11**	**0**	**0**	**0**	**146**	**2**	**0**	**103**	**8**	**0**	**0**	**0**	**113**	**0**	**1**	**149**	**16**	**1**	**0**	**0**	**167**
1800 - 1815	0	0	3	0	0	0	0	**3**	0	0	16	1	0	0	0	**17**	0	0	19	1	0	0	0	**20**	0	0	27	3	0	0	0	**30**
1815 - 1830	0	0	1	1	0	0	0	**2**	0	0	12	1	0	0	0	**13**	0	0	9	1	0	0	0	**10**	0	0	14	1	0	0	0	**15**
1830 - 1845	0	0	5	1	0	0	0	**6**	0	0	16	1	0	0	0	**17**	1	0	15	1	0	0	0	**17**	0	0	24	1	0	0	0	**25**
1845 - 1900	0	0	1	0	0	0	0	**1**	0	0	13	2	0	0	0	**15**	0	0	12	2	0	0	0	**14**	0	0	17	1	0	0	0	**18**
Hourly Total	**0**	**0**	**10**	**2**	**0**	**0**	**0**	**12**	**0**	**0**	**57**	**5**	**0**	**0**	**0**	**62**	**1**	**0**	**55**	**5**	**0**	**0**	**0**	**61**	**0**	**0**	**82**	**6**	**0**	**0**	**0**	**88**
Session Total	**0**	**0**	**44**	**5**	**1**	**0**	**0**	**50**	**0**	**0**	**259**	**24**	**3**	**0**	**0**	**286**	**3**	**0**	**222**	**20**	**0**	**0**	**0**	**245**	**0**	**1**	**340**	**35**	**4**	**0**	**0**	**380**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (4) A466 / A48 / Fair View

Approach: A466 (South)

	Left to A48 (West)								N/B to A466 (North)								Right to A48 (East)								Last Right to Fair View							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	1	17	2	1	0	0	**21**	0	0	13	3	3	0	1	**20**	0	0	47	18	5	6	1	**77**	0	0	6	1	0	0	0	**7**
0715 - 0730	0	0	17	4	2	1	1	**25**	0	0	21	8	0	0	1	**30**	0	0	42	13	4	7	0	**66**	1	0	10	2	0	0	0	**13**
0730 - 0745	0	2	12	6	2	1	1	**24**	0	0	22	2	2	5	1	**32**	0	0	49	15	4	2	1	**71**	0	0	13	0	0	0	0	**13**
0745 - 0800	0	2	17	3	5	1	1	**29**	0	0	34	5	0	0	2	**41**	0	0	75	17	3	3	0	**98**	0	0	11	1	0	0	0	**12**
Hourly Total	**0**	**5**	**63**	**15**	**10**	**3**	**3**	**99**	**0**	**0**	**90**	**18**	**5**	**5**	**5**	**123**	**0**	**0**	**213**	**63**	**16**	**18**	**2**	**312**	**1**	**0**	**40**	**4**	**0**	**0**	**0**	**45**
0800 - 0815	0	0	24	7	4	1	0	**36**	0	0	34	13	1	1	0	**49**	0	0	68	12	5	3	1	**89**	0	0	6	2	1	0	0	**9**
0815 - 0830	0	0	24	6	0	1	0	**31**	0	0	49	4	0	1	0	**54**	0	0	76	21	7	1	0	**105**	0	0	6	2	0	0	0	**8**
0830 - 0845	0	0	19	6	4	1	0	**30**	0	0	58	4	1	0	1	**64**	0	0	66	15	6	2	2	**91**	0	0	6	2	1	0	0	**9**
0845 - 0900	0	0	20	3	3	0	0	**26**	0	1	25	10	2	0	0	**38**	0	0	67	22	6	4	0	**99**	0	0	13	2	0	0	0	**15**
Hourly Total	**0**	**0**	**87**	**22**	**11**	**3**	**0**	**123**	**0**	**1**	**166**	**31**	**4**	**2**	**1**	**205**	**0**	**0**	**277**	**70**	**24**	**10**	**3**	**384**	**0**	**0**	**31**	**8**	**2**	**0**	**0**	**41**
0900 - 0915	0	0	23	1	2	0	0	**26**	0	0	24	1	2	0	0	**27**	0	0	50	11	7	0	1	**69**	0	0	11	2	0	0	0	**13**
0915 - 0930	0	0	23	2	0	0	0	**25**	0	0	28	2	0	0	0	**30**	0	2	65	11	5	0	0	**83**	0	0	12	2	0	0	0	**14**
0930 - 0945	0	0	22	1	3	0	0	**26**	0	1	27	5	2	1	0	**36**	0	0	49	10	4	3	0	**66**	0	0	9	3	1	0	0	**13**
0945 - 1000	0	0	14	2	0	0	0	**16**	0	0	23	6	2	0	0	**31**	0	0	52	9	2	2	0	**65**	0	0	12	2	0	0	0	**14**
Hourly Total	**0**	**0**	**82**	**6**	**5**	**0**	**0**	**93**	**0**	**1**	**102**	**14**	**6**	**1**	**0**	**124**	**0**	**2**	**216**	**41**	**18**	**5**	**1**	**283**	**0**	**0**	**44**	**9**	**1**	**0**	**0**	**54**
Session Total	**0**	**5**	**232**	**43**	**26**	**6**	**3**	**315**	**0**	**2**	**358**	**63**	**15**	**8**	**6**	**452**	**0**	**2**	**706**	**174**	**58**	**33**	**6**	**979**	**1**	**0**	**115**	**21**	**3**	**0**	**0**	**140**
1600 - 1615	0	1	35	5	2	0	0	**43**	0	2	68	5	2	1	1	**79**	0	0	114	19	4	0	0	**137**	0	0	16	2	0	0	0	**18**
1615 - 1630	0	1	53	6	2	0	1	**63**	0	3	82	6	0	0	1	**92**	0	4	127	17	0	3	0	**151**	0	0	19	3	0	0	0	**22**
1630 - 1645	0	2	69	5	2	0	1	**79**	0	3	56	4	1	0	1	**65**	0	2	124	13	3	0	0	**142**	1	1	22	1	0	0	0	**25**
1645 - 1700	0	1	54	5	1	1	1	**63**	0	3	78	8	0	0	0	**89**	0	1	119	11	4	0	1	**136**	0	0	20	2	1	0	0	**23**
Hourly Total	**0**	**5**	**211**	**21**	**7**	**1**	**3**	**248**	**0**	**11**	**284**	**23**	**3**	**1**	**3**	**325**	**0**	**7**	**484**	**60**	**11**	**3**	**1**	**566**	**1**	**1**	**77**	**8**	**1**	**0**	**0**	**88**
1700 - 1715	0	3	57	5	1	1	0	**67**	0	2	52	4	0	0	0	**58**	0	2	91	15	0	3	0	**111**	0	0	13	1	0	0	0	**14**
1715 - 1730	0	0	59	3	1	0	0	**63**	0	1	58	2	0	0	2	**63**	0	1	119	13	1	4	1	**139**	0	0	18	0	0	0	0	**18**
1730 - 1745	0	3	48	2	0	0	0	**53**	0	4	85	4	0	0	0	**93**	0	4	112	8	0	4	0	**128**	0	0	13	0	0	0	0	**13**
1745 - 1800	0	0	50	3	0	1	0	**54**	0	1	77	1	0	0	0	**79**	0	4	112	9	3	3	0	**131**	0	0	12	2	0	0	0	**14**
Hourly Total	**0**	**6**	**214**	**13**	**2**	**2**	**0**	**237**	**0**	**8**	**272**	**11**	**0**	**0**	**2**	**293**	**0**	**11**	**434**	**45**	**4**	**14**	**1**	**509**	**0**	**0**	**56**	**3**	**0**	**0**	**0**	**59**
1800 - 1815	0	1	66	4	3	0	0	**74**	0	1	86	4	0	0	0	**91**	0	7	121	6	2	0	0	**136**	0	0	27	1	0	0	0	**28**
1815 - 1830	0	0	56	0	1	0	0	**57**	0	2	64	4	2	0	0	**72**	0	3	97	7	3	1	1	**112**	0	1	14	1	0	0	0	**16**
1830 - 1845	0	0	58	2	1	3	0	**64**	0	0	64	4	0	0	0	**68**	0	0	89	5	2	0	0	**96**	0	0	13	1	0	0	0	**14**
1845 - 1900	0	0	39	3	1	0	0	**43**	0	2	58	4	0	0	0	**64**	0	0	91	2	3	0	1	**97**	0	0	12	1	0	0	0	**13**
Hourly Total	**0**	**1**	**219**	**9**	**6**	**3**	**0**	**238**	**0**	**5**	**272**	**16**	**2**	**0**	**0**	**295**	**0**	**10**	**398**	**20**	**10**	**1**	**2**	**441**	**0**	**1**	**66**	**4**	**0**	**0**	**0**	**71**
Session Total	**0**	**12**	**644**	**43**	**15**	**6**	**3**	**723**	**0**	**24**	**828**	**50**	**5**	**1**	**5**	**913**	**0**	**28**	**1316**	**125**	**25**	**18**	**4**	**1516**	**1**	**2**	**199**	**15**	**1**	**0**	**0**	**218**

Chepstow - Manual Traffic Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Junction: (4) A466 / A48 / Fair View

Approach: A48 (West)

	Left to A466 (North)								E/B to A48 (East)								Right to Fair View								Last Right to A466 (South)							
TIME	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715	0	0	6	3	2	0	1	**12**	0	0	10	4	2	1	1	**18**	1	0	2	1	0	0	0	**4**	0	0	78	10	2	0	0	**90**
0715 - 0730	0	0	8	2	0	0	3	**13**	0	0	17	2	1	2	2	**24**	1	0	4	0	0	0	0	**5**	0	2	68	7	2	0	0	**79**
0730 - 0745	0	0	8	3	1	0	0	**12**	0	0	30	4	1	0	0	**35**	0	0	7	0	0	0	0	**7**	0	2	86	11	1	0	0	**100**
0745 - 0800	0	0	16	0	1	0	0	**17**	0	0	34	8	3	1	0	**46**	0	0	5	1	0	0	0	**6**	0	0	80	3	0	2	0	**85**
Hourly Total	**0**	**0**	**38**	**8**	**4**	**0**	**4**	**54**	**0**	**0**	**91**	**18**	**7**	**4**	**3**	**123**	**2**	**0**	**18**	**2**	**0**	**0**	**0**	**22**	**0**	**4**	**312**	**31**	**5**	**2**	**0**	**354**
0800 - 0815	0	0	27	1	0	0	0	**28**	0	1	41	7	3	1	0	**53**	0	0	3	0	1	0	0	**4**	0	3	68	7	3	1	0	**82**
0815 - 0830	0	0	31	6	0	0	0	**37**	0	0	34	11	2	4	0	**51**	1	0	4	2	0	0	0	**7**	0	0	84	2	2	0	0	**88**
0830 - 0845	0	0	30	4	2	0	2	**38**	0	1	57	4	2	0	2	**66**	0	1	5	1	0	0	0	**7**	0	4	74	4	2	0	0	**84**
0845 - 0900	0	0	40	8	3	0	0	**51**	0	0	53	6	3	0	1	**63**	0	0	10	1	0	0	0	**11**	0	0	57	4	0	2	0	**63**
Hourly Total	**0**	**0**	**128**	**19**	**5**	**0**	**2**	**154**	**0**	**2**	**185**	**28**	**10**	**5**	**3**	**233**	**1**	**1**	**22**	**4**	**1**	**0**	**0**	**29**	**0**	**7**	**283**	**17**	**7**	**3**	**0**	**317**
0900 - 0915	0	0	22	3	0	1	0	**26**	0	0	39	10	5	0	0	**54**	0	0	10	2	0	0	0	**12**	0	0	50	5	6	1	0	**62**
0915 - 0930	0	0	15	1	0	0	0	**16**	0	0	42	9	4	0	0	**55**	0	0	8	1	0	0	0	**9**	0	0	48	3	4	1	0	**56**
0930 - 0945	0	0	15	5	0	1	0	**21**	0	0	58	7	2	1	0	**68**	0	0	9	2	1	0	0	**12**	0	0	20	10	2	0	0	**32**
0945 - 1000	0	0	19	2	0	0	0	**21**	0	0	36	7	2	1	1	**47**	0	0	9	1	0	0	0	**10**	0	1	32	4	2	3	0	**42**
Hourly Total	**0**	**0**	**71**	**11**	**0**	**2**	**0**	**84**	**0**	**0**	**175**	**33**	**13**	**2**	**1**	**224**	**0**	**0**	**36**	**6**	**1**	**0**	**0**	**43**	**0**	**1**	**150**	**22**	**14**	**5**	**0**	**192**
Session Total	**0**	**0**	**237**	**38**	**9**	**2**	**6**	**292**	**0**	**2**	**451**	**79**	**30**	**11**	**7**	**580**	**3**	**1**	**76**	**12**	**2**	**0**	**0**	**94**	**0**	**12**	**745**	**70**	**26**	**10**	**0**	**863**
1600 - 1615	0	0	16	5	1	1	0	**23**	0	0	44	10	1	0	0	**55**	0	0	8	2	0	0	0	**10**	0	2	27	12	6	0	0	**47**
1615 - 1630	0	0	17	2	0	0	1	**20**	0	1	53	7	0	1	2	**64**	0	0	8	3	0	0	0	**11**	0	1	27	8	0	0	0	**36**
1630 - 1645	0	0	29	3	0	0	1	**33**	0	1	48	11	1	2	0	**63**	0	0	7	1	1	0	0	**9**	0	1	41	4	2	0	0	**48**
1645 - 1700	0	0	18	3	0	0	0	**21**	0	1	40	10	1	0	2	**54**	0	0	8	1	0	0	0	**9**	0	1	27	2	0	2	0	**32**
Hourly Total	**0**	**0**	**80**	**13**	**1**	**1**	**2**	**97**	**0**	**3**	**185**	**38**	**3**	**3**	**4**	**236**	**0**	**0**	**31**	**7**	**1**	**0**	**0**	**39**	**0**	**5**	**122**	**26**	**8**	**2**	**0**	**163**
1700 - 1715	0	0	27	3	0	0	0	**30**	0	1	69	4	0	0	0	**74**	0	0	8	1	0	0	0	**9**	0	1	13	4	0	0	0	**18**
1715 - 1730	0	1	24	2	0	0	0	**27**	0	1	43	4	0	0	0	**48**	0	0	6	0	0	0	0	**6**	0	0	28	8	0	0	0	**36**
1730 - 1745	0	0	19	2	0	0	0	**21**	0	1	57	5	1	0	0	**64**	0	0	7	0	0	0	0	**7**	0	0	26	5	1	0	0	**32**
1745 - 1800	0	0	27	0	0	0	0	**27**	0	0	56	2	0	0	1	**59**	0	0	5	1	0	0	0	**6**	0	0	16	3	1	0	0	**20**
Hourly Total	**0**	**1**	**97**	**7**	**0**	**0**	**0**	**105**	**0**	**3**	**225**	**15**	**1**	**0**	**1**	**245**	**0**	**0**	**26**	**2**	**0**	**0**	**0**	**28**	**0**	**1**	**83**	**20**	**2**	**0**	**0**	**106**
1800 - 1815	0	0	19	3	0	0	0	**22**	0	0	39	4	1	0	0	**44**	0	0	9	1	0	0	0	**10**	0	0	23	3	0	1	0	**27**
1815 - 1830	0	0	17	2	1	0	0	**20**	0	1	41	1	0	0	0	**43**	0	0	6	0	0	0	0	**6**	0	0	24	2	1	0	0	**27**
1830 - 1845	0	0	17	1	0	0	0	**18**	0	0	43	2	0	0	2	**47**	0	0	7	0	0	0	0	**7**	0	0	18	2	0	1	0	**21**
1845 - 1900	0	0	16	0	0	0	0	**16**	0	0	27	2	0	0	0	**29**	0	0	3	1	0	0	0	**4**	0	1	10	4	0	0	0	**15**
Hourly Total	**0**	**0**	**69**	**6**	**1**	**0**	**0**	**76**	**0**	**1**	**150**	**9**	**1**	**0**	**2**	**163**	**0**	**0**	**25**	**2**	**0**	**0**	**0**	**27**	**0**	**1**	**75**	**11**	**1**	**2**	**0**	**90**
Session Total	**0**	**1**	**246**	**26**	**2**	**1**	**2**	**278**	**0**	**7**	**560**	**62**	**5**	**3**	**7**	**644**	**0**	**0**	**82**	**11**	**1**	**0**	**0**	**94**	**0**	**7**	**280**	**57**	**11**	**4**	**0**	**359**

Chepstow - Queue Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Time	A446 (North)	Welsh Street	A446 (South)	Itton Road
	Lane 1	Lane 1	Lane 1	Lane 1
	Vehicles			
7:00 - 7:05	0	1	0	3
7:05 - 7:10	0	2	0	1
7:10 - 7:15	1	2	0	0
7:15 - 7:20	6	0	1	1
7:20 - 7:25	1	0	0	2
7:25 - 7:30	2	0	1	2
7:30 - 7:35	1	1	0	1
7:35 - 7:40	6	1	0	1
7:40 - 7:45	3	0	0	6
7:45 - 7:50	3	1	1	1
7:50 - 7:55	1	0	1	0
7:55 - 8:00	0	1	1	1
8:00 - 8:05	2	1	1	4
8:05 - 8:10	1	3	0	0
8:10 - 8:15	2	2	3	3
8:15 - 8:20	7	2	4	9
8:20 - 8:25	2	2	1	4
8:25 - 8:30	5	1	6	7
8:30 - 8:35	2	2	2	6
8:35 - 8:40	2	3	3	3
8:40 - 8:45	3	1	1	3
8:45 - 8:50	3	1	4	5
8:50 - 8:55	5	1	3	2
8:55 - 9:00	0	1	1	1
9:00 - 9:05	2	2	1	4
9:05 - 9:10	6	1	1	1
9:10 - 9:15	4	1	1	1
9:15 - 9:20	1	0	1	2
9:20 - 9:25	2	1	0	0
9:25 - 9:30	2	2	1	8
9:30 - 9:35	1	0	1	0
9:35 - 9:40	1	1	0	7
9:40 - 9:45	1	1	0	2
9:45 - 9:50	0	1	1	2
9:50 - 9:55	2	1	0	1
9:55 - 10:00	0	1	2	1
16:00 - 16:05	1	2	1	0
16:05 - 16:10	2	0	4	2
16:10 - 16:15	3	2	4	1
16:15 - 16:20	1	1	3	2
16:20 - 16:25	2	1	1	2
16:25 - 16:30	3	1	2	3
16:30 - 16:35	1	1	2	2
16:35 - 16:40	1	1	3	2
16:40 - 16:45	0	2	2	4
16:45 - 16:50	3	1	1	2
16:50 - 16:55	0	0	1	2
16:55 - 17:00	1	1	1	3
17:00 - 17:05	1	0	1	3
17:05 - 17:10	3	2	4	3
17:10 - 17:15	0	1	1	1
17:15 - 17:20	2	1	1	0
17:20 - 17:25	0	1	3	1
17:25 - 17:30	0	2	3	9
17:30 - 17:35	1	0	0	2
17:35 - 17:40	1	0	5	2
17:40 - 17:45	1	0	3	2
17:45 - 17:50	4	0	0	2
17:50 - 17:55	0	2	1	1
17:55 - 18:00	1	1	5	5
18:00 - 18:05	0	1	0	1
18:05 - 18:10	0	0	5	1
18:10 - 18:15	2	2	1	3
18:15 - 18:20	0	1	2	2
18:20 - 18:25	2	0	3	3
18:25 - 18:30	0	0	1	1
18:30 - 18:35	2	2	1	2
18:35 - 18:40	1	0	3	1
18:40 - 18:45	2	0	3	2
18:45 - 18:50	0	2	1	1
18:50 - 18:55	0	0	2	0
18:55 - 19:00	0	0	0	1

Queues are maximum vehicle length every 5 minutes

Chepstow - Queue Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Time			A446 (North) RIGHT TURN	B4235
			Lane 1	Lane 1
			Vehicles	
7:00	-	7:05	0	2
7:05	-	7:10	1	1
7:10	-	7:15	0	1
7:15	-	7:20	0	3
7:20	-	7:25	1	1
7:25	-	7:30	0	1
7:30	-	7:35	1	1
7:35	-	7:40	0	2
7:40	-	7:45	2	0
7:45	-	7:50	1	2
7:50	-	7:55	0	1
7:55	-	8:00	0	1
8:00	-	8:05	4	1
8:05	-	8:10	2	2
8:10	-	8:15	2	4
8:15	-	8:20	2	3
8:20	-	8:25	1	2
8:25	-	8:30	1	4
8:30	-	8:35	0	4
8:35	-	8:40	4	2
8:40	-	8:45	3	4
8:45	-	8:50	5	4
8:50	-	8:55	1	3
8:55	-	9:00	1	1
9:00	-	9:05	2	8
9:05	-	9:10	1	2
9:10	-	9:15	1	3
9:15	-	9:20	2	3
9:20	-	9:25	2	4
9:25	-	9:30	2	3
9:30	-	9:35	1	2
9:35	-	9:40	3	2
9:40	-	9:45	1	1
9:45	-	9:50	1	4
9:50	-	9:55	0	2
9:55	-	10:00	2	2

16:00	**-**	**16:05**	2	3
16:05	**-**	**16:10**	2	3
16:10	**-**	**16:15**	4	3
16:15	**-**	**16:20**	2	3
16:20	**-**	**16:25**	2	3
16:25	**-**	**16:30**	2	2
16:30	**-**	**16:35**	1	3
16:35	**-**	**16:40**	2	6
16:40	**-**	**16:45**	2	2
16:45	**-**	**16:50**	1	4
16:50	**-**	**16:55**	1	3
16:55	**-**	**17:00**	3	2
17:00	**-**	**17:05**	1	2
17:05	**-**	**17:10**	2	2
17:10	**-**	**17:15**	2	2
17:15	**-**	**17:20**	1	5
17:20	**-**	**17:25**	1	2
17:25	**-**	**17:30**	0	5
17:30	**-**	**17:35**	2	3
17:35	**-**	**17:40**	1	3
17:40	**-**	**17:45**	3	2
17:45	**-**	**17:50**	3	1
17:50	**-**	**17:55**	1	2
17:55	**-**	**18:00**	1	3
18:00	**-**	**18:05**	0	3
18:05	**-**	**18:10**	1	2
18:10	**-**	**18:15**	3	2
18:15	**-**	**18:20**	1	1
18:20	**-**	**18:25**	2	2
18:25	**-**	**18:30**	1	1
18:30	**-**	**18:35**	2	3
18:35	**-**	**18:40**	2	3
18:40	**-**	**18:45**	0	1
18:45	**-**	**18:50**	0	1
18:50	**-**	**18:55**	0	1
18:55	**-**	**19:00**	2	1

Queues are maximum vehicle length every 5 minutes

Chepstow - Queue Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Time	A466 (North)		Tempest Way	A466 (South)		St Lawrence Park
	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 1
	Vehicles					
7:00 - 7:05	4	0	0	0	0	3
7:05 - 7:10	4	0	1	6	0	1
7:10 - 7:15	9	0	2	1	1	1
7:15 - 7:20	6	0	1	0	0	2
7:20 - 7:25	1	0	2	2	0	1
7:25 - 7:30	7	0	1	2	2	1
7:30 - 7:35	0	0	1	2	0	0
7:35 - 7:40	7	0	2	2	0	1
7:40 - 7:45	5	0	3	2	2	1
7:45 - 7:50	8	0	2	5	1	0
7:50 - 7:55	4	0	2	1	1	0
7:55 - 8:00	5	0	0	3	0	2
8:00 - 8:05	6	1	1	5	1	2
8:05 - 8:10	7	1	1	4	1	2
8:10 - 8:15	5	1	2	3	2	1
8:15 - 8:20	10	0	1	5	0	1
8:20 - 8:25	23	0	1	5	3	2
8:25 - 8:30	28	1	2	5	2	2
8:30 - 8:35	18	0	1	4	2	3
8:35 - 8:40	24	0	1	5	1	1
8:40 - 8:45	23	0	1	10	2	3
8:45 - 8:50	25	0	2	5	4	3
8:50 - 8:55	28	0	0	4	3	2
8:55 - 9:00	24	0	2	2	0	2
9:00 - 9:05	12	1	1	3	1	2
9:05 - 9:10	18	0	3	3	1	0
9:10 - 9:15	8	1	2	4	2	2
9:15 - 9:20	9	0	2	2	1	1
9:20 - 9:25	4	0	2	3	2	1
9:25 - 9:30	8	0	2	3	1	1
9:30 - 9:35	6	0	2	1	1	1
9:35 - 9:40	4	1	1	1	1	1
9:40 - 9:45	6	0	2	4	1	1
9:45 - 9:50	4	0	2	3	1	1
9:50 - 9:55	4	0	2	4	2	2
9:55 - 10:00	6	0	1	4	1	3

16:00	**-**	**16:05**	4	0	4	5	1	1
16:05	**-**	**16:10**	3	1	2	5	0	1
16:10	**-**	**16:15**	5	1	4	6	2	2
16:15	**-**	**16:20**	3	0	2	5	0	2
16:20	**-**	**16:25**	6	0	3	4	0	2
16:25	**-**	**16:30**	4	0	1	5	0	1
16:30	**-**	**16:35**	3	0	4	5	1	1
16:35	**-**	**16:40**	5	1	4	5	1	1
16:40	**-**	**16:45**	6	1	2	4	0	1
16:45	**-**	**16:50**	4	0	2	7	0	1
16:50	**-**	**16:55**	3	0	2	6	2	1
16:55	**-**	**17:00**	3	0	2	5	1	1
17:00	**-**	**17:05**	3	0	1	6	0	1
17:05	**-**	**17:10**	2	0	1	4	2	2
17:10	**-**	**17:15**	3	0	5	9	2	4
17:15	**-**	**17:20**	5	0	1	4	1	0
17:20	**-**	**17:25**	1	0	0	5	0	1
17:25	**-**	**17:30**	1	1	1	6	1	2
17:30	**-**	**17:35**	2	0	3	6	1	0
17:35	**-**	**17:40**	3	1	1	5	0	0
17:40	**-**	**17:45**	0	2	2	5	1	2
17:45	**-**	**17:50**	5	1	1	3	0	3
17:50	**-**	**17:55**	4	0	1	6	1	2
17:55	**-**	**18:00**	2	0	2	9	0	1
18:00	**-**	**18:05**	3	0	1	6	0	0
18:05	**-**	**18:10**	0	0	0	4	1	1
18:10	**-**	**18:15**	4	0	1	5	0	2
18:15	**-**	**18:20**	1	0	2	5	0	1
18:20	**-**	**18:25**	2	0	2	4	1	1
18:25	**-**	**18:30**	2	0	0	4	0	2
18:30	**-**	**18:35**	1	0	2	5	1	1
18:35	**-**	**18:40**	2	0	1	5	0	2
18:40	**-**	**18:45**	3	0	1	3	1	1
18:45	**-**	**18:50**	3	0	0	5	0	1
18:50	**-**	**18:55**	1	0	0	2	0	1
18:55	**-**	**19:00**	1	0	2	2	0	2

