REDSTART

A4119 Ely Valley Road Dualling, Coedely

Transport Assessment

June 2019

REDSTART

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Transport Assessment

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Contents

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1. Introduction

Redstart has been commissioned by Rhondda Cynon Taf County Borough Council (RCTCBC) to undertake a Transport Assessment (TA) to support the proposed development of the A4119 Ely Valley Road Dualling in Coedely.

This Transport Assessment examines the highway and transportation issues associated with the proposed development including the provision for pedestrians, cyclists and other non-car users and how to best utilise and enhance existing facilities.

1.1 Report Structure

The remainder of the report has been set out in the following chapters:

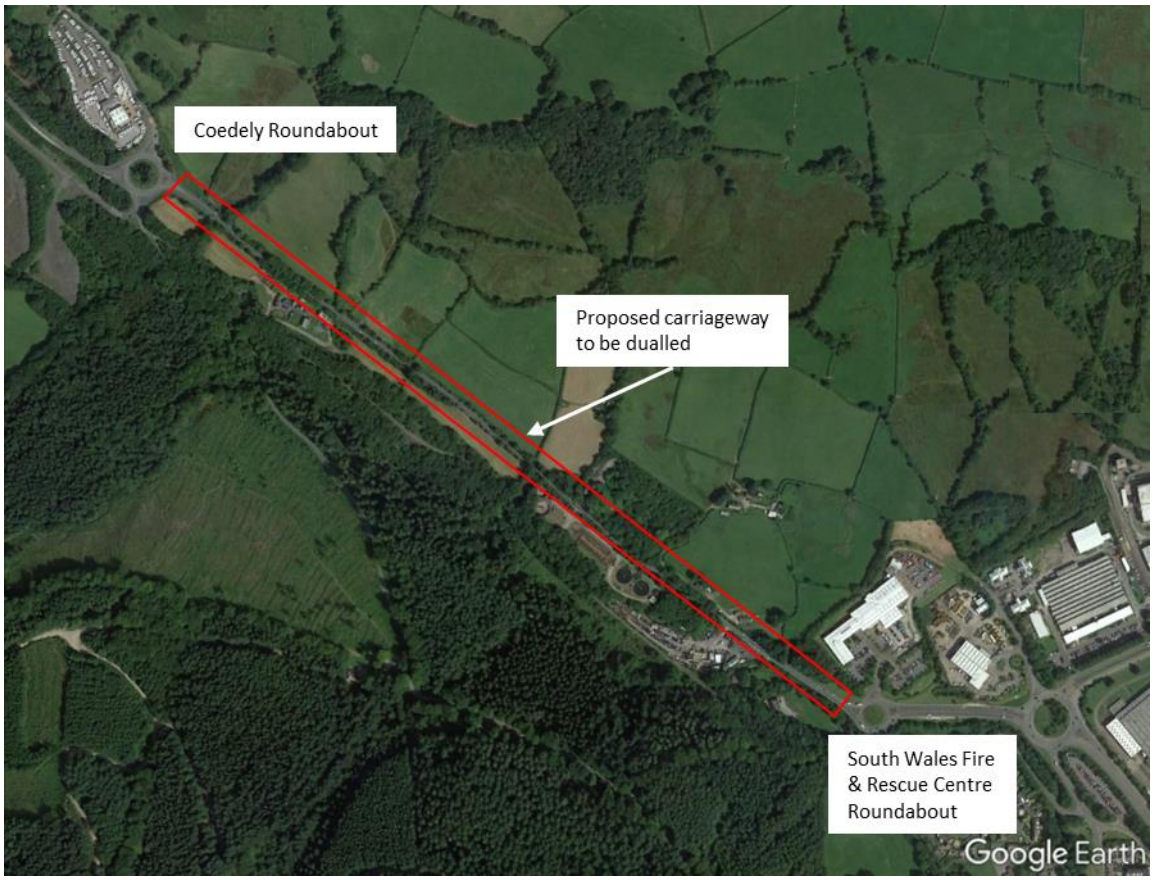
- Chapter 2: Existing Conditions;
- Chapter 3: Relevant Transport Policy Context;
- Chapter 4: Collision Analysis;
- Chapter 5: Proposed Development;
- Chapter 6: Parking Requirements;
- Chapter 7: Highway Impact Assessment;
- Chapter 8: Transport Implementation Strategy; and
- Chapter 9: Summary and Conclusions.

2. Existing Conditions

2.1 Site Location

The carriageway that is proposed to be dualled is the A4119 to the south of Coedely, between the roundabout adjacent to the South Wales Fire & Rescue Centre and the Coedely roundabout. The site boundary is illustrated in Figure 2.1.

Figure 2.1 A4119 Carriageway Dualling Location



The A4119 carriageway proposed to be dualled is bound by a sewage treatment works, farmland and a residential property to the south, and farmland and a residential property to the north.

2.2 Existing Carriageway Layout and Operation

At the South Wales Fire & Rescue Centre in Ynysmaerdy the A4119 carriageway converts from dual carriageway standard to single carriageway standard. The A4119 is single carriageway between this point and Tonypandy approximately seven miles to the north.

Significant delay and congestion is currently experienced along the A4119 carriageway in this location with extended queues generated along the carriageway within the study area, as well as to the north and south. The ANPR survey indicated that significantly reduced vehicle speeds occur along this road during the peak hours and the queue survey indicated that extended queues are generated either side of the carriageway study area.

3. Relevant Transport Policy Context

3.1 Extent of assessment

This Transport Assessment has been carried out in accordance with the Welsh Government's Planning Policy Wales Edition 9, Technical Advice Note (TAN): 18 Transport, and RCTCBC Local Development Plan (LDP)

3.2 Planning Policy Wales (Welsh Government 2016)

In addition to addressing the existing congestion and travel issues that exist along the A4119 within the study area the proposed carriageway improvement is intended to support the development of the RCTCBC LDP employment allocation at Coedely (SSA14). The proposed dualling scheme will improve connections to the site by extending the dual carriageway standard from the Fire & Rescue Centre roundabout in Ynysmaerdy to the Coedely roundabout/site access roundabout. This will mean that a continuous dual carriageway is provided along the A4119 from junction 34 of the M4 all the way to the site access in Coedely.

PPW states that 'It is also expected that proposed access to a development will reflect the likely travel patterns involved.' The proposed allocation at Coedely is to include B1 Business and B2 General Industrial use. It is considered that the proposal is well aligned with PPW as the B2 component of the site is likely to require a high degree of access by road.

It is also stated within PPW that 'large-scale development proposals may merit special traffic measures or road works to cater for them in the existing network' and that 'where transport improvements will be needed to enable the proposal to go ahead, these should normally be provided first.' It is the intention of RCTCBC that improved connections to the site at Coedely are provided prior to the occupation of the development site.

3.3 Technical Advice Note: 18 – Transport (Welsh Government 2007)

Technical Advice Note 18 (TAN 18) promotes the overall integration of transport in the following ways:

- Integration of transport and land use planning;
- Integration between different types of transport; and,
- Integration of transport policy with policies for the environment, education, social justice, health, economic development and wealth creation.

The integration of land use planning and the development of transport has a key role to play in the promotion of sustainable development. TAN 18 identifies the following ways in which integration can help achieve sustainable environmental outcomes:

- Promoting resource and travel efficient settlement patterns;
- Ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;
- Managing parking provision;

- Ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport and traffic management and parking/servicing;
- Encouraging the location of development near other related uses to encourage multi-purpose trips;
- Promoting cycling and walking;
- Supporting the provision of high quality, inclusive public transport;
- Supporting provision of a reliable and efficient freight network;
- Promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;
- Encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and
- Ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions.

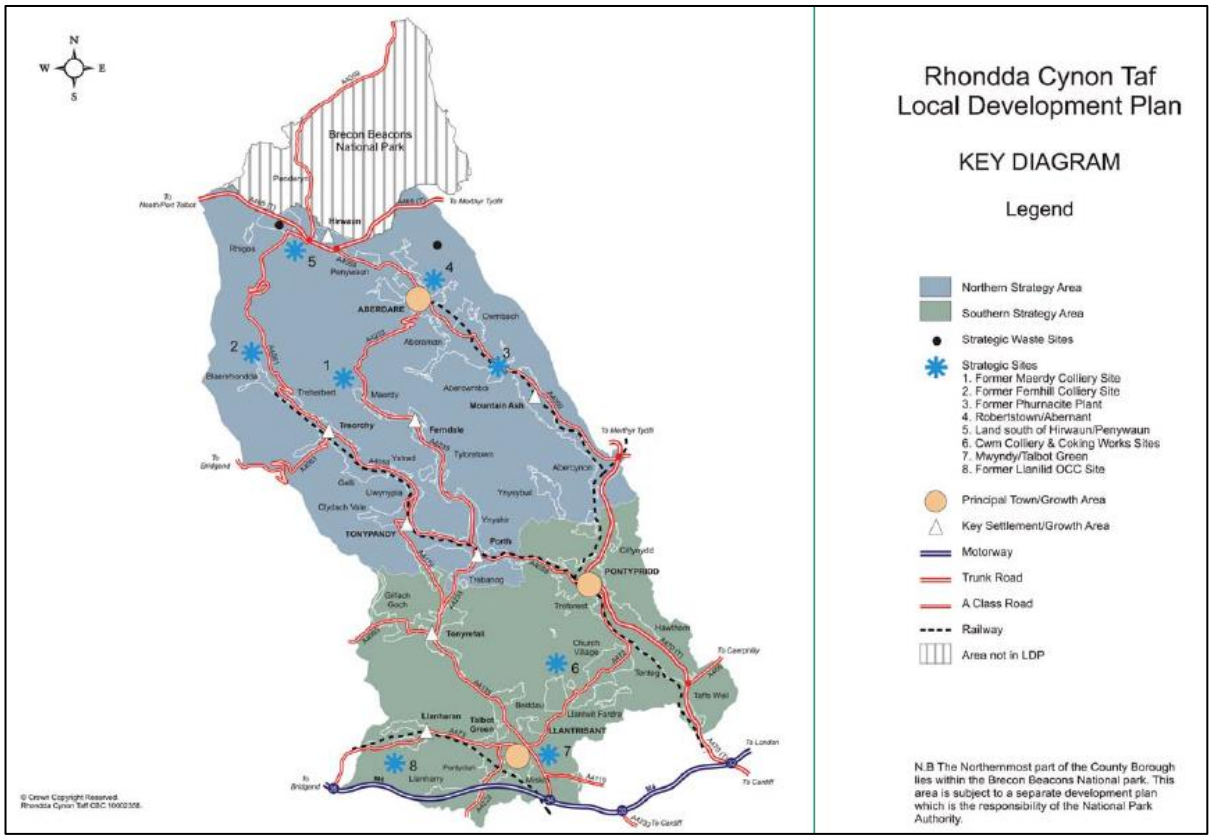
TAN 18 indicates that 'local authorities must apply for planning permission for their own development proposals such as road schemes. Such applications must be published and where they affect existing or proposed trunk roads local authorities should consult Transport Wales within the Assembly Government.' This transport assessment supports the planning application for the A4119 Dualling Scheme therefore satisfying the requirement for planning permission to be granted for local authority highway schemes.

3.4 RCTCBC Local Development Plan (Welsh Government 2006-2021)

The RCTCBC LDP covers the 15-year period between 2006 and 2021. It is used by the Council to guide and control development and to provide a basis on which to base decisions related to development within the County Borough.

The core strategy for RCT advocates a different approach for development in the north and south of the County Borough in-line with social, economic and environmental trends. The proposed A4119 Dualling shceme is within the southern strategy area as illustrated in Figure 3.1.

Figure 3.1 RCT LDP Strategy Areas



Policy 'CS8 – Transportation' of the RCT LDP states that improvements to the strategic transportation network in Rhondda Cynon Taf will be secured through the implementation of strategic corridor management systems along the A4119 and A473 corridors. The proposed carriageway improvement along the A4119 in Coedely contributes to policy CS8 for the implementation of strategic corridor management along the A4119 corridor.

4. Collision Analysis

A review of the collisions that have occurred along the proposed carriageway improvement area and the adjacent junctions has been undertaken. The CrashMap database has been interrogated to provide collisions that have occurred in the most recently recorded 5-year period. The results are illustrated in Figure 4.1.