Queues are maximum vehicle length every 5 minutes

Chepstow - Queue Survey, Thursday 30th November 2017

Produced by Road Data Services Ltd

Time	A466 (North)		A48 (East)		Fair View	A466 (South)		A48 (West)
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 1	Lane 2	Lane 1
	Vehicles							
7:00 - 7:05	13	0	1	1	2	1	1	11
7:05 - 7:10	10	1	2	3	4	5	5	10
7:10 - 7:15	6	1	1	2	2	3	3	8
7:15 - 7:20	9	1	3	3	6	1	1	3
7:20 - 7:25	18	1	6	4	7	2	2	16
7:25 - 7:30	26	0	2	3	3	1	1	9
7:30 - 7:35	26	1	5	2	3	6	6	9
7:35 - 7:40	23	1	5	4	7	2	2	8
7:40 - 7:45	22	0	2	4	6	2	2	8
7:45 - 7:50	19	1	2	4	5	3	3	5
7:50 - 7:55	16	2	3	4	5	3	3	8
7:55 - 8:00	22	2	2	5	8	1	1	10
8:00 - 8:05	25	3	2	6	10	3	3	9
8:05 - 8:10	20	3	3	5	6	2	2	9
8:10 - 8:15	23	3	1	5	6	4	4	8
8:15 - 8:20	23	3	3	5	11	4	4	13
8:20 - 8:25	26	1	1	4	7	2	2	8
8:25 - 8:30	24	3	1	6	7	5	5	17
8:30 - 8:35	19	3	2	12	13	2	2	17
8:35 - 8:40	23	3	2	8	10	5	5	20
8:40 - 8:45	25	3	1	5	6	6	6	22
8:45 - 8:50	20	4	3	5	7	2	2	13
8:50 - 8:55	20	2	2	5	4	5	5	9
8:55 - 9:00	26	3	2	4	5	6	6	10
9:00 - 9:05	18	1	4	9	12	4	4	14
9:05 - 9:10	13	3	4	9	9	3	3	6
9:10 - 9:15	15	3	1	5	6	1	1	4
9:15 - 9:20	10	2	1	5	4	2	2	9
9:20 - 9:25	9	2	2	6	10	6	6	4
9:25 - 9:30	9	1	1	2	8	4	4	8
9:30 - 9:35	7	2	1	2	3	5	5	4
9:35 - 9:40	3	3	1	2	3	3	3	9
9:40 - 9:45	5	2	1	4	4	3	3	7
9:45 - 9:50	3	2	1	2	3	1	1	3
9:50 - 9:55	3	3	1	4	6	2	2	5
9:55 - 10:00	11	4	1	3	4	3	3	8
16:00 - 16:05	15	3	1	3	3	12	14	12
16:05 - 16:10	17	3	3	2	4	17	20	8
16:10 - 16:15	17	3	4	3	7	19	22	15
16:15 - 16:20	21	3	0	4	4	18	23	21
16:20 - 16:25	17	2	1	1	1	26	22	27
16:25 - 16:30	21	3	2	1	2	28	25	32
16:30 - 16:35	21	4	1	4	3	39	33	30
16:35 - 16:40	23	3	3	8	18	31	36	18
16:40 - 16:45	28	4	1	6	13	43	41	13
16:45 - 16:50	23	3	1	6	9	46	44	16
16:50 - 16:55	29	3	2	4	5	43	46	18
16:55 - 17:00	31	3	2	6	8	45	44	12
17:00 - 17:05	32	3	2	8	9	41	46	11
17:05 - 17:10	35	3	2	6	24	57	51	5
17:10 - 17:15	29	4	1	3	25	56	53	9
17:15 - 17:20	17	2	1	3	5	58	59	13
17:20 - 17:25	10	3	0	5	8	51	54	8
17:25 - 17:30	9	2	0	4	5	50	50	9
17:30 - 17:35	17	3	2	3	5	49	48	8
17:35 - 17:40	9	4	0	4	10	46	41	15
17:40 - 17:45	12	3	2	4	8	30	36	20
17:45 - 17:50	10	3	0	4	5	29	29	13
17:50 - 17:55	11	3	1	5	21	24	22	6
17:55 - 18:00	4	3	1	1	2	21	18	10
18:00 - 18:05	5	3	1	2	2	20	23	7
18:05 - 18:10	3	3	2	5	9	24	25	7
18:10 - 18:15	6	2	1	4	6	6	14	6
18:15 - 18:20	5	3	1	1	1	2	10	11
18:20 - 18:25	5	2	1	1	1	7	8	9
18:25 - 18:30	3	3	3	2	3	6	6	4
18:30 - 18:35	4	1	2	4	4	8	5	3
18:35 - 18:40	5	3	0	1	5	10	8	5
18:40 - 18:45	4	1	1	2	3	6	6	5
18:45 - 18:50	3	1	1	3	3	6	7	2
18:50 - 18:55	9	1	1	2	2	5	6	7
18:55 - 19:00	2	2	0	1	2	5	4	5

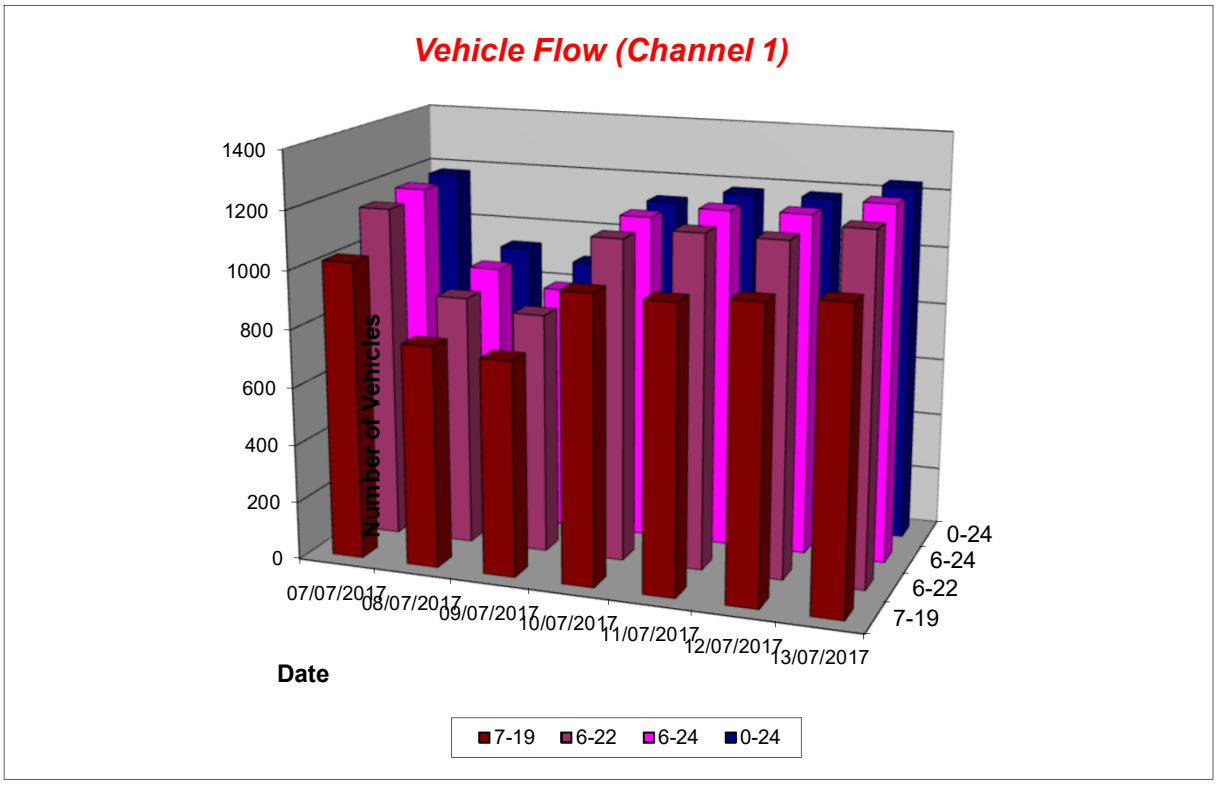
Queues are maximum vehicle length every 5 minutes

Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 1 - Westbound | **Vehicle Flow** | **Week 1**

Hr Ending	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday	5 Day Ave	7 Day Ave
1	3	6	26	0	4	0	3	2	6
2	2	3	5	2	1	0	1	1	2
3	0	3	1	0	2	0	0	0	1
4	0	1	2	0	0	2	0	0	1
5	0	0	0	0	0	1	0	0	0
6	1	6	3	0	1	1	4	1	2
7	12	9	6	8	12	12	10	11	10
8	51	27	16	61	53	51	71	57	47
9	91	36	25	97	95	102	100	97	78
10	73	85	36	67	71	79	73	73	69
11	80	73	88	61	74	57	75	69	73
12	79	69	77	81	63	72	79	75	74
13	97	82	84	62	67	92	65	77	78
14	79	58	83	79	78	67	59	72	72
15	65	64	94	57	78	60	66	65	69
16	102	69	68	120	89	105	104	104	94
17	105	51	62	102	83	97	105	98	86
18	118	84	59	118	117	118	116	117	104
19	84	67	50	83	113	104	112	99	88
20	47	39	40	53	69	65	88	64	57
21	39	31	22	44	57	40	42	44	39
22	30	21	19	15	27	21	31	25	23
23	16	23	14	15	16	24	19	18	18
24	5	21	11	6	8	9	12	8	10
7-19	1024	765	742	988	981	1004	1025	1004	933
6-22	1152	865	829	1108	1146	1142	1196	1149	1063
6-24	1173	909	854	1129	1170	1175	1227	1175	1091
0-24	1179	928	891	1131	1178	1179	1235	1180	1103



Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 1 - Westbound **Average Speed** **Week 1**

Hr Ending	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday
1	36.3	35.5	33.8	-	38.0	-	38.0
2	38.0	29.7	35.0	43.0	33.0	-	28.0
3	-	41.3	33.0	-	38.0	-	-
4	-	33.0	40.5	-	-	53.0	-
5	-	-	-	-	-	38.0	-
6	28.0	30.1	34.7	-	28.0	33.0	31.8
7	34.9	37.4	28.0	36.1	37.6	37.4	36.5
8	34.3	33.5	33.0	34.4	35.1	34.5	34.3
9	32.9	33.1	32.9	34.2	31.9	33.9	33.8
10	34.3	31.7	33.8	33.6	32.3	32.1	32.0
11	32.2	31.9	30.4	32.9	31.8	30.9	31.8
12	31.2	32.7	31.9	31.8	32.0	30.6	32.7
13	31.6	34.4	32.7	33.4	33.6	31.9	34.8
14	32.1	33.2	31.5	32.5	31.7	30.8	33.2
15	32.6	33.4	32.5	33.7	32.5	32.2	33.1
16	33.1	34.1	31.6	33.2	32.6	33.4	32.1
17	32.4	33.6	31.5	32.2	34.7	32.6	33.7
18	34.2	33.5	34.2	32.9	33.0	33.2	32.7
19	34.0	33.9	33.6	33.5	33.0	32.5	32.2
20	33.3	32.3	35.0	33.5	31.3	35.4	32.6
21	34.1	32.2	33.6	33.7	33.6	34.4	32.2
22	33.5	35.3	32.7	29.8	32.3	32.8	32.4
23	32.7	32.3	34.4	35.0	33.3	35.5	32.5
24	36.0	32.3	33.9	38.0	32.7	36.9	35.1
10-12	31.7	32.3	31.1	32.3	31.9	30.7	32.2
14-16	32.9	33.7	32.2	33.4	32.6	32.9	32.5
0-24	33.0	33.2	32.5	33.2	32.8	32.9	33.0

Average	32.9

Channel 1 - Westbound **85th Percentile**

Hr Ending	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday
1	43.7	38.5	38.3	-	38.1	-	43.2
2	38.5	33.3	38.4	43.6	-	-	-
3	-	48.6	-	-	43.4	-	-
4	-	-	43.9	-	-	58.1	-
5	-	-	-	-	-	-	-
6	-	38.3	44.0	-	-	-	38.1
7	43.3	43.3	43.4	38.6	43.2	43.7	43.4
8	43.3	38.8	38.3	38.4	38.5	38.5	38.3
9	38.8	38.8	38.2	38.1	38.3	38.8	38.9
10	38.0	38.6	38.2	38.6	38.6	38.1	38.8
11	38.8	39.0	38.6	38.7	38.5	38.2	38.3
12	38.8	38.9	38.4	38.9	38.2	38.7	38.7
13	38.7	38.2	38.4	38.8	38.9	38.5	38.3
14	38.0	38.7	38.7	38.0	38.7	38.4	38.1
15	38.4	39.0	38.3	38.5	38.5	38.1	38.0
16	38.9	38.2	38.6	38.9	38.4	38.7	38.3
17	38.8	38.5	38.2	38.4	38.1	38.9	38.8
18	38.4	38.1	38.2	38.7	38.8	38.5	38.3
19	39.0	39.0	38.6	38.5	38.5	38.1	38.2
20	38.9	38.7	38.1	38.5	38.8	43.8	38.5
21	38.1	38.0	43.5	38.5	43.6	38.4	38.3
22	38.9	38.6	43.9	33.4	38.8	38.5	38.3
23	38.4	38.1	43.3	38.4	38.0	38.5	38.0
24	43.5	33.1	38.8	48.3	38.2	43.2	38.5
10-12	38.8	38.8	38.4	38.1	38.1	38.3	38.2
14-16	38.1	38.3	38.3	38.2	38.1	38.1	38.9
0-24	38.6	38.0	38.9	39.0	38.3	38.6	38.6

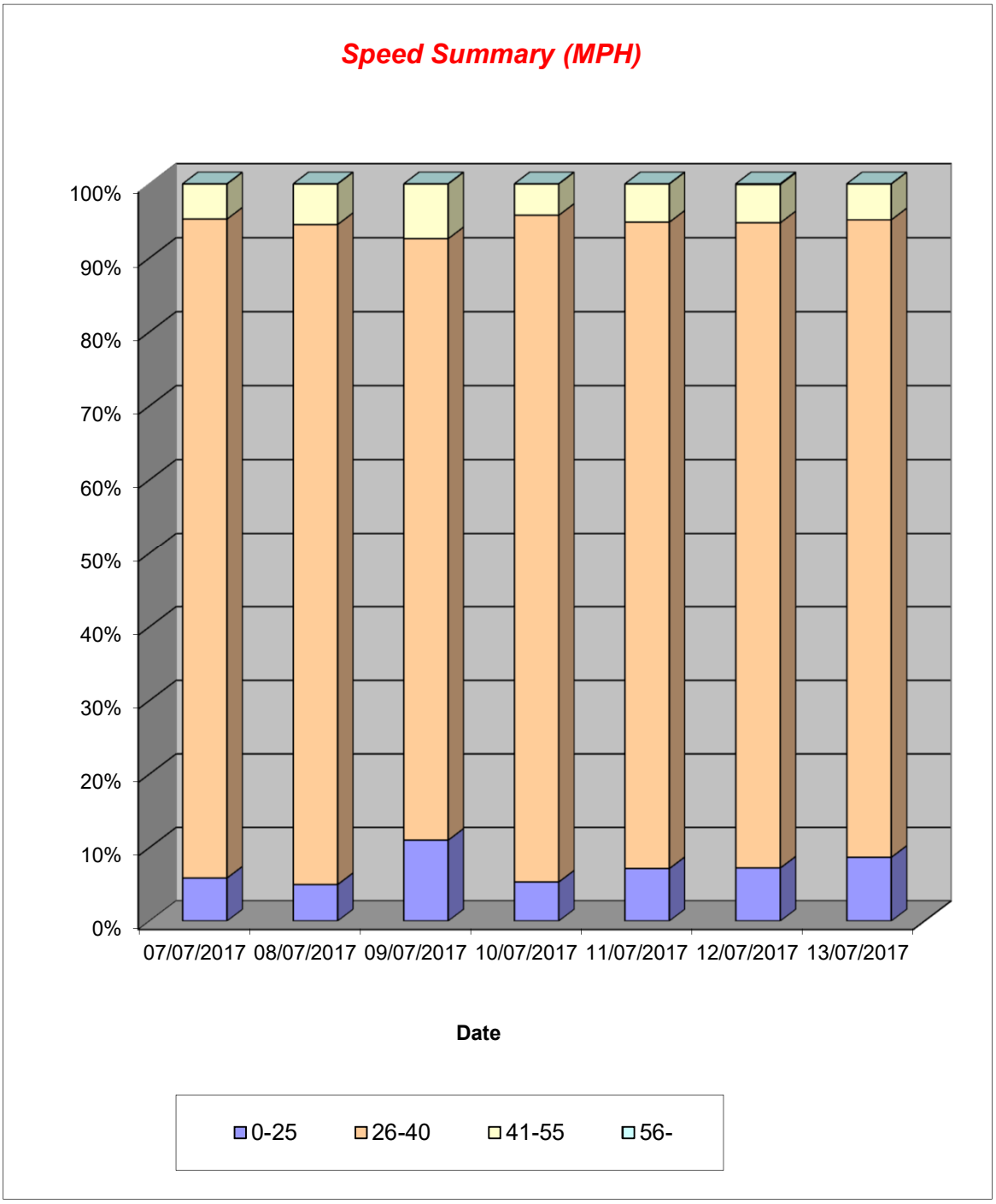
85th %ile	38.6

Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 1 - Westbound | **Speed Summary** | **Week 1**

Speed (MPH)	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday
0-25	69	46	98	60	84	85	107
26-40	1054	831	727	1023	1033	1032	1068
41-55	56	51	66	48	61	61	60
56-	0	0	0	0	0	1	0
TOTAL	**1179**	**928**	**891**	**1131**	**1178**	**1179**	**1235**



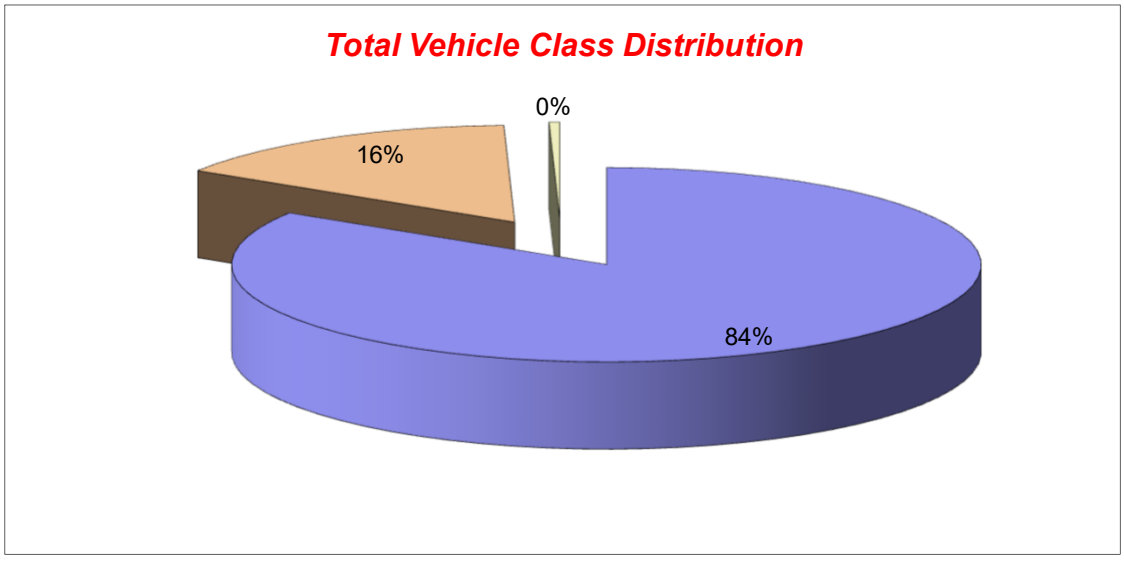
Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 1 - Westbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
07/07/2017				
7-19	853	167	4	1024
6-22	967	180	5	1152
6-24	985	183	5	1173
0-24	991	183	5	1179
08/07/2017				
7-19	668	97	0	765
6-22	755	110	0	865
6-24	792	117	0	909
0-24	810	118	0	928
09/07/2017				
7-19	664	69	9	742
6-22	744	76	9	829
6-24	765	80	9	854
0-24	797	85	9	891
10/07/2017				
7-19	799	185	4	988
6-22	902	202	4	1108
6-24	917	208	4	1129
0-24	919	208	4	1131
11/07/2017				
7-19	800	178	3	981
6-22	942	200	4	1146
6-24	962	204	4	1170
0-24	970	204	4	1178
12/07/2017				
7-19	819	176	9	1004
6-22	940	193	9	1142
6-24	967	199	9	1175
0-24	971	199	9	1179
13/07/2017				
7-19	842	179	4	1025
6-22	987	204	5	1196
6-24	1014	208	5	1227
0-24	1022	208	5	1235

Average				
7-19	778	150	5	933
6-22	891	166	5	1063
6-24	915	171	5	1091
0-24	926	172	5	1103

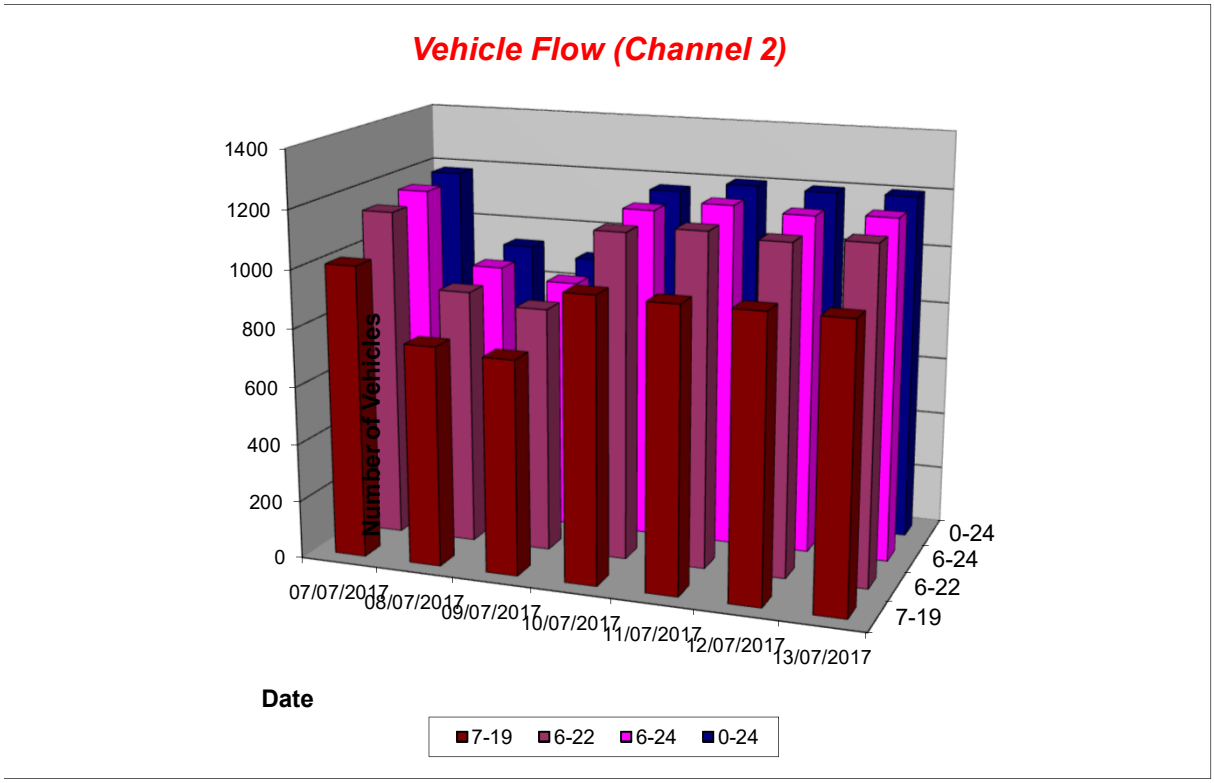


Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 2 - Eastbound | **Vehicle Flow** | **Week 1**

Hr Ending	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday	5 Day Ave	7 Day Ave
1	0	8	15	0	0	0	5	1	4
2	0	4	2	0	0	3	0	1	1
3	0	0	0	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0	0
5	4	0	0	0	0	0	2	1	1
6	15	9	8	18	19	26	15	19	16
7	31	14	7	35	27	21	23	27	23
8	81	23	13	90	88	92	95	89	69
9	119	57	24	129	105	91	124	114	93
10	84	72	55	78	80	93	101	87	80
11	87	79	55	78	72	66	55	72	70
12	81	70	82	61	81	61	75	72	73
13	76	69	86	69	76	66	70	71	73
14	73	61	99	61	68	82	61	69	72
15	77	97	78	84	72	98	76	81	83
16	102	68	73	86	81	98	68	87	82
17	85	50	74	108	81	92	94	92	83
18	76	60	51	70	82	72	87	77	71
19	69	55	52	65	86	61	66	69	65
20	35	59	34	64	68	66	75	62	57
21	37	32	34	30	46	46	40	40	38
22	26	17	29	19	37	28	40	30	28
23	14	9	13	17	21	18	22	18	16
24	11	19	17	6	14	17	7	11	13
7-19	1010	761	742	979	972	972	972	981	915
6-22	1139	883	846	1127	1150	1133	1150	1140	1061
6-24	1164	911	876	1150	1185	1168	1179	1169	1090
0-24	1183	932	902	1168	1204	1197	1201	1191	1112



Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 2 - Eastbound **Average Speed** **Week 1**

Hr Ending	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday
1	-	40.5	35.0	-	-	-	37.0
2	-	38.0	35.5	-	-	33.0	-
3	-	-	-	-	-	-	-
4	-	-	43.0	-	-	-	-
5	33.0	-	-	-	-	-	35.5
6	38.3	34.4	37.4	36.3	38.5	35.9	38.3
7	38.8	34.8	37.3	36.1	38.2	36.2	34.6
8	35.9	36.0	32.2	35.0	35.1	36.2	35.0
9	34.8	33.7	32.7	34.8	33.2	35.1	34.9
10	33.9	32.3	30.7	34.6	34.8	34.4	34.1
11	33.5	31.7	31.6	33.0	31.8	33.3	33.8
12	32.2	31.9	29.9	31.0	31.6	31.7	33.8
13	31.5	33.6	34.8	34.6	33.7	33.3	33.1
14	33.6	33.6	33.2	33.6	33.5	33.1	34.0
15	32.5	32.4	34.0	33.4	34.7	33.3	33.4
16	33.8	33.1	32.7	34.4	32.6	34.1	35.2
17	33.4	34.0	32.9	34.5	34.4	34.2	35.2
18	33.9	33.5	34.8	33.0	34.2	35.2	35.3
19	33.5	35.7	34.3	35.9	33.9	33.2	33.3
20	35.4	33.3	32.9	33.8	32.0	33.6	33.5
21	34.2	33.4	30.0	33.4	34.9	35.2	31.8
22	30.2	33.1	35.2	33.5	33.7	35.3	33.1
23	30.3	35.2	36.8	35.4	32.4	38.6	34.8
24	35.7	35.1	35.1	40.5	34.4	35.4	36.6
10-12	32.9	31.8	30.6	32.1	31.7	32.5	33.8
14-16	33.2	32.7	33.3	33.9	33.6	33.7	34.2
0-24	33.8	33.4	33.1	34.2	33.8	34.2	34.3

Average	33.8

Channel 2 - Eastbound **85th Percentile**

Hr Ending	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday
1	-	43.8	38.2	-	-	-	43.9
2	-	48.8	38.5	-	-	34.0	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	38.8	-	-	-	-	-	38.4
6	43.9	38.7	43.6	43.7	43.3	43.6	43.1
7	43.3	38.7	43.4	43.5	43.4	43.9	39.0
8	38.5	44.0	38.9	38.6	38.4	43.7	38.8
9	38.1	38.3	43.5	38.2	38.9	38.4	38.7
10	38.6	38.5	38.2	38.5	38.1	38.7	38.4
11	38.4	38.4	38.7	38.7	33.6	38.1	38.0
12	39.0	38.7	38.7	38.8	38.3	38.8	38.2
13	38.1	38.2	43.6	38.4	38.1	38.7	38.2
14	38.9	38.4	38.8	38.9	38.2	38.5	38.5
15	38.6	38.5	38.2	38.7	38.1	38.2	38.4
16	38.3	38.8	38.8	38.1	38.4	38.2	38.1
17	38.1	38.5	38.2	38.6	39.0	38.3	38.3
18	38.5	38.4	39.0	38.7	43.5	43.8	43.6
19	38.2	43.5	38.1	43.0	38.5	43.1	38.8
20	44.0	38.2	43.1	38.4	39.0	38.5	43.5
21	43.1	43.6	38.8	43.4	38.2	43.8	38.2
22	33.0	38.5	38.4	38.3	38.4	38.8	38.9
23	38.3	43.7	43.5	39.0	38.4	43.3	43.4
24	43.5	38.9	43.1	48.8	38.3	39.0	43.3
10-12	38.9	38.4	38.1	38.7	38.5	38.8	38.8
14-16	38.5	38.3	38.2	38.4	38.1	38.7	38.2
0-24	38.4	38.3	38.0	38.7	38.5	38.9	38.4

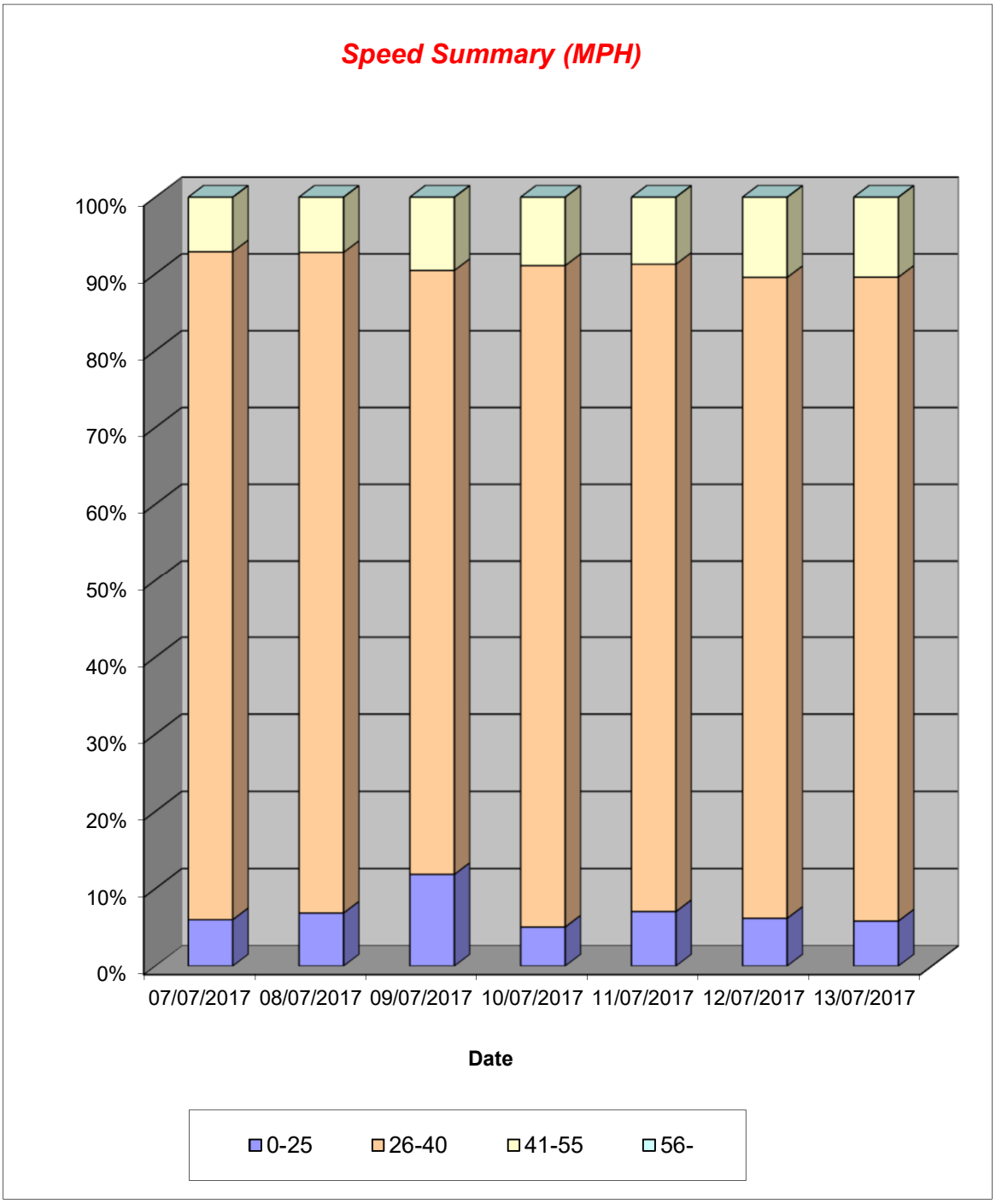
85th %ile	38.5

Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 2 - Eastbound **Speed Summary** **Week 1**

Speed (MPH)	07/07/2017 Friday	08/07/2017 Saturday	09/07/2017 Sunday	10/07/2017 Monday	11/07/2017 Tuesday	12/07/2017 Wednesday	13/07/2017 Thursday
0-25	71	64	107	59	85	74	70
26-40	1028	801	709	1005	1014	998	1006
41-55	84	67	86	104	105	125	125
56-	0	0	0	0	0	0	0
TOTAL	**1183**	**932**	**902**	**1168**	**1204**	**1197**	**1201**



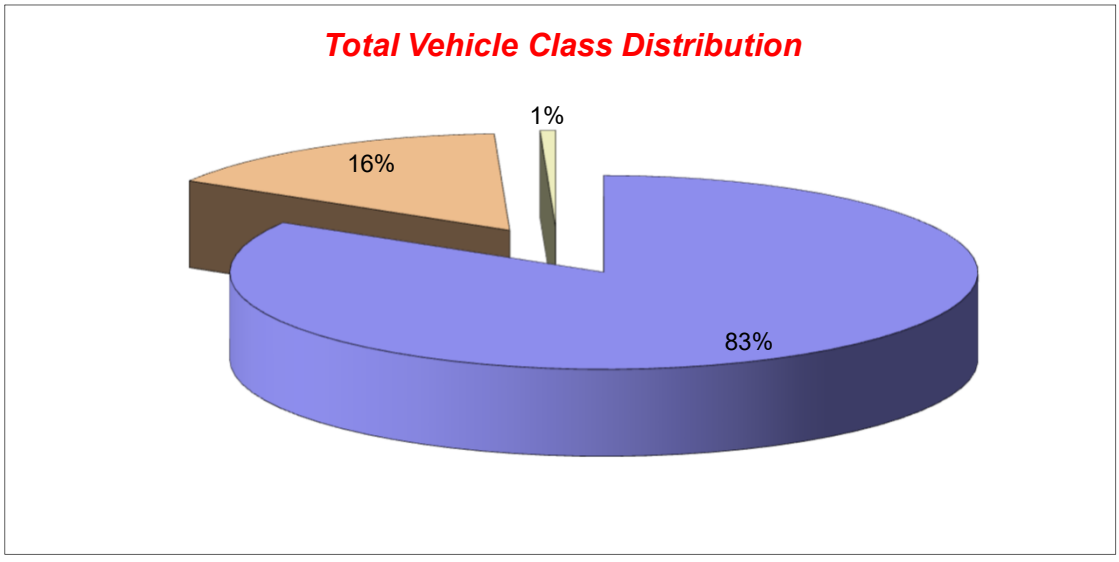
Chepstow ATC, B4235

Produced by Road Data Services Ltd.

Channel 2 - Eastbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
07/07/2017				
7-19	818	186	6	1010
6-22	929	204	6	1139
6-24	951	207	6	1164
0-24	967	210	6	1183
08/07/2017				
7-19	628	130	3	761
6-22	727	153	3	883
6-24	750	158	3	911
0-24	771	158	3	932
09/07/2017				
7-19	626	107	9	742
6-22	718	118	10	846
6-24	744	121	11	876
0-24	766	125	11	902
10/07/2017				
7-19	795	179	5	979
6-22	925	196	6	1127
6-24	946	198	6	1150
0-24	959	203	6	1168
11/07/2017				
7-19	791	173	8	972
6-22	946	196	8	1150
6-24	980	197	8	1185
0-24	994	202	8	1204
12/07/2017				
7-19	839	126	7	972
6-22	978	148	7	1133
6-24	1011	150	7	1168
0-24	1035	155	7	1197
13/07/2017				
7-19	812	149	11	972
6-22	970	169	11	1150
6-24	997	171	11	1179
0-24	1016	174	11	1201

Average				
7-19	758	150	7	915
6-22	885	169	7	1061
6-24	911	172	7	1090
0-24	930	175	7	1112




B4293
Itton Rd
B4293
Itton Rd
A466
B4293
A466
B4293
The Cloisters
St.
Piercefield Ave
Piercefield Ave
ATC
B4235
B4235
B4235
B4235
B4235
Racecourse Garage
St Lawrence Rd
Edmond Locard Ct
Park View
Park View
Kingsmark
A466

APPENDIX D

STATS19 PIA DATA

STATS19 Ref	Year	Date	Severity	Vehicles	Casualties	Long	Lat	Severity	Light Veh	Ped	Cyclist	HGV or Bus	Mcycle	Day	Time	Age 0-5	Age 6-10	Age 11-15	Age 16-20
2013610049113	2013	14/07/2013	Serious	1	1	-2.69038	51.646229	2	No	No	No	No	No	Sunday	10:36:00	0	0	0	0
2012610022212	2012	10/01/2012	Slight	2	1	-2.690253	51.647399	3	No	No	Yes	No	No	Tuesday	09:15:00	0	0	0	0
2015610035415	2015	11/07/2015	Serious	2	1	-2.690299	51.64766	2	Yes	No	Yes	No	No	Saturday	12:54:00	0	0	0	0
2012610069712	2012	25/11/2012	Slight	2	1	-2.690403	51.647757	3	Yes	No	No	No	No	Sunday	11:15:00	0	0	0	0
2012610076012	2012	20/10/2012	Slight	2	1	-2.686442	51.634293	3	No	No	No	No	Yes	Saturday	09:57:00	0	0	0	1
2014610018714	2014	04/02/2014	Slight	2	1	-2.685864	51.634306	3	Yes	No	No	No	Yes	Tuesday	18:45:00	0	0	0	0
2015610031415	2015	22/06/2015	Slight	2	1	-2.685979	51.634387	3	Yes	No	No	No	Yes	Monday	17:14:00	0	0	0	0
2015610062815	2015	04/12/2015	Slight	2	1	-2.685864	51.634396	3	Yes	No	Yes	No	No	Friday	11:00:00	0	0	0	0
2014610049914	2014	27/07/2014	Slight	2	1	-2.685536	51.634551	3	Yes	No	No	No	Yes	Sunday	17:21:00	0	0	0	1
2012610035512	2012	09/07/2012	Slight	2	2	-2.685583	51.634838	3	Yes	No	No	No	No	Monday	22:12:00	0	0	0	0

APPENDIX E

CHEPSTOW ACTIVE TRAVEL ACT EXISTING PEDESTRIAN ROUTES MAP

Casgwent / Chepstow

MCC-C1
MCC-C2
MCC-C10
MCC-C8
MCC-C6
MCC-C7
MCC-C11
MCC-C9
MCC-C4
MCC-C5
MCC-C7

Eglurhad / Legend

Ardaloedd Adeiledig / Built-Up Areas

MCC Ffin Y Sir / County Boundary

INM Llwybrau / Routes

Beicio / Cycling

Cerdded a Beicio / Walking and Cycling

Cerdded / Walking

monmouthshire sir fynwy

CAPITA

APPENDIX F

ILLUSTRATIVE SITE MASTERPLAN

Land South of B4235, Chepstow

Legend

- Redline Boundary
- Residential
- Primary Route
- Secondary Route
- Green Lanes
- POS
- PRoW
- Potential Pumping Station Location
- Attenuation Pond

BARRATT HOMES

N

BARTON WILLMORE

Concept Plan_1:2000@A3

27117/CP-01f/Chepstow

CHECKED BY_ AC

THE SCALING OF THIS DRAWING CANNOT BE ASSURED

0 20 40 60 80 100m

APPENDIX G

PROPOSED SITE ACCESS DESIGN

GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. THE CONTRACTOR IS TO CHECK AND VERIFY ALL BUILDINGS AND SITE DIMENSIONS AND LEVELS, INCLUDING SEWER INVERT LEVELS, BEFORE WORKS START ON SITE. THE CONTRACTOR IS TO COMPLY IN ALL ASPECTS WITH THE CURRENT BUILDING LEGISLATION, BRITISH STANDARDS ETC.
3. POSITIONS OF EXISTING SERVICES/STATUTORY UNDERTAKERS APPARATUS ADJACENT TO OR CROSSING PROPOSED EXCAVATIONS ARE TO BE CHECKED BY THE CONTRACTOR PRIOR TO STARTING WORK.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AND CHECKED AGAINST ALL OTHER DRAWINGS ENGINEERING DETAILS, SPECIFICATIONS AND ANY STRUCTURAL, GEOTECHNICAL OR OTHER SPECIALIST DOCUMENT PROVIDED.
5. ANY ANOMALY OR CONTRADICTION BETWEEN ANY OF THE ABOVE IS TO BE REPORTED TO THE DEVELOPERS ENGINEER.
6. ALL LEVELS ARE IN TERMS OF THE OS DATUM.

KEY

- LANDSCAPED BATTER MAXIMUM 1:3
- 75.000 — PROPOSED CONTOURS
- HIGHWAY ADOPTABLE SURFACE WATER SEWER
- HIGHWAY GULLY AND CONNECTION
- SITE BOUNDARY
- EXTENTS OF ADOPTABLE HIGHWAY

PROPOSED PRECAST HEADWALL SUBJECT TO OWC

FLOW CONTROL CHAMBER RESTRICTED TO 5 L/S

PROPOSED PRECAST HEADWALL

PROPOSED ATTENUATION BASIN, SUBJECT TO DETAILED DESIGN

PROPOSED PRECAST HEADWALL

POLE TO BE RELOCATED

PROPOSED POSITION OF RELOCATED GULLY

RE-LOCATE EXISTING GULLY TO NEW CHANNEL LINE

VEGETATION TO BE TRIMMED BACK ONCE PRIOR TO OCCUPATION

NEW GIVE WAY SIGN AND ROAD MARKINGS

EXISTING TELEGRAPH POLE TO BE RE-LOCATED

NEW TACTILE CROSSING

TIE IN TO EXISTING FOOTWAY

VIS SPLAY 2.4m X 56m

VIS SPLAY 2.4m X 56m

IL 150 pipe 67.26

CL 68.68 IL 67.46

IL 225 pipe 67.55

IL 100 pipe 70.65
IL 300 pipe 70.25
IL 450 pipe 69.98

IL 225 pipe 69.82

SUB STATION

FWS pump station

GE SOUTH
NE TO BE
IN

Revisions		
A	29.11.2018	Speed limit relocation removed, vis splay increased to 56m, junction radii increased 10m, red line boundary & highway extents added.

Project: Land South of B4235
Bayfield, Chepstow

Client: BARRATT HOMES

Drawing: Section 278
General Arrangement

Scale: 1:250 @ A1 | Date: NOV 2018 | Drawn by: JP

Drawing No: 10233-S278-300 | Rev: A

PHOENIX DESIGN Partnership Ltd.
Unit 9, Westway Garage, Marksbury, Bath. BA2 9HN
tel. 01761 479950
Titan House, Lewis Road, Cardiff. CF24 5BS
tel. 029 2049 0771
email. enquiries@phoenixdp.co.uk www.phoenixdp.co.uk

Drg.Status: PLANNING

GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. THE CONTRACTOR IS TO CHECK AND VERIFY ALL BUILDINGS AND SITE DIMENSIONS AND LEVELS, INCLUDING SEWER INVERT LEVELS, BEFORE WORKS START ON SITE. THE CONTRACTOR IS TO COMPLY IN ALL ASPECTS WITH THE CURRENT BUILDING LEGISLATION, BRITISH STANDARDS ETC.
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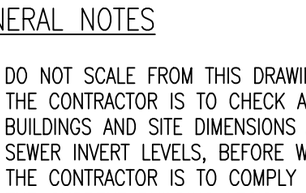
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AND CHECKED AGAINST ALL OTHER DRAWINGS ENGINEERING DETAILS, SPECIFICATIONS AND ANY STRUCTURAL, GEOTECHNICAL OR OTHER SPECIALIST DOCUMENT PROVIDED.
5. ANY ANOMALY OR CONTRADICTION BETWEEN ANY OF THE ABOVE IS TO BE REPORTED TO THE DEVELOPERS ENGINEER.
6. ALL LEVELS ARE IN TERMS OF THE OS DATUM.



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)

Overall Length	11.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.500m

Revisions

Project:	Land South of B4235 Bayfield, Chepstow
Client:	BARRATT HOMES
Drawing:	Section 278 Large Refuse Swept Path
Scale:	1:250 @ A2
Date:	NOV 2018
Drawn by:	NC
Drawing No:	10233-S278-302
Rev:	/

PHOENIX DESIGN Partnership Ltd.
Unit 9, Westway Garage, Marksbury, Bath. BA2 9HN
tel. 01761 479950
Titan House, Lewis Road, Cardiff. CF24 5BS
tel. 029 2049 0771
email. enquiries@phoenixdp.co.uk www.phoenixdp.co.uk

Drg.Status:	PLANNING

APPENDIX H

TRICS OUTPUTS

Calculation Reference: AUDIT-540501-170719-0754

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
	WY	WEST YORKSHIRE	2 days
08	NORTH WEST		
	MS	MERSEYSIDE	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 16 to 280 (units:)
Range Selected by User: 14 to 280 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 19/09/13

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

Selected survey days:

Tuesday	2 days
Thursday	2 days

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

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	2

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

Selected Location Sub Categories:

Residential Zone	2
Built-Up Zone	1
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

C3	4 days

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

Population within 1 mile:

1,001 to 5,000	1 days
10,001 to 15,000	2 days
25,001 to 50,000	1 days

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

Population within 5 miles:

5,001 to 25,000	2 days
75,001 to 100,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	1 days

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

Travel Plan:

No	4 days

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

PTAL Rating:

No PTAL Present	4 days

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

LIST OF SITES relevant to selection parameters

1	MS-03-B-01	TERRACED		MERSEYSIDE
	TARBOCK ROAD			
	SPEKE			
	LIVERPOOL			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		16	
	Survey date: TUESDAY		18/06/13	Survey Type: MANUAL
2	NY-03-B-01	TERRACED HOUSING		NORTH YORKSHIRE
	NORTHALLERTON ROAD			
	NORBY			
	THIRSK			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		280	
	Survey date: THURSDAY		20/09/07	Survey Type: MANUAL
3	WY-03-B-02	MIXED HOUSES		WEST YORKSHIRE
	WHITEACRE STREET			
	DEIGHTON			
	HUDDERSFIELD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		54	
	Survey date: TUESDAY		17/09/13	Survey Type: MANUAL
4	WY-03-B-03	TERRACED HOUSES		WEST YORKSHIRE
	LINCOLN GREEN ROAD			
	LEEDS			
	Suburban Area (PPS6 Out of Centre)			
	Built-Up Zone			
	Total Number of dwellings:		29	
	Survey date: THURSDAY		19/09/13	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.045	4	95	0.127	4	95	0.172
08:00 - 09:00	4	95	0.106	4	95	0.206	4	95	0.312
09:00 - 10:00	4	95	0.111	4	95	0.103	4	95	0.214
10:00 - 11:00	4	95	0.106	4	95	0.111	4	95	0.217
11:00 - 12:00	4	95	0.121	4	95	0.095	4	95	0.216
12:00 - 13:00	4	95	0.084	4	95	0.108	4	95	0.192
13:00 - 14:00	4	95	0.113	4	95	0.082	4	95	0.195
14:00 - 15:00	4	95	0.087	4	95	0.121	4	95	0.208
15:00 - 16:00	4	95	0.137	4	95	0.087	4	95	0.224
16:00 - 17:00	4	95	0.116	4	95	0.127	4	95	0.243
17:00 - 18:00	4	95	0.179	4	95	0.132	4	95	0.311
18:00 - 19:00	4	95	0.124	4	95	0.063	4	95	0.187
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.329			1.362			2.691

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.005	4	95	0.005	4	95	0.010
08:00 - 09:00	4	95	0.003	4	95	0.005	4	95	0.008
09:00 - 10:00	4	95	0.013	4	95	0.011	4	95	0.024
10:00 - 11:00	4	95	0.011	4	95	0.021	4	95	0.032
11:00 - 12:00	4	95	0.018	4	95	0.018	4	95	0.036
12:00 - 13:00	4	95	0.013	4	95	0.011	4	95	0.024
13:00 - 14:00	4	95	0.000	4	95	0.005	4	95	0.005
14:00 - 15:00	4	95	0.021	4	95	0.011	4	95	0.032
15:00 - 16:00	4	95	0.011	4	95	0.011	4	95	0.022
16:00 - 17:00	4	95	0.016	4	95	0.011	4	95	0.027
17:00 - 18:00	4	95	0.008	4	95	0.011	4	95	0.019
18:00 - 19:00	4	95	0.008	4	95	0.008	4	95	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.127			0.128			0.255

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.000	4	95	0.000	4	95	0.000
08:00 - 09:00	4	95	0.003	4	95	0.000	4	95	0.003
09:00 - 10:00	4	95	0.005	4	95	0.000	4	95	0.005
10:00 - 11:00	4	95	0.000	4	95	0.008	4	95	0.008
11:00 - 12:00	4	95	0.000	4	95	0.000	4	95	0.000
12:00 - 13:00	4	95	0.000	4	95	0.000	4	95	0.000
13:00 - 14:00	4	95	0.000	4	95	0.000	4	95	0.000
14:00 - 15:00	4	95	0.000	4	95	0.000	4	95	0.000
15:00 - 16:00	4	95	0.000	4	95	0.000	4	95	0.000
16:00 - 17:00	4	95	0.000	4	95	0.000	4	95	0.000
17:00 - 18:00	4	95	0.000	4	95	0.000	4	95	0.000
18:00 - 19:00	4	95	0.000	4	95	0.000	4	95	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.008			0.008			0.016

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.000	4	95	0.000	4	95	0.000
08:00 - 09:00	4	95	0.000	4	95	0.000	4	95	0.000
09:00 - 10:00	4	95	0.003	4	95	0.003	4	95	0.006
10:00 - 11:00	4	95	0.000	4	95	0.000	4	95	0.000
11:00 - 12:00	4	95	0.003	4	95	0.003	4	95	0.006
12:00 - 13:00	4	95	0.000	4	95	0.000	4	95	0.000
13:00 - 14:00	4	95	0.003	4	95	0.003	4	95	0.006
14:00 - 15:00	4	95	0.000	4	95	0.000	4	95	0.000
15:00 - 16:00	4	95	0.000	4	95	0.000	4	95	0.000
16:00 - 17:00	4	95	0.000	4	95	0.000	4	95	0.000
17:00 - 18:00	4	95	0.000	4	95	0.000	4	95	0.000
18:00 - 19:00	4	95	0.000	4	95	0.000	4	95	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.009			0.009			0.018

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.003	4	95	0.000	4	95	0.003
08:00 - 09:00	4	95	0.003	4	95	0.011	4	95	0.014
09:00 - 10:00	4	95	0.003	4	95	0.008	4	95	0.011
10:00 - 11:00	4	95	0.003	4	95	0.000	4	95	0.003
11:00 - 12:00	4	95	0.003	4	95	0.003	4	95	0.006
12:00 - 13:00	4	95	0.008	4	95	0.003	4	95	0.011
13:00 - 14:00	4	95	0.003	4	95	0.003	4	95	0.006
14:00 - 15:00	4	95	0.000	4	95	0.003	4	95	0.003
15:00 - 16:00	4	95	0.011	4	95	0.003	4	95	0.014
16:00 - 17:00	4	95	0.003	4	95	0.003	4	95	0.006
17:00 - 18:00	4	95	0.003	4	95	0.003	4	95	0.006
18:00 - 19:00	4	95	0.011	4	95	0.011	4	95	0.022
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.054			0.051			0.105

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.045	4	95	0.187	4	95	0.232
08:00 - 09:00	4	95	0.148	4	95	0.369	4	95	0.517
09:00 - 10:00	4	95	0.142	4	95	0.148	4	95	0.290
10:00 - 11:00	4	95	0.145	4	95	0.161	4	95	0.306
11:00 - 12:00	4	95	0.150	4	95	0.116	4	95	0.266
12:00 - 13:00	4	95	0.108	4	95	0.137	4	95	0.245
13:00 - 14:00	4	95	0.145	4	95	0.095	4	95	0.240
14:00 - 15:00	4	95	0.121	4	95	0.153	4	95	0.274
15:00 - 16:00	4	95	0.216	4	95	0.135	4	95	0.351
16:00 - 17:00	4	95	0.187	4	95	0.203	4	95	0.390
17:00 - 18:00	4	95	0.243	4	95	0.214	4	95	0.457
18:00 - 19:00	4	95	0.201	4	95	0.079	4	95	0.280
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.851			1.997			3.848

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.016	4	95	0.045	4	95	0.061
08:00 - 09:00	4	95	0.032	4	95	0.166	4	95	0.198
09:00 - 10:00	4	95	0.069	4	95	0.063	4	95	0.132
10:00 - 11:00	4	95	0.063	4	95	0.090	4	95	0.153
11:00 - 12:00	4	95	0.058	4	95	0.063	4	95	0.121
12:00 - 13:00	4	95	0.087	4	95	0.042	4	95	0.129
13:00 - 14:00	4	95	0.026	4	95	0.040	4	95	0.066
14:00 - 15:00	4	95	0.055	4	95	0.055	4	95	0.110
15:00 - 16:00	4	95	0.132	4	95	0.063	4	95	0.195
16:00 - 17:00	4	95	0.087	4	95	0.063	4	95	0.150
17:00 - 18:00	4	95	0.129	4	95	0.092	4	95	0.221
18:00 - 19:00	4	95	0.061	4	95	0.053	4	95	0.114
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.815			0.835			1.650