Figure 4.1 – CrashMap collision statistics on the A4119 near Coedely

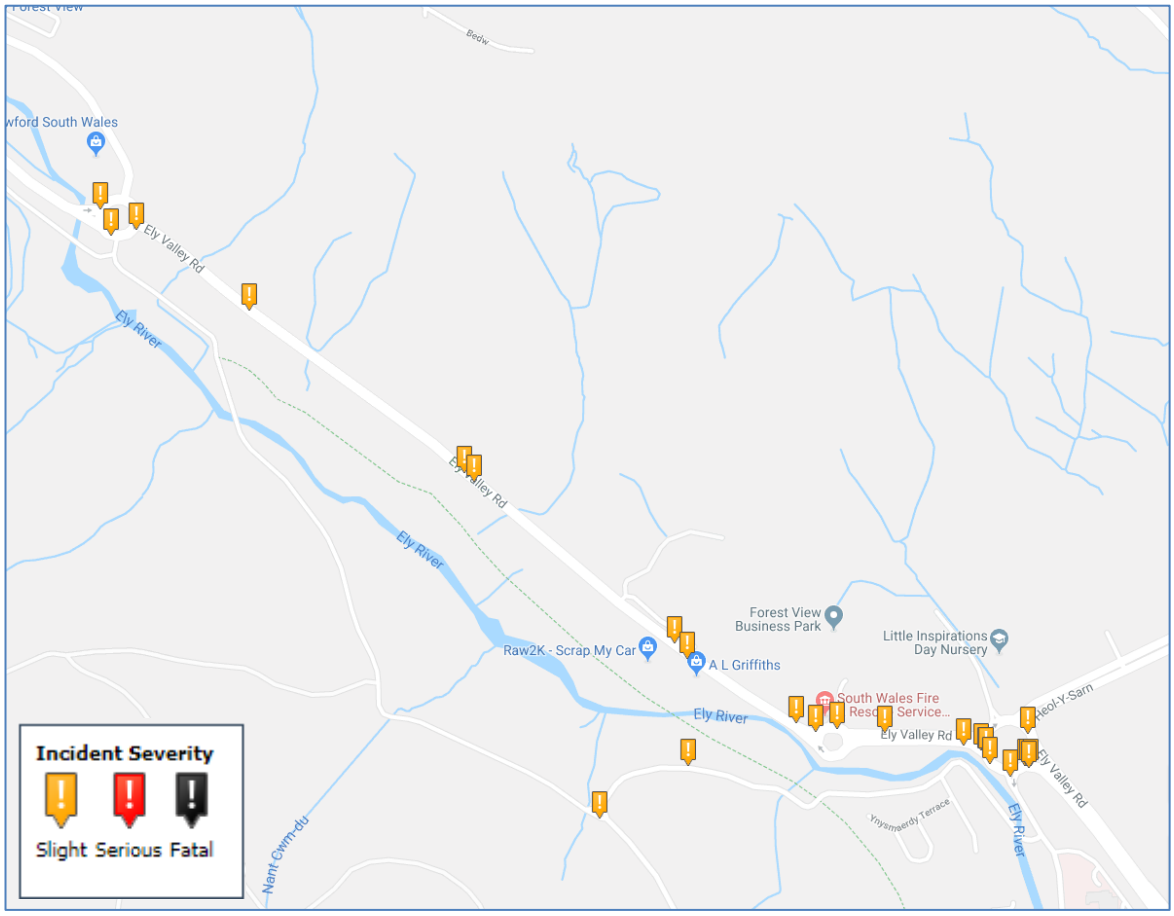


Figure 4.1 shows that a total of 23 collisions occurred along the carriageway site and within the immediate vicinity (not including collisions on surrounding minor roads). It is shown that three collisions occurred at the Coedely roundabout, five collisions occurred along the A4119 carriageway between the roundabouts, four collisions occurred at the Fire & Rescue Centre roundabout and 11 collisions occurred at the Royal Glamorgan Hospital roundabout.

Review of the collision data for the collisions highlighted above indicated to the following traffic issues and collision patterns:

- 13 (57%) of the 23 collisions were rear-shunt type accidents. A rear-shunt type accident occurred at all areas within the study area including the Coedely roundabout in the north, the Fire Station roundabout, the carriageway link between the previously mentioned roundabouts, and the Royal Glamorgan roundabout.
- Nine (40%) of the collisions occurred during the AM or PM peak hour;
- All collisions occurred were slight incident severity;

- The vast majority of collisions occurred during good light conditions (78%) and dry road surfaces (70%).

Analysis of the collision data indicates that the vast majority of the collisions are likely to have occurred as a result of the congestion and associated queues and driver behaviour which occurs in this location. Rear-shunt type collisions may be considered attributable to extended vehicle queuing, particularly collisions located in the middle of the A4119 carriageway link. It is indicated that a significant number of the collision occurred during peak hours which is when congestion and associated impact are worst. It is also shown that there were no other factors such as road lighting or road surface conditions which would have contributed to the occurrence of collisions.

The proposed carriageway improvement will improve the carriageway standard between the Coedely and the Fire and Rescue Centre roundabouts. As such it is considered that fewer collisions will occur at this location. The proposed scheme involves the removal of the Fire and Rescue Centre roundabout, as such it is considered that no collisions of the current nature will occur at this location. The proposed scheme will also improve the capacity of the Coedely roundabout and the Royal Glamorgan Roundabout (as vehicles will no longer queue back from the northbound carriageway merge at the Fire Centre roundabout causing exit blocking). As such it is considered that the proposed scheme will also reduce the number of collisions that occur at the Royal Glamorgan Hospital roundabout also.

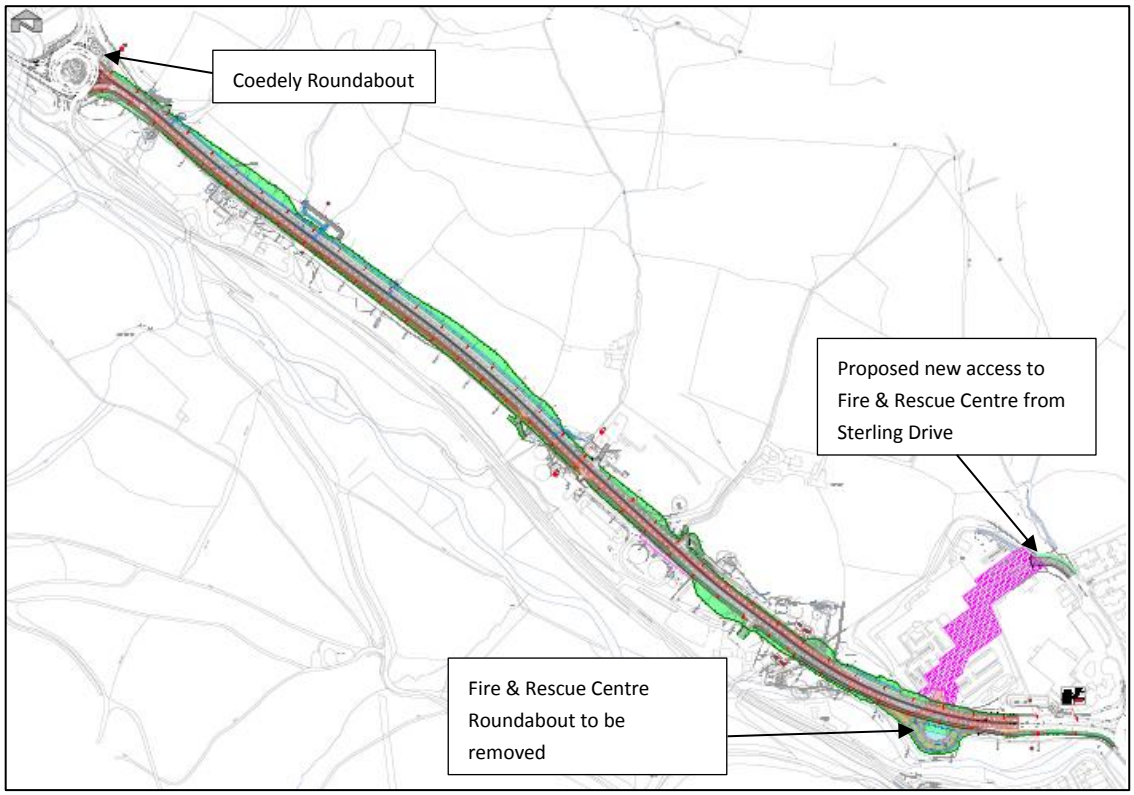
In light of the above, it is considered that the proposed scheme will reduce the number of collisions that occur along the A4119 corridor at this location.

5. Proposed Development

The development proposal consists of the dualling of the A4119 carriageway to the south of Coedely, between the roundabout adjacent to the South Wales Fire & Rescue Centre and the Coedely roundabout. The proposal also involves the removal of the Fire and Rescue Centre roundabout so that a dual carriageway is provided continuously between the Coedely roundabout and the roundabout adjacent to the Royal Glamorgan Hospital. It is proposed that vehicles travelling to and from the Fire and Rescue Centre will travel via a new access on Sterling Drive and the Royal Glamorgan Hospital roundabout.

The general arrangement of the proposal is presented in figure 5.1:

Figure 5.1 A4119 Dualling Scheme Proposal



6. Parking Requirements

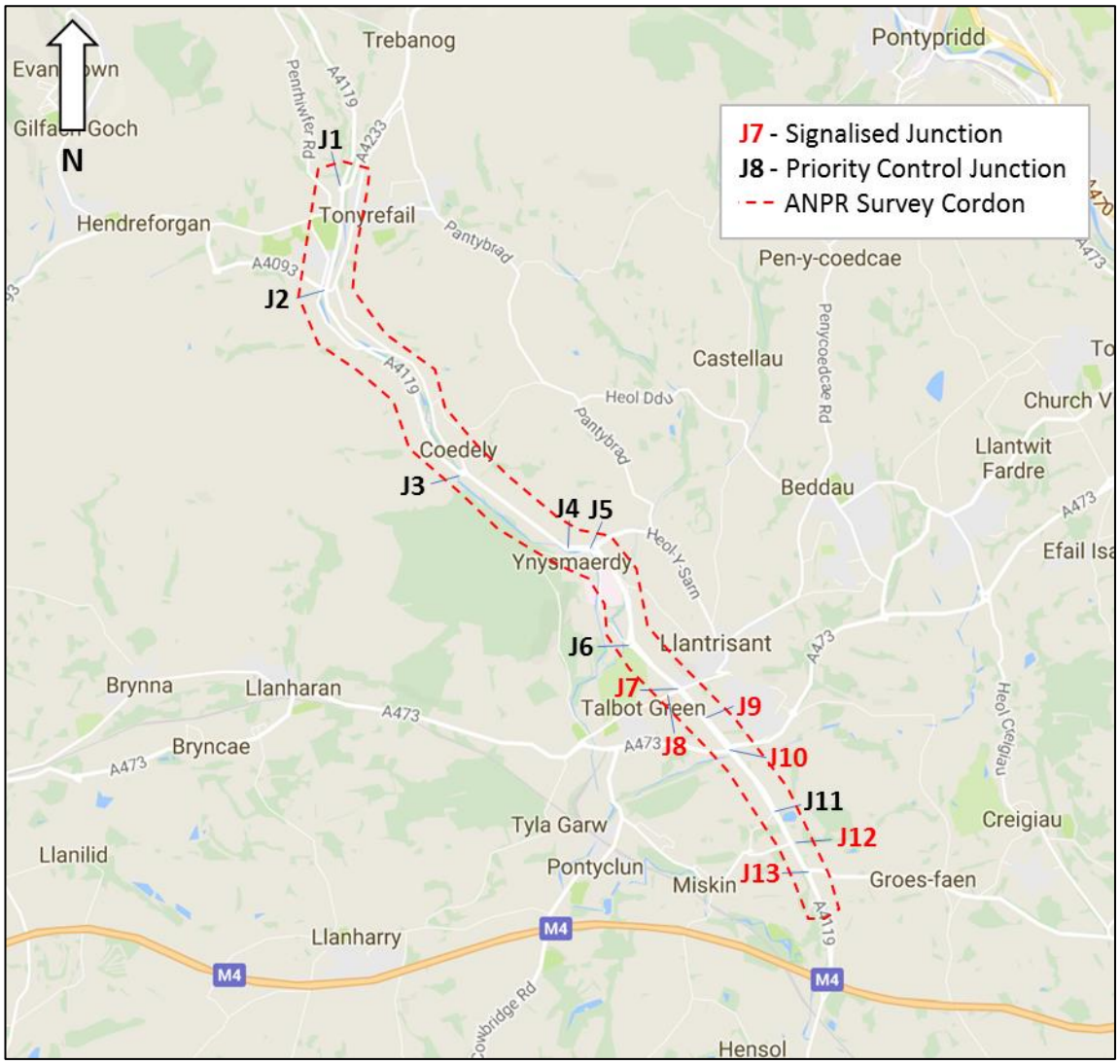
The proposed development does not generate a parking requirement. As such no assessment of parking requirements has been made.

7. Highway Impact Assessment

7.1 Introduction

The junctions along the A4119 corridor have been assessed to determine if the proposed A4119 dualling scheme will have an adverse effect on the operational performance of the junctions. The A4119 Corridor Paramics model has been used to ascertain forecast traffic flows for the junctions with and without the proposed scheme in place. Junction modelling and analysis has been undertaken on junctions which are forecast to experience a marked increase in traffic flows as a result of the scheme. The junctions assessed are illustrated in Figure 7.1.

Figure 7.1 Junctions within study area



7.2 Traffic Flow analysis

The forecast traffic flow with and without the proposed scheme (Do Minimum and Do Something respectively) at each of the junctions along the A4119 corridor is summarised in tables 7.1 and 7.2.

Table 7.1 Traffic Flow Comparison - 2022

Junction	AM			PM		
	Do Minimum	Do Something	Difference %	Do Minimum	Do Something	Difference %
1	2028	2027	0%	2136	2138	0%
2	2711	2710	0%	2808	2811	0%
3	2431	2495	3%	2742	2777	1%
4	N/A	N/A	N/A	N/A	N/A	N/A
5	3075	3207	4%	3409	3439	1%
6	3240	3307	2%	3433	3438	0%
7	3963	4034	2%	4237	4240	0%
8	N/A	N/A	N/A	N/A	N/A	N/A
9	3027	3076	2%	3784	3786	0%
10	4910	4984	1%	5707	5732	0%
11 (North)	3093	3123	1%	3667	3655	0%
11 (South)	3096	3126	1%	3671	3659	0%
12	3488	3542	2%	4038	4038	0%
13	3898	3917	0%	4441	4438	0%

Table 7.2 Traffic Flow Comparison - 2037

Junction	AM			PM		
	Do Minimum	Do Something	Difference %	Do Minimum	Do Something	Difference %
1	2041	2018	-1%	2178	2180	0%
2	2833	2823	0%	2919	2923	0%
3	2542	2647	4%	2868	2890	1%
4	N/A	N/A	N/A	N/A	N/A	N/A
5	3245	3359	3%	3645	3750	3%
6	3362	3443	2%	3589	3587	0%
7	4147	4225	2%	4399	4395	0%
8	N/A	N/A	N/A	N/A	N/A	N/A
9	3115	3186	2%	3929	3929	0%
10	5260	5284	0%	6075	6072	0%
11 (North)	3276	3287	0%	3836	3832	0%
11 (South)	3274	3286	0%	3828	3832	0%
12	3654	3652	0%	4163	4170	0%
13	4086	4072	0%	4557	4556	0%

Tables 7.1 and 7.2 show that the proposed A4119 dualling scheme is forecast to have minimal impact upon the peak hour traffic flow at the junctions along the A4119. Junctions 3 and 5 are forecast to experience the highest change in traffic flow with a forecast change of up to 4%.

Junction 3 is the A4119/Ely Valley Road/Unspecified Road roundabout which is located at the northern side of the A4119 carriageway that is proposed to be dualled. It is proposed that the layout of this roundabout is modified as part of the scheme. In light of this, and the fact that this junction is forecast to experience the highest change in traffic flow, the capacity of the junction has been assessed.

Junction 5 is the A4119/Heol-y-Sarn/Sterling Drive/Royal Glamorgan Hospital Access roundabout which is located at the southern side of the A4119 carriageway that is proposed to be dualled. It is proposed that this roundabout accommodates trips to and from the Fire & Rescue Centre as the Fire & Rescue Centre roundabout is proposed to be removed as part of the scheme. In light of this, and the fact that this junction is forecast to experience the highest change in traffic flow, the capacity of the junction has been assessed below.

7.3 Capacity Analysis

In accordance with the traffic flow analysis described above the following junctions have been assessed:

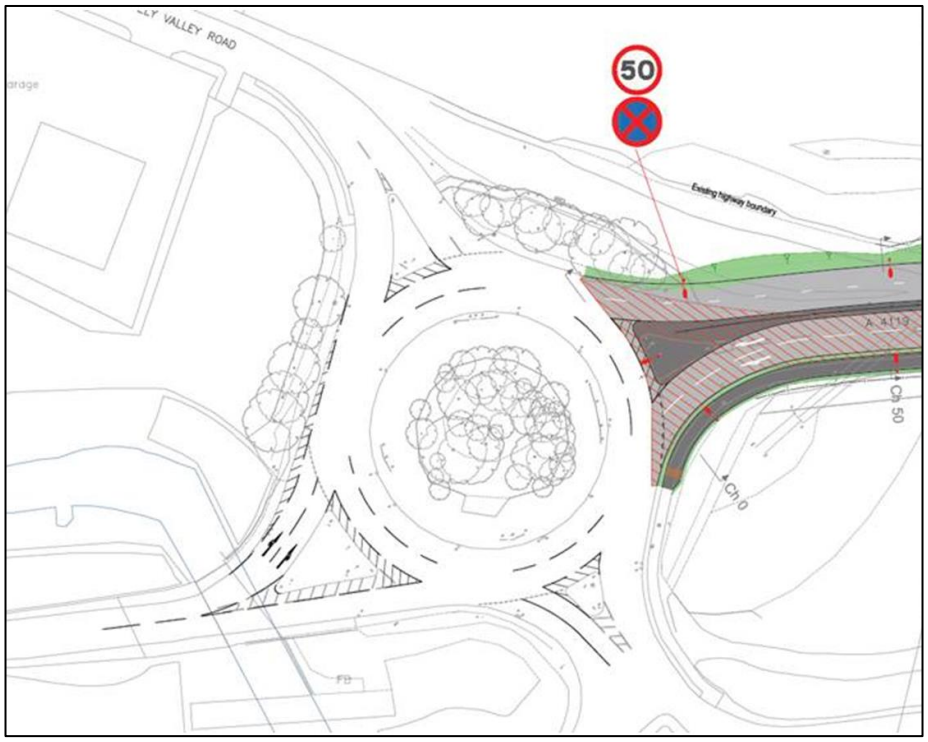
- A4119/Ely Valley Road/Unspecified Road
- A4119/Sterling Drive/Heol-y-Sarn/Hospital Access

The Transport Research Laboratory (TRL) Junctions 8 capacity assessment program has been used to assess the junctions listed above. The Ratio of Flow to Capacity (RFC) is a measure commonly used at priority junctions to represent operational capacity and has been used to evaluate the junctions. An RFC value of 0.85 is considered to be the upper limit of junction capacity. The queue measurement provided is the average maximum queue within the assessment period and the delay measurement is the maximum value of average delay per arriving vehicle. The Entry Lane Simulation (ELS) facility within Junctions 8 has been used to provide a more accurate assessment of junction capacity by taking account of the permitted lane movements within the junctions.

A4119/Ely Valley Road/Unspecified Road Roundabout

As part of the A4119 Dualling scheme a small number of modifications are proposed for the A4119/Ely Valley Road/Unspecified Road junction layout. These include a change to the lane designation at the southbound A4119 approach to the junction so that the ahead movement may be undertaken in lanes one and two, and two full lanes are provided at the A4119 northbound approach to the junction. The proposed junction layout is illustrated in Figure 7.2.

Figure 7.2 Proposed layout at A4119/Ely Valley Road/Unspecified Junction



A detailed study of the A4119/Ely Valley Road/Unspecified Road junction has been undertaken as part of the A4119 Dualling design process. The study looked at the existing operation of the roundabout and the forecast operation of the proposed roundabout with the dual carriageway and proposed roundabout layout in place. This was done for the AM and PM peak hours in a 2017 base year, a 2022 opening year and a 2037 design year. The summary results of the junction capacity assessments are presented in tables 7.3 to 7.5, and the full assessment is provided in Appendix A.

Table 7.3 A4119/Ely Valley Road/Unspecified Road - Existing Operation

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
A4119 N	4	11	0.84	1	3	0.56
Ely Valley Rd	2	15	0.59	0	3	0.21
A4119 S	0	2	0.44	13	26	0.80
Site Access	0	0	0.02	0	6	0.25
Average Delay	9 seconds			17 seconds		

Table 7.3 indicates that the junction is near capacity during the AM peak and PM peak hours. Queue length results are similar to observed queue lengths with the exception of the A4119 north in the AM peak hour. On-site observations indicated that extended queues are generated on the A4119 northern arm (southbound approach) during the AM peak, however this queue is generated as a result of junction exit blocking rather than due to limited junction capacity.

Table 7.4 A4119/Ely Valley Road/Unspecified Road – Forecast Operation 2022

Arm	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2022 Do Minimum						
A4119 N	7	17	0.89	1	3	0.60
Ely Valley Rd	2	19	0.64	0	3	0.20
A4119 S	1	4	0.58	32	55	0.91
Site Access	0	1	0.08	1	9	0.32
Average Delay	13 seconds			35 seconds		
2022 Do Something						
A4119 N	2	4	0.80	1	4	0.68
Ely Valley Rd	2	19	0.62	0	3	0.20
A4119 S	1	2	0.50	4	7	0.80
Site Access	0	1	0.08	1	9	0.33
Average Delay	5 seconds			6 seconds		

Table 7.5 A4119/Ely Valley Road/Unspecified Road – Forecast Operation 2037

Arm	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2037 Do Minimum						
A4119 N	29	55	0.98	1	5	0.66
Ely Valley Rd	5	41	0.79	0	4	0.25
A4119 S	2	6	0.70	105	155	0.93
Site Access	0	1	0.09	1	13	0.42
Average Delay	35 seconds			95 seconds		
2037 Do Something						
A4119 N	3	6	0.87	1	5	0.76
Ely Valley Rd	6	51	0.82	0	4	0.25
A4119 S	1	3	0.59	9	15	0.88
Site Access	0	1	0.09	2	25	0.51
Average Delay	10 seconds			13 seconds		

Table 7.4 shows that without intervention the junction is forecast to operate over capacity with a maximum RFC of 0.98 in the AM and 0.93 during the PM. This is forecast to occur on the A4119 North in the AM peak and the A4119 South in the PM peak. The junction is forecast to operate within capacity in 2022 with the proposed layout in place with a maximum RFC of 0.80 which occurs both on the A4119 North in the AM Peak and A4119 South in the PM peak. The maximum queue is 4 PCUs and occurs on this approach in the PM Peak.

Table 7.5 shows that with the proposed layout in place, in the 2037 design year the junction is forecast to operate marginally over capacity with a maximum RFC of 0.87 during the AM peak and 0.88 during the PM peak. This occurs on the A4119 North and A4119 South respectively.

The scheme is considered to significantly improve the operational performance of the roundabout with opening year delay and queues forecast to be less than existing and design year delay and queues forecast to be similar to existing.

A4119/Sterling Drive/Heol-y-Sarn/Hospital Access Roundabout

It is proposed that traffic to and from the Fire & Rescue Centre access the site from the A4119/Sterling Drive/Heol-y-Sarn/Hospital Access roundabout, instead of the existing dedicated Fire & Rescue Centre roundabout, which is proposed to be removed. The roundabout has been assessed with the trips to and from the Fire & Rescue Centre rerouted to the Sterling Drive arm of the roundabout. A secondary lane movement factor has been applied to lane 2 of the A4119 south to capture the effect of the lane merging after the following junction and motorists' reluctance to use this lane for the ahead movement (to the A4119 N). Capacity assessment results are summarised in tables 7.5 to 7.7, and full details are provided in Appendix B. Lane queuing and overall junction delay has been used to evaluate junction capacity as the RFC can be misleading within ELS models with secondary lane movements permitted such as this.

Table 7.5 A4119/Sterling Drive/Heol-y-Sarn/Hospital Access Roundabout - Existing Operation

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Sterling Drive	0	2	N/A	0	1	N/A
Heol-y-Sarn	1	7	N/A	1	6	N/A
A4119 S	3	9	N/A	75	128	N/A
Hospital Access	0	2	N/A	1	9	N/A
A4119 W	7	14	N/A	1	3	N/A
Overall Delay	11 seconds			63 seconds		

Table 7.6 A4119/Sterling Drive/Heol-y-Sarn/Hospital Access Roundabout - 2022 Operation

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2022 Do Minimum						
Sterling Drive	0	2	N/A	0	1	N/A
Heol-y-Sarn	1	7	N/A	0	6	N/A
A4119 S	5	13	N/A	75	127	N/A
Hospital Access	0	2	N/A	1	11	N/A
A4119 W	5	12	N/A	1	4	N/A
Overall Delay	11 seconds			63 seconds		
2022 Do Something						
Sterling Drive	0	2	N/A	0	1	N/A
Heol-y-Sarn	1	6	N/A	1	6	N/A
A4119 S	6	15	N/A	34	60	N/A
Hospital Access	0	2	N/A	1	13	N/A
A4119 W	7	16	N/A	1	4	N/A
Overall Delay	14 seconds			31 seconds		

Table 7.7 A4119/Sterling Drive/Heol-y-Sarn/Hospital Access Roundabout - 2037 Operation

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2037 Do Minimum						
Sterling Drive	0	2	N/A	0	1	N/A
Heol-y-Sarn	1	8	N/A	2	9	N/A
A4119 S	8	21	N/A	207	442	N/A
Hospital Access	0	3	N/A	1	9	N/A
A4119 W	7	14	N/A	1	4	N/A
Overall Delay	15 seconds			215 seconds		
2037 Do Something						
Sterling Drive	0	2	N/A	0	2	N/A
Heol-y-Sarn	1	8	N/A	2	9	N/A
A4119 S	10	23	N/A	111	174	N/A
Hospital Access	0	3	N/A	1	12	N/A
A4119 W	9	20	N/A	2	4	N/A
Overall Delay	19 seconds			85 seconds		

Table 7.5 shows that the roundabout is currently operating marginally within capacity during the AM peak hour with a maximum queue and delay of 3 vehicles and 9 seconds respectively. During the PM peak the junction is operating over capacity with a maximum queue and delay of 75 vehicles and 128 seconds respectively. Overall junction delay is 11 seconds during the AM peak and 63 seconds during the PM peak.

Tables 7.6 – 7.7 show that the proposed dualling of the A4119 and associated changes to the Fire & Rescue Centre access is forecast to marginally reduce the operational performance of the roundabout during the AM peak, and significantly improve the performance of the roundabout during the PM peak. An increase in overall junction delay of approximately 4 - 5 seconds is forecast during the AM peak, and a reduction ranging between 32 and 130 seconds forecast during the PM peak.

In light of the above the proposed A4119 dualling scheme is considered to significantly improve the operation of the roundabout with opening year delay and queues forecast to be less than existing, and future year delay and queues forecast to be similar to existing.

8. Transport Implementation Strategy

A Transport Implementation Strategy (TIS) is aimed at managing travel demand, based on objectives set out within development plan policies relating to movement.

The proposed A4119 dualling scheme is aimed at improving highway connections between RCT's Southern Strategic Area and the Northern Strategic Area.

Policy 'CS8 – Transportation' of the RCT LDP states that improvements to the strategic transportation network in Rhondda Cynon Taf will be secured through the implementation of strategic corridor management systems along the A4119 and A473 corridors. The proposed carriageway improvement along the A4119 in Coedely contributes to policy CS8 for the implementation of strategic corridor management along the A4119 corridor. The proposed carriageway dualling is itself a method of improving transport connections by providing improved highway access between the Southern Strategic Area and the Northern Strategic Area.

In light of the above a specific TIS for the A4119 dualling scheme is not proposed.

9. Summary and Conclusions

RCTCBC propose to upgrade the existing A4119 single carriageway in Coedely to dual carriageway standard.

The A4119 carriageway converts from dual carriageway standard to single carriageway standard at the Fire Station roundabout in Ynysmaerdy. The A4119 is single carriageway between this point and Tonypandy approximately seven miles to the north. Significant delay and congestion is currently experienced along the A4119 carriageway in this location with extended queues generated along the carriageway within the study area, as well as to the north and south. Significantly reduced vehicle speeds occur along this road during the peak hours and extended queues are generated either side of the carriageway study area.

Assessment of relevant national and local transport policy indicated that the proposed scheme is in-line with national policy guidelines such as those put forward in TAN 18 and PPW. It is also consistent with local policy aspirations identified within the LDP.

The collision data for the study area was reviewed. It was found that the collisions that have occurred within the study area are likely to have occurred as a result of the congestion and associated queues and driver behaviour that exist in this location. It was concluded that the proposed dualling scheme will reduce the number of collision that occurs in this area.