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.000	4	95	0.003	4	95	0.003
08:00 - 09:00	4	95	0.000	4	95	0.021	4	95	0.021
09:00 - 10:00	4	95	0.005	4	95	0.016	4	95	0.021
10:00 - 11:00	4	95	0.000	4	95	0.000	4	95	0.000
11:00 - 12:00	4	95	0.005	4	95	0.008	4	95	0.013
12:00 - 13:00	4	95	0.000	4	95	0.000	4	95	0.000
13:00 - 14:00	4	95	0.026	4	95	0.008	4	95	0.034
14:00 - 15:00	4	95	0.003	4	95	0.003	4	95	0.006
15:00 - 16:00	4	95	0.016	4	95	0.003	4	95	0.019
16:00 - 17:00	4	95	0.000	4	95	0.003	4	95	0.003
17:00 - 18:00	4	95	0.013	4	95	0.000	4	95	0.013
18:00 - 19:00	4	95	0.003	4	95	0.000	4	95	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.071			0.065			0.136

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.000	4	95	0.000	4	95	0.000
08:00 - 09:00	4	95	0.000	4	95	0.000	4	95	0.000
09:00 - 10:00	4	95	0.000	4	95	0.000	4	95	0.000
10:00 - 11:00	4	95	0.000	4	95	0.000	4	95	0.000
11:00 - 12:00	4	95	0.000	4	95	0.000	4	95	0.000
12:00 - 13:00	4	95	0.000	4	95	0.000	4	95	0.000
13:00 - 14:00	4	95	0.000	4	95	0.000	4	95	0.000
14:00 - 15:00	4	95	0.000	4	95	0.000	4	95	0.000
15:00 - 16:00	4	95	0.000	4	95	0.000	4	95	0.000
16:00 - 17:00	4	95	0.000	4	95	0.000	4	95	0.000
17:00 - 18:00	4	95	0.000	4	95	0.000	4	95	0.000
18:00 - 19:00	4	95	0.000	4	95	0.000	4	95	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.000	4	95	0.000	4	95	0.000
08:00 - 09:00	4	95	0.000	4	95	0.000	4	95	0.000
09:00 - 10:00	4	95	0.000	4	95	0.000	4	95	0.000
10:00 - 11:00	4	95	0.000	4	95	0.000	4	95	0.000
11:00 - 12:00	4	95	0.000	4	95	0.000	4	95	0.000
12:00 - 13:00	4	95	0.000	4	95	0.000	4	95	0.000
13:00 - 14:00	4	95	0.000	4	95	0.000	4	95	0.000
14:00 - 15:00	4	95	0.000	4	95	0.000	4	95	0.000
15:00 - 16:00	4	95	0.000	4	95	0.000	4	95	0.000
16:00 - 17:00	4	95	0.000	4	95	0.000	4	95	0.000
17:00 - 18:00	4	95	0.000	4	95	0.000	4	95	0.000
18:00 - 19:00	4	95	0.000	4	95	0.000	4	95	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.000	4	95	0.003	4	95	0.003
08:00 - 09:00	4	95	0.000	4	95	0.021	4	95	0.021
09:00 - 10:00	4	95	0.005	4	95	0.016	4	95	0.021
10:00 - 11:00	4	95	0.000	4	95	0.000	4	95	0.000
11:00 - 12:00	4	95	0.005	4	95	0.008	4	95	0.013
12:00 - 13:00	4	95	0.000	4	95	0.000	4	95	0.000
13:00 - 14:00	4	95	0.026	4	95	0.008	4	95	0.034
14:00 - 15:00	4	95	0.003	4	95	0.003	4	95	0.006
15:00 - 16:00	4	95	0.016	4	95	0.003	4	95	0.019
16:00 - 17:00	4	95	0.000	4	95	0.003	4	95	0.003
17:00 - 18:00	4	95	0.013	4	95	0.000	4	95	0.013
18:00 - 19:00	4	95	0.003	4	95	0.000	4	95	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.071			0.065			0.136

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	95	0.063	4	95	0.235	4	95	0.298
08:00 - 09:00	4	95	0.182	4	95	0.567	4	95	0.749
09:00 - 10:00	4	95	0.219	4	95	0.235	4	95	0.454
10:00 - 11:00	4	95	0.211	4	95	0.251	4	95	0.462
11:00 - 12:00	4	95	0.216	4	95	0.190	4	95	0.406
12:00 - 13:00	4	95	0.203	4	95	0.182	4	95	0.385
13:00 - 14:00	4	95	0.201	4	95	0.145	4	95	0.346
14:00 - 15:00	4	95	0.179	4	95	0.214	4	95	0.393
15:00 - 16:00	4	95	0.375	4	95	0.203	4	95	0.578
16:00 - 17:00	4	95	0.277	4	95	0.272	4	95	0.549
17:00 - 18:00	4	95	0.388	4	95	0.309	4	95	0.697
18:00 - 19:00	4	95	0.274	4	95	0.142	4	95	0.416
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.788			2.945			5.733

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

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

Parameter summary

Trip rate parameter range selected:	16 - 280 (units:)
Survey date date range:	01/01/07 - 19/09/13
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-540501-170719-0735

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	DV	DEVON	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	2 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
10	WALES		
	CF	CARDIFF	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 108 to 230 (units:)
Range Selected by User: 100 to 491 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 25/09/15

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

Selected survey days:

Monday	1 days
Tuesday	2 days
Thursday	3 days
Friday	3 days

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

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	4

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

Selected Location Sub Categories:

Residential Zone	7
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

C3	9 days

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

Population within 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	2 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	2 days

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

Car ownership within 5 miles:

1.1 to 1.5	9 days

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

Travel Plan:

Yes	1 days
No	8 days

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

PTAL Rating:

No PTAL Present	9 days

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

LIST OF SITES relevant to selection parameters

1 CF-03-A-02 MIXED HOUSES CARDIFF
DROPE ROAD

CARDIFF
Edge of Town
Residential Zone
Total Number of dwellings: 196
Survey date: FRIDAY 05/10/07 Survey Type: MANUAL

2 CH-03-A-06 SEMI-DET./BUNGALOWS CHESHIRE
CREWE ROAD

CREWE
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 129
Survey date: TUESDAY 14/10/08 Survey Type: MANUAL

3 DV-03-A-02 HOUSES & BUNGALOWS DEVON
MILLHEAD ROAD

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

4 LN-03-A-01 MIXED HOUSES LINCOLNSHIRE
BRANT ROAD
BRACEBRIDGE
LINCOLN
Edge of Town
Residential Zone
Total Number of dwellings: 150
Survey date: TUESDAY 15/05/07 Survey Type: MANUAL

5 LN-03-A-02 MIXED HOUSES LINCOLNSHIRE
HYKEHAM ROAD

LINCOLN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 186
Survey date: MONDAY 14/05/07 Survey Type: MANUAL

6 NY-03-A-06 BUNGALOWS & SEMI DET. NORTH YORKSHIRE
HORSEFAIR

BOROUGHBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: FRIDAY 14/10/11 Survey Type: MANUAL

7 SF-03-A-02 SEMI DET./TERRACED SUFFOLK
STOKE PARK DRIVE
MAIDENHALL
IPSWICH
Edge of Town
Residential Zone
Total Number of dwellings: 230
Survey date: THURSDAY 24/05/07 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 SH-03-A-04 TERRACED SHROPSHIRE
ST MICHAEL'S STREET

SHREWSBURY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 108
Survey date: THURSDAY 11/06/09 Survey Type: MANUAL

9 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.089	9	153	0.280	9	153	0.369
08:00 - 09:00	9	153	0.170	9	153	0.387	9	153	0.557
09:00 - 10:00	9	153	0.180	9	153	0.206	9	153	0.386
10:00 - 11:00	9	153	0.159	9	153	0.209	9	153	0.368
11:00 - 12:00	9	153	0.182	9	153	0.183	9	153	0.365
12:00 - 13:00	9	153	0.197	9	153	0.190	9	153	0.387
13:00 - 14:00	9	153	0.190	9	153	0.159	9	153	0.349
14:00 - 15:00	9	153	0.168	9	153	0.180	9	153	0.348
15:00 - 16:00	9	153	0.269	9	153	0.185	9	153	0.454
16:00 - 17:00	9	153	0.293	9	153	0.185	9	153	0.478
17:00 - 18:00	9	153	0.381	9	153	0.226	9	153	0.607
18:00 - 19:00	9	153	0.226	9	153	0.195	9	153	0.421
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.504			2.585			5.089

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.003	9	153	0.003	9	153	0.006
08:00 - 09:00	9	153	0.003	9	153	0.004	9	153	0.007
09:00 - 10:00	9	153	0.004	9	153	0.004	9	153	0.008
10:00 - 11:00	9	153	0.005	9	153	0.006	9	153	0.011
11:00 - 12:00	9	153	0.001	9	153	0.001	9	153	0.002
12:00 - 13:00	9	153	0.001	9	153	0.001	9	153	0.002
13:00 - 14:00	9	153	0.001	9	153	0.000	9	153	0.001
14:00 - 15:00	9	153	0.001	9	153	0.001	9	153	0.002
15:00 - 16:00	9	153	0.007	9	153	0.006	9	153	0.013
16:00 - 17:00	9	153	0.000	9	153	0.001	9	153	0.001
17:00 - 18:00	9	153	0.001	9	153	0.001	9	153	0.002
18:00 - 19:00	9	153	0.001	9	153	0.001	9	153	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.028			0.029			0.057

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.004	9	153	0.002	9	153	0.006
08:00 - 09:00	9	153	0.002	9	153	0.004	9	153	0.006
09:00 - 10:00	9	153	0.004	9	153	0.002	9	153	0.006
10:00 - 11:00	9	153	0.003	9	153	0.004	9	153	0.007
11:00 - 12:00	9	153	0.001	9	153	0.002	9	153	0.003
12:00 - 13:00	9	153	0.004	9	153	0.001	9	153	0.005
13:00 - 14:00	9	153	0.002	9	153	0.005	9	153	0.007
14:00 - 15:00	9	153	0.001	9	153	0.004	9	153	0.005
15:00 - 16:00	9	153	0.003	9	153	0.002	9	153	0.005
16:00 - 17:00	9	153	0.001	9	153	0.001	9	153	0.002
17:00 - 18:00	9	153	0.000	9	153	0.001	9	153	0.001
18:00 - 19:00	9	153	0.000	9	153	0.000	9	153	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.025			0.028			0.053

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.000	9	153	0.000	9	153	0.000
08:00 - 09:00	9	153	0.001	9	153	0.001	9	153	0.002
09:00 - 10:00	9	153	0.000	9	153	0.000	9	153	0.000
10:00 - 11:00	9	153	0.000	9	153	0.000	9	153	0.000
11:00 - 12:00	9	153	0.001	9	153	0.001	9	153	0.002
12:00 - 13:00	9	153	0.000	9	153	0.000	9	153	0.000
13:00 - 14:00	9	153	0.000	9	153	0.000	9	153	0.000
14:00 - 15:00	9	153	0.000	9	153	0.000	9	153	0.000
15:00 - 16:00	9	153	0.000	9	153	0.000	9	153	0.000
16:00 - 17:00	9	153	0.000	9	153	0.000	9	153	0.000
17:00 - 18:00	9	153	0.000	9	153	0.000	9	153	0.000
18:00 - 19:00	9	153	0.000	9	153	0.000	9	153	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.007	9	153	0.007	9	153	0.014
08:00 - 09:00	9	153	0.008	9	153	0.022	9	153	0.030
09:00 - 10:00	9	153	0.004	9	153	0.005	9	153	0.009
10:00 - 11:00	9	153	0.002	9	153	0.007	9	153	0.009
11:00 - 12:00	9	153	0.006	9	153	0.004	9	153	0.010
12:00 - 13:00	9	153	0.007	9	153	0.007	9	153	0.014
13:00 - 14:00	9	153	0.005	9	153	0.004	9	153	0.009
14:00 - 15:00	9	153	0.004	9	153	0.002	9	153	0.006
15:00 - 16:00	9	153	0.026	9	153	0.015	9	153	0.041
16:00 - 17:00	9	153	0.015	9	153	0.009	9	153	0.024
17:00 - 18:00	9	153	0.014	9	153	0.013	9	153	0.027
18:00 - 19:00	9	153	0.011	9	153	0.005	9	153	0.016
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.109			0.100			0.209

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.102	9	153	0.328	9	153	0.430
08:00 - 09:00	9	153	0.209	9	153	0.574	9	153	0.783
09:00 - 10:00	9	153	0.211	9	153	0.259	9	153	0.470
10:00 - 11:00	9	153	0.196	9	153	0.272	9	153	0.468
11:00 - 12:00	9	153	0.221	9	153	0.234	9	153	0.455
12:00 - 13:00	9	153	0.248	9	153	0.232	9	153	0.480
13:00 - 14:00	9	153	0.250	9	153	0.202	9	153	0.452
14:00 - 15:00	9	153	0.211	9	153	0.227	9	153	0.438
15:00 - 16:00	9	153	0.416	9	153	0.233	9	153	0.649
16:00 - 17:00	9	153	0.395	9	153	0.270	9	153	0.665
17:00 - 18:00	9	153	0.496	9	153	0.301	9	153	0.797
18:00 - 19:00	9	153	0.303	9	153	0.290	9	153	0.593
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.258			3.422			6.680

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.035	9	153	0.050	9	153	0.085
08:00 - 09:00	9	153	0.038	9	153	0.127	9	153	0.165
09:00 - 10:00	9	153	0.046	9	153	0.067	9	153	0.113
10:00 - 11:00	9	153	0.062	9	153	0.043	9	153	0.105
11:00 - 12:00	9	153	0.031	9	153	0.049	9	153	0.080
12:00 - 13:00	9	153	0.033	9	153	0.036	9	153	0.069
13:00 - 14:00	9	153	0.027	9	153	0.031	9	153	0.058
14:00 - 15:00	9	153	0.052	9	153	0.049	9	153	0.101
15:00 - 16:00	9	153	0.175	9	153	0.073	9	153	0.248
16:00 - 17:00	9	153	0.084	9	153	0.055	9	153	0.139
17:00 - 18:00	9	153	0.059	9	153	0.048	9	153	0.107
18:00 - 19:00	9	153	0.049	9	153	0.052	9	153	0.101
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.691			0.680			1.371

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.000	9	153	0.010	9	153	0.010
08:00 - 09:00	9	153	0.003	9	153	0.014	9	153	0.017
09:00 - 10:00	9	153	0.002	9	153	0.009	9	153	0.011
10:00 - 11:00	9	153	0.004	9	153	0.007	9	153	0.011
11:00 - 12:00	9	153	0.003	9	153	0.012	9	153	0.015
12:00 - 13:00	9	153	0.006	9	153	0.006	9	153	0.012
13:00 - 14:00	9	153	0.006	9	153	0.004	9	153	0.010
14:00 - 15:00	9	153	0.007	9	153	0.003	9	153	0.010
15:00 - 16:00	9	153	0.008	9	153	0.007	9	153	0.015
16:00 - 17:00	9	153	0.014	9	153	0.005	9	153	0.019
17:00 - 18:00	9	153	0.020	9	153	0.008	9	153	0.028
18:00 - 19:00	9	153	0.010	9	153	0.001	9	153	0.011
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.083			0.086			0.169

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.000	9	153	0.001	9	153	0.001
08:00 - 09:00	9	153	0.000	9	153	0.001	9	153	0.001
09:00 - 10:00	9	153	0.000	9	153	0.001	9	153	0.001
10:00 - 11:00	9	153	0.000	9	153	0.001	9	153	0.001
11:00 - 12:00	9	153	0.000	9	153	0.000	9	153	0.000
12:00 - 13:00	9	153	0.000	9	153	0.000	9	153	0.000
13:00 - 14:00	9	153	0.000	9	153	0.000	9	153	0.000
14:00 - 15:00	9	153	0.000	9	153	0.000	9	153	0.000
15:00 - 16:00	9	153	0.001	9	153	0.002	9	153	0.003
16:00 - 17:00	9	153	0.000	9	153	0.000	9	153	0.000
17:00 - 18:00	9	153	0.002	9	153	0.000	9	153	0.002
18:00 - 19:00	9	153	0.002	9	153	0.000	9	153	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.006			0.011

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.000	9	153	0.000	9	153	0.000
08:00 - 09:00	9	153	0.001	9	153	0.003	9	153	0.004
09:00 - 10:00	9	153	0.000	9	153	0.000	9	153	0.000
10:00 - 11:00	9	153	0.000	9	153	0.000	9	153	0.000
11:00 - 12:00	9	153	0.003	9	153	0.001	9	153	0.004
12:00 - 13:00	9	153	0.000	9	153	0.000	9	153	0.000
13:00 - 14:00	9	153	0.000	9	153	0.000	9	153	0.000
14:00 - 15:00	9	153	0.000	9	153	0.000	9	153	0.000
15:00 - 16:00	9	153	0.000	9	153	0.000	9	153	0.000
16:00 - 17:00	9	153	0.000	9	153	0.000	9	153	0.000
17:00 - 18:00	9	153	0.000	9	153	0.000	9	153	0.000
18:00 - 19:00	9	153	0.000	9	153	0.000	9	153	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.004			0.004			0.008

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.000	9	153	0.012	9	153	0.012
08:00 - 09:00	9	153	0.004	9	153	0.018	9	153	0.022
09:00 - 10:00	9	153	0.002	9	153	0.011	9	153	0.013
10:00 - 11:00	9	153	0.004	9	153	0.008	9	153	0.012
11:00 - 12:00	9	153	0.006	9	153	0.012	9	153	0.018
12:00 - 13:00	9	153	0.006	9	153	0.006	9	153	0.012
13:00 - 14:00	9	153	0.006	9	153	0.004	9	153	0.010
14:00 - 15:00	9	153	0.007	9	153	0.003	9	153	0.010
15:00 - 16:00	9	153	0.009	9	153	0.009	9	153	0.018
16:00 - 17:00	9	153	0.014	9	153	0.005	9	153	0.019
17:00 - 18:00	9	153	0.022	9	153	0.008	9	153	0.030
18:00 - 19:00	9	153	0.012	9	153	0.001	9	153	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.092			0.097			0.189

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	153	0.145	9	153	0.397	9	153	0.542
08:00 - 09:00	9	153	0.259	9	153	0.742	9	153	1.001
09:00 - 10:00	9	153	0.264	9	153	0.342	9	153	0.606
10:00 - 11:00	9	153	0.265	9	153	0.329	9	153	0.594
11:00 - 12:00	9	153	0.264	9	153	0.298	9	153	0.562
12:00 - 13:00	9	153	0.293	9	153	0.280	9	153	0.573
13:00 - 14:00	9	153	0.287	9	153	0.242	9	153	0.529
14:00 - 15:00	9	153	0.274	9	153	0.280	9	153	0.554
15:00 - 16:00	9	153	0.626	9	153	0.331	9	153	0.957
16:00 - 17:00	9	153	0.508	9	153	0.340	9	153	0.848
17:00 - 18:00	9	153	0.591	9	153	0.370	9	153	0.961
18:00 - 19:00	9	153	0.375	9	153	0.348	9	153	0.723
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.151			4.299			8.450

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

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

Parameter summary

Trip rate parameter range selected:	108 - 230 (units:)
Survey date date range:	01/01/07 - 25/09/15
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

APPENDIX I

2011 CENSUS DATA DISTRIBUTION ANALYSIS

Monmouthshire 008 for Journey from this OA by car				A466 South	A48 East of High Beech	A48 West of High Beech	Fairview	Tempest Way	St Lawrence Park	B4235 West	Itton Road	B4293 Welsh Street	A466 North
Home	Work	Number	Notes on Routes										
Monmouthshire 008	Monmouthshire 008	497	Various, as taken from lower output area analysis	37	37	0	44	0	0	0	0	380	0
Monmouthshire 008	Monmouthshire 009	125				125							
Monmouthshire 008	Monmouthshire 007	121	Various as taken from lower output area analysis	0	17	0	0	35	17	0	11	17	24
Monmouthshire 008	Forest of Dean 010	112										112	
Monmouthshire 008	South Gloucestershire 005	82		82									
Monmouthshire 008	Newport 004	72		72									
Monmouthshire 008	Monmouthshire 010	59				59							
Monmouthshire 008	South Gloucestershire 017	49		49									
Monmouthshire 008	Forest of Dean 009	47										47	
Monmouthshire 008	Newport 020	40		40									
Monmouthshire 008	Newport 014	39		39									
Monmouthshire 008	Bristol 032	34		34									
Monmouthshire 008	Monmouthshire 004	32	50% Itton Road, 50% A466 North								16		16
Monmouthshire 008	Newport 015	30		30									
Monmouthshire 008	Bristol 008	29		29									
Monmouthshire 008	South Gloucestershire 004	29		29									
Monmouthshire 008	Monmouthshire 011	26		26									
Monmouthshire 008	Newport 018	26		26									
Monmouthshire 008	South Gloucestershire 009	24		24									
Monmouthshire 008	Monmouthshire 006	22								22			
Monmouthshire 008	Monmouthshire 001	20									20		
Monmouthshire 008	South Gloucestershire 011	18		18									
Monmouthshire 008	Torfaen 010	18								18			
Monmouthshire 008	Bristol 003	18		18									
Monmouthshire 008	Forest of Dean 007	16										16	
Monmouthshire 008	Monmouthshire 005	15									15		
Monmouthshire 008	Cardiff 032	14		14									
Monmouthshire 008	Cardiff 003	13		13									
Monmouthshire 008	Torfaen 008	12								12			
Monmouthshire 008	South Gloucestershire 019	12		12									
Monmouthshire 008	South Gloucestershire 018	10		10									
Monmouthshire 008	Newport 012	10		10									
Monmouthshire 008	Bristol 054	10		10									
Monmouthshire 008	Cardiff 018	9		9									
Monmouthshire 008	Torfaen 013	9								9			
Monmouthshire 008	Cardiff 049	9		9									
Monmouthshire 008	Cardiff 038	8		8									
Monmouthshire 008	South Gloucestershire 002	8		8									
Monmouthshire 008	Forest of Dean 004	8										8	
Monmouthshire 008	South Gloucestershire 008	8		8									
Monmouthshire 008	Bristol 014	7		7									
Monmouthshire 008	South Gloucestershire 001	7		7									
Monmouthshire 008	Torfaen 004	7										7	
Monmouthshire 008	Monmouthshire 002	7									7		
Monmouthshire 008	Forest of Dean 008	7										7	
				678	54	184	44	35	17	61	69	594	40
				38.2%	**3.0%**	**10.4%**	**2.5%**	**2.0%**	**1.0%**	**3.4%**	**3.9%**	**33.4%**	**2.3%**

APPENDIX J

TEC ARTICLE – SEPTEMBER 2003

We know it's good, but just how good is it?

Damian Meehan *B.Eng. (Hons), M.Sc., MIHT, JCT Consultancy Ltd.*

Capacities at traffic signal controlled intersections may be readily calculated by use of established empirical equations. However, auto-adaptive systems such as Microprocessor Optimised Vehicle Actuation (MOVA) respond dynamically to vehicle demands that make the prediction of their performance very difficult. Indeed, there is currently no analytical technique available for predicting in advance the extent of the improvement at any site, save for expensive and time consuming micro-simulation techniques or particularly vehicle detector occupancy studies.

To overcome this, an examination of the vehicle discharge rates and hence saturation flow rate was undertaken that aimed to produce factors that could be applied to current traffic signal calculations for the estimation of MOVA. The saturation flow rate was particularly used because it is one of the principal factors that govern traffic signal capacity.

INTRODUCTION

Because MOVA responds dynamically to variations in vehicle arrival rates, there is currently no analytical technique for predicting in advance the extent of the improvement at any particular site. Indeed, when set up correctly, MOVA will achieve an improvement in terms of traffic performance but the question is 'by how much?'

The best available information is given in RR 170 'MOVA: Traffic responsive, self optimising signal control for isolated junctions' (Vincent & Peirce, 1988); RR 279 'MOVA: The 20 site trial' (Peirce & Webb, 1990); PR/TT/096/97 'M1 Junction 21 assessment of 'MOVA' signal control' (Vincent, 1997a); and PR/TT/172/97 'M1 Junction 21 further assessment of 'VA' vs. 'MOVA' control' (Vincent, 1997b). However, the method used in these documents is detector occupancy (Young, 1988), which cannot satisfactorily determine peak period performance because of the likelihood of queues stretching back beyond the outermost detector. Moreover, the technique only allows delay information to be obtained although Vincent (1997a, 1997b) has used this method to estimate increased throughput by comparing the regression lines produced from covariance studies.

However, because of its inherent problems of peak period estimation, cost and delay estimation only, detector occupancy is not of great use to the traffic signal practitioner. What the practitioner needs is a robust, readily calculated capacity indicator for auto-adaptive systems such as MOVA.

This paper describes the technique and results of an investigation into how MOVA operation can be estimated in established traffic signal calculations.

RATIONALE

So what does MOVA do differently to VA to bring about any improvements? One answer is to look at how traffic discharges under the green signal.

Consider a critical traffic stream discharging under saturated conditions as shown in Figure 1. After about two seconds, traffic will begin to discharge across the stop line at the maximum saturation flow rate. At around 36 seconds, the discharge rate will begin to fall and after 44 seconds the saturation flow rate will also fall (tests conducted at the 95% level - Brahimi, 1989). At this point MOVA will begin to make judgements on the termination of the green by looking at either its delay-and-stops performance index or the green use efficiency, dependent on its mode.

If either the performance index or green use efficiency suggest that a stage change is required, MOVA will end the green as shown, whereas VA has a tendency to extend the green inefficiently as also shown (dG). It is this intelligent approach to maximising the green use that brings about some of MOVA's improvement.

In essence, some of MOVA's improvement is the result of higher maintained saturation flow rates throughout the green period when compared to VA. It is this 'saturation flow efficiency' that is the key to estimating MOVA's performance in traffic signal calculations.

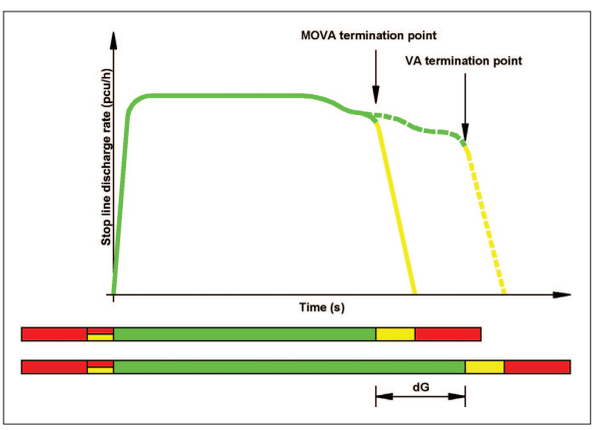


Figure 1: A simplified discharge flow profile for both VA and MOVA.

By investigating vehicle discharge rates and hence saturation flows during the green through periods of saturation, factors may be established that can be applied to saturation flow rates. These amended saturation flow rates may then be used in established intersection calculations, giving an indication of the intersection performance at MOVA sites during the peak periods. Moreover, it would also be possible to use these same factors to estimate improvements during off-peak periods (albeit conservative), potentially removing the need for time-consuming and costly vehicle detector analyses. It is anticipated that the factors may be used in both manual and computer calculations, such as Linsig for Windows™ (Moore and Simmonite, 2000).

SITE SELECTION CRITERIA

The following site selection criteria were used throughout the study so that any inference made was based on consistent, unbiased data.

Approach conditions

Because a constant saturation flow rate was being sought, sites were chosen that did not contain any flaring at the stopline. The obvious effect of flaring is to produce a 'dip' in the discharge rate for the lane concerned as traffic enters the adjacent lanes. Therefore, only lanes termed 'infinite' (ie the lane is homogeneous along its length) were examined.