An assessment of the proposal was undertaken using the A4119 Paramics model. The assessment found that the proposed A4119 dualling scheme is forecast to have minimal impact upon the peak hour traffic flow at the vast majority of junctions along the A4119. Junctions 3 (A4119/Ely Valley Road/Unspecified Road roundabout) and 5 (A4119/Heol-y-Sarn/Sterling Drive/Royal Glamorgan Hospital Access roundabout) are forecast to experience the highest change in traffic flow with a forecast change of up to 4%.

Detailed junction capacity analysis of the proposed improvements at junctions 3 and 5 was undertaken in a 2022 opening year and 2037 design year scenario. Analysis of junction 3 indicated that the junction is forecast to operate within capacity in the 2022 opening year, and marginally over capacity by the 2037 design year. This is a significant improvement on the forecast operation of the existing junction layout. Analysis of junction 5 indicated that the junction is currently operating over capacity and that it is forecast to continue to operate over capacity in the 2022 opening year, and the 2037 design year. This was found to provide a very small reduction in the operational performance of the roundabout during the AM peak and a significant improvement to the junction during the PM peak.

In light of the above, the proposed dualling scheme is considered to be in-line with policy aspirations and considered to provide a benefit to the local highway network both in terms of road safety and capacity.

Appendix A – A4119/Ely Valley Road Capacity Study

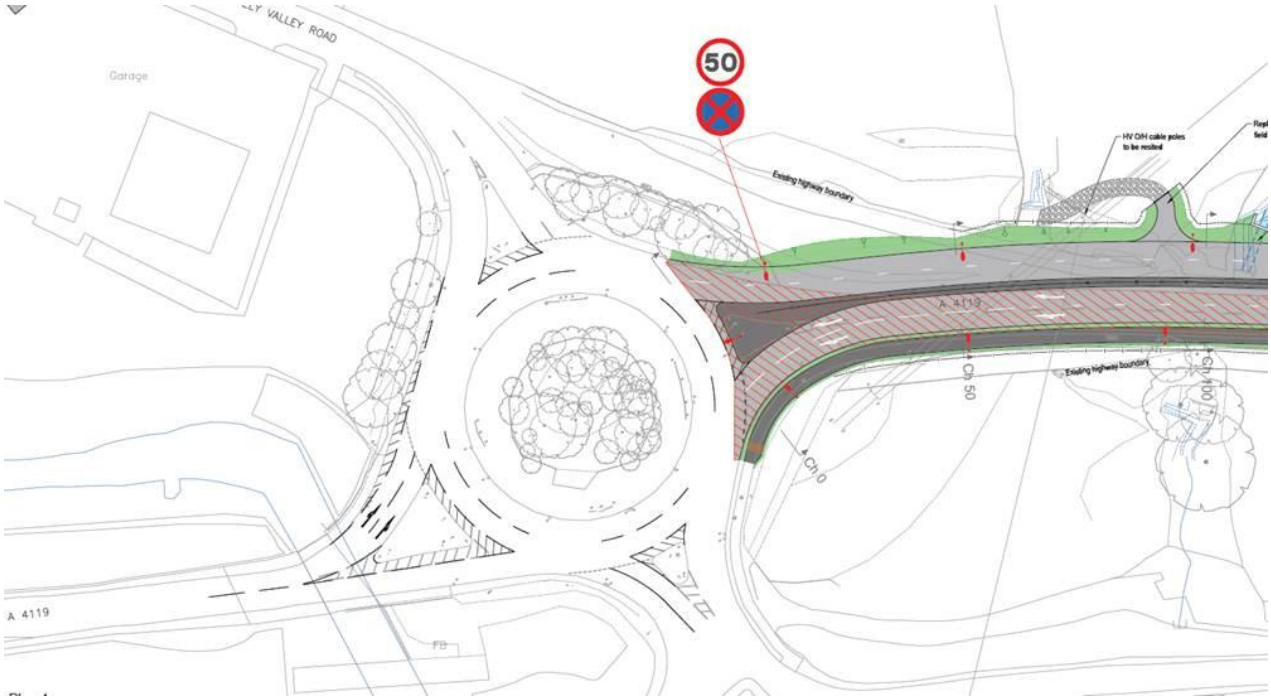
Technical Report

Report Title	**Coedely Roundabout Capacity Assessment**
Date	September 2018
Prepared For	Rhondda Cynon Taf County Borough Council
Prepared By	Daniel Davies Transportation Tel: 02920 803 631 Daniel.Davies@capita.co.uk
Ref	CS/095111

1. Introduction

This technical note presents the findings of traffic modelling analysis that has been undertaken on the A4119 Coedely roundabout in relation to the Coedely Dualling Project. As part of the A4119 Coedely Dualling scheme changes are proposed to the A4119 Coedely/Ely Valley Road roundabout to improve capacity. This technical note presents the findings of the capacity analysis undertaken to determine how the junction is currently performing and how it is forecast to perform following the construction of the A4119 Coedely dualling scheme. The proposed roundabout layout is illustrated in figure 1.1.

Figure 1.1 Proposed Roundabout Layout



2. Traffic Flows

Traffic flows for the assessment of the A4119 Coedely roundabout have been taken from the A4119 Paramics model with the Coedely Dualling Scheme in place. This includes AM and PM (08:00 – 09:00 & 16:45 – 17:45) peak hour flows for a 2017 Base Year, a 2022 Opening Year and a 2037 Design year. Analysis of the A4119 Paramics model indicated that flows along the A4119 northbound approach increase to a small degree as a result of the proposed dualling scheme. This is because increased capacity is provided through the provision of a dual carriageway to the south of the roundabout. However, unrestricted traffic flows were extracted from the model in order to ensure the largest potential demand at the roundabout was used within the assessment. This involved running the model at 50% demand to remove any capacity limitation that might restrict traffic from arriving at the junction.

3. Capacity Analysis

Base

A standard ARCADY model has been produced based on the existing geometry of the junction. The summary results are provided in table 3.1 and full results are available upon request.

The ratio of flow to capacity (RFC) is a measure commonly used at priority controlled junctions to represent operational capacity and has been used to evaluate the junctions. An RFC value of 0.85 is considered to be the upper limit of junction capacity. This is consistent with Transport for London (TfL) Traffic Modelling Guidelines which advises that un-signalised junctions with an RFC value of up to 0.85 may be considered to be operating within capacity. The queue measurement provided by Junctions 8 is the average maximum queue generated within the assessment period, and the delay measurement is the maximum value of average delay per arriving vehicle.

Table 3.1 Standard ARCADY Model Base Results 2017

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
A4119 N	3	7	0.72	1	4	0.50
Ely Valley Rd	0	4	0.26	0	3	0.10
A4119 S	1	3	0.40	6	12	0.85
Site Access	0	3	0.02	0	5	0.17

Table 3.1 indicates that the junction is currently operating within capacity in the AM peak hour and at capacity in the PM peak hour.

As part of the validation process and in order to assess the proposed junction layout, the Entry Lane Analysis (ELA) feature within ARCADY has been used. This allows the turning movements designated to each lane on approach to the junction to be specified and provides a more accurate assessment of capacity. It should be noted that TRL advises that ELA is an investigative tool and should be used with engineering judgement.

In addition to the use of ELA, intercept adjustments have been made in accordance with the user guide in order to calibrate the model and ensure an accurate representation of the junction operation is produced. Intercept is the maximum flow that would be possible across the give-way line in the absence of circulating traffic. Intercept values for the A4119 northbound and southbound straight ahead movement have been calculated using survey video footage of both approaches to the junction. The intercept calculated for the northbound and southbound movements were 1776 and 1848 respectively. The intercept for the flared section of both approaches was calculated using the ARCADY program.

The summary capacity assessment results using the ELA facility are presented in table 3.2 and full results are available upon request.

Table 3.2 ELA ARCADY Model Base Scenario Results 2017

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	Observed Queue (PCU)	Queue (PCU)	Delay (s)	RFC	Observed Queue (PCU)
A4119 N	4	11	0.84	0*	1	3	0.56	3
Ely Valley Rd	2	15	0.59	3	0	3	0.20	3
A4119 S	0	2	0.44	0	6	13	0.71	0**
Site Access	0	0	0.02	0	0	6	0.25	1

* On-site observations indicated that moderate to large queues are generated on the A4119 North arm during the AM peak that weren't captured by the survey.

** On-site observations indicated that there is slow moving traffic not captured by the survey resulting in a small amount of queuing on the northbound A4119 approach to the junction during the PM peak.

The ELA analysis indicates that the junction is near capacity in the AM peak hour and within capacity during the PM peak hour. Queue length results are similar to observed queue lengths with the exception of the A4119 north arm in the AM peak hour and the A4119 south arm in the PM peak hour. On-site observations indicated that extended queues are generated on the A4119 northern arm (southbound approach) during the AM peak, however this queue is generated as a result of junction exit blocking due to link capacity to the south of the junction rather than due to limited junction capacity. Slow moving vehicles were observed on the A4119 South arm in the PM peak resulting in a small queue.

Forecast Operation

The base ELA model has been modified to incorporate the proposed junction layout. This includes the provision of two lanes at the A4119 South arm, consisting of an ahead lane and a right turn only lane, and two ahead lanes within the existing approach at the A4119 North arm. The proposed junction layout is illustrated in figure 1.1. The observed intercept value has been retained for the A4119 approaches with a slightly reduced intercept for the A4119 northbound right turn lane to account for vehicles slowing for the corner. The summary results are presented in Table 3.3 and full results are available upon request.

Table 3.3 ELA ARCADY Improved Layout Future Scenario Results

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2022						
A4119 N	2	4	0.80	1	4	0.68
Ely Valley Rd	2	19	0.62	0	3	0.20
A4119 S	1	2	0.50	4	7	0.80
Site Access	0	1	0.08	1	9	0.33
2037						
A4119 N	3	6	0.87	1	5	0.76
Ely Valley Rd	6	51	0.82	0	4	0.25
A4119 S	1	3	0.59	9	15	0.88
Site Access	0	1	0.09	2	25	0.51

Table 3.3 shows that the junction is forecast to operate within capacity in both the 2022 AM and PM peak hours with a maximum RFC of 0.80 in both periods. However, in the 2037 design year the roundabout is forecast to operate marginally over capacity with a maximum RFC of 0.87 during the AM peak hour and 0.88 during the PM peak hour.

It should be noted that 19 seconds of delay is forecast on the Ely Valley Rd minor arm of the roundabout in the opening year. This doesn't result in a significant queue but could do should the demand on that arm increase in the future.

4. Conclusions

Analysis of the proposed A4119 Dualling scheme and Coedely roundabout within the A4119 Paramics model indicated that flows along the A4119 northbound approach increase to a small degree as a result of the proposed dualling scheme. This occurs as increased capacity is provided through the provision of a dual carriageway to the south of the roundabout.

The capacity assessment indicates that the junction will operate within capacity in the 2022 opening year scenario but will be marginally over capacity in 2037. The proposed layout provides only a marginal increase to capacity as the flared southbound approach restricts the full utilisation of the second ahead lane and a single ahead lane is maintained for the northbound approach. However, the operational performance forecast is considered acceptable for the study years assessed.

Queues are currently generated on the A4119 north arm of the roundabout in the AM peak hour due to exit blocking on the A4119 to the south of the roundabout because of constraints in link capacity and junction capacity to the south. It is considered that this queue will not occur with the proposed scheme in place as the upgraded dual carriageway will increase the link capacity and provide additional stacking space for southbound traffic.

Appendix B – A4119/Sterling Drive/Heol Y Sarn/Hospital Access Roundabout Capacity Assesment Results

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Do Min_Sec Lane.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:51:40

Summary of junction performance

	AM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - Base				
Sterling Drive	0.01	1.78	N/A	A	10.98
Heol-Y-Sarn	0.92	6.78	N/A	A	
A4119 S	3.30	9.33	N/A	A	
Site Access	0.07	1.96	N/A	A	
A4119 W	6.01	14.14	N/A	B	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM " model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D3 - 2022 DM, AM" model duration: 07:30 - 09:00
"D4 - 2022 DM, PM" model duration: 16:30 - 18:00
"D5 - 2037 DM, AM" model duration: 07:30 - 09:00
"D6 - 2037 DM, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:51:39

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	1047019965	502

(Default Analysis Set) - Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
Base, AM	Base	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			10.98	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	13.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	427.00	100.000
A4119 S	ONE HOUR	✓	1094.00	100.000
Site Access	ONE HOUR	✓	99.00	100.000
A4119 W	ONE HOUR	✓	1447.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	4.000	6.000	0.000	3.000
	Heol-Y-Sarn	7.000	0.000	158.000	120.000	142.000
	A4119 S	24.000	369.000	0.000	103.000	598.000
	Site Access	0.000	11.000	38.000	0.000	50.000
	A4119 W	9.000	170.000	1000.000	268.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.31	0.46	0.00	0.23
	Heol-Y-Sarn	0.02	0.00	0.37	0.28	0.33
	A4119 S	0.02	0.34	0.00	0.09	0.55
	Site Access	0.00	0.11	0.38	0.00	0.51
	A4119 W	0.01	0.12	0.69	0.19	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.090	1.000	1.010
	A4119 S	1.000	1.010	1.000	1.050	1.010
	Site Access	1.000	1.000	1.000	1.000	1.040
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	9.0	0.0	1.0
	A4119 S	0.0	1.0	0.0	5.0	1.0
	Site Access	0.0	0.0	0.0	0.0	4.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.78	0.01	A	11.49	17.23	0.37	1.30	0.00
Heol-Y-Sarn	6.78	0.92	A	391.17	586.75	50.04	5.12	0.56
A4119 S	9.33	3.30	A	1001.45	1502.17	154.61	6.18	1.72
Site Access	1.96	0.07	A	88.27	132.41	3.57	1.62	0.04
A4119 W	14.14	6.01	B	1328.87	1993.30	271.28	8.17	3.01

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	9.20	2.30	9.32	29.88	1403.55	0.00	0.00	0.726	A
Heol-Y-Sarn	329.64	82.41	327.85	413.31	999.56	0.00	0.33	3.174	A
A4119 S	829.36	207.34	826.02	907.41	417.25	0.00	0.80	3.181	A
Site Access	75.78	18.94	76.25	378.76	860.56	0.00	0.01	0.939	A
A4119 W	1106.06	276.51	1104.14	603.47	333.35	0.00	1.15	3.175	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	11.24	2.81	10.88	35.26	1663.15	0.00	0.01	1.035	A
Heol-Y-Sarn	380.92	95.23	382.35	496.61	1177.41	0.00	0.42	4.180	A
A4119 S	982.95	245.74	985.82	1074.02	485.14	0.00	1.29	4.699	A
Site Access	86.18	21.54	87.25	445.34	1020.96	0.00	0.03	1.425	A
A4119 W	1306.49	326.62	1302.43	706.61	401.59	0.00	2.02	5.105	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	12.19	3.05	11.95	43.98	2045.14	0.01	0.01	1.780	A
Heol-Y-Sarn	454.66	113.67	459.68	611.00	1446.10	0.42	0.70	6.539	A
A4119 S	1211.12	302.78	1209.80	1320.84	593.78	1.29	3.19	8.962	A
Site Access	103.98	26.00	103.27	536.53	1277.45	0.03	0.07	1.957	A
A4119 W	1585.22	396.30	1594.18	881.71	499.00	2.02	6.01	12.967	B

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	14.97	3.74	15.45	44.19	2054.97	0.01	0.00	1.569	A
Heol-Y-Sarn	467.07	116.77	465.39	588.14	1482.28	0.70	0.92	6.775	A
A4119 S	1201.44	300.36	1201.32	1352.57	595.09	3.19	3.30	9.328	A
Site Access	107.43	26.86	108.50	539.88	1246.59	0.07	0.06	1.964	A
A4119 W	1585.51	396.38	1608.02	875.21	479.88	6.01	5.59	14.135	B

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	11.50	2.87	11.86	39.52	1682.40	0.00	0.00	1.265	A
Heol-Y-Sarn	392.10	98.02	392.10	496.53	1197.72	0.92	0.61	4.363	A
A4119 S	963.71	240.93	965.51	1088.14	493.41	3.30	1.16	4.953	A
Site Access	87.54	21.89	88.14	445.03	1017.13	0.06	0.03	1.409	A
A4119 W	1306.35	326.59	1305.63	703.59	401.68	5.59	1.84	5.951	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	9.82	2.46	9.58	28.98	1389.58	0.00	0.00	0.731	A
Heol-Y-Sarn	322.63	80.66	322.87	397.49	1001.68	0.61	0.27	3.308	A
A4119 S	820.12	205.03	820.48	910.42	415.09	1.16	0.85	3.195	A
Site Access	68.74	17.19	68.98	383.71	843.95	0.03	0.01	1.040	A
A4119 W	1083.59	270.90	1085.99	592.22	320.72	1.84	0.90	3.383	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.03	0.00	0.726	A	A
Heol-Y-Sarn	4.40	0.29	3.174	A	A
A4119 S	10.95	0.73	3.181	A	A
Site Access	0.30	0.02	0.939	A	A
A4119 W	14.46	0.96	3.175	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.05	0.00	1.035	A	A
Heol-Y-Sarn	6.89	0.46	4.180	A	A
A4119 S	19.39	1.29	4.699	A	A
Site Access	0.56	0.04	1.425	A	A
A4119 W	27.89	1.86	5.105	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.10	0.01	1.780	A	A
Heol-Y-Sarn	13.10	0.87	6.539	A	A
A4119 S	45.26	3.02	8.962	A	A
Site Access	0.91	0.06	1.957	A	A
A4119 W	85.37	5.69	12.967	B	B

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.09	0.01	1.569	A	A
Heol-Y-Sarn	13.67	0.91	6.775	A	A
A4119 S	47.07	3.14	9.328	A	A
Site Access	0.92	0.06	1.964	A	A
A4119 W	94.17	6.28	14.135	B	B

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.06	0.00	1.265	A	A
Heol-Y-Sarn	7.31	0.49	4.363	A	A
A4119 S	20.71	1.38	4.953	A	A
Site Access	0.55	0.04	1.409	A	A
A4119 W	33.55	2.24	5.951	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.03	0.00	0.731	A	A
Heol-Y-Sarn	4.67	0.31	3.308	A	A
A4119 S	11.23	0.75	3.195	A	A
Site Access	0.33	0.02	1.040	A	A
A4119 W	15.85	1.06	3.383	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:30-07:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	**1**	**1**	9.20	2.30	9.32	1018.87	0.009	0.00	0.00	0.726	A
Heol-Y-Sarn	**1**	**1**	213.23	53.31	210.12	728.86	0.293	0.00	0.24	3.501	A
Heol-Y-Sarn	**1**	**2**	109.24	27.31	109.84	728.86	0.150	0.00	0.06	2.304	A
Heol-Y-Sarn	**1**	**3**	5.38	1.34	5.14	728.86	0.007	0.00	0.01	1.563	A
Heol-Y-Sarn	**2**	**1**	329.64	82.41	327.85			0.00	0.03	0.113	A
A4119 S	**1**	**2**	416.89	104.22	416.65	918.75	0.454	0.00	0.34	2.974	A
A4119 S	**1**	**3**	409.12	102.28	405.42	918.75	0.445	0.00	0.38	2.873	A
A4119 S	**2**	**1**	829.36	207.34	826.02			0.00	0.09	0.255	A
Site Access	**1**	**1**	75.78	18.94	76.25	973.47	0.078	0.00	0.01	0.939	A
A4119 W	**1**	**1**	537.49	134.37	536.65	986.48	0.545	0.00	0.47	2.881	A
A4119 W	**1**	**2**	566.65	141.66	563.43	986.48	0.574	0.00	0.58	3.051	A
A4119 W	**2**	**2**	1106.06	276.51	1104.14			0.00	0.10	0.206	A

Main results: (07:45-08:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	11.24	2.81	10.88	901.51	0.012	0.00	0.01	1.035	A
Heol-Y-Sarn	1	1	252.55	63.14	251.47	693.10	0.364	0.24	0.32	4.524	A
Heol-Y-Sarn	1	2	122.63	30.66	123.35	693.10	0.177	0.06	0.09	2.875	A
Heol-Y-Sarn	1	3	7.17	1.79	6.93	693.10	0.010	0.01	0.01	1.645	A
Heol-Y-Sarn	2	1	380.92	95.23	382.35			0.03	0.00	0.262	A
A4119 S	1	2	501.27	125.32	499.48	902.38	0.556	0.34	0.54	3.996	A
A4119 S	1	3	484.54	121.14	481.67	902.38	0.537	0.38	0.56	3.977	A
A4119 S	2	1	982.95	245.74	985.82			0.09	0.19	0.712	A
Site Access	1	1	86.18	21.54	87.25	911.09	0.095	0.01	0.03	1.425	A
A4119 W	1	1	638.84	159.71	640.88	969.08	0.659	0.47	0.75	4.167	A
A4119 W	1	2	663.59	165.90	655.94	969.08	0.685	0.58	0.93	4.473	A
A4119 W	2	2	1306.49	326.62	1302.43			0.10	0.33	0.780	A

Main results: (08:00-08:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	12.19	3.05	11.95	728.81	0.017	0.01	0.01	1.780	A
Heol-Y-Sarn	1	1	294.62	73.66	303.59	639.07	0.461	0.32	0.42	6.468	A
Heol-Y-Sarn	1	2	158.61	39.65	158.37	639.07	0.248	0.09	0.20	3.951	A
Heol-Y-Sarn	1	3	6.45	1.61	6.57	639.07	0.010	0.01	0.01	1.996	A
Heol-Y-Sarn	2	1	454.66	113.67	459.68			0.00	0.08	1.002	A
A4119 S	1	2	606.69	151.67	608.84	876.19	0.692	0.54	1.02	5.910	A
A4119 S	1	3	603.11	150.78	611.35	876.19	0.688	0.56	0.97	5.861	A
A4119 S	2	1	1211.12	302.78	1209.80			0.19	1.20	3.065	A
Site Access	1	1	103.98	26.00	103.27	811.34	0.128	0.03	0.07	1.957	A
A4119 W	1	1	798.76	199.69	795.66	944.24	0.846	0.75	1.49	6.869	A
A4119 W	1	2	795.42	198.85	794.46	944.24	0.842	0.93	1.72	7.284	A
A4119 W	2	2	1585.22	396.30	1594.18			0.33	2.80	5.868	A

Main results: (08:15-08:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	14.97	3.74	15.45	724.36	0.021	0.01	0.00	1.569	A
Heol-Y-Sarn	1	1	303.35	75.84	306.83	631.80	0.480	0.42	0.58	6.712	A
Heol-Y-Sarn	1	2	155.09	38.77	151.86	631.80	0.245	0.20	0.18	3.989	A
Heol-Y-Sarn	1	3	6.95	1.74	6.71	631.80	0.011	0.01	0.01	2.104	A
Heol-Y-Sarn	2	1	467.07	116.77	465.39			0.08	0.15	1.053	A
A4119 S	1	2	602.04	150.51	599.76	875.88	0.687	1.02	1.07	5.942	A
A4119 S	1	3	599.28	149.82	591.62	875.88	0.684	0.97	1.08	5.873	A
A4119 S	2	1	1201.44	300.36	1201.32			1.20	1.14	3.423	A
Site Access	1	1	107.43	26.86	108.50	823.35	0.130	0.07	0.06	1.964	A
A4119 W	1	1	789.82	197.46	794.97	949.11	0.832	1.49	1.45	7.051	A
A4119 W	1	2	818.20	204.55	824.31	949.11	0.862	1.72	1.60	7.538	A
A4119 W	2	2	1585.51	396.38	1608.02			2.80	2.54	6.839	A

Main results: (08:30-08:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	11.50	2.87	11.86	892.81	0.013	0.00	0.00	1.265	A
Heol-Y-Sarn	1	1	252.46	63.11	246.71	689.02	0.366	0.58	0.43	4.765	A
Heol-Y-Sarn	1	2	131.74	32.93	129.10	689.02	0.191	0.18	0.14	2.949	A
Heol-Y-Sarn	1	3	7.90	1.98	8.02	689.02	0.011	0.01	0.00	1.965	A
Heol-Y-Sarn	2	1	392.10	98.02	392.10			0.15	0.04	0.273	A
A4119 S	1	2	482.28	120.57	484.55	900.39	0.536	1.07	0.50	4.118	A
A4119 S	1	3	483.23	120.81	484.19	900.39	0.537	1.08	0.53	4.095	A
A4119 S	2	1	963.71	240.93	965.51			1.14	0.13	0.865	A
Site Access	1	1	87.54	21.89	88.14	912.58	0.096	0.06	0.03	1.409	A
A4119 W	1	1	642.40	160.60	649.34	969.06	0.663	1.45	0.71	4.561	A
A4119 W	1	2	663.23	165.81	670.90	969.06	0.684	1.60	0.79	4.833	A
A4119 W	2	2	1306.35	326.59	1305.63			2.54	0.35	1.290	A

Main results: (08:45-09:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	9.82	2.46	9.58	1025.19	0.010	0.00	0.00	0.731	A
Heol-Y-Sarn	1	1	216.29	54.07	218.56	728.44	0.297	0.43	0.19	3.625	A
Heol-Y-Sarn	1	2	101.92	25.48	100.48	728.44	0.140	0.14	0.06	2.402	A
Heol-Y-Sarn	1	3	4.67	1.17	4.79	728.44	0.006	0.00	0.00	1.910	A
Heol-Y-Sarn	2	1	322.63	80.66	322.87			0.04	0.01	0.134	A
A4119 S	1	2	418.80	104.70	415.69	919.27	0.456	0.50	0.41	2.915	A
A4119 S	1	3	401.68	100.42	396.89	919.27	0.437	0.53	0.39	2.959	A
A4119 S	2	1	820.12	205.03	820.48			0.13	0.05	0.263	A
Site Access	1	1	68.74	17.19	68.98	979.93	0.070	0.03	0.01	1.040	A
A4119 W	1	1	519.04	129.76	527.31	989.70	0.524	0.71	0.39	3.021	A
A4119 W	1	2	566.95	141.74	570.54	989.70	0.573	0.79	0.46	3.222	A
A4119 W	2	2	1083.59	270.90	1085.99			0.35	0.05	0.266	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.03	0.00	0.726	A	A
Heol-Y-Sarn	1	1	3.15	0.21	3.501	A	A
Heol-Y-Sarn	1	2	1.05	0.07	2.304	A	A
Heol-Y-Sarn	1	3	0.03	0.00	1.563	A	A
Heol-Y-Sarn	2	1	0.16	0.01	0.113	A	A
A4119 S	1	2	5.17	0.34	2.974	A	A
A4119 S	1	3	4.90	0.33	2.873	A	A
A4119 S	2	1	0.88	0.06	0.255	A	A
Site Access	1	1	0.30	0.02	0.939	A	A
A4119 W	1	1	6.39	0.43	2.881	A	A
A4119 W	1	2	7.13	0.48	3.051	A	A
A4119 W	2	2	0.94	0.06	0.206	A	A

Queueing Delay results: (07:45-08:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.05	0.00	1.035	A	A
Heol-Y-Sarn	1	1	4.89	0.33	4.524	A	A
Heol-Y-Sarn	1	2	1.52	0.10	2.875	A	A
Heol-Y-Sarn	1	3	0.04	0.00	1.645	A	A
Heol-Y-Sarn	2	1	0.44	0.03	0.262	A	A
A4119 S	1	2	8.29	0.55	3.996	A	A
A4119 S	1	3	8.16	0.54	3.977	A	A
A4119 S	2	1	2.94	0.20	0.712	A	A
Site Access	1	1	0.56	0.04	1.425	A	A
A4119 W	1	1	11.15	0.74	4.167	A	A
A4119 W	1	2	12.47	0.83	4.473	A	A
A4119 W	2	2	4.28	0.29	0.780	A	A