Capacity conditions

Saturated/oversaturated approaches only were considered in the study because it is this state that allows the saturation flow technique to be used. It was not necessary to have all approaches to the intersection saturated/oversaturated and in the event unlikely. If a single approach was saturated/oversaturated, it was included in the study, subject to its acceptance from other selection criteria.

Green durations

The duration of the green period was crucial to the study. If the green duration was short (< 44 seconds), it was likely that the maximum saturation flow rate would be maintained (Brahimi, 1989). Consequently, no discernible difference would be likely and no inference made. Above this figure, the initial discharge subsides, leaving only 'sporadic' vehicles to extend the phase, which would indicate the level of green use efficiency.

Therefore, sites with green durations at or above 40 seconds were considered in the study but where sites had green durations slightly below this value, they were also considered as this value was by no means absolute and was only a product of previous work and traffic observations by the author.

Validation

The term 'validation' related to how well MOVA controlled the prevailing traffic. Undoubtedly, a good dataset/hardware was vital if MOVA was to achieve the maximum benefit possible.

In order to determine the level of validation, an examination of the dataset was necessary at each site and also a visual estimate. Factors such as congested control and maintenance (detector responses, transmission errors, etc) were all investigated prior to accepting any site.

Exit conditions

Because downstream conditions are known to affect stopline discharge rates, particularly if the restriction is nearby, only sites with good exit conditions were included in the study.

Good exit conditions were defined as those without parked cars impeding through traffic, no merges or 'funnels', no blocking from downstream intersections and no blocking due to traffic turning right into accesses, etc.

Approach gradients

Uphill gradients are known to affect saturation flow rates. Therefore, only approaches with flat or downhill gradients were included in the study.

This was considered necessary because of possible bias being introduced as a result of vehicles stalling. The result would not be significant if the same number of vehicles stalled during the survey periods, but if the numbers varied significantly, this would have biased the result.

Auxiliary conditions

Because the study called for the switching of controller modes (viz. MOVA to VA), the intersection would be without the potential safety benefits MOVA has. The current UK specification (HA, 2001) requires either SDE or SA equipment be used at high-speed sites (≥ 35 mph). However, most MOVA sites are equipped solely for MOVA operation and do not contain any SDE/SA fallback.

Because of this restriction, only sites with approach speeds at or below 35 mph were included in the study. However, where it was believed that this restriction was not well founded (ie if all approaches were queued resulting in low speeds through the intersection), the site was included in the study, subject to it satisfying the other criteria.

STUDY METHODS

Saturation flow rate collection

The accepted method of collecting saturation flow rates is described by the TRRL (1963). The fluctuations in discharge rates are often complex and simplification (by averaging the discharge rates, hence finding the saturation flow rate) is necessary for the calculation of delay, optimum signal timings and capacity because the number of vehicles discharged in any fully saturated green period is then directly proportional to the effective green time.

However, the TRRL method is very demanding (Wood, 1986); not only must the observer count vehicles whilst continuously monitoring a stopwatch, but also record the count during that period whilst still concentrating on the traffic during the next time period. Moreover, the method is error prone, particularly if the traffic is of a mixed nature. Given this, at least two observers are often required.

Because of the problems highlighted above, the TRL's SATFLOW program was used for the collection of both VA and MOVA saturation flow rates since it enabled one observer to collect the saturation flow rate values.

Statistical methods

In order to derive a reliable statistical inference that suggests MOVA control contributes to higher maintained saturation flow rates or otherwise, an appropriate control method was necessary. For this study, the matched pairs technique was used. The matched pairs technique is useful for investigating the saturation flow rate in two groups (VA and MOVA in this case) where there is a meaningful one-to-one correspondence between the data points in one group and those in the other.

The matched pairs technique means that the saturation flow rate is measured at different times, ie when the intersection is working under VA and MOVA. Each saturation flow rate at one time is consequently paired with the same saturation flow rate at the other time.

Matched pairs are recognised as the most robust method of obtaining control data because they minimise the effects of external factors that may bias the results, possibly leading to either an under- or over-estimation of any impact that the introduction of MOVA control may have on the saturation flow rate.

The parametric paired *t*-test was used in the analysis because of its high power and sample mean analysis plus its ease of use. Because of the uncertainty attached to the population type, the paired *t*-test was justified by use of the Kolmogorov-Smirnov test on the interval data for each sample. The Kolmogorov-Smirnov test is used to estimate whether or not the sample is taken from the Gaussian (normal) distribution.

A one-tailed paired *t*-test was used because of the expectation a priori that the mean of the saturation flow rate under the MOVA regimen would be higher than that under the VA

regimen. The associated significance level used for the analysis was 5% as is widely accepted.

Checks were made on the sampled data prior to the paired *t*-test using the Extreme Studentised Deviate (Grubb's test) that identified the possibility of outliers that lead to an increase in the standard deviation of the data.

SITES SELECTED IN THE STUDY

Nanpantan Road/Snells Nook Lane, Loughborough

The intersection of Nanpantan Road and Snells Nook Lane, Loughborough, is a semi-rural crossroads on the outskirts of a busy University town. In the morning peak period, very heavy congestion exists on the inbound approach to Loughborough and can become apparent on the side roads, albeit for a much shorter period.

The intersection is controlled using a four-stage arrangement; stage 1 – main road both directions, stage 2 – Right Turn Indicative Green Arrow (RTIGA) to main road outbound, stage 3 – 1st side road all directions, stage 4 – 2nd side road all directions.

The lane under consideration was the main road inbound single lane approach. The approach lane contained mixed left, ahead and right turning traffic but the numbers that made turns were very low, particularly those turning right.

The approach lane has a downhill gradient and is treated as a nearside lane. The exit conditions were considered as good, as no downstream parking is allowed or likely due to a large public house car park being adjacent. The exit lane is infinitely long and contains no building accesses. Nevertheless, the intersection does have severe restrictions on visibility, both within the intersection and on some of the approaches but was not considered important for the purposes of the study.

A607 Newark Road/Humberstone Lane, Thurmaston

The intersection of Newark Road and Humberstone Lane, Thurmaston, is an urban crossroads on the outskirts of Leicester City. The A607 Newark Road is the main route into Leicester from the northeast and joins the A46 at the nearby Hobby Horse roundabout. In the morning peak period, very heavy congestion exists on the two-lane inbound approach to Leicester.

The intersection is controlled using a three-stage arrangement; stage 1 – main road both directions, stage 2 – fully signalled right-turn to main road outbound and full green to main road outbound, stage 3 – both side roads in all directions.

The lane under consideration was the main road inbound offside lane approach. The approach lane contained mixed ahead and right turning traffic but the right-turn proportions were insignificant. The approach lane has a negligible downhill gradient and exit conditions were considered as excellent due to the exit being a dual urban clearway.

The offside lane was considered for two main reasons. The first reason being that VA is known to extend the green phase inefficiently when traffic is discharging at considerably less than the full saturation flow rate, particularly at multi-lane approaches (Vincent and Peirce, 1988 pp. 1). The second reason is the high number of left turning traffic that uses the nearside lane. During an initial site survey, vehicles turning left toward a local industrial estate often impeded the ahead traffic, resulting in lower discharge rates. Given that this situation occurred in several signal cycles, it was decided that the lane would not be considered further in the study.

High Street/Delven Lane, Castle Donington

The intersection of High Street and Delven Lane, Castle Donington, is a semi-urban crossroads located on the entrance to the village. From the intersection, traffic progresses either toward a residential and industrial area or toward the village centre. Heavy congestion exists on the inbound approach during the evening peak period.

The intersection is controlled using a five-stage arrangement; stage 1 – main road both directions, stage 2 – RTIGA to main road outbound, stage 3 – 1st side road and bus only exit all directions, stage 4 – 2nd side road all directions, stage 5 – All red pedestrian stage.

The lane under consideration was the main road inbound single lane approach. The approach lane contained mixed left, ahead and right turning traffic. Turning traffic makes up a significant amount of traffic but didn't impede the ahead movement sufficiently to be rejected. The exit conditions were considered as adequate due to the exit having the potential to be blocked by right-turning traffic.

Burbage Road/Brookside, Burbage

The intersection of Burbage Road and Brookside, Burbage, is an urban crossroads on the outskirts of Hinckley town. In the morning peak period very heavy congestion exists on the single-lane inbound approach to Hinckley.

The intersection is controlled using a five-stage arrangement; stage 1 – main road both directions, stage 2 – RTIGA to main road outbound and left turn filter to 1st side road, stage 3 – 1st side road all directions, stage 4 – All red pedestrian stage, stage 5 – 2nd side road all directions.

The lane under consideration was the main road inbound single-lane approach. The approach lane contained mixed ahead and right turning traffic but the turning proportions were insignificant. The approach also contains an advanced cycle stopline and reservoir.

The approach lane has a downhill gradient and exit conditions were considered as adequate because of a downstream pelican crossing (approximately 150 metres downstream).

RESULTS OF THE STUDY

Discharge rate/Saturation flow rate comparison

Table 1 below shows the saturation flow rates found at the sites surveyed when under both VA and MOVA regimens.

Site	Site type	Saturation flow rate (pcu/h) VA	MOVA	% Difference
Nanpantan Road, Loughborough	Large town	1791	1843	2.90
A607 Newark Road, Thurmaston City	City	2041	2034	-0.34
High Street, Castle Donington Village	Village	1702	1781	4.64
Burbage Road, Burbage	Small-to-medium size town	1535	1595	3.91

Table 1: Saturation flow rate comparison for the sites included in the study.

Statistical analysis

At the 95% level, the one-tailed paired *t*-test found that the differences between MOVA and VA saturation flow rates were statistically significant. The corresponding P-value of 0.045 was below the threshold value of 0.050 and advocated that MOVA saturation flow rates are higher than those under the VA regimen.

Derived factors

The established saturation flow efficiency factors (ηs) for use at MOVA controlled intersections are presented below (Table 2). The factors may be multiplied with either observed VA saturation flow rates or estimated rates calculated from Re-

Location type	Likely driver awareness levels (Low, Medium, High)	Saturation flow efficiency factor (ηs)
City	High	+1.000
Large town	Medium-to-high	+1.029
Small-to-medium size town	Medium	+1.039
Village	Low	+1.046
	Mean	**+1.028**

Table 2: MOVA saturation flow rate improvements

search Report 67 (Kimber, McDonald and Hounsell, 1986) subject to certain conditions. The factors should be used to modify the 'y' value (y = q/S.ηs).

SUMMARY AND USAGE OF FACTORS

Auto-adaptive systems like MOVA have not yet been addressed in the existing signal analysis procedures used in the UK, making true traffic capacities incalculable since it is assumed that green durations remain the same throughout the entire peak period. Indubitably, there must be some betterment by having the signal timings fit the traffic volumes on a cyclic basis rather than using an average hourly volume and calculating fixed maximum green durations but the question in capacity terms is 'by how much?'

To answer this question, the study aimed to quantify the difference, if any, between MOVA and VA saturation flow rates. The saturation flow rate was chosen because it is one of two principal factors that govern capacity, the other being cycle time. Any statistically significant differences found in the saturation flow rates would be used as factors that could be input into current traffic signal calculations to estimate the likely effects MOVA would have on a VA intersection. The statistical significance was based on the a priori assertion that saturation flow rates under the MOVA regimen were higher than those when under the VA regimen.

The sites chosen represented typical intersection configurations and locations. The choice of different location 'type' was important because of the prevailing driver behaviour at each site, which could well affect the saturation flow rate.

With the exception of one site, all the sites surveyed had saturation flow rates higher under the MOVA regimen than when under the VA regimen. The mean increase was +2.78% under saturated conditions. The exception was due to both the high driver awareness levels present (hence the green was used to its maximum) and the maximum green being below 40 seconds under both MOVA and VA operation.

During the early evaluation of MOVA, Vincent and Peirce (1988, pp. 17) undertook limited studies of the delay savings at four sites in order to calculate its annual benefits for cost-benefit analysis purposes. The mean peak period delay saving found at the four sites was +9.5%. In the context of capacity, the TRL have advocated that the capacity improvement is approximately 1/3 of the delay savings, hence returning a mean peak period capacity improvement of 3.17%, which compares very well with the observed value of 2.78%. It should be noted that the mean value reported by Vincent and Peirce was a product of discrete values that were not always statistically significant. The discrete differences found in this study were significant at the 95% level.

The derived factors (Table 2) represent the best possible approach to estimating peak period MOVA improvements over VA. Moreover, the factors can also represent conservative off-peak period improvements. The figures are conservative because MOVA is much more effective in terminating the green in its delay-and-stops routine than when in its capacity-maximising routine. It must be noted that MOVA has other benefits when considering capacity; its ability to alter the maximums to better suit the prevailing conditions, which also contributes to greater capacity. This must be considered alongside this research.

The research may be used with a VA 'base' that may be taken as either the observed saturation flow rate or that estimated from Research Report 67 (Kimber, McDonald and Hounsell, 1986). However, the reader is advised to exercise caution when using the factors with Research Report 67 since the values may only be valid when the green is below 44 seconds. The factors should only be used on critical or 'relevant' links that make up the green termination decision for the stage and should only be used when the green will be long enough to invoke the efficiency factor; 44 seconds and above is recommended.

In summary, MOVA should become the preferred method of isolated intersection control in the UK not just for its proven capacity and delay benefits but also for its other qualities, such as its proven ability to reduce red light infringements (provided the system is correctly set-up) and its ability to operate satisfactorily even if its vehicle detectors have become damaged. For these reasons and more, MOVA is the best control algorithm currently available for isolated traffic signal intersections.

For further details or queries, Damian Meehan may be contacted at dtm@jctconsultancy.co.uk or by phone on +44 (0)1522 754681

The views expressed herein are those of the author and do not necessarily reflect those of JCT Consultancy Ltd.

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APPENDIX K

JUNCTION MODELLING OUTPUT REPORTS

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: J1. Site Access - B4235 Usk Road 150218.j9
Path: F:\01 Contracts\C-0000-C\C-06747-C - Bayfields, Chepstow\01_WIP\CA_Calculation\TP\Junction Models\J1. Site Access - B4235
Report generation date: 21/03/2018 13:46:57

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2023 Base + Com + Dev							
Stream B-AC	0.2	8.39	0.14	A	0.1	7.92	0.08	A
Stream C-AB	0.0	5.41	0.00	A	0.0	5.74	0.00	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

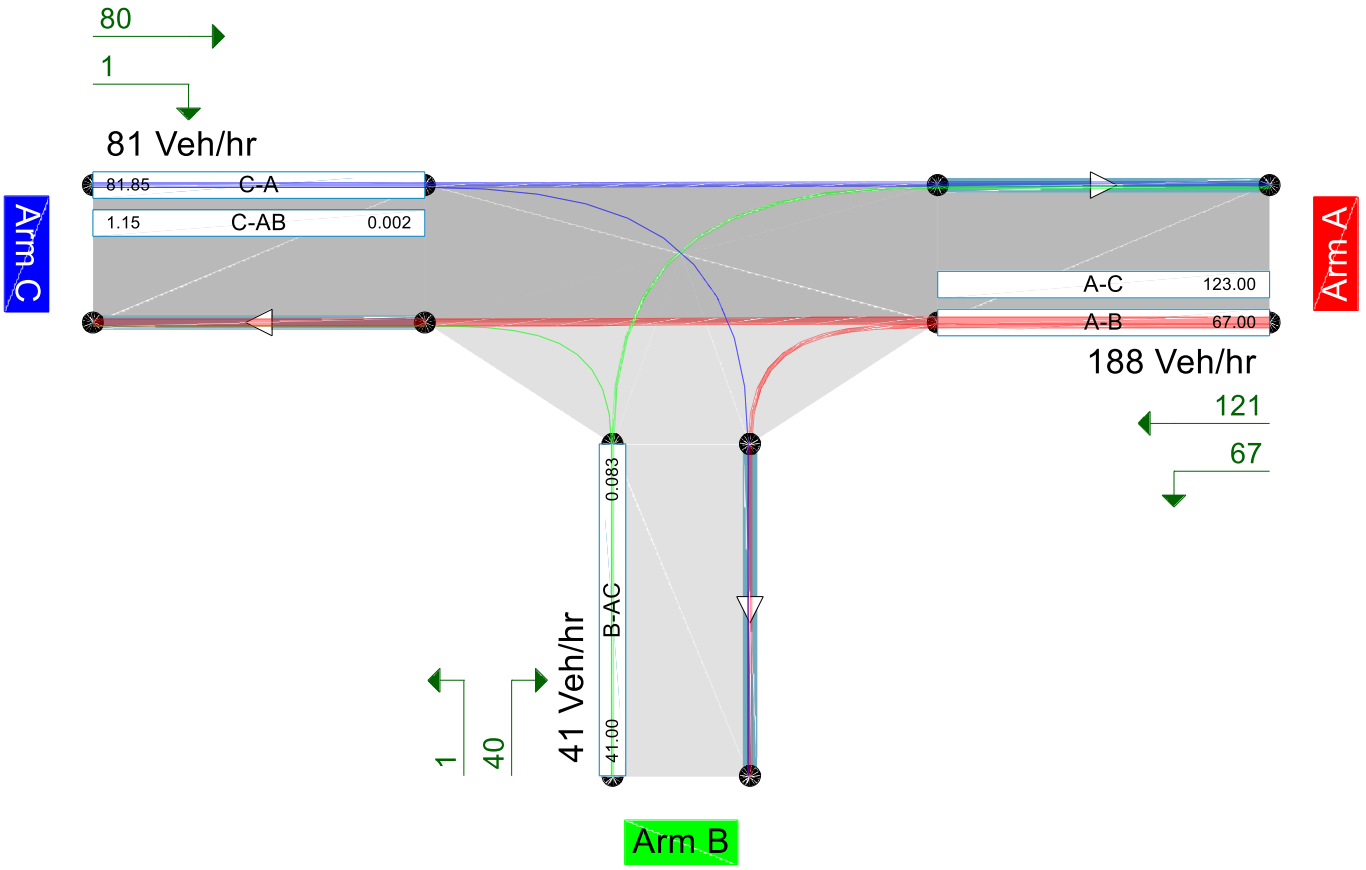
File Description

Title	J1. Site Access / B4235
Location	Chepstow
Site number	
Date	21/01/2018
Version	
Status	(new file)
Identifier	
Client	

Jobnumber	
Enumerator	HYDROCK"davidchapman
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	PCU	perHour	s	-Min	perMin



Flow Overlay by Entry
Showing original traffic demand (Veh/hr).
Streams (upstreams) show Total Demand (PCU/hr); Streams (downstreams) show RFC ()

The junction diagram reflects the last run of Junctions.

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

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)	Run automatically
2023 Base + Com + Dev	AM	FLAT	07:45	09:15	90	15	✓
2023 Base + Com + Dev	PM	FLAT	15:45	17:15	90	15	✓

2023 Base + Com + Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B4235 East	B4235 East	Major
B	Site Access	Site Access	Minor
C	B4235 West	B4235 West	Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			80.0	✓	0.00

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	3.00	80	80

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	543.663	0.099	0.250	0.157	0.358
1	B-C	674.299	0.103	0.261	-	-
1	C-B	620.292	0.240	0.240	-	-

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	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)	Run automatically
D1	2023 Base + Com + Dev	AM	FLAT	07:45	09:15	90	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		FLAT	✓	130.00	100.000
B		FLAT	✓	70.00	100.000
C		FLAT	✓	118.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0.000	30.000	100.000
	B	68.000	0.000	2.000
	C	117.000	1.000	0.000

Proportions

		To		
		A	B	C
From	A	0.00	0.23	0.77
	B	0.97	0.00	0.03
	C	0.99	0.01	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.030
	B	1.000	1.000	1.000
	C	1.009	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	130.00	133.00
	B	70.00	70.00
	C	118.00	119.00
08:00-08:15	A	130.00	133.00
	B	70.00	70.00
	C	118.00	119.00
08:15-08:30	A	130.00	133.00
	B	70.00	70.00
	C	118.00	119.00
08:30-08:45	A	130.00	133.00
	B	70.00	70.00
	C	118.00	119.00
08:45-09:00	A	130.00	133.00
	B	70.00	70.00

	C	118.00	119.00
09:00-09:15	A	130.00	133.00
	B	70.00	70.00
	C	118.00	119.00

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.14	8.39	0.2	A	70.00	105.00
C-AB	0.00	5.41	0.0	A	1.21	1.81
C-A					117.79	176.69
A-B					30.00	45.00
A-C					103.00	154.50

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	70.00	70.00	17.50	0.00	499.26	0.140	69.35	0.0	0.2	8.361	A
C-AB	1.21	1.21	0.30	0.00	667.44	0.002	1.20	0.0	0.0	5.410	A
C-A	117.79	117.79	29.45	0.00			117.79				
A-B	30.00	30.00	7.50	0.00			30.00				
A-C	103.00	103.00	25.75	0.00			103.00				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	70.00	70.00	17.50	0.00	499.26	0.140	70.00	0.2	0.2	8.386	A
C-AB	1.21	1.21	0.30	0.00	667.44	0.002	1.21	0.0	0.0	5.410	A
C-A	117.79	117.79	29.45	0.00			117.79				
A-B	30.00	30.00	7.50	0.00			30.00				

A-C	103.00	103.00	25.75	0.00			103.00				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	70.00	70.00	17.50	0.00	499.26	0.140	70.00	0.2	0.2	8.386	A
C-AB	1.21	1.21	0.30	0.00	667.44	0.002	1.21	0.0	0.0	5.410	A
C-A	117.79	117.79	29.45	0.00			117.79				
A-B	30.00	30.00	7.50	0.00			30.00				
A-C	103.00	103.00	25.75	0.00			103.00				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	70.00	70.00	17.50	0.00	499.26	0.140	70.00	0.2	0.2	8.386	A
C-AB	1.21	1.21	0.30	0.00	667.44	0.002	1.21	0.0	0.0	5.410	A
C-A	117.79	117.79	29.45	0.00			117.79				
A-B	30.00	30.00	7.50	0.00			30.00				
A-C	103.00	103.00	25.75	0.00			103.00				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	70.00	70.00	17.50	0.00	499.26	0.140	70.00	0.2	0.2	8.386	A
C-AB	1.21	1.21	0.30	0.00	667.44	0.002	1.21	0.0	0.0	5.410	A
C-A	117.79	117.79	29.45	0.00			117.79				
A-B	30.00	30.00	7.50	0.00			30.00				
A-C	103.00	103.00	25.75	0.00			103.00				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	70.00	70.00	17.50	0.00	499.26	0.140	70.00	0.2	0.2	8.386	A
C-AB	1.21	1.21	0.30	0.00	667.44	0.002	1.21	0.0	0.0	5.413	A
C-A	117.79	117.79	29.45	0.00			117.79				
A-B	30.00	30.00	7.50	0.00			30.00				

A-C	103.00	103.00	25.75	0.00			103.00				

2023 Base + Com + Dev, PM

Data Errors and Warnings
No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.05	A

Junction Network Options
[same as above]

Arms

Arms
[same as above]

Major Arm Geometry
[same as above]

Minor Arm Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)	Run automatically

D2	2023 Base + Com + Dev	PM	FLAT	15:45	17:15	90	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		FLAT	✓	188.00	100.000
B		FLAT	✓	41.00	100.000
C		FLAT	✓	81.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	**B**	**C**
From	**A**	0.000	67.000	121.000
	B	40.000	0.000	1.000
	C	80.000	1.000	0.000

Proportions

		To		
		A	**B**	**C**
From	**A**	0.00	0.36	0.64
	B	0.98	0.00	0.02
	C	0.99	0.01	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	**B**	**C**
From	**A**	0	0	2
	B	0	0	0
	C	3	0	0

Average PCU Per Veh

		To		
		A	**B**	**C**
From	**A**	1.000	1.000	1.017
	B	1.000	1.000	1.000
	C	1.025	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
15:45-16:00	A	188.00	190.00
	B	41.00	41.00
	C	81.00	83.00
16:00-16:15	A	188.00	190.00
	B	41.00	41.00
	C	81.00	83.00
16:15-16:30	A	188.00	190.00
	B	41.00	41.00
	C	81.00	83.00
16:30-16:45	A	188.00	190.00
	B	41.00	41.00
	C	81.00	83.00
16:45-17:00	A	188.00	190.00
	B	41.00	41.00
	C	81.00	83.00
17:00-17:15	A	188.00	190.00
	B	41.00	41.00
	C	81.00	83.00

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	7.92	0.1	A	41.00	61.50
C-AB	0.00	5.74	0.0	A	1.15	1.72
C-A					81.85	122.78
A-B					67.00	100.50
A-C					123.00	184.50

Main Results for each time segment

Main results: (15:45-16:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

B-AC	41.00	41.00	10.25	0.00	495.68	0.083	40.64	0.0	0.1	7.911	A
C-AB	1.15	1.15	0.29	0.00	630.34	0.002	1.14	0.0	0.0	5.738	A
C-A	81.85	81.85	20.46	0.00			81.85				
A-B	67.00	67.00	16.75	0.00			67.00				
A-C	123.00	123.00	30.75	0.00			123.00				

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	41.00	41.00	10.25	0.00	495.68	0.083	41.00	0.1	0.1	7.917	A
C-AB	1.15	1.15	0.29	0.00	630.34	0.002	1.15	0.0	0.0	5.741	A
C-A	81.85	81.85	20.46	0.00			81.85				
A-B	67.00	67.00	16.75	0.00			67.00				
A-C	123.00	123.00	30.75	0.00			123.00				

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	41.00	41.00	10.25	0.00	495.68	0.083	41.00	0.1	0.1	7.917	A
C-AB	1.15	1.15	0.29	0.00	630.34	0.002	1.15	0.0	0.0	5.741	A
C-A	81.85	81.85	20.46	0.00			81.85				
A-B	67.00	67.00	16.75	0.00			67.00				
A-C	123.00	123.00	30.75	0.00			123.00				

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	41.00	41.00	10.25	0.00	495.68	0.083	41.00	0.1	0.1	7.917	A
C-AB	1.15	1.15	0.29	0.00	630.34	0.002	1.15	0.0	0.0	5.741	A
C-A	81.85	81.85	20.46	0.00			81.85				
A-B	67.00	67.00	16.75	0.00			67.00				
A-C	123.00	123.00	30.75	0.00			123.00				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

B-AC	41.00	41.00	10.25	0.00	495.68	0.083	41.00	0.1	0.1	7.917	A
C-AB	1.15	1.15	0.29	0.00	630.34	0.002	1.15	0.0	0.0	5.741	A
C-A	81.85	81.85	20.46	0.00			81.85				
A-B	67.00	67.00	16.75	0.00			67.00				
A-C	123.00	123.00	30.75	0.00			123.00				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	41.00	41.00	10.25	0.00	495.68	0.083	41.00	0.1	0.1	7.917	A
C-AB	1.15	1.15	0.29	0.00	630.34	0.002	1.15	0.0	0.0	5.741	A
C-A	81.85	81.85	20.46	0.00			81.85				
A-B	67.00	67.00	16.75	0.00			67.00				
A-C	123.00	123.00	30.75	0.00			123.00				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []

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Filename: J2. A466 - B4235 Priority Junction 150218.j9
Path: F:\01 Contracts\C-0000-C\C-06747-C - Bayfields, Chepstow\01_WIP\CA_Calculation\TP\Junction Models\J2. B4235 - A466
Report generation date: 21/03/2018 13:43:09