Queueing Delay results: (08:00-08:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.10	0.01	1.780	A	A
Heol-Y-Sarn	1	1	8.42	0.56	6.468	A	A
Heol-Y-Sarn	1	2	2.60	0.17	3.951	A	A
Heol-Y-Sarn	1	3	0.06	0.00	1.996	A	A
Heol-Y-Sarn	2	1	2.02	0.13	1.002	A	A
A4119 S	1	2	15.06	1.00	5.910	A	A
A4119 S	1	3	14.75	0.98	5.861	A	A
A4119 S	2	1	15.45	1.03	3.065	A	A
Site Access	1	1	0.91	0.06	1.957	A	A
A4119 W	1	1	22.38	1.49	6.869	A	A
A4119 W	1	2	24.38	1.63	7.284	A	A
A4119 W	2	2	38.60	2.57	5.868	A	A

Queueing Delay results: (08:15-08:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.09	0.01	1.569	A	A
Heol-Y-Sarn	1	1	8.86	0.59	6.712	A	A
Heol-Y-Sarn	1	2	2.62	0.17	3.989	A	A
Heol-Y-Sarn	1	3	0.06	0.00	2.104	A	A
Heol-Y-Sarn	2	1	2.12	0.14	1.053	A	A
A4119 S	1	2	15.05	1.00	5.942	A	A
A4119 S	1	3	14.73	0.98	5.873	A	A
A4119 S	2	1	17.28	1.15	3.423	A	A
Site Access	1	1	0.92	0.06	1.964	A	A
A4119 W	1	1	23.19	1.55	7.051	A	A
A4119 W	1	2	25.39	1.69	7.538	A	A
A4119 W	2	2	45.58	3.04	6.839	A	A

Queueing Delay results: (08:30-08:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.06	0.00	1.265	A	A
Heol-Y-Sarn	1	1	5.17	0.34	4.765	A	A
Heol-Y-Sarn	1	2	1.60	0.11	2.949	A	A
Heol-Y-Sarn	1	3	0.05	0.00	1.965	A	A
Heol-Y-Sarn	2	1	0.48	0.03	0.273	A	A
A4119 S	1	2	8.60	0.57	4.118	A	A
A4119 S	1	3	8.42	0.56	4.095	A	A
A4119 S	2	1	3.69	0.25	0.865	A	A
Site Access	1	1	0.55	0.04	1.409	A	A
A4119 W	1	1	12.36	0.82	4.561	A	A
A4119 W	1	2	13.69	0.91	4.833	A	A
A4119 W	2	2	7.51	0.50	1.290	A	A

Queueing Delay results: (08:45-09:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.03	0.00	0.731	A	A
Heol-Y-Sarn	**1**	**1**	3.33	0.22	3.625	A	A
Heol-Y-Sarn	**1**	**2**	1.10	0.07	2.402	A	A
Heol-Y-Sarn	**1**	**3**	0.04	0.00	1.910	A	A
Heol-Y-Sarn	**2**	**1**	0.20	0.01	0.134	A	A
A4119 S	**1**	**2**	5.17	0.34	2.915	A	A
A4119 S	**1**	**3**	5.13	0.34	2.959	A	A
A4119 S	**2**	**1**	0.93	0.06	0.263	A	A
Site Access	**1**	**1**	0.33	0.02	1.040	A	A
A4119 W	**1**	**1**	6.86	0.46	3.021	A	A
A4119 W	**1**	**2**	7.73	0.52	3.222	A	A
A4119 W	**2**	**2**	1.26	0.08	0.266	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Do Min_Sec Lane.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:54:10

Summary of junction performance

	PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - Base				
Sterling Drive	0.01	0.94	N/A	A	66.72
Heol-Y-Sarn	0.88	5.40	N/A	A	
A4119 S	76.52	130.96	N/A	F	
Site Access	0.78	9.54	N/A	A	
A4119 W	0.92	3.07	N/A	A	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM " model duration: 16:30 - 18:00
"D3 - 2022 DM, AM" model duration: 07:30 - 09:00
"D4 - 2022 DM, PM" model duration: 16:30 - 18:00
"D5 - 2037 DM, AM" model duration: 07:30 - 09:00
"D6 - 2037 DM, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:54:10

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	2092886334	1316

(Default Analysis Set) - Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
Base, PM	Base	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			66.72	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	49.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	514.00	100.000
A4119 S	ONE HOUR	✓	1647.00	100.000
Site Access	ONE HOUR	✓	242.00	100.000
A4119 W	ONE HOUR	✓	897.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.000	15.000	16.000	2.000	16.000
	Heol-Y-Sarn	0.000	0.000	314.000	18.000	182.000
	A4119 S	1.000	342.000	0.000	32.000	1272.000
	Site Access	0.000	24.000	79.000	0.000	139.000
	A4119 W	0.000	152.000	659.000	86.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.00	0.31	0.33	0.04	0.33
	Heol-Y-Sarn	0.00	0.00	0.61	0.04	0.35
	A4119 S	0.00	0.21	0.00	0.02	0.77
	Site Access	0.00	0.10	0.33	0.00	0.57
	A4119 W	0.00	0.17	0.73	0.10	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.020	1.000	1.000
	A4119 S	1.000	1.070	1.000	1.030	1.010
	Site Access	1.000	1.000	1.000	1.000	1.020
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	2.0	0.0	0.0
	A4119 S	0.0	7.0	0.0	3.0	1.0
	Site Access	0.0	0.0	0.0	0.0	2.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	0.94	0.01	A	44.91	67.37	0.81	0.72	0.01
Heol-Y-Sarn	5.40	0.88	A	469.99	704.98	49.46	4.21	0.55
A4119 S	130.96	76.52	F	1509.83	2264.74	2374.22	62.90	26.38
Site Access	9.54	0.78	A	223.29	334.94	36.17	6.48	0.40
A4119 W	3.07	0.92	A	824.23	1236.34	50.36	2.44	0.56

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	36.06	9.02	35.79	0.82	1015.12	0.00	0.01	0.471	A
Heol-Y-Sarn	389.09	97.27	389.27	401.63	649.29	0.00	0.31	2.866	A
A4119 S	1238.57	309.64	1242.63	812.10	227.37	0.00	2.34	6.379	A
Site Access	179.09	44.77	177.45	103.59	1363.91	0.00	0.15	2.788	A
A4119 W	678.33	169.58	678.24	1204.10	337.25	0.00	0.34	1.706	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	44.73	11.18	44.68	0.82	1209.53	0.00	0.01	0.650	A
Heol-Y-Sarn	460.85	115.21	460.71	478.22	775.99	0.00	0.51	3.658	A
A4119 S	1478.57	369.64	1478.80	959.45	275.38	0.00	6.35	13.664	B
Site Access	223.36	55.84	219.44	127.75	1620.68	0.00	0.34	4.697	A
A4119 W	806.85	201.71	806.44	1436.90	403.22	0.00	0.50	2.184	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	52.57	13.14	52.75	1.00	1437.54	0.01	0.01	0.918	A
Heol-Y-Sarn	557.01	139.25	557.37	552.63	937.66	0.51	0.88	5.399	A
A4119 S	1805.65	451.41	1684.56	1165.85	326.67	6.35	44.44	59.957	F
Site Access	263.25	65.81	264.76	147.22	1856.26	0.34	0.66	8.743	A
A4119 W	982.43	245.61	982.89	1661.40	459.62	0.50	0.89	3.071	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	54.48	13.62	54.48	0.96	1461.17	0.01	0.01	0.936	A
Heol-Y-Sarn	568.70	142.17	568.88	569.98	945.67	0.88	0.87	5.390	A
A4119 S	1829.02	457.25	1715.54	1184.03	332.76	44.44	76.52	130.960	F
Site Access	271.71	67.93	269.38	148.84	1895.95	0.66	0.78	9.535	A
A4119 W	996.00	249.00	995.54	1693.73	471.60	0.89	0.92	3.018	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	44.62	11.16	44.62	0.87	1236.96	0.01	0.01	0.688	A
Heol-Y-Sarn	458.97	114.74	458.97	506.83	774.75	0.87	0.46	3.703	A
A4119 S	1467.60	366.90	1588.79	961.14	270.98	76.52	31.03	110.027	F
Site Access	215.59	53.90	214.68	125.06	1739.32	0.78	0.39	6.917	A
A4119 W	809.20	202.30	809.61	1527.70	426.30	0.92	0.45	2.266	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	37.00	9.25	37.14	0.41	1015.85	0.01	0.00	0.493	A
Heol-Y-Sarn	385.32	96.33	385.73	412.29	640.70	0.46	0.32	2.891	A
A4119 S	1239.56	309.89	1256.67	796.24	231.29	31.03	3.32	25.561	D
Site Access	186.75	46.69	186.84	107.22	1381.55	0.39	0.17	3.808	A
A4119 W	672.55	168.14	672.64	1224.55	343.85	0.45	0.36	1.758	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.07	0.00	0.471	A	A
Heol-Y-Sarn	4.68	0.31	2.866	A	A
A4119 S	33.05	2.20	6.379	A	A
Site Access	2.14	0.14	2.788	A	A
A4119 W	4.87	0.32	1.706	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.12	0.01	0.650	A	A
Heol-Y-Sarn	7.10	0.47	3.658	A	A
A4119 S	83.50	5.57	13.664	B	B
Site Access	4.29	0.29	4.697	A	A
A4119 W	7.43	0.50	2.184	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.20	0.01	0.918	A	A
Heol-Y-Sarn	12.79	0.85	5.399	A	A
A4119 S	409.95	27.33	59.957	F	E
Site Access	9.72	0.65	8.743	A	A
A4119 W	12.76	0.85	3.071	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.21	0.01	0.936	A	A
Heol-Y-Sarn	12.80	0.85	5.390	A	A
A4119 S	910.00	60.67	130.960	F	F
Site Access	10.59	0.71	9.535	A	A
A4119 W	12.50	0.83	3.018	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.13	0.01	0.688	A	A
Heol-Y-Sarn	7.27	0.48	3.703	A	A
A4119 S	768.77	51.25	110.027	F	F
Site Access	6.41	0.43	6.917	A	A
A4119 W	7.72	0.51	2.266	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.08	0.01	0.493	A	A
Heol-Y-Sarn	4.82	0.32	2.891	A	A
A4119 S	168.94	11.26	25.561	D	C
Site Access	3.02	0.20	3.808	A	A
A4119 W	5.09	0.34	1.758	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:30-16:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	36.06	9.02	35.79	1194.48	0.030	0.00	0.01	0.471	A
Heol-Y-Sarn	1	1	251.99	63.00	253.36	799.30	0.315	0.00	0.22	3.133	A
Heol-Y-Sarn	1	2	137.28	34.32	136.82	799.30	0.172	0.00	0.09	2.090	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	799.30	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	389.09	97.27	389.27			0.00	0.01	0.108	A
A4119 S	1	2	690.50	172.63	684.94	964.53	0.716	0.00	1.10	5.188	A
A4119 S	1	3	552.13	138.03	555.18	964.53	0.572	0.00	0.59	3.803	A
A4119 S	2	1	1238.57	309.64	1242.63			0.00	0.65	1.795	A
Site Access	1	1	179.09	44.77	177.45	777.72	0.230	0.00	0.15	2.788	A
A4119 W	1	1	354.53	88.63	354.30	985.48	0.360	0.00	0.18	1.752	A
A4119 W	1	2	323.71	80.93	324.39	985.48	0.328	0.00	0.16	1.626	A
A4119 W	2	2	678.33	169.58	678.24			0.00	0.00	0.014	A

Main results: (16:45-17:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	44.73	11.18	44.68	1106.59	0.040	0.01	0.01	0.650	A
Heol-Y-Sarn	1	1	298.09	74.52	296.81	773.82	0.385	0.22	0.36	3.884	A
Heol-Y-Sarn	1	2	162.63	40.66	162.04	773.82	0.210	0.09	0.11	2.510	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	773.82	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	460.85	115.21	460.71			0.01	0.04	0.265	A
A4119 S	1	2	806.35	201.59	802.48	952.95	0.846	1.10	1.78	7.340	A
A4119 S	1	3	672.45	168.11	670.58	952.95	0.706	0.59	1.08	5.408	A
A4119 S	2	1	1478.57	369.64	1478.80			0.65	3.50	7.169	A
Site Access	1	1	223.36	55.84	219.44	677.86	0.330	0.15	0.34	4.697	A
A4119 W	1	1	415.99	104.00	416.67	968.66	0.429	0.18	0.25	2.227	A
A4119 W	1	2	390.46	97.61	390.46	968.66	0.403	0.16	0.24	2.037	A
A4119 W	2	2	806.85	201.71	806.44			0.00	0.01	0.048	A

Main results: (17:00-17:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	52.57	13.14	52.75	1003.51	0.052	0.01	0.01	0.918	A
Heol-Y-Sarn	1	1	361.78	90.44	359.95	741.31	0.488	0.36	0.58	5.433	A
Heol-Y-Sarn	1	2	195.59	48.90	194.91	741.31	0.264	0.11	0.17	3.177	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	741.31	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	557.01	139.25	557.37			0.04	0.13	0.768	A
A4119 S	1	2	902.23	225.56	897.77	940.59	0.959	1.78	2.72	10.157	B
A4119 S	1	3	782.33	195.58	779.04	940.59	0.832	1.08	1.72	7.641	A
A4119 S	2	1	1805.65	451.41	1684.56			3.50	39.99	50.904	F
Site Access	1	1	263.25	65.81	264.76	586.25	0.449	0.34	0.66	8.743	A
A4119 W	1	1	508.86	127.22	506.26	954.28	0.533	0.25	0.46	3.023	A
A4119 W	1	2	474.03	118.51	472.66	954.28	0.497	0.24	0.38	2.815	A
A4119 W	2	2	982.43	245.61	982.89			0.01	0.04	0.149	A