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2017 Base							
Stream B-AC	0.5	11.78	0.34	B	0.4	11.53	0.30	B
Stream C-AB	0.5	5.48	0.20	A	0.3	6.58	0.19	A
Stream C-A								
Stream A-B								
Stream A-C								
	2023 Base + Com							
Stream B-AC	0.6	12.25	0.36	B	0.5	12.04	0.32	B
Stream C-AB	0.5	5.49	0.21	A	0.4	6.60	0.20	A
Stream C-A								
Stream A-B								
Stream A-C								
	2023 Base + Com + Dev							
Stream B-AC	1.2	17.34	0.54	C	0.8	14.88	0.43	B
Stream C-AB	0.6	5.75	0.24	A	0.5	7.38	0.27	A
Stream C-A								
Stream A-B								
Stream A-C								

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	J2. A466 - B4235 Priority Junction
Location	Chepstow
Site number	
Date	21/01/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HYDROCK"davidchapman
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	PCU	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

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
2017 Base	AM	ONE HOUR	07:45	09:15	15	✓
2017 Base	PM	ONE HOUR	15:45	17:15	15	✓
2023 Base + Com	AM	ONE HOUR	07:45	09:15	15	✓
2023 Base + Com	PM	ONE HOUR	15:45	17:15	15	✓
2023 Base + Com + Dev	AM	ONE HOUR	07:45	09:15	15	✓
2023 Base + Com + Dev	PM	ONE HOUR	15:45	17:15	15	✓

2017 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A466 South	A466 South	Major
B	B4235	B4235	Minor
C	A466 North	A466 North	Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.50			100.0	✓	0.00

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	3.00	100	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	560.751	0.100	0.253	0.159	0.361
1	B-C	686.890	0.103	0.260	-	-
1	C-B	631.874	0.239	0.239	-	-

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017 Base	AM	ONE HOUR	07:45	09:15	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	✓	311.00	100.000
B		ONE HOUR	✓	146.00	100.000
C		ONE HOUR	✓	466.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0.000	63.000	248.000
	B	63.000	0.000	83.000
	C	396.000	70.000	0.000

Proportions

		To		
		A	B	C
From	A	0.00	0.20	0.80
	B	0.43	0.00	0.57
	C	0.85	0.15	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	6	4
	B	3	0	4
	C	3	6	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.060	1.040
	B	1.030	1.000	1.040
	C	1.030	1.060	1.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.34	11.78	0.5	B	138.75	208.13
C-AB	0.20	5.48	0.5	A	126.99	190.49
C-A					315.37	473.06
A-B					61.28	91.92
A-C					236.67	355.01

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	113.84	113.84	28.46	0.00	530.56	0.215	112.72	0.0	0.3	8.901	A
C-AB	91.38	91.38	22.84	0.00	781.73	0.117	90.47	0.0	0.2	5.456	A
C-A	271.56	271.56	67.89	0.00			271.56				
A-B	50.28	50.28	12.57	0.00			50.28				
A-C	194.18	194.18	48.54	0.00			194.18				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	135.93	135.93	33.98	0.00	510.79	0.266	135.57	0.3	0.4	9.926	A

C-AB	120.54	120.54	30.13	0.00	812.70	0.148	120.20	0.2	0.3	5.449	A
C-A	312.84	312.84	78.21	0.00			312.84				
A-B	60.03	60.03	15.01	0.00			60.03				
A-C	231.86	231.86	57.97	0.00			231.86				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	166.49	166.49	41.62	0.00	482.93	0.345	165.83	0.4	0.5	11.733	B
C-AB	168.56	168.56	42.14	0.00	855.76	0.197	167.95	0.3	0.5	5.479	A
C-A	362.22	362.22	90.55	0.00			362.22				
A-B	73.53	73.53	18.38	0.00			73.53				
A-C	283.98	283.98	70.99	0.00			283.98				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	166.49	166.49	41.62	0.00	482.83	0.345	166.46	0.5	0.5	11.783	B
C-AB	168.80	168.80	42.20	0.00	856.03	0.197	168.78	0.5	0.5	5.485	A
C-A	361.98	361.98	90.50	0.00			361.98				
A-B	73.53	73.53	18.38	0.00			73.53				
A-C	283.98	283.98	70.99	0.00			283.98				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	135.93	135.93	33.98	0.00	510.64	0.266	136.57	0.5	0.4	9.983	A
C-AB	120.84	120.84	30.21	0.00	813.11	0.149	121.42	0.5	0.3	5.451	A
C-A	312.54	312.54	78.14	0.00			312.54				
A-B	60.03	60.03	15.01	0.00			60.03				
A-C	231.86	231.86	57.97	0.00			231.86				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	113.84	113.84	28.46	0.00	530.34	0.215	114.22	0.4	0.3	8.967	A

C-AB	91.84	91.84	22.96	0.00	782.12	0.117	92.19	0.3	0.2	5.470	A
C-A	271.10	271.10	67.77	0.00			271.10				
A-B	50.28	50.28	12.57	0.00			50.28				
A-C	194.18	194.18	48.54	0.00			194.18				

2017 Base, PM

Data Errors and Warnings
No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.53	A

Junction Network Options
[same as above]

Arms

Arms
[same as above]

Major Arm Geometry
[same as above]

Minor Arm Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017 Base	PM	ONE HOUR	15:45	17:15	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	✓	431.00	100.000
B		ONE HOUR	✓	124.00	100.000
C		ONE HOUR	✓	281.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	**B**	**C**
From	**A**	0.000	79.000	352.000
	B	68.000	0.000	56.000
	C	205.000	76.000	0.000

Proportions

		To		
		A	**B**	**C**
From	**A**	0.00	0.18	0.82
	B	0.55	0.00	0.45
	C	0.73	0.27	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	**B**	**C**
From	**A**	0	0	2
	B	0	0	2
	C	5	0	0

Average PCU Per Veh

		To		
		A	**B**	**C**
From	**A**	1.000	1.000	1.020
	B	1.000	1.000	1.020
	C	1.050	1.000	1.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.30	11.53	0.4	B	114.81	172.22
C-AB	0.19	6.58	0.3	A	99.68	149.52
C-A					167.58	251.37
A-B					72.49	108.74
A-C					329.46	494.19

Main Results for each time segment

Main results: (15:45-16:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	94.20	94.20	23.55	0.00	504.38	0.187	93.28	0.0	0.2	8.817	A
C-AB	74.94	74.94	18.73	0.00	664.34	0.113	74.25	0.0	0.2	6.167	A
C-A	144.33	144.33	36.08	0.00			144.33				
A-B	59.48	59.48	14.87	0.00			59.48				
A-C	270.30	270.30	67.58	0.00			270.30				

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	112.48	112.48	28.12	0.00	482.78	0.233	112.19	0.2	0.3	9.793	A
C-AB	95.95	95.95	23.99	0.00	673.24	0.143	95.71	0.2	0.2	6.314	A
C-A	165.88	165.88	41.47	0.00			165.88				
A-B	71.02	71.02	17.75	0.00			71.02				
A-C	322.77	322.77	80.69	0.00			322.77				

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	137.76	137.76	34.44	0.00	452.73	0.304	137.23	0.3	0.4	11.494	B
C-AB	127.90	127.90	31.98	0.00	685.23	0.187	127.49	0.2	0.3	6.557	A
C-A	192.77	192.77	48.19	0.00			192.77				

A-B	86.98	86.98	21.75	0.00			86.98				
A-C	395.31	395.31	98.83	0.00			395.31				

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	137.76	137.76	34.44	0.00	452.64	0.304	137.74	0.4	0.4	11.535	B
C-AB	128.02	128.02	32.01	0.00	685.37	0.187	128.01	0.3	0.3	6.576	A
C-A	192.65	192.65	48.16	0.00			192.65				
A-B	86.98	86.98	21.75	0.00			86.98				
A-C	395.31	395.31	98.83	0.00			395.31				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	112.48	112.48	28.12	0.00	482.65	0.233	112.99	0.4	0.3	9.839	A
C-AB	96.10	96.10	24.03	0.00	673.46	0.143	96.50	0.3	0.2	6.347	A
C-A	165.73	165.73	41.43	0.00			165.73				
A-B	71.02	71.02	17.75	0.00			71.02				
A-C	322.77	322.77	80.69	0.00			322.77				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	94.20	94.20	23.55	0.00	504.17	0.187	94.50	0.3	0.2	8.873	A
C-AB	75.15	75.15	18.79	0.00	664.53	0.113	75.40	0.2	0.2	6.196	A
C-A	144.12	144.12	36.03	0.00			144.12				
A-B	59.48	59.48	14.87	0.00			59.48				
A-C	270.30	270.30	67.58	0.00			270.30				

2023 Base + Com, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

A1	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.72	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023 Base + Com	AM	ONE HOUR	07:45	09:15	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	✓	327.00	100.000
B		ONE HOUR	✓	150.00	100.000
C		ONE HOUR	✓	484.00	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To		
	A	B	C
A	0.000	65.000	262.000
B	65.000	0.000	85.000
C	412.000	72.000	0.000

Proportions

From	To		
	A	B	C
A	0.00	0.20	0.80
B	0.43	0.00	0.57
C	0.85	0.15	0.00

Vehicle Mix

Heavy Vehicle proportion

From	To		
	A	B	C
A	0	6	4
B	3	0	4
C	3	6	0

Average PCU Per Veh

From	To		
	A	B	C
A	1.000	1.060	1.040
B	1.030	1.000	1.040
C	1.030	1.060	1.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.36	12.25	0.6	B	142.55	213.83
C-AB	0.21	5.49	0.5	A	135.08	202.63
C-A					324.35	486.52
A-B					63.22	94.84
A-C					250.03	375.05

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	116.96	116.96	29.24	0.00	525.52	0.223	115.78	0.0	0.3	9.075	A
C-AB	95.93	95.93	23.98	0.00	787.57	0.122	94.97	0.0	0.2	5.444	A
C-A	281.01	281.01	70.25	0.00			281.01				
A-B	51.87	51.87	12.97	0.00			51.87				
A-C	205.14	205.14	51.28	0.00			205.14				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	139.66	139.66	34.91	0.00	504.71	0.277	139.27	0.3	0.4	10.190	B
C-AB	127.07	127.07	31.77	0.00	819.80	0.155	126.70	0.2	0.3	5.442	A
C-A	323.04	323.04	80.76	0.00			323.04				
A-B	61.94	61.94	15.48	0.00			61.94				
A-C	244.95	244.95	61.24	0.00			244.95				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	171.04	171.04	42.76	0.00	475.33	0.360	170.32	0.4	0.6	12.194	B
C-AB	181.70	181.70	45.42	0.00	867.76	0.209	181.01	0.3	0.5	5.487	A
C-A	369.56	369.56	92.39	0.00			369.56				
A-B	75.86	75.86	18.97	0.00			75.86				
A-C	300.01	300.01	75.00	0.00			300.01				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	171.04	171.04	42.76	0.00	475.22	0.360	171.02	0.6	0.6	12.254	B
C-AB	181.98	181.98	45.50	0.00	868.08	0.210	181.96	0.5	0.5	5.492	A
C-A	369.28	369.28	92.32	0.00			369.28				
A-B	75.86	75.86	18.97	0.00			75.86				
A-C	300.01	300.01	75.00	0.00			300.01				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	139.66	139.66	34.91	0.00	504.54	0.277	140.35	0.6	0.4	10.258	B
C-AB	127.40	127.40	31.85	0.00	820.28	0.155	128.07	0.5	0.3	5.447	A
C-A	322.70	322.70	80.68	0.00			322.70				
A-B	61.94	61.94	15.48	0.00			61.94				
A-C	244.95	244.95	61.24	0.00			244.95				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	116.96	116.96	29.24	0.00	525.29	0.223	117.36	0.4	0.3	9.150	A
C-AB	96.43	96.43	24.11	0.00	788.00	0.122	96.81	0.3	0.2	5.461	A
C-A	280.50	280.50	70.13	0.00			280.50				
A-B	51.87	51.87	12.97	0.00			51.87				
A-C	205.14	205.14	51.28	0.00			205.14				

2023 Base + Com, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.57	A

Junction Network Options

[same as above]

Arms

Arms
[same as above]

Major Arm Geometry
[same as above]

Minor Arm Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023 Base + Com	PM	ONE HOUR	15:45	17:15	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	✓	455.00	100.000
B		ONE HOUR	✓	128.00	100.000
C		ONE HOUR	✓	297.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	**B**	**C**
From	**A**	0.000	82.000	373.000
	B	70.000	0.000	58.000
	C	219.000	78.000	0.000

Proportions

		To		
		A	**B**	**C**
From	**A**	0.00	0.18	0.82
	B	0.55	0.00	0.45
	C	0.74	0.26	0.00

Vehicle Mix

Heavy Vehicle proportion

From	To			
		A	B	C
	A	0	0	2
	B	0	0	2
	C	5	0	0

Average PCU Per Veh

From	To			
		A	B	C
	A	1.000	1.000	1.020
	B	1.000	1.000	1.020
	C	1.050	1.000	1.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.32	12.04	0.5	B	118.52	177.78
C-AB	0.20	6.60	0.4	A	105.27	157.91
C-A					177.31	265.96
A-B					75.24	112.87
A-C					349.12	523.68

Main Results for each time segment

Main results: (15:45-16:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	97.24	97.24	24.31	0.00	498.52	0.195	96.27	0.0	0.2	9.009	A
C-AB	79.15	79.15	19.79	0.00	668.76	0.118	78.41	0.0	0.2	6.171	A
C-A	152.69	152.69	38.17	0.00			152.69				
A-B	61.73	61.73	15.43	0.00			61.73				
A-C	286.43	286.43	71.61	0.00			286.43				

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

B-AC	116.11	116.11	29.03	0.00	475.68	0.244	115.79	0.2	0.3	10.084	B
C-AB	100.94	100.94	25.24	0.00	677.83	0.149	100.69	0.2	0.2	6.324	A
C-A	175.90	175.90	43.97	0.00			175.90				
A-B	73.72	73.72	18.43	0.00			73.72				
A-C	342.03	342.03	85.51	0.00			342.03				

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	142.21	142.21	35.55	0.00	443.84	0.320	141.62	0.3	0.5	11.995	B
C-AB	135.44	135.44	33.86	0.00	691.17	0.196	134.98	0.2	0.4	6.582	A
C-A	203.62	203.62	50.90	0.00			203.62				
A-B	90.28	90.28	22.57	0.00			90.28				
A-C	418.89	418.89	104.72	0.00			418.89				

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	142.21	142.21	35.55	0.00	443.75	0.320	142.19	0.5	0.5	12.043	B
C-AB	135.58	135.58	33.89	0.00	691.33	0.196	135.56	0.4	0.4	6.605	A
C-A	203.48	203.48	50.87	0.00			203.48				
A-B	90.28	90.28	22.57	0.00			90.28				
A-C	418.89	418.89	104.72	0.00			418.89				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	116.11	116.11	29.03	0.00	475.54	0.244	116.67	0.5	0.3	10.140	B
C-AB	101.12	101.12	25.28	0.00	678.08	0.149	101.56	0.4	0.3	6.362	A
C-A	175.72	175.72	43.93	0.00			175.72				
A-B	73.72	73.72	18.43	0.00			73.72				
A-C	342.03	342.03	85.51	0.00			342.03				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS

B-AC	97.24	97.24	24.31	0.00	498.30	0.195	97.57	0.3	0.2	9.073	A
C-AB	79.40	79.40	19.85	0.00	668.98	0.119	79.67	0.3	0.2	6.200	A
C-A	152.44	152.44	38.11	0.00			152.44				
A-B	61.73	61.73	15.43	0.00			61.73				
A-C	286.43	286.43	71.61	0.00			286.43				

2023 Base + Com + Dev, AM

Data Errors and Warnings
No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	4.43	A

Junction Network Options
[same as above]

Arms

Arms
[same as above]

Major Arm Geometry
[same as above]

Minor Arm Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2023 Base + Com + Dev	AM	ONE HOUR	07:45	09:15	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	✓	345.00	100.000
B		ONE HOUR	✓	218.00	100.000
C		ONE HOUR	✓	496.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0.000	83.000	262.000
	B	105.000	0.000	113.000
	C	412.000	84.000	0.000

Proportions

		To		
		A	B	C
From	A	0.00	0.24	0.76
	B	0.48	0.00	0.52
	C	0.83	0.17	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	5	4
	B	2	0	3
	C	3	5	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.050	1.040
	B	1.020	1.000	1.030
	C	1.030	1.050	1.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.54	17.34	1.2	C	205.08	307.62
C-AB	0.24	5.75	0.6	A	156.71	235.07
C-A					313.62	470.43
A-B					79.97	119.96
A-C					250.03	375.05

Main Results for each time segment

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	168.25	168.25	42.06	0.00	512.43	0.328	166.29	0.0	0.5	10.605	B
C-AB	111.12	111.12	27.78	0.00	784.86	0.142	110.01	0.0	0.3	5.555	A
C-A	274.76	274.76	68.69	0.00			274.76				
A-B	65.61	65.61	16.40	0.00			65.61				
A-C	205.14	205.14	51.28	0.00			205.14				

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	200.91	200.91	50.23	0.00	490.15	0.410	200.10	0.5	0.7	12.686	B
C-AB	147.33	147.33	36.83	0.00	816.74	0.180	146.89	0.3	0.4	5.602	A
C-A	313.45	313.45	78.36	0.00			313.45				
A-B	78.35	78.35	19.59	0.00			78.35				
A-C	244.95	244.95	61.24	0.00			244.95				

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	246.07	246.07	61.52	0.00	458.74	0.536	244.29	0.7	1.1	17.063	C

C-AB	211.01	211.01	52.75	0.00	864.26	0.244	210.17	0.4	0.6	5.736	A
C-A	353.33	353.33	88.33	0.00			353.33				
A-B	95.95	95.95	23.99	0.00			95.95				
A-C	300.01	300.01	75.00	0.00			300.01				

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	246.07	246.07	61.52	0.00	458.60	0.537	245.98	1.1	1.2	17.338	C
C-AB	211.37	211.37	52.84	0.00	864.66	0.244	211.34	0.6	0.6	5.745	A
C-A	352.97	352.97	88.24	0.00			352.97				
A-B	95.95	95.95	23.99	0.00			95.95				
A-C	300.01	300.01	75.00	0.00			300.01				

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	200.91	200.91	50.23	0.00	489.94	0.410	202.65	1.2	0.7	12.922	B
C-AB	147.74	147.74	36.94	0.00	817.32	0.181	148.56	0.6	0.4	5.615	A
C-A	313.04	313.04	78.26	0.00			313.04				
A-B	78.35	78.35	19.59	0.00			78.35				
A-C	244.95	244.95	61.24	0.00			244.95				

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	168.25	168.25	42.06	0.00	512.14	0.329	169.13	0.7	0.5	10.788	B
C-AB	111.72	111.72	27.93	0.00	785.36	0.142	112.17	0.4	0.3	5.577	A
C-A	274.17	274.17	68.54	0.00			274.17				
A-B	65.61	65.61	16.40	0.00			65.61				
A-C	205.14	205.14	51.28	0.00			205.14				

2023 Base + Com + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.65	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2023 Base + Com + Dev	PM	ONE HOUR	15:45	17:15	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	✓	494.00	100.000

B		ONE HOUR	✓	168.00	100.000
C		ONE HOUR	✓	325.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	**B**	**C**
From	**A**	0.000	121.000	373.000
	B	93.000	0.000	75.000
	C	219.000	106.000	0.000

Proportions

		To		
		A	**B**	**C**
From	**A**	0.00	0.24	0.76
	B	0.55	0.00	0.45
	C	0.67	0.33	0.00

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	**B**	**C**
From	**A**	0	0	2
	B	0	0	1
	C	5	0	0

Average PCU Per Veh

		To		
		A	**B**	**C**
From	**A**	1.000	1.000	1.019
	B	1.000	1.000	1.013
	C	1.046	1.000	1.000

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.43	14.88	0.8	B	155.08	232.62
C-AB	0.27	7.38	0.5	A	143.67	215.51
C-A					163.73	245.59
A-B					111.03	166.55
A-C					348.69	523.04

Main Results for each time segment

Main results: (15:45-16:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	127.23	127.23	31.81	0.00	488.76	0.260	125.84	0.0	0.3	9.942	A
C-AB	107.79	107.79	26.95	0.00	661.98	0.163	106.75	0.0	0.3	6.551	A
C-A	144.42	144.42	36.10	0.00			144.42				
A-B	91.10	91.10	22.77	0.00			91.10				
A-C	286.08	286.08	71.52	0.00			286.08				

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	151.93	151.93	37.98	0.00	463.96	0.327	151.40	0.3	0.5	11.566	B
C-AB	137.66	137.66	34.42	0.00	669.94	0.205	137.28	0.3	0.4	6.846	A
C-A	163.50	163.50	40.87	0.00			163.50				
A-B	108.78	108.78	27.19	0.00			108.78				
A-C	341.61	341.61	85.40	0.00			341.61				

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	186.07	186.07	46.52	0.00	429.36	0.433	185.00	0.5	0.7	14.753	B
C-AB	185.14	185.14	46.29	0.00	681.78	0.272	184.42	0.4	0.5	7.354	A
C-A	183.70	183.70	45.93	0.00			183.70				
A-B	133.22	133.22	33.31	0.00			133.22				
A-C	418.39	418.39	104.60	0.00			418.39				

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	186.07	186.07	46.52	0.00	429.22	0.434	186.03	0.7	0.8	14.884	B
C-AB	185.37	185.37	46.34	0.00	682.03	0.272	185.34	0.5	0.5	7.384	A

C-A	183.47	183.47	45.87	0.00			183.47				
A-B	133.22	133.22	33.31	0.00			133.22				
A-C	418.39	418.39	104.60	0.00			418.39				

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	151.93	151.93	37.98	0.00	463.74	0.328	152.97	0.8	0.5	11.693	B
C-AB	137.94	137.94	34.48	0.00	670.31	0.206	138.63	0.5	0.4	6.895	A
C-A	163.22	163.22	40.81	0.00			163.22				
A-B	108.78	108.78	27.19	0.00			108.78				
A-C	341.61	341.61	85.40	0.00			341.61				

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	127.23	127.23	31.81	0.00	488.44	0.260	127.79	0.5	0.4	10.058	B
C-AB	108.15	108.15	27.04	0.00	662.30	0.163	108.56	0.4	0.3	6.595	A
C-A	144.05	144.05	36.01	0.00			144.05				
A-B	91.10	91.10	22.77	0.00			91.10				
A-C	286.08	286.08	71.52	0.00			286.08				

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.0.4211 []

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: A4293 A466 RAB 150218.j9
Path: F:\01 Contracts\C-0000-C\C-06747-C - Bayfields, Chepstow\01_WIP\CA_Calculation\TP\Junction Models\J3. B4293 - A466 (Racecourse Rbout)
Report generation date: 21/03/2018 13:50:10

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2017							
Arm 1	0.9	9.17	0.48	A	0.4	5.50	0.26	A
Arm 2	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Arm 3	0.4	7.37	0.29	A	0.3	6.04	0.26	A
Arm 4	0.6	6.45	0.40	A	0.9	7.48	0.48	A
Arm 5	0.5	8.52	0.35	A	0.2	6.55	0.14	A
	2023 B + C							
Arm 1	1.0	9.75	0.51	A	0.4	5.64	0.28	A
Arm 2	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Arm 3	0.4	7.63	0.31	A	0.4	6.21	0.27	A
Arm 4	0.7	6.69	0.42	A	1.0	7.93	0.51	A
Arm 5	0.6	8.87	0.37	A	0.2	6.71	0.16	A
	2023 B + C + D							
Arm 1	1.1	10.16	0.52	B	0.4	5.74	0.28	A
Arm 2	0.0	0.00	0.00	A	0.0	0.00	0.00	A

Arm 3	0.5	7.83	0.32	A	0.4	6.53	0.31	A
Arm 4	0.8	7.07	0.45	A	1.1	8.26	0.53	A
Arm 5	0.6	9.19	0.38	A	0.2	6.83	0.16	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	J3. Racecourse Roundabout
Location	Chepstow
Site number	
Date	15/01/2018
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

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
2017	AM	ONE HOUR	08:00	09:30	15	✓
2017	PM	ONE HOUR	15:45	17:15	15	✓
2023	AM	ONE HOUR	08:00	09:30	15	
2023	PM	ONE HOUR	15:45	17:15	15	
2023 B + C	AM	ONE HOUR	08:00	09:30	15	✓

2023 B + C	PM	ONE HOUR	15:45	17:15	15	✓
2023 B + C + D	AM	ONE HOUR	08:00	09:30	15	✓
2023 B + C + D	PM	ONE HOUR	15:45	17:15	15	✓

2017, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	7.87	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A466 N	
2	Racecourse	
3	Welsh Street	
4	B4235	
5	Illton Rd	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00

2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.25	3.25	0.0	11.0	32.0	15.0	
2	3.00	3.00	0.0	10.0	32.0	15.0	
3	3.25	3.25	0.0	13.0	32.0	41.0	
4	3.25	3.25	0.0	20.0	32.0	20.0	
5	3.00	3.00	0.0	9.0	32.0	34.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.516	996.607
2	0.496	911.863
3	0.477	921.233
4	0.528	1018.921
5	0.458	842.055

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017	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 (%)
1		ONE HOUR	✓	331.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	181.00	100.000
4		ONE HOUR	✓	331.00	100.000

5		ONE HOUR	✓	203.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	**2**	**3**	**4**	**5**
From	**1**	0.000	0.000	93.000	233.000	5.000
	2	0.000	0.000	0.000	0.000	0.000
	3	58.000	0.000	0.000	90.000	33.000
	4	106.000	0.000	168.000	0.000	57.000
	5	1.000	0.000	59.000	143.000	0.000

Proportions

		To				
		1	**2**	**3**	**4**	**5**
From	**1**	0.00	0.00	0.28	0.70	0.02
	2	0.20	0.20	0.20	0.20	0.20
	3	0.32	0.00	0.00	0.50	0.18
	4	0.32	0.00	0.51	0.00	0.17
	5	0.00	0.00	0.29	0.70	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	**2**	**3**	**4**	**5**
From	**1**	0	0	2	3	20
	2	0	0	2	3	20
	3	3	0	0	6	0
	4	6	0	3	0	5
	5	0	0	3	3	0

Average PCU Per Veh

		To				
		1	**2**	**3**	**4**	**5**
From	**1**	1.000	1.000	1.022	1.030	1.200
	2	1.000	1.000	1.022	1.030	1.200
	3	1.034	1.000	1.000	1.056	1.000
	4	1.057	1.000	1.030	1.000	1.053
	5	1.000	1.000	1.034	1.035	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.48	9.17	0.9	A	303.73	455.60

2	0.00	0.00	0.0	A	0.00	0.00
3	0.29	7.37	0.4	A	166.09	249.13
4	0.40	6.45	0.6	A	303.73	455.60
5	0.35	8.52	0.5	A	186.28	279.41

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	249.19	62.30	276.73	824.29	0.302	247.48	123.48	0.0	0.4	6.222	A
2	0.00	0.00	524.20	615.81	0.000	0.00	0.00	0.0	0.0	0.000	A
3	136.27	34.07	284.82	751.69	0.181	135.39	239.38	0.0	0.2	5.833	A
4	249.19	62.30	71.81	940.10	0.265	247.76	348.40	0.0	0.4	5.189	A
5	152.83	38.21	248.48	699.68	0.218	151.72	71.09	0.0	0.3	6.556	A

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	297.56	74.39	332.05	795.69	0.374	296.92	148.11	0.4	0.6	7.209	A
2	0.00	0.00	628.97	564.55	0.000	0.00	0.00	0.0	0.0	0.000	A
3	162.72	40.68	341.80	724.63	0.225	162.45	287.17	0.2	0.3	6.400	A
4	297.56	74.39	86.16	932.61	0.319	297.14	418.09	0.4	0.5	5.661	A
5	182.49	45.62	298.02	676.89	0.270	182.14	85.27	0.3	0.4	7.272	A

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	364.44	91.11	406.39	757.25	0.481	363.16	181.28	0.6	0.9	9.105	A
2	0.00	0.00	769.54	495.77	0.000	0.00	0.00	0.0	0.0	0.000	A
3	199.28	49.82	418.13	688.39	0.289	198.82	351.42	0.3	0.4	7.347	A
4	364.44	91.11	105.45	922.54	0.395	363.71	511.50	0.5	0.6	6.434	A
5	223.51	55.88	364.79	646.17	0.346	222.88	104.37	0.4	0.5	8.492	A

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	364.44	91.11	407.35	756.75	0.482	364.40	181.66	0.9	0.9	9.174	A
2	0.00	0.00	771.76	494.68	0.000	0.00	0.00	0.0	0.0	0.000	A

3	199.28	49.82	419.45	687.76	0.290	199.27	352.30	0.4	0.4	7.368	A
4	364.44	91.11	105.69	922.41	0.395	364.42	513.03	0.6	0.6	6.451	A
5	223.51	55.88	365.52	645.84	0.346	223.49	104.59	0.5	0.5	8.523	A

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	297.56	74.39	333.58	794.89	0.374	298.82	148.71	0.9	0.6	7.277	A
2	0.00	0.00	632.40	562.87	0.000	0.00	0.00	0.0	0.0	0.000	A
3	162.72	40.68	343.84	723.66	0.225	163.17	288.56	0.4	0.3	6.429	A
4	297.56	74.39	86.55	932.40	0.319	298.27	420.46	0.6	0.5	5.682	A
5	182.49	45.62	299.19	676.35	0.270	183.10	85.63	0.5	0.4	7.306	A

Main results: (09:15-09:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	249.19	62.30	279.14	823.05	0.303	249.86	124.45	0.6	0.4	6.287	A
2	0.00	0.00	529.00	613.46	0.000	0.00	0.00	0.0	0.0	0.000	A
3	136.27	34.07	287.57	750.38	0.182	136.54	241.43	0.3	0.2	5.869	A
4	249.19	62.30	72.42	939.77	0.265	249.63	351.69	0.5	0.4	5.219	A
5	152.83	38.21	250.40	698.80	0.219	153.19	71.66	0.4	0.3	6.604	A

2017, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	6.62	A

Junction Network Options

[same as above]

Arms

Arms
[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017	PM	ONE HOUR	15:45	17:15	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 (%)
1		ONE HOUR	✓	209.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	190.00	100.000
4		ONE HOUR	✓	408.00	100.000
5		ONE HOUR	✓	83.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	53.000	152.000	4.000
	2	0.000	0.000	0.000	0.000	0.000
	3	66.000	0.000	0.000	73.000	51.000
	4	211.000	0.000	57.000	0.000	140.000
	5	5.000	0.000	22.000	56.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.25	0.73	0.02
	2	0.20	0.20	0.20	0.20	0.20
	3	0.35	0.00	0.00	0.38	0.27
	4	0.52	0.00	0.14	0.00	0.34
	5	0.06	0.00	0.27	0.67	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	5	0
	2	0	0	2	3	20
	3	0	0	0	0	0
	4	1	0	0	0	4
	5	20	0	0	5	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.019	1.046	1.000
	2	1.000	1.000	1.019	1.030	1.200
	3	1.000	1.000	1.000	1.000	1.000
	4	1.014	1.000	1.000	1.000	1.036
	5	1.200	1.000	1.000	1.054	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.26	5.50	0.4	A	191.78	287.67
2	0.00	0.00	0.0	A	0.00	0.00
3	0.26	6.04	0.3	A	174.35	261.52
4	0.48	7.48	0.9	A	374.39	561.58
5	0.14	6.55	0.2	A	76.16	114.24

Main Results for each time segment

Main results: (15:45-16:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	157.35	39.34	101.00	908.56	0.173	156.51	211.02	0.0	0.2	4.782	A
2	0.00	0.00	257.52	746.63	0.000	0.00	0.00	0.0	0.0	0.000	A
3	143.04	35.76	158.72	841.97	0.170	142.23	98.80	0.0	0.2	5.140	A
4	307.16	76.79	90.58	952.46	0.322	305.28	210.37	0.0	0.5	5.547	A
5	62.49	15.62	249.93	693.16	0.090	62.09	145.92	0.0	0.1	5.700	A

Main results: (16:00-16:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	187.89	46.97	121.18	898.31	0.209	187.67	253.10	0.2	0.3	5.064	A
2	0.00	0.00	308.85	721.48	0.000	0.00	0.00	0.0	0.0	0.000	A
3	170.81	42.70	190.35	826.17	0.207	170.58	118.49	0.2	0.3	5.490	A
4	366.78	91.70	108.64	943.12	0.389	366.15	252.30	0.5	0.6	6.233	A
5	74.62	18.65	299.77	671.19	0.111	74.51	175.02	0.1	0.1	6.033	A

Main results: (16:15-16:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	230.11	57.53	148.32	884.52	0.260	229.77	309.75	0.3	0.3	5.496	A
2	0.00	0.00	378.09	687.56	0.000	0.00	0.00	0.0	0.0	0.000	A
3	209.19	52.30	233.05	804.84	0.260	208.84	145.04	0.3	0.3	6.036	A
4	449.22	112.30	133.00	930.52	0.483	448.06	308.89	0.6	0.9	7.443	A
5	91.38	22.85	366.86	641.62	0.142	91.22	214.20	0.1	0.2	6.539	A

Main results: (16:30-16:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	230.11	57.53	148.63	884.36	0.260	230.11	310.47	0.3	0.4	5.501	A
2	0.00	0.00	378.74	687.25	0.000	0.00	0.00	0.0	0.0	0.000	A
3	209.19	52.30	233.41	804.66	0.260	209.19	145.33	0.3	0.3	6.044	A
4	449.22	112.30	133.22	930.40	0.483	449.19	309.38	0.9	0.9	7.480	A
5	91.38	22.85	367.72	641.24	0.143	91.38	214.69	0.2	0.2	6.546	A

Main results: (16:45-17:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	187.89	46.97	121.67	898.06	0.209	188.22	254.23	0.4	0.3	5.075	A
2	0.00	0.00	309.89	720.97	0.000	0.00	0.00	0.0	0.0	0.000	A
3	170.81	42.70	190.94	825.87	0.207	171.15	118.95	0.3	0.3	5.503	A
4	366.78	91.70	109.00	942.93	0.389	367.91	253.10	0.9	0.6	6.272	A
5	74.62	18.65	301.12	670.60	0.111	74.77	175.79	0.2	0.1	6.043	A

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	157.35	39.34	101.82	908.14	0.173	157.57	212.73	0.3	0.2	4.797	A
2	0.00	0.00	259.39	745.71	0.000	0.00	0.00	0.0	0.0	0.000	A
3	143.04	35.76	159.84	841.40	0.170	143.27	99.55	0.3	0.2	5.157	A
4	307.16	76.79	91.24	952.12	0.323	307.82	211.87	0.6	0.5	5.592	A
5	62.49	15.62	251.96	692.27	0.090	62.59	147.10	0.1	0.1	5.717	A

2023, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	8.10	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2023	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 (%)
1		ONE HOUR	✓	341.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	187.00	100.000
4		ONE HOUR	✓	341.00	100.000
5		ONE HOUR	✓	209.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	96.000	240.000	5.000
	2	0.000	0.000	0.000	0.000	0.000
	3	60.000	0.000	0.000	93.000	34.000
	4	109.000	0.000	173.000	0.000	59.000
	5	1.000	0.000	61.000	147.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.28	0.70	0.01
	2	0.20	0.20	0.20	0.20	0.20
	3	0.32	0.00	0.00	0.50	0.18
	4	0.32	0.00	0.51	0.00	0.17
	5	0.00	0.00	0.29	0.70	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	3	20
	2	0	0	2	3	20
	3	3	0	0	5	0
	4	6	0	3	0	5
	5	0	0	3	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.020	1.028	1.200
	2	1.000	1.000	1.021	1.029	1.200
	3	1.032	1.000	1.000	1.053	1.000
	4	1.055	1.000	1.028	1.000	1.050
	5	1.000	1.000	1.032	1.033	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.50	9.55	1.0	A	312.91	469.36
2	0.00	0.00	0.0	A	0.00	0.00
3	0.30	7.53	0.4	A	171.59	257.39
4	0.41	6.58	0.7	A	312.91	469.36
5	0.36	8.73	0.6	A	191.78	287.67

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	256.72	64.18	284.93	821.63	0.312	254.92	127.21	0.0	0.4	6.332	A
2	0.00	0.00	539.86	608.80	0.000	0.00	0.00	0.0	0.0	0.000	A
3	140.78	35.20	293.01	749.60	0.188	139.87	246.84	0.0	0.2	5.896	A
4	256.72	64.18	74.04	940.61	0.273	255.23	358.84	0.0	0.4	5.240	A
5	157.35	39.34	255.95	697.84	0.225	156.19	73.33	0.0	0.3	6.633	A

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	306.55	76.64	341.91	792.18	0.387	305.86	152.59	0.4	0.6	7.391	A
2	0.00	0.00	647.77	556.07	0.000	0.00	0.00	0.0	0.0	0.000	A
3	168.11	42.03	351.64	721.76	0.233	167.82	296.13	0.2	0.3	6.496	A
4	306.55	76.64	88.85	932.89	0.329	306.10	430.62	0.4	0.5	5.740	A
5	187.89	46.97	306.99	674.36	0.279	187.51	87.96	0.3	0.4	7.383	A

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	375.45	93.86	418.43	752.62	0.499	374.04	186.76	0.6	1.0	9.473	A
2	0.00	0.00	792.47	485.37	0.000	0.00	0.00	0.0	0.0	0.000	A
3	205.89	51.47	430.12	684.48	0.301	205.39	362.35	0.3	0.4	7.506	A
4	375.45	93.86	108.73	922.51	0.407	374.68	526.78	0.5	0.7	6.561	A
5	230.11	57.53	375.75	642.71	0.358	229.44	107.66	0.4	0.5	8.697	A

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	375.45	93.86	419.46	752.09	0.499	375.41	187.16	1.0	1.0	9.554	A
2	0.00	0.00	794.87	484.20	0.000	0.00	0.00	0.0	0.0	0.000	A
3	205.89	51.47	431.56	683.80	0.301	205.88	363.31	0.4	0.4	7.531	A
4	375.45	93.86	108.99	922.37	0.407	375.43	528.44	0.7	0.7	6.581	A
5	230.11	57.53	376.53	642.35	0.358	230.10	107.89	0.5	0.6	8.732	A

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	306.55	76.64	343.54	791.34	0.387	307.93	153.23	1.0	0.6	7.467	A
2	0.00	0.00	651.48	554.26	0.000	0.00	0.00	0.0	0.0	0.000	A
3	168.11	42.03	353.85	720.71	0.233	168.59	297.62	0.4	0.3	6.525	A
4	306.55	76.64	89.26	932.67	0.329	307.30	433.18	0.7	0.5	5.765	A
5	187.89	46.97	308.23	673.79	0.279	188.54	88.34	0.6	0.4	7.430	A

Main results: (09:15-09:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	256.72	64.18	287.46	820.33	0.313	257.44	128.23	0.6	0.5	6.405	A
2	0.00	0.00	544.90	606.33	0.000	0.00	0.00	0.0	0.0	0.000	A
3	140.78	35.20	295.91	748.23	0.188	141.08	248.99	0.3	0.2	5.931	A
4	256.72	64.18	74.69	940.27	0.273	257.19	362.30	0.5	0.4	5.275	A
5	157.35	39.34	257.95	696.92	0.226	157.73	73.92	0.4	0.3	6.680	A

2023, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	6.79	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2023	PM	ONE HOUR	15:45	17:15	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 (%)
1		ONE HOUR	✓	216.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	196.00	100.000
4		ONE HOUR	✓	422.00	100.000
5		ONE HOUR	✓	86.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	55.000	157.000	4.000
	2	0.000	0.000	0.000	0.000	0.000
	3	68.000	0.000	0.000	75.000	53.000
	4	218.000	0.000	59.000	0.000	145.000
	5	5.000	0.000	23.000	58.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.25	0.73	0.02
	2	0.20	0.20	0.20	0.20	0.20
	3	0.35	0.00	0.00	0.38	0.27
	4	0.52	0.00	0.14	0.00	0.34
	5	0.06	0.00	0.27	0.67	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	4	0
	2	0	0	2	3	20
	3	0	0	0	0	0
	4	1	0	0	0	3
	5	20	0	0	5	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.018	1.043	1.000
	2	1.000	1.000	1.018	1.030	1.200
	3	1.000	1.000	1.000	1.000	1.000
	4	1.013	1.000	1.000	1.000	1.034
	5	1.200	1.000	1.000	1.051	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.27	5.57	0.4	A	198.21	297.31
2	0.00	0.00	0.0	A	0.00	0.00
3	0.27	6.15	0.4	A	179.85	269.78
4	0.50	7.75	1.0	A	387.23	580.85
5	0.15	6.63	0.2	A	78.92	118.37

Main Results for each time segment

Main results: (15:45-16:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	162.62	40.65	104.74	908.59	0.179	161.75	217.74	0.0	0.2	4.816	A
2	0.00	0.00	266.48	742.56	0.000	0.00	0.00	0.0	0.0	0.000	A
3	147.56	36.89	163.95	839.55	0.176	146.71	102.53	0.0	0.2	5.189	A
4	317.70	79.43	93.57	951.93	0.334	315.72	217.10	0.0	0.5	5.642	A
5	64.75	16.19	258.14	691.10	0.094	64.33	151.15	0.0	0.1	5.740	A

Main results: (16:00-16:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	194.18	48.54	125.66	897.95	0.216	193.95	261.16	0.2	0.3	5.112	A
2	0.00	0.00	319.61	716.58	0.000	0.00	0.00	0.0	0.0	0.000	A
3	176.20	44.05	196.63	823.27	0.214	175.97	122.98	0.2	0.3	5.560	A
4	379.37	94.84	112.22	942.26	0.403	378.69	260.37	0.5	0.7	6.379	A
5	77.31	19.33	309.62	668.37	0.116	77.20	181.29	0.1	0.1	6.090	A

Main results: (16:15-16:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	237.82	59.46	153.80	883.64	0.269	237.46	319.60	0.3	0.4	5.569	A
2	0.00	0.00	391.26	681.53	0.000	0.00	0.00	0.0	0.0	0.000	A
3	215.80	53.95	240.74	801.29	0.269	215.42	150.52	0.3	0.4	6.140	A
4	464.63	116.16	137.39	929.23	0.500	463.36	318.77	0.7	1.0	7.705	A
5	94.69	23.67	378.89	637.78	0.148	94.52	221.86	0.1	0.2	6.625	A

Main results: (16:30-16:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	237.82	59.46	154.14	883.47	0.269	237.81	320.38	0.4	0.4	5.575	A
2	0.00	0.00	391.95	681.20	0.000	0.00	0.00	0.0	0.0	0.000	A
3	215.80	53.95	241.12	801.10	0.269	215.79	150.83	0.4	0.4	6.149	A
4	464.63	116.16	137.62	929.11	0.500	464.60	319.29	1.0	1.0	7.748	A
5	94.69	23.67	379.83	637.37	0.149	94.68	222.39	0.2	0.2	6.632	A

Main results: (16:45-17:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	194.18	48.54	126.19	897.68	0.216	194.53	262.38	0.4	0.3	5.121	A
2	0.00	0.00	320.72	716.03	0.000	0.00	0.00	0.0	0.0	0.000	A
3	176.20	44.05	197.25	822.96	0.214	176.57	123.47	0.4	0.3	5.572	A
4	379.37	94.84	112.61	942.07	0.403	380.61	261.22	1.0	0.7	6.427	A
5	77.31	19.33	311.09	667.72	0.116	77.48	182.13	0.2	0.1	6.100	A

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	162.62	40.65	105.60	908.14	0.179	162.85	219.53	0.3	0.2	4.831	A
2	0.00	0.00	268.45	741.60	0.000	0.00	0.00	0.0	0.0	0.000	A
3	147.56	36.89	165.12	838.97	0.176	147.80	103.33	0.3	0.2	5.211	A
4	317.70	79.43	94.26	951.57	0.334	318.41	218.66	0.7	0.5	5.693	A
5	64.75	16.19	260.28	690.16	0.094	64.86	152.39	0.1	0.1	5.757	A

2023 B + C, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	8.23	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023 B + C	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 (%)
1		ONE HOUR	✓	346.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	191.00	100.000
4		ONE HOUR	✓	348.00	100.000
5		ONE HOUR	✓	213.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	98.000	243.000	5.000
	2	0.000	0.000	0.000	0.000	0.000
	3	62.000	0.000	0.000	93.000	36.000
	4	112.000	0.000	173.000	0.000	63.000
	5	1.000	0.000	63.000	149.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.28	0.70	0.01
	2	0.20	0.20	0.20	0.20	0.20
	3	0.32	0.00	0.00	0.49	0.19
	4	0.32	0.00	0.50	0.00	0.18
	5	0.00	0.00	0.30	0.70	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	3	20
	2	0	0	2	3	20
	3	3	0	0	5	0
	4	5	0	3	0	5
	5	0	0	3	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.020	1.028	1.200
	2	1.000	1.000	1.020	1.029	1.200
	3	1.031	1.000	1.000	1.053	1.000
	4	1.052	1.000	1.028	1.000	1.047
	5	1.000	1.000	1.031	1.032	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.51	9.75	1.0	A	317.50	476.24
2	0.00	0.00	0.0	A	0.00	0.00
3	0.31	7.63	0.4	A	175.26	262.90
4	0.42	6.69	0.7	A	319.33	479.00
5	0.37	8.87	0.6	A	195.45	293.18

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	260.49	65.12	287.91	820.46	0.317	258.65	130.94	0.0	0.5	6.387	A
2	0.00	0.00	546.55	605.71	0.000	0.00	0.00	0.0	0.0	0.000	A
3	143.79	35.95	296.73	748.43	0.192	142.85	249.82	0.0	0.2	5.937	A
4	261.99	65.50	77.03	940.23	0.279	260.46	362.55	0.0	0.4	5.284	A
5	160.36	40.09	259.68	696.64	0.230	159.17	77.81	0.0	0.3	6.683	A

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	311.05	77.76	345.49	790.69	0.393	310.33	157.07	0.5	0.6	7.484	A
2	0.00	0.00	655.82	552.33	0.000	0.00	0.00	0.0	0.0	0.000	A
3	171.71	42.93	356.11	720.22	0.238	171.41	299.71	0.2	0.3	6.557	A
4	312.84	78.21	92.43	932.19	0.336	312.38	435.08	0.4	0.5	5.805	A
5	191.48	47.87	311.47	672.82	0.285	191.09	93.34	0.3	0.4	7.466	A

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	380.95	95.24	422.79	750.73	0.507	379.48	192.25	0.6	1.0	9.657	A
2	0.00	0.00	802.27	480.79	0.000	0.00	0.00	0.0	0.0	0.000	A
3	210.29	52.57	435.56	682.48	0.308	209.77	366.71	0.3	0.4	7.608	A
4	383.16	95.79	113.12	921.39	0.416	382.34	532.21	0.5	0.7	6.669	A
5	234.52	58.63	381.22	640.73	0.366	233.82	114.24	0.4	0.6	8.832	A

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	380.95	95.24	423.87	750.17	0.508	380.91	192.67	1.0	1.0	9.746	A
2	0.00	0.00	804.77	479.57	0.000	0.00	0.00	0.0	0.0	0.000	A
3	210.29	52.57	437.06	681.76	0.308	210.28	367.71	0.4	0.4	7.634	A
4	383.16	95.79	113.40	921.24	0.416	383.14	533.94	0.7	0.7	6.689	A
5	234.52	58.63	382.04	640.35	0.366	234.50	114.50	0.6	0.6	8.870	A

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	311.05	77.76	347.18	789.82	0.394	312.49	157.74	1.0	0.7	7.563	A
2	0.00	0.00	659.67	550.45	0.000	0.00	0.00	0.0	0.0	0.000	A
3	171.71	42.93	358.41	719.13	0.239	172.21	301.26	0.4	0.3	6.587	A
4	312.84	78.21	92.88	931.96	0.336	313.63	437.75	0.7	0.5	5.829	A
5	191.48	47.87	312.76	672.22	0.285	192.16	93.75	0.6	0.4	7.511	A

Main results: (09:15-09:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	260.49	65.12	290.49	819.13	0.318	261.24	132.01	0.7	0.5	6.463	A
2	0.00	0.00	551.72	603.19	0.000	0.00	0.00	0.0	0.0	0.000	A
3	143.79	35.95	299.70	747.02	0.192	144.10	252.02	0.3	0.2	5.975	A
4	261.99	65.50	77.71	939.88	0.279	262.47	366.09	0.5	0.4	5.319	A
5	160.36	40.09	261.73	695.69	0.231	160.76	78.45	0.4	0.3	6.736	A

2023 B + C, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	6.91	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023 B + C	PM	ONE HOUR	15:45	17:15	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 (%)
1		ONE HOUR	✓	221.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	198.00	100.000
4		ONE HOUR	✓	431.00	100.000
5		ONE HOUR	✓	90.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	56.000	161.000	4.000
	2	0.000	0.000	0.000	0.000	0.000
	3	69.000	0.000	0.000	75.000	54.000
	4	223.000	0.000	59.000	0.000	149.000
	5	5.000	0.000	24.000	61.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.25	0.73	0.02
	2	0.20	0.20	0.20	0.20	0.20
	3	0.35	0.00	0.00	0.38	0.27
	4	0.52	0.00	0.14	0.00	0.35
	5	0.06	0.00	0.27	0.68	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	4	0
	2	0	0	2	3	20
	3	0	0	0	0	0
	4	1	0	0	0	3
	5	20	0	0	5	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.018	1.042	1.000
	2	1.000	1.000	1.018	1.030	1.200
	3	1.000	1.000	1.000	1.000	1.000
	4	1.013	1.000	1.000	1.000	1.033
	5	1.200	1.000	1.000	1.048	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.28	5.64	0.4	A	202.79	304.19
2	0.00	0.00	0.0	A	0.00	0.00
3	0.27	6.21	0.4	A	181.69	272.53
4	0.51	7.93	1.0	A	395.49	593.24
5	0.16	6.71	0.2	A	82.59	123.88

Main Results for each time segment

Main results: (15:45-16:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	166.38	41.60	107.72	907.80	0.183	165.49	222.21	0.0	0.2	4.843	A
2	0.00	0.00	273.21	739.41	0.000	0.00	0.00	0.0	0.0	0.000	A
3	149.06	37.27	169.19	837.05	0.178	148.20	104.02	0.0	0.2	5.219	A
4	324.48	81.12	95.06	951.51	0.341	322.43	222.33	0.0	0.5	5.704	A
5	67.76	16.94	262.61	690.47	0.098	67.32	154.88	0.0	0.1	5.773	A

Main results: (16:00-16:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	198.67	49.67	129.25	896.85	0.222	198.44	266.54	0.2	0.3	5.153	A
2	0.00	0.00	327.68	712.79	0.000	0.00	0.00	0.0	0.0	0.000	A
3	178.00	44.50	202.91	820.27	0.217	177.76	124.77	0.2	0.3	5.602	A
4	387.46	96.87	114.02	941.68	0.411	386.75	266.65	0.5	0.7	6.479	A
5	80.91	20.23	314.99	667.30	0.121	80.79	185.77	0.1	0.1	6.136	A

Main results: (16:15-16:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	243.33	60.83	158.19	882.13	0.276	242.94	326.16	0.3	0.4	5.628	A
2	0.00	0.00	401.13	676.89	0.000	0.00	0.00	0.0	0.0	0.000	A
3	218.00	54.50	248.42	797.63	0.273	217.61	152.71	0.3	0.4	6.202	A
4	474.54	118.63	139.58	928.44	0.511	473.19	326.45	0.7	1.0	7.884	A
5	99.09	24.77	385.44	636.14	0.156	98.91	227.33	0.1	0.2	6.699	A

Main results: (16:30-16:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	243.33	60.83	158.54	881.95	0.276	243.32	326.98	0.4	0.4	5.636	A
2	0.00	0.00	401.86	676.53	0.000	0.00	0.00	0.0	0.0	0.000	A
3	218.00	54.50	248.82	797.43	0.273	217.99	153.03	0.4	0.4	6.212	A
4	474.54	118.63	139.83	928.31	0.511	474.50	326.99	1.0	1.0	7.931	A
5	99.09	24.77	386.43	635.70	0.156	99.09	227.90	0.2	0.2	6.707	A

Main results: (16:45-17:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	198.67	49.67	129.80	896.57	0.222	199.05	267.82	0.4	0.3	5.165	A
2	0.00	0.00	328.85	712.22	0.000	0.00	0.00	0.0	0.0	0.000	A
3	178.00	44.50	203.57	819.94	0.217	178.38	125.28	0.4	0.3	5.616	A
4	387.46	96.87	114.41	941.48	0.412	388.78	267.53	1.0	0.7	6.528	A
5	80.91	20.23	316.53	666.62	0.121	81.09	186.65	0.2	0.1	6.149	A

Main results: (17:00-17:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	166.38	41.60	108.62	907.34	0.183	166.62	224.07	0.3	0.2	4.861	A
2	0.00	0.00	275.25	738.42	0.000	0.00	0.00	0.0	0.0	0.000	A
3	149.06	37.27	170.41	836.44	0.178	149.31	104.84	0.3	0.2	5.242	A
4	324.48	81.12	95.77	951.14	0.341	325.22	223.95	0.7	0.5	5.757	A
5	67.76	16.94	264.82	689.49	0.098	67.87	156.17	0.1	0.1	5.791	A

2023 B + C + D, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	8.54	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2023 B + C + D	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 (%)
1		ONE HOUR	✓	347.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	201.00	100.000
4		ONE HOUR	✓	376.00	100.000
5		ONE HOUR	✓	214.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	98.000	244.000	5.000
	2	0.000	0.000	0.000	0.000	0.000
	3	62.000	0.000	0.000	103.000	36.000
	4	114.000	0.000	196.000	0.000	66.000
	5	1.000	0.000	63.000	150.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.28	0.70	0.01
	2	0.20	0.20	0.20	0.20	0.20
	3	0.31	0.00	0.00	0.51	0.18
	4	0.30	0.00	0.52	0.00	0.18
	5	0.00	0.00	0.29	0.70	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	3	20
	2	0	0	2	3	20
	3	3	0	0	5	0
	4	5	0	3	0	5
	5	0	0	3	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.020	1.029	1.200
	2	1.000	1.000	1.020	1.029	1.200
	3	1.032	1.000	1.000	1.049	1.000
	4	1.053	1.000	1.026	1.000	1.045
	5	1.000	1.000	1.032	1.033	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.52	10.16	1.1	B	318.41	477.62
2	0.00	0.00	0.0	A	0.00	0.00
3	0.32	7.83	0.5	A	184.44	276.66
4	0.45	7.07	0.8	A	345.02	517.54
5	0.38	9.19	0.6	A	196.37	294.56