Main results: (17:15-17:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	54.48	13.62	54.48	992.82	0.055	0.01	0.01	0.936	A
Heol-Y-Sarn	1	1	369.22	92.30	370.08	739.70	0.499	0.58	0.56	5.411	A
Heol-Y-Sarn	1	2	199.67	49.92	201.03	739.70	0.270	0.17	0.17	3.223	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	739.70	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	568.70	142.17	568.88			0.13	0.13	0.762	A
A4119 S	1	2	927.92	231.98	930.75	939.12	0.988	2.72	2.68	10.645	B
A4119 S	1	3	787.62	196.90	781.28	939.12	0.839	1.72	1.83	8.031	A
A4119 S	2	1	1829.02	457.25	1715.54			39.99	72.01	121.509	F
Site Access	1	1	271.71	67.93	269.38	570.81	0.476	0.66	0.78	9.535	A
A4119 W	1	1	514.49	128.62	512.49	951.22	0.541	0.46	0.46	2.984	A
A4119 W	1	2	481.05	120.26	478.04	951.22	0.506	0.38	0.42	2.763	A
A4119 W	2	2	996.00	249.00	995.54			0.04	0.04	0.141	A

Main results: (17:30-17:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	44.62	11.16	44.62	1094.19	0.041	0.01	0.01	0.688	A
Heol-Y-Sarn	1	1	299.09	74.77	297.13	774.07	0.386	0.56	0.33	3.954	A
Heol-Y-Sarn	1	2	159.88	39.97	160.24	774.07	0.207	0.17	0.11	2.566	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	774.07	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	458.97	114.74	458.97			0.13	0.02	0.252	A
A4119 S	1	2	860.71	215.18	864.46	954.01	0.902	2.68	2.22	9.921	A
A4119 S	1	3	728.08	182.02	728.94	954.01	0.763	1.83	1.42	7.460	A
A4119 S	2	1	1467.60	366.90	1588.79			72.01	27.39	101.298	F
Site Access	1	1	215.59	53.90	214.68	631.73	0.341	0.78	0.39	6.917	A
A4119 W	1	1	420.50	105.13	421.23	962.78	0.437	0.46	0.22	2.334	A
A4119 W	1	2	389.11	97.28	390.30	962.78	0.404	0.42	0.21	2.096	A
A4119 W	2	2	809.20	202.30	809.61			0.04	0.01	0.048	A

Main results: (17:45-18:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	37.00	9.25	37.14	1194.15	0.031	0.01	0.00	0.493	A
Heol-Y-Sarn	1	1	249.86	62.46	250.77	801.02	0.312	0.33	0.23	3.202	A
Heol-Y-Sarn	1	2	135.88	33.97	136.06	801.02	0.170	0.11	0.08	2.036	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	801.02	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	385.32	96.33	385.73			0.02	0.01	0.114	A
A4119 S	1	2	693.44	173.36	695.63	963.58	0.720	2.22	1.09	6.720	A
A4119 S	1	3	563.22	140.81	561.86	963.58	0.585	1.42	0.63	4.896	A
A4119 S	2	1	1239.56	309.89	1256.67			27.39	1.60	19.896	C
Site Access	1	1	186.75	46.69	186.84	770.86	0.242	0.39	0.17	3.808	A
A4119 W	1	1	348.59	87.15	347.45	983.80	0.354	0.22	0.19	1.831	A
A4119 W	1	2	324.05	81.01	324.96	983.80	0.329	0.21	0.17	1.649	A
A4119 W	2	2	672.55	168.14	672.64			0.01	0.00	0.015	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.07	0.00	0.471	A	A
Heol-Y-Sarn	1	1	3.31	0.22	3.133	A	A
Heol-Y-Sarn	1	2	1.20	0.08	2.090	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.18	0.01	0.108	A	A
A4119 S	1	2	14.78	0.99	5.188	A	A
A4119 S	1	3	8.98	0.60	3.803	A	A
A4119 S	2	1	9.29	0.62	1.795	A	A
Site Access	1	1	2.14	0.14	2.788	A	A
A4119 W	1	1	2.60	0.17	1.752	A	A
A4119 W	1	2	2.23	0.15	1.626	A	A
A4119 W	2	2	0.04	0.00	0.014	A	A

Queueing Delay results: (16:45-17:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.12	0.01	0.650	A	A
Heol-Y-Sarn	1	1	4.88	0.33	3.884	A	A
Heol-Y-Sarn	1	2	1.70	0.11	2.510	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.52	0.03	0.265	A	A
A4119 S	1	2	24.54	1.64	7.340	A	A
A4119 S	1	3	15.24	1.02	5.408	A	A
A4119 S	2	1	43.72	2.91	7.169	A	A
Site Access	1	1	4.29	0.29	4.697	A	A
A4119 W	1	1	3.91	0.26	2.227	A	A
A4119 W	1	2	3.35	0.22	2.037	A	A
A4119 W	2	2	0.17	0.01	0.048	A	A

Queueing Delay results: (17:00-17:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.20	0.01	0.918	A	A
Heol-Y-Sarn	1	1	8.33	0.56	5.433	A	A
Heol-Y-Sarn	1	2	2.63	0.18	3.177	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	1.83	0.12	0.768	A	A
A4119 S	1	2	38.11	2.54	10.157	B	B
A4119 S	1	3	24.50	1.63	7.641	A	A
A4119 S	2	1	347.35	23.16	50.904	F	D
Site Access	1	1	9.72	0.65	8.743	A	A
A4119 W	1	1	6.46	0.43	3.023	A	A
A4119 W	1	2	5.68	0.38	2.815	A	A
A4119 W	2	2	0.62	0.04	0.149	A	A

Queueing Delay results: (17:15-17:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.21	0.01	0.936	A	A
Heol-Y-Sarn	1	1	8.31	0.55	5.411	A	A
Heol-Y-Sarn	1	2	2.69	0.18	3.223	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	1.81	0.12	0.762	A	A
A4119 S	1	2	40.49	2.70	10.645	B	B
A4119 S	1	3	26.13	1.74	8.031	A	A
A4119 S	2	1	843.38	56.23	121.509	F	F
Site Access	1	1	10.59	0.71	9.535	A	A
A4119 W	1	1	6.35	0.42	2.984	A	A
A4119 W	1	2	5.56	0.37	2.763	A	A
A4119 W	2	2	0.59	0.04	0.141	A	A

Queueing Delay results: (17:30-17:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.13	0.01	0.688	A	A
Heol-Y-Sarn	1	1	5.02	0.33	3.954	A	A
Heol-Y-Sarn	1	2	1.75	0.12	2.566	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.51	0.03	0.252	A	A
A4119 S	1	2	37.14	2.48	9.921	A	A
A4119 S	1	3	23.86	1.59	7.460	A	A
A4119 S	2	1	707.78	47.19	101.298	F	F
Site Access	1	1	6.41	0.43	6.917	A	A
A4119 W	1	1	4.10	0.27	2.334	A	A
A4119 W	1	2	3.45	0.23	2.096	A	A
A4119 W	2	2	0.17	0.01	0.048	A	A

Queueing Delay results: (17:45-18:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.08	0.01	0.493	A	A
Heol-Y-Sarn	**1**	**1**	3.44	0.23	3.202	A	A
Heol-Y-Sarn	**1**	**2**	1.19	0.08	2.036	A	A
Heol-Y-Sarn	**1**	**3**	0.00	0.00	0.000	A	A
Heol-Y-Sarn	**2**	**1**	0.19	0.01	0.114	A	A
A4119 S	**1**	**2**	20.91	1.39	6.720	A	A
A4119 S	**1**	**3**	12.69	0.85	4.896	A	A
A4119 S	**2**	**1**	135.33	9.02	19.896	C	B
Site Access	**1**	**1**	3.02	0.20	3.808	A	A
A4119 W	**1**	**1**	2.75	0.18	1.831	A	A
A4119 W	**1**	**2**	2.30	0.15	1.649	A	A
A4119 W	**2**	**2**	0.04	0.00	0.015	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Do Min_Sec Lane.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:55:38

Summary of junction performance

	AM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2022 DM				
Sterling Drive	0.01	1.78	N/A	A	10.99
Heol-Y-Sarn	0.87	6.36	N/A	A	
A4119 S	4.88	12.83	N/A	B	
Site Access	0.06	2.27	N/A	A	
A4119 W	5.05	11.53	N/A	B	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D3 - 2022 DM, AM " model duration: 07:30 - 09:00
"D4 - 2022 DM, PM" model duration: 16:30 - 18:00
"D5 - 2037 DM, AM" model duration: 07:30 - 09:00
"D6 - 2037 DM, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:55:37

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	1336210679	622

(Default Analysis Set) - 2022 DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2022 DM, AM	2022 DM	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			10.99	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	13.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	432.00	100.000
A4119 S	ONE HOUR	✓	1193.00	100.000
Site Access	ONE HOUR	✓	96.00	100.000
A4119 W	ONE HOUR	✓	1410.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	4.000	7.000	0.000	2.000
	Heol-Y-Sarn	7.000	0.000	160.000	120.000	145.000
	A4119 S	23.000	374.000	0.000	120.000	676.000
	Site Access	0.000	11.000	35.000	0.000	50.000
	A4119 W	9.000	166.000	1015.000	220.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.31	0.54	0.00	0.15
	Heol-Y-Sarn	0.02	0.00	0.37	0.28	0.34
	A4119 S	0.02	0.31	0.00	0.10	0.57
	Site Access	0.00	0.11	0.36	0.00	0.52
	A4119 W	0.01	0.12	0.72	0.16	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.090	1.000	1.010
	A4119 S	1.000	1.010	1.000	1.050	1.010
	Site Access	1.000	1.000	1.000	1.000	1.040
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	9.0	0.0	1.0
	A4119 S	0.0	1.0	0.0	5.0	1.0
	Site Access	0.0	0.0	0.0	0.0	4.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.78	0.01	A	12.35	18.53	0.35	1.13	0.00
Heol-Y-Sarn	6.36	0.87	A	397.03	595.54	49.49	4.99	0.55
A4119 S	12.83	4.88	B	1094.83	1642.24	213.60	7.80	2.37
Site Access	2.27	0.06	A	87.73	131.59	3.80	1.73	0.04
A4119 W	11.53	5.05	B	1296.82	1945.23	224.88	6.94	2.50

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	11.29	2.82	11.29	28.46	1376.53	0.00	0.00	0.685	A
Heol-Y-Sarn	334.73	83.68	334.63	416.43	971.38	0.00	0.29	3.114	A
A4119 S	890.35	222.59	887.85	925.85	379.39	0.00	0.85	3.534	A
Site Access	70.03	17.51	69.84	347.17	920.45	0.00	0.03	1.086	A
A4119 W	1064.86	266.21	1065.63	654.60	335.69	0.00	0.93	3.053	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	11.86	2.97	11.67	35.59	1637.56	0.00	0.00	0.930	A
Heol-Y-Sarn	384.41	96.10	385.37	497.75	1151.48	0.00	0.46	4.256	A
A4119 S	1059.45	264.86	1060.90	1094.86	442.96	0.00	1.60	5.488	A
Site Access	87.78	21.95	88.65	410.35	1093.12	0.00	0.04	1.438	A
A4119 W	1269.45	317.36	1266.56	781.35	400.42	0.00	1.75	4.760	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	15.34	3.83	15.63	43.50	2011.83	0.00	0.01	1.784	A
Heol-Y-Sarn	466.69	116.67	468.91	609.84	1417.62	0.46	0.87	6.359	A
A4119 S	1300.13	325.03	1305.72	1346.82	543.47	1.60	4.55	11.559	B
Site Access	107.07	26.77	106.69	514.73	1324.63	0.04	0.06	2.172	A
A4119 W	1549.10	387.27	1563.57	944.37	486.95	1.75	5.05	10.609	B

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	15.14	3.79	15.05	41.86	2016.56	0.01	0.01	1.646	A
Heol-Y-Sarn	466.50	116.62	466.78	609.45	1422.15	0.87	0.80	6.315	A
A4119 S	1322.22	330.55	1327.23	1352.32	535.85	4.55	4.88	12.828	B
Site Access	102.83	25.71	102.54	503.34	1359.94	0.06	0.05	2.268	A
A4119 W	1542.44	385.61	1552.67	965.69	496.78	5.05	5.04	11.527	B

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	11.88	2.97	12.17	34.01	1679.42	0.01	0.00	0.951	A
Heol-Y-Sarn	408.70	102.17	406.86	510.43	1181.16	0.80	0.56	4.391	A
A4119 S	1095.17	273.79	1096.43	1116.52	467.54	4.88	1.60	6.070	A
Site Access	88.02	22.00	87.54	430.63	1130.63	0.05	0.05	1.521	A
A4119 W	1293.72	323.43	1290.53	802.13	416.04	5.04	1.68	5.260	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	8.60	2.15	8.50	30.72	1369.86	0.00	0.00	0.691	A
Heol-Y-Sarn	321.16	80.29	321.16	413.62	964.73	0.56	0.29	3.306	A
A4119 S	901.64	225.41	899.03	916.62	372.56	1.60	0.93	3.643	A
Site Access	70.63	17.66	70.92	342.71	926.18	0.05	0.01	1.112	A
A4119 W	1061.35	265.34	1063.38	657.97	339.13	1.68	0.92	3.192	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.03	0.00	0.685	A	A
Heol-Y-Sarn	4.42	0.29	3.114	A	A
A4119 S	13.31	0.89	3.534	A	A
Site Access	0.34	0.02	1.086	A	A
A4119 W	13.59	0.91	3.053	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.05	0.00	0.930	A	A
Heol-Y-Sarn	7.11	0.47	4.256	A	A
A4119 S	24.60	1.64	5.488	A	A
Site Access	0.53	0.04	1.438	A	A
A4119 W	25.27	1.68	4.760	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.10	0.01	1.784	A	A
Heol-Y-Sarn	12.94	0.86	6.359	A	A
A4119 S	62.84	4.19	11.559	B	B
Site Access	0.99	0.07	2.172	A	A
A4119 W	68.06	4.54	10.609	B	B

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.10	0.01	1.646	A	A
Heol-Y-Sarn	12.85	0.86	6.315	A	A
A4119 S	70.58	4.71	12.828	B	B
Site Access	1.02	0.07	2.268	A	A
A4119 W	74.76	4.98	11.527	B	B

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.05	0.00	0.951	A	A
Heol-Y-Sarn	7.41	0.49	4.391	A	A
A4119 S	28.18	1.88	6.070	A	A
Site Access	0.57	0.04	1.521	A	A
A4119 W	28.72	1.91	5.260	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.03	0.00	0.691	A	A
Heol-Y-Sarn	4.76	0.32	3.306	A	A
A4119 S	14.09	0.94	3.643	A	A
Site Access	0.36	0.02	1.112	A	A
A4119 W	14.49	0.97	3.192	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:30-07:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	**1**	**1**	11.29	2.82	11.29	1031.09	0.011	0.00	0.00	0.685	A
Heol-Y-Sarn	**1**	**1**	217.62	54.41	217.43	734.53	0.296	0.00	0.19	3.409	A
Heol-Y-Sarn	**1**	**2**	111.32	27.83	110.84	734.53	0.152	0.00	0.08	2.310	A
Heol-Y-Sarn	**1**	**3**	5.69	1.42	5.59	734.53	0.008	0.00	0.00	1.452	A
Heol-Y-Sarn	**2**	**1**	334.73	83.68	334.63			0.00	0.02	0.111	A
A4119 S	**1**	**2**	458.59	114.65	460.42	927.88	0.494	0.00	0.39	3.287	A
A4119 S	**1**	**3**	429.26	107.32	427.81	927.88	0.463	0.00	0.35	3.053	A
A4119 S	**2**	**1**	890.35	222.59	887.85			0.00	0.10	0.357	A
Site Access	**1**	**1**	70.03	17.51	69.84	950.18	0.074	0.00	0.03	1.086	A
A4119 W	**1**	**1**	525.05	131.26	526.78	985.88	0.533	0.00	0.44	2.845	A
A4119 W	**1**	**2**	540.58	135.14	542.51	985.88	0.548	0.00	0.46	2.933	A
A4119 W	**2**	**2**	1064.86	266.21	1065.63			0.00	0.03	0.163	A

Main results: (07:45-08:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	11.86	2.97	11.67	913.08	0.013	0.00	0.00	0.930	A
Heol-Y-Sarn	1	1	246.56	61.64	248.30	698.32	0.353	0.19	0.31	4.527	A
Heol-Y-Sarn	1	2	130.61	32.65	129.74	698.32	0.187	0.08	0.11	2.963	A
Heol-Y-Sarn	1	3	8.20	2.05	8.30	698.32	0.012	0.00	0.00	1.783	A
Heol-Y-Sarn	2	1	384.41	96.10	385.37			0.02	0.04	0.313	A
A4119 S	1	2	544.73	136.18	547.62	912.55	0.597	0.39	0.66	4.537	A
A4119 S	1	3	516.17	129.04	512.89	912.55	0.566	0.35	0.60	4.134	A
A4119 S	2	1	1059.45	264.86	1060.90			0.10	0.34	1.144	A
Site Access	1	1	87.78	21.95	88.65	883.03	0.099	0.03	0.04	1.438	A
A4119 W	1	1	623.63	155.91	630.00	969.38	0.643	0.44	0.66	4.041	A
A4119 W	1	2	642.93	160.73	642.73	969.38	0.663	0.46	0.80	4.201	A
A4119 W	2	2	1269.45	317.36	1266.56			0.03	0.29	0.634	A

Main results: (08:00-08:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	15.34	3.83	15.63	743.87	0.021	0.00	0.01	1.784	A
Heol-Y-Sarn	1	1	304.24	76.06	308.78	644.80	0.472	0.31	0.57	6.464	A
Heol-Y-Sarn	1	2	157.23	39.31	156.75	644.80	0.244	0.11	0.17	3.796	A
Heol-Y-Sarn	1	3	7.43	1.86	7.14	644.80	0.012	0.00	0.01	2.110	A
Heol-Y-Sarn	2	1	466.69	116.67	468.91			0.04	0.12	0.877	A
A4119 S	1	2	667.33	166.83	667.52	888.32	0.751	0.66	1.34	6.675	A
A4119 S	1	3	638.39	159.60	628.36	888.32	0.719	0.60	1.21	6.168	A
A4119 S	2	1	1300.13	325.03	1305.72			0.34	1.99	5.116	A
Site Access	1	1	107.07	26.77	106.69	793.00	0.135	0.04	0.06	2.172	A
A4119 W	1	1	778.55	194.64	781.25	947.31	0.822	0.66	1.44	6.408	A
A4119 W	1	2	785.02	196.25	787.14	947.31	0.829	0.80	1.59	6.676	A
A4119 W	2	2	1549.10	387.27	1563.57			0.29	2.02	4.054	A

Main results: (08:15-08:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	15.14	3.79	15.05	741.73	0.020	0.01	0.01	1.646	A
Heol-Y-Sarn	1	1	304.44	76.11	304.15	643.89	0.473	0.57	0.55	6.478	A
Heol-Y-Sarn	1	2	154.53	38.63	154.44	643.89	0.240	0.17	0.15	3.858	A
Heol-Y-Sarn	1	3	7.81	1.95	7.43	643.89	0.012	0.01	0.01	1.957	A
Heol-Y-Sarn	2	1	466.50	116.62	466.78			0.12	0.09	0.818	A
A4119 S	1	2	679.00	169.75	684.02	890.16	0.763	1.34	1.30	6.979	A
A4119 S	1	3	648.23	162.06	643.41	890.16	0.728	1.21	1.22	6.406	A
A4119 S	2	1	1322.22	330.55	1327.23			1.99	2.36	6.123	A
Site Access	1	1	102.83	25.71	102.54	779.27	0.132	0.06	0.05	2.268	A
A4119 W	1	1	764.76	191.19	770.35	944.80	0.809	1.44	1.50	6.753	A
A4119 W	1	2	787.91	196.98	791.29	944.80	0.834	1.59	1.50	6.836	A
A4119 W	2	2	1542.44	385.61	1552.67			2.02	2.04	4.727	A

Main results: (08:30-08:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	11.88	2.97	12.17	894.15	0.013	0.01	0.00	0.951	A
Heol-Y-Sarn	1	1	265.70	66.43	263.00	692.35	0.384	0.55	0.39	4.676	A
Heol-Y-Sarn	1	2	133.14	33.29	132.17	692.35	0.192	0.15	0.13	3.025	A
Heol-Y-Sarn	1	3	8.02	2.00	7.73	692.35	0.012	0.01	0.01	1.563	A
Heol-Y-Sarn	2	1	408.70	102.17	406.86			0.09	0.04	0.341	A
A4119 S	1	2	563.38	140.85	565.89	906.63	0.621	1.30	0.66	4.702	A
A4119 S	1	3	533.04	133.26	527.83	906.63	0.588	1.22	0.66	4.407	A
A4119 S	2	1	1095.17	273.79	1096.43			2.36	0.28	1.548	A
Site Access	1	1	88.02	22.00	87.54	868.44	0.101	0.05	0.05	1.521	A
A4119 W	1	1	637.58	159.40	643.67	965.39	0.660	1.50	0.70	4.320	A
A4119 W	1	2	652.95	163.24	653.72	965.39	0.676	1.50	0.74	4.445	A
A4119 W	2	2	1293.72	323.43	1290.53			2.04	0.24	0.911	A

Main results: (08:45-09:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	8.60	2.15	8.50	1034.10	0.008	0.00	0.00	0.691	A
Heol-Y-Sarn	1	1	208.21	52.05	209.86	735.87	0.283	0.39	0.20	3.643	A
Heol-Y-Sarn	1	2	106.96	26.74	108.79	735.87	0.145	0.13	0.07	2.336	A
Heol-Y-Sarn	1	3	5.99	1.50	5.80	735.87	0.008	0.01	0.00	1.728	A
Heol-Y-Sarn	2	1	321.16	80.29	321.16			0.04	0.01	0.157	A
A4119 S	1	2	462.42	115.60	463.57	929.52	0.497	0.66	0.41	3.408	A
A4119 S	1	3	436.62	109.15	432.75	929.52	0.470	0.66	0.41	3.074	A
A4119 S	2	1	901.64	225.41	899.03			0.28	0.11	0.405	A
Site Access	1	1	70.63	17.66	70.92	947.95	0.075	0.05	0.01	1.112	A
A4119 W	1	1	517.97	129.49	516.04	985.00	0.526	0.70	0.42	2.901	A
A4119 W	1	2	545.41	136.35	545.41	985.00	0.554	0.74	0.45	3.073	A
A4119 W	2	2	1061.35	265.34	1063.38			0.24	0.05	0.210	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.03	0.00	0.685	A	A
Heol-Y-Sarn	1	1	3.16	0.21	3.409	A	A
Heol-Y-Sarn	1	2	1.07	0.07	2.310	A	A
Heol-Y-Sarn	1	3	0.03	0.00	1.452	A	A
Heol-Y-Sarn	2	1	0.17	0.01	0.111	A	A
A4119 S	1	2	6.43	0.43	3.287	A	A
A4119 S	1	3	5.52	0.37	3.053	A	A
A4119 S	2	1	1.35	0.09	0.357	A	A
Site Access	1	1	0.34	0.02	1.086	A	A
A4119 W	1	1	6.22	0.41	2.845	A	A
A4119 W	1	2	6.63	0.44	2.933	A	A
A4119 W	2	2	0.74	0.05	0.163	A	A

Queueing Delay results: (07:45-08:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.05	0.00	0.930	A	A
Heol-Y-Sarn	1	1	4.91	0.33	4.527	A	A
Heol-Y-Sarn	1	2	1.63	0.11	2.963	A	A
Heol-Y-Sarn	1	3	0.05	0.00	1.783	A	A
Heol-Y-Sarn	2	1	0.53	0.04	0.313	A	A
A4119 S	1	2	10.51	0.70	4.537	A	A
A4119 S	1	3	8.95	0.60	4.134	A	A
A4119 S	2	1	5.14	0.34	1.144	A	A
Site Access	1	1	0.53	0.04	1.438	A	A
A4119 W	1	1	10.62	0.71	4.041	A	A
A4119 W	1	2	11.27	0.75	4.201	A	A
A4119 W	2	2	3.38	0.23	0.634	A	A

Queueing Delay results: (08:00-08:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.10	0.01	1.784	A	A
Heol-Y-Sarn	1	1	8.53	0.57	6.464	A	A
Heol-Y-Sarn	1	2	2.54	0.17	3.796	A	A
Heol-Y-Sarn	1	3	0.07	0.00	2.110	A	A
Heol-Y-Sarn	2	1	1.80	0.12	0.877	A	A
A4119 S	1	2	18.78	1.25	6.675	A	A
A4119 S	1	3	16.28	1.09	6.168	A	A
A4119 S	2	1	27.78	1.85	5.116	A	A
Site Access	1	1	0.99	0.07	2.172	A	A
A4119 W	1	1	20.46	1.36	6.408	A	A
A4119 W	1	2	21.62	1.44	6.676	A	A
A4119 W	2	2	25.98	1.73	4.054	A	A

Queueing Delay results: (08:15-08:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.10	0.01	1.646	A	A
Heol-Y-Sarn	1	1	8.51	0.57	6.478	A	A
Heol-Y-Sarn	1	2	2.59	0.17	3.858	A	A
Heol-Y-Sarn	1	3	0.06	0.00	1.957	A	A
Heol-Y-Sarn	2	1	1.68	0.11	0.818	A	A
A4119 S	1	2	19.80	1.32	6.979	A	A
A4119 S	1	3	17.11	1.14	6.406	A	A
A4119 S	2	1	33.67	2.24	6.123	A	A
Site Access	1	1	1.02	0.07	2.268	A	A
A4119 W	1	1	21.66	1.44	6.753	A	A
A4119 W	1	2	22.39	1.49	6.836	A	A
A4119 W	2	2	30.71	2.05	4.727	A	A

Queueing Delay results: (08:30-08:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.05	0.00	0.951	A	A
Heol-Y-Sarn	1	1	5.10	0.34	4.676	A	A
Heol-Y-Sarn	1	2	1.67	0.11	3.025	A	A
Heol-Y-Sarn	1	3	0.04	0.00	1.563	A	A
Heol-Y-Sarn	2	1	0.59	0.04	0.341	A	A
A4119 S	1	2	11.09	0.74	4.702	A	A
A4119 S	1	3	9.70	0.65	4.407	A	A
A4119 S	2	1	7.39	0.49	1.548	A	A
Site Access	1	1	0.57	0.04	1.521	A	A
A4119 W	1	1	11.51	0.77	4.320	A	A
A4119 W	1	2	12.12	0.81	4.445	A	A
A4119 W	2	2	5.10	0.34	0.911	A	A

Queueing Delay results: (08:45-09:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.03	0.00	0.691	A	A
Heol-Y-Sarn	**1**	**1**	3.39	0.23	3.643	A	A
Heol-Y-Sarn	**1**	**2**	1.11	0.07	2.336	A	A
Heol-Y-Sarn	**1**	**3**	0.04	0.00	1.728	A	A
Heol-Y-Sarn	**2**	**1**	0.23	0.02	0.157	A	A
A4119 S	**1**	**2**	6.80	0.45	3.408	A	A
A4119 S	**1**	**3**	5.71	0.38	3.074	A	A
A4119 S	**2**	**1**	1.58	0.11	0.405	A	A
Site Access	**1**	**1**	0.36	0.02	1.112	A	A
A4119 W	**1**	**1**	6.48	0.43	2.901	A	A
A4119 W	**1**	**2**	7.04	0.47	3.073	A	A
A4119 W	**2**	**2**	0.97	0.06	0.210	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Do Min_Sec Lane.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:59:21

Summary of junction performance

	PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2022 DM				
Sterling Drive	0.01	1.05	N/A	A	62.24
Heol-Y-Sarn