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	261.24	65.31	305.82	810.82	0.322	259.36	132.42	0.0	0.5	6.506	A
2	0.00	0.00	565.18	596.67	0.000	0.00	0.00	0.0	0.0	0.000	A
3	151.32	37.83	298.19	748.32	0.202	150.32	266.99	0.0	0.3	6.010	A
4	283.07	70.77	77.03	942.03	0.300	281.37	371.48	0.0	0.4	5.434	A
5	161.11	40.28	278.35	687.64	0.234	159.90	80.05	0.0	0.3	6.807	A

Main results: (08:15-08:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	311.95	77.99	366.99	779.24	0.400	311.19	158.85	0.5	0.7	7.679	A
2	0.00	0.00	678.19	541.47	0.000	0.00	0.00	0.0	0.0	0.000	A
3	180.69	45.17	357.87	719.92	0.251	180.37	320.32	0.3	0.3	6.667	A
4	338.02	84.50	92.43	933.97	0.362	337.47	445.81	0.4	0.6	6.030	A
5	192.38	48.10	333.87	662.15	0.291	191.97	96.03	0.3	0.4	7.650	A

Main results: (08:30-08:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	382.05	95.51	449.07	736.87	0.518	380.48	194.41	0.7	1.1	10.056	B
2	0.00	0.00	829.55	467.53	0.000	0.00	0.00	0.0	0.0	0.000	A
3	221.31	55.33	437.65	681.95	0.325	220.73	391.90	0.3	0.5	7.796	A
4	413.98	103.50	113.10	923.15	0.448	413.02	545.28	0.6	0.8	7.044	A
5	235.62	58.90	408.61	627.85	0.375	234.87	117.52	0.4	0.6	9.143	A

Main results: (08:45-09:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	382.05	95.51	450.29	736.24	0.519	382.00	194.87	1.1	1.1	10.159	B
2	0.00	0.00	832.29	466.19	0.000	0.00	0.00	0.0	0.0	0.000	A
3	221.31	55.33	439.26	681.19	0.325	221.29	393.03	0.5	0.5	7.827	A
4	413.98	103.50	113.40	922.99	0.449	413.96	547.15	0.8	0.8	7.071	A
5	235.62	58.90	409.56	627.42	0.376	235.60	117.80	0.6	0.6	9.186	A

Main results: (09:00-09:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	311.95	77.99	368.89	778.26	0.401	313.50	159.58	1.1	0.7	7.772	A
2	0.00	0.00	682.39	539.41	0.000	0.00	0.00	0.0	0.0	0.000	A
3	180.69	45.17	360.31	718.76	0.251	181.25	322.08	0.5	0.3	6.706	A
4	338.02	84.50	92.89	933.73	0.362	338.95	448.68	0.8	0.6	6.061	A
5	192.38	48.10	335.36	661.47	0.291	193.11	96.48	0.6	0.4	7.698	A

Main results: (09:15-09:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	261.24	65.31	308.63	809.37	0.323	262.03	133.53	0.7	0.5	6.588	A
2	0.00	0.00	570.65	593.99	0.000	0.00	0.00	0.0	0.0	0.000	A
3	151.32	37.83	301.25	746.87	0.203	151.65	269.41	0.3	0.3	6.051	A
4	283.07	70.77	77.72	941.67	0.301	283.63	375.19	0.6	0.4	5.474	A
5	161.11	40.28	280.62	686.59	0.235	161.53	80.72	0.4	0.3	6.863	A

2023 B + C + D, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Racecourse Roundabout	Standard Roundabout	1,2,3,4,5	7.16	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options
[same as above]

Roundabout Geometry
[same as above]

Slope / Intercept / Capacity
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2023 B + C + D	PM	ONE HOUR	15:45	17:15	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 (%)
1		ONE HOUR	✓	223.00	100.000
2		ONE HOUR	✓	0.00	100.000
3		ONE HOUR	✓	221.00	100.000
4		ONE HOUR	✓	448.00	100.000
5		ONE HOUR	✓	93.00	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1	2	3	4	5
From	1	0.000	0.000	56.000	163.000	4.000
	2	0.000	0.000	0.000	0.000	0.000
	3	69.000	0.000	0.000	98.000	54.000
	4	224.000	0.000	73.000	0.000	151.000
	5	5.000	0.000	24.000	64.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.00	0.25	0.73	0.02
	2	0.20	0.20	0.20	0.20	0.20
	3	0.31	0.00	0.00	0.44	0.24
	4	0.50	0.00	0.16	0.00	0.34
	5	0.05	0.00	0.26	0.69	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	2	4	0
	2	0	0	2	3	20
	3	0	0	0	0	0
	4	1	0	0	0	3
	5	20	0	0	5	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.018	1.042	1.000
	2	1.000	1.000	1.018	1.030	1.200
	3	1.000	1.000	1.000	1.000	1.000
	4	1.013	1.000	1.000	1.000	1.032
	5	1.200	1.000	1.000	1.046	1.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.28	5.74	0.4	A	204.63	306.94
2	0.00	0.00	0.0	A	0.00	0.00
3	0.31	6.53	0.4	A	202.79	304.19
4	0.53	8.26	1.1	A	411.09	616.64
5	0.16	6.83	0.2	A	85.34	128.01

Main Results for each time segment

Main results: (15:45-16:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	167.89	41.97	120.43	901.73	0.186	166.98	222.93	0.0	0.2	4.893	A
2	0.00	0.00	287.41	732.67	0.000	0.00	0.00	0.0	0.0	0.000	A
3	166.38	41.60	172.92	835.27	0.199	165.39	114.49	0.0	0.2	5.366	A
4	337.28	84.32	95.05	952.15	0.354	335.11	243.26	0.0	0.5	5.815	A
5	70.02	17.50	273.80	686.48	0.102	69.56	156.36	0.0	0.1	5.832	A

Main results: (16:00-16:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	200.47	50.12	144.49	889.51	0.225	200.23	267.41	0.2	0.3	5.222	A
2	0.00	0.00	344.72	704.70	0.000	0.00	0.00	0.0	0.0	0.000	A
3	198.67	49.67	207.40	818.13	0.243	198.39	137.32	0.2	0.3	5.806	A
4	402.74	100.69	114.01	942.32	0.427	401.97	291.78	0.5	0.7	6.652	A
5	83.61	20.90	328.42	662.29	0.126	83.48	187.55	0.1	0.1	6.217	A

Main results: (16:15-16:30)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	245.53	61.38	176.83	873.10	0.281	245.13	327.20	0.3	0.4	5.729	A
2	0.00	0.00	421.97	666.99	0.000	0.00	0.00	0.0	0.0	0.000	A
3	243.33	60.83	253.90	795.01	0.306	242.85	168.06	0.3	0.4	6.514	A
4	493.26	123.31	139.56	929.08	0.531	491.76	357.20	0.7	1.1	8.203	A
5	102.39	25.60	401.83	629.79	0.163	102.20	229.49	0.1	0.2	6.822	A

Main results: (16:30-16:45)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	245.53	61.38	177.25	872.88	0.281	245.52	328.08	0.4	0.4	5.737	A
2	0.00	0.00	422.77	666.60	0.000	0.00	0.00	0.0	0.0	0.000	A
3	243.33	60.83	254.33	794.80	0.306	243.32	168.45	0.4	0.4	6.527	A
4	493.26	123.31	139.82	928.94	0.531	493.22	357.82	1.1	1.1	8.261	A
5	102.39	25.60	402.94	629.30	0.163	102.39	230.10	0.2	0.2	6.831	A

Main results: (16:45-17:00)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	200.47	50.12	145.15	889.18	0.225	200.86	268.78	0.4	0.3	5.232	A
2	0.00	0.00	346.01	704.07	0.000	0.00	0.00	0.0	0.0	0.000	A
3	198.67	49.67	208.08	817.79	0.243	199.14	137.93	0.4	0.3	5.825	A
4	402.74	100.69	114.43	942.10	0.427	404.20	292.79	1.1	0.8	6.710	A
5	83.61	20.90	330.14	661.53	0.126	83.80	188.50	0.2	0.1	6.235	A

Main results: (17:00-17:15)

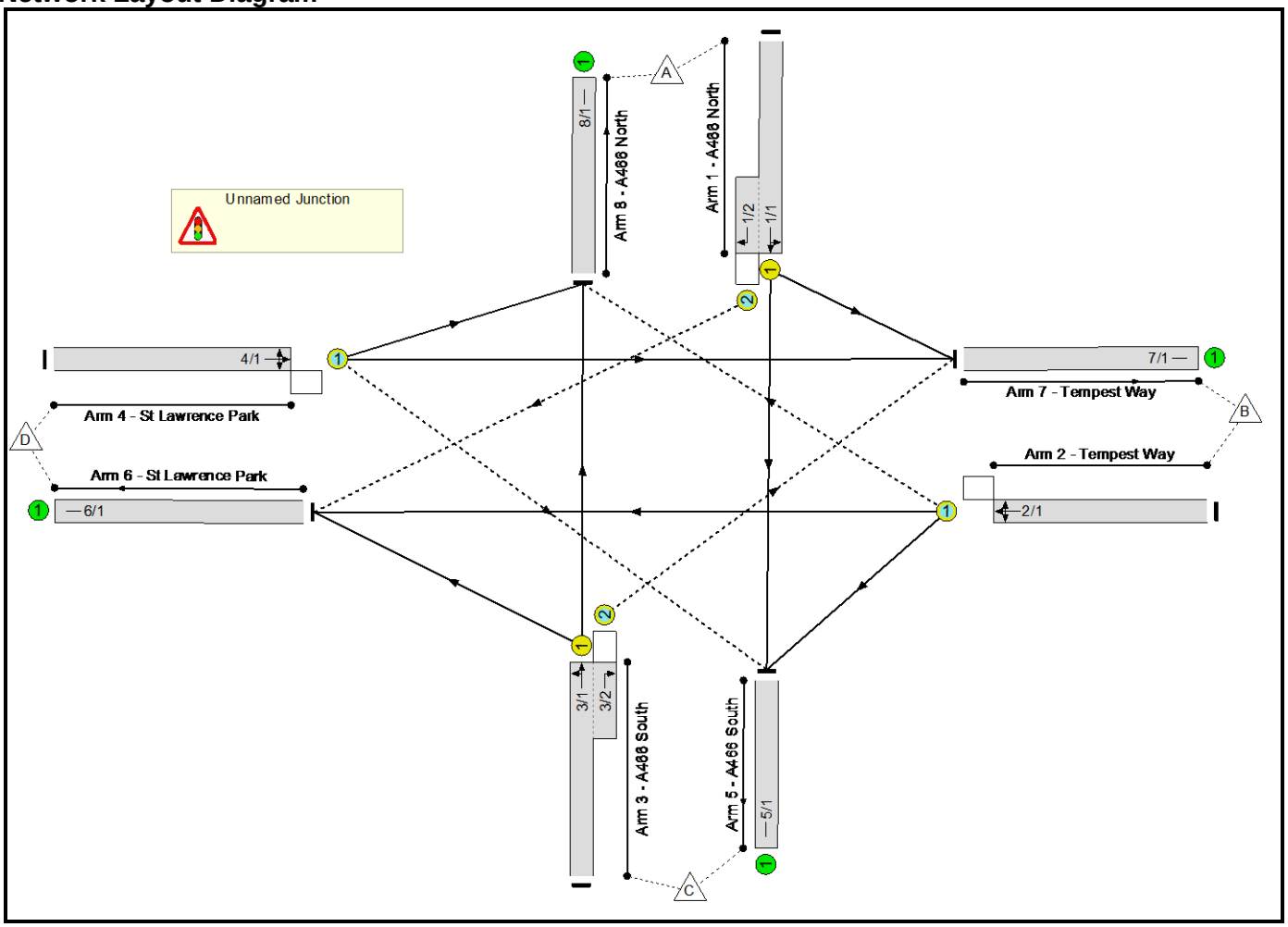
Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	167.89	41.97	121.46	901.21	0.186	168.14	224.85	0.3	0.2	4.912	A
2	0.00	0.00	289.60	731.60	0.000	0.00	0.00	0.0	0.0	0.000	A
3	166.38	41.60	174.18	834.64	0.199	166.67	115.41	0.3	0.3	5.393	A
4	337.28	84.32	95.78	951.77	0.354	338.09	245.08	0.8	0.6	5.873	A
5	70.02	17.50	276.17	685.43	0.102	70.14	157.69	0.1	0.1	5.853	A

Full Input Data And Results

User and Project Details

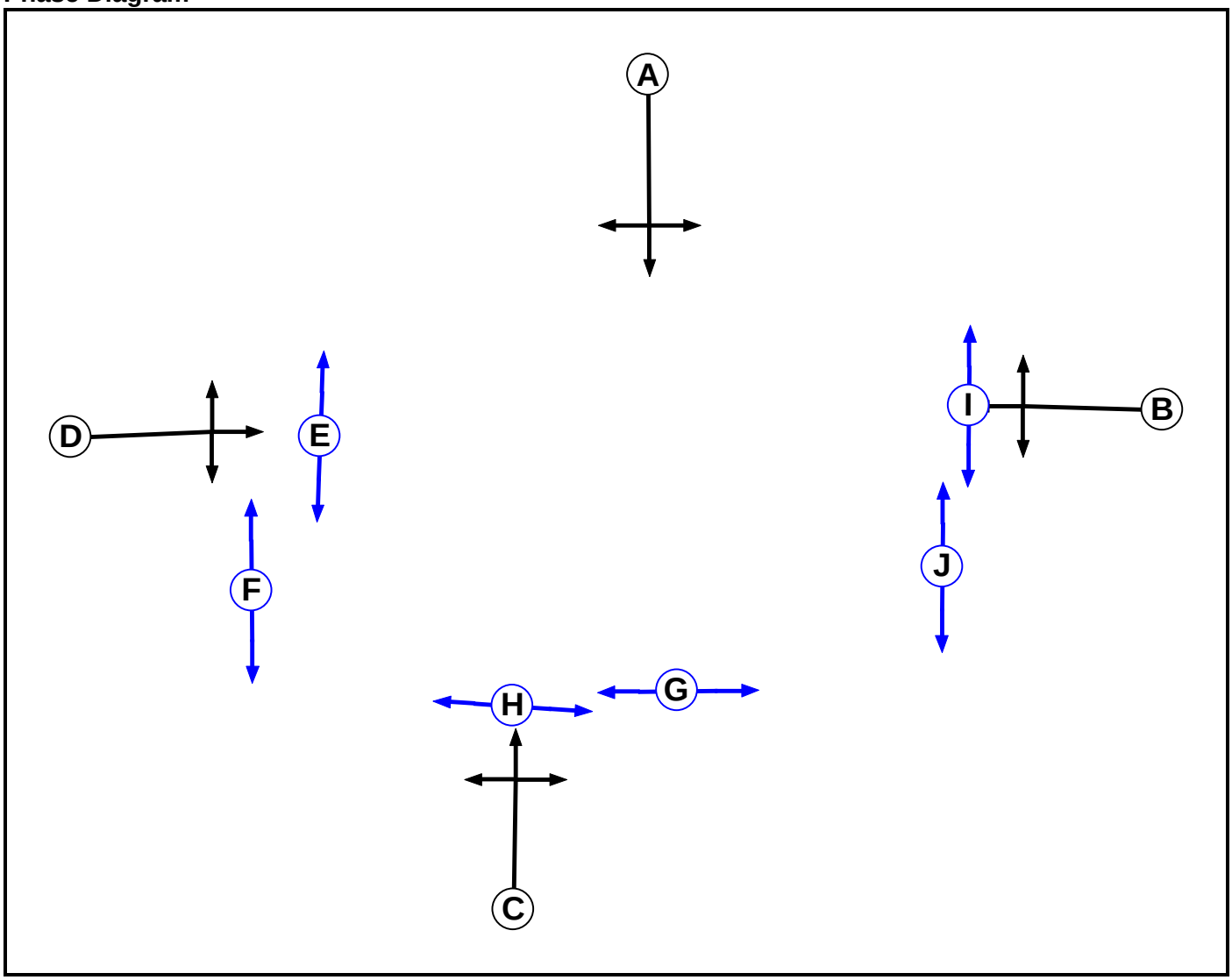
Project:	**Bayfields**
Title:	**A466 / Tempest Way Signals**
Location:	Chepstow

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		5	5
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Pedestrian		5	5
I	Pedestrian		5	5
J	Pedestrian		5	5

Full Input Data And Results

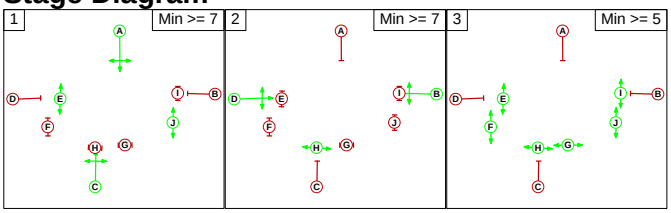
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J
A		5	-	5	-	6	6	-	7	-
B	5		5	-	-	7	7	-	-	5
C	-	5		5	-	6	-	5	7	-
D	5	-	5		5	-	7	-	7	-
E	-	-	-	5		-	-	-	-	-
F	5	5	5	-	-		-	-	-	-
G	5	5	-	5	-	-		-	-	-
H	-	-	5	-	-	-	-		-	-
I	5	-	5	5	-	-	-	-		-
J	-	5	-	-	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A C E J
2	B D H
3	E F G H I J

Stage Diagram



Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/2 (A466 North)	6/1 (Right)	1000	0	3/1	0.50	All	2.00	-	0.50	2	2.00
2/1 (Tempest Way)	8/1 (Right)	1000	0	4/1	0.50	To 7/1 (Ahead) To 8/1 (Left)	2.00	2.00	0.50	2	2.00
3/2 (A466 South)	7/1 (Right)	1000	0	1/1	0.50	All	2.00	-	0.50	2	2.00
4/1 (St Lawrence Park)	5/1 (Right)	1000	0	2/1	0.50	To 5/1 (Left) To 6/1 (Ahead)	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A466 North)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 7 Left	15.00
1/2 (A466 North)	O	A	2	3	5.0	Geom	-	3.00	0.00	Y	Arm 6 Right	20.00
2/1 (Tempest Way)	O	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
											Arm 8 Right	20.00
3/1 (A466 South)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Left	15.00
											Arm 8 Ahead	Inf
3/2 (A466 South)	O	C	2	3	5.0	Geom	-	3.00	0.00	Y	Arm 7 Right	20.00
4/1 (St Lawrence Park)	O	D	2	3	60.0	Geom	-	2.75	0.00	Y	Arm 5 Right	20.00
											Arm 7 Ahead	Inf
											Arm 8 Left	15.00
5/1 (A466 South)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (St Lawrence Park)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Tempest Way)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A466 North)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2017 AM'	08:00	09:00	01:00	
2: '2017 PM'	16:00	17:00	01:00	
5: '2023 Base + Com AM'	08:00	09:00	01:00	
6: '2023 Base + Com PM'	16:00	17:00	01:00	
7: '2023 Base + Com + Dev AM'	08:00	09:00	01:00	
8: '2023 Base + Com + Dev PM'	16:00	17:00	01:00	

Full Input Data And Results

Full Input Data And Results

Network Results

Scenario 1: '2017 AM' (FG1: '2017 AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Full Phase	Arrow Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**51.9%**	**-**	**-**	**190**	**0**	**0**	**4.8**	**-**	**-**
Unnamed Junction	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**51.9%**	**-**	**-**	**190**	**0**	**0**	**4.8**	**-**	**-**
1/1+1/2	A466 North Ahead Right Left	U+O	N/A	A		660	1926:1781	1246+25	51.9 : 51.9%	10.3	9.4	13	0	0	1.9	8.9	0.5
2/1	Tempest Way Left Ahead Right	O	N/A	B		65	1787	298	21.8%	36.2	1.5	29	0	0	0.7	1.3	0.1
3/1+3/2	A466 South Left Right Ahead	U+O	N/A	C		580	1934:1781	1061+248	44.3 : 44.3%	10.1	6.2	110	0	0	1.6	5.8	0.4
4/1	St Lawrence Park Right Ahead Left	O	N/A	D		60	1751	292	20.6%	36.6	1.3	38	0	0	0.6	1.2	0.1

C1 PRC for Signalled Lanes (%): 73.3 Total Delay for Signalled Lanes (pcuHr): 4.78 Cycle Time (s): 156

PRC Over All Lanes (%): 73.3 Total Delay Over All Lanes(pcuHr): 4.78

Full Input Data And Results

Scenario 2: '2017 PM' (FG2: '2017 PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Full Phase	Arrow Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**76.5%**	**-**	**-**	**127**	**0**	**0**	**6.7**	**-**	**-**
Unnamed Junction	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**76.5%**	**-**	**-**	**127**	**0**	**0**	**6.7**	**-**	**-**
1/1+1/2	A466 North Ahead Right Left	U+O	N/A	A		435	1932:1781	883+32	47.6 : 47.6%	13.9	5.5	15	0	0	1.7	5.0	0.5
2/1	Tempest Way Left Ahead Right	O	N/A	B		149	1779	479	31.1%	21.0	2.2	33	0	0	0.9	2.0	0.2
3/1+3/2	A466 South Left Right Ahead	U+O	N/A	C		713	1930:1781	851+81	76.5 : 76.5%	20.2	11.4	62	0	0	4.0	9.8	1.6
4/1	St Lawrence Park Right Ahead Left	O	N/A	D		31	1750	471	6.6%	19.0	0.4	17	0	0	0.2	0.4	0.0

C1 PRC for Signalled Lanes (%): 17.6 Total Delay for Signalled Lanes (pcuHr): 6.72 Cycle Time (s): 104
PRC Over All Lanes (%): 17.6 Total Delay Over All Lanes(pcuHr): 6.72

Full Input Data And Results

Scenario 5: '2023 B + C AM' (FG5: '2023 Base + Com AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Full Phase	Arrow Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**53.7%**	**-**	**-**	**195**	**0**	**0**	**5.0**	**-**	**-**
Unnamed Junction	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**53.7%**	**-**	**-**	**195**	**0**	**0**	**5.0**	**-**	**-**
1/1+1/2	A466 North Ahead Right Left	U+O	N/A	A		683	1926:1781	1247+24	53.7 : 53.7%	10.6	10.0	13	0	0	2.0	9.4	0.6
2/1	Tempest Way Left Ahead Right	O	N/A	B		67	1787	298	22.5%	36.3	1.5	30	0	0	0.7	1.4	0.1
3/1+3/2	A466 South Left Right Ahead	U+O	N/A	C		602	1934:1781	1063+246	46.0 : 46.0%	10.3	6.6	113	0	0	1.7	6.2	0.4
4/1	St Lawrence Park Right Ahead Left	O	N/A	D		62	1751	292	21.2%	36.8	1.4	39	0	0	0.6	1.3	0.1

C1 PRC for Signalled Lanes (%): 67.4 Total Delay for Signalled Lanes (pcuHr): 5.04 Cycle Time (s): 156
PRC Over All Lanes (%): 67.4 Total Delay Over All Lanes(pcuHr): 5.04

Full Input Data And Results

Scenario 6: '2023 B + C PM' (FG6: '2023 Base + Com PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Full Phase	Arrow Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**80.0%**	**-**	**-**	**131**	**0**	**0**	**7.4**	**-**	**-**
Unnamed Junction	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**80.0%**	**-**	**-**	**131**	**0**	**0**	**7.4**	**-**	**-**
1/1+1/2	A466 North Ahead Right Left	U+O	N/A	A		456	1932:1781	884+30	49.9 : 49.9%	14.2	5.9	15	0	0	1.8	5.4	0.5
2/1	Tempest Way Left Ahead Right	O	N/A	B		154	1779	479	32.2%	21.1	2.3	34	0	0	0.9	2.1	0.2
3/1+3/2	A466 South Left Right Ahead	U+O	N/A	C		745	1930:1781	851+80	80.0 : 80.0%	21.9	12.5	64	0	0	4.5	10.5	2.0
4/1	St Lawrence Park Right Ahead Left	O	N/A	D		32	1751	471	6.8%	19.0	0.4	18	0	0	0.2	0.4	0.0

C1 PRC for Signalled Lanes (%): 12.5 Total Delay for Signalled Lanes (pcuHr): 7.40 Cycle Time (s): 104
PRC Over All Lanes (%): 12.5 Total Delay Over All Lanes(pcuHr): 7.40

Full Input Data And Results

Scenario 7: '2023 B + C + D AM' (FG7: '2023 Base + Com + Dev AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Full Phase	Arrow Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**56.9%**	**-**	**-**	**197**	**0**	**0**	**5.4**	**-**	**-**
Unnamed Junction	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**56.9%**	**-**	**-**	**197**	**0**	**0**	**5.4**	**-**	**-**
1/1+1/2	A466 North Ahead Right Left	U+O	N/A	A		723	1927:1781	1247+25	56.9 : 56.9%	11.0	11.0	14	0	0	2.2	10.3	0.7
2/1	Tempest Way Left Ahead Right	O	N/A	B		68	1787	298	22.8%	36.3	1.5	31	0	0	0.7	1.4	0.1
3/1+3/2	A466 South Left Right Ahead	U+O	N/A	C		619	1935:1781	1069+239	47.3 : 47.3%	10.6	7.1	113	0	0	1.8	6.6	0.4
4/1	St Lawrence Park Right Ahead Left	O	N/A	D		62	1751	292	21.2%	36.8	1.4	39	0	0	0.6	1.3	0.1

C1 PRC for Signalled Lanes (%): 58.3 Total Delay for Signalled Lanes (pcuHr): 5.35 Cycle Time (s): 156
PRC Over All Lanes (%): 58.3 Total Delay Over All Lanes(pcuHr): 5.35

Full Input Data And Results

Scenario 8: '2023 B + C + D PM' (FG8: '2023 Base + Com + Dev PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Full Phase	Arrow Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)
Network	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**84.1%**	**-**	**-**	**132**	**0**	**0**	**8.4**	**-**	**-**
Unnamed Junction	**-**	**-**	**N/A**	**-**		**-**	**-**	**-**	**84.1%**	**-**	**-**	**132**	**0**	**0**	**8.4**	**-**	**-**
1/1+1/2	A466 North Ahead Right Left	U+O	N/A	A		479	1932:1781	885+29	52.5 : 52.5%	14.6	6.3	15	0	0	1.9	5.8	0.6
2/1	Tempest Way Left Ahead Right	O	N/A	B		155	1779	479	32.4%	21.1	2.3	35	0	0	0.9	2.1	0.2
3/1+3/2	A466 South Left Right Ahead	U+O	N/A	C		782	1931:1781	854+76	84.1 : 84.1%	24.6	14.1	64	0	0	5.3	11.5	2.6
4/1	St Lawrence Park Right Ahead Left	O	N/A	D		33	1750	471	7.0%	19.0	0.4	18	0	0	0.2	0.4	0.0

C1 PRC for Signalled Lanes (%): 7.1 Total Delay for Signalled Lanes (pcuHr): 8.36 Cycle Time (s): 104
PRC Over All Lanes (%): 7.1 Total Delay Over All Lanes(pcuHr): 8.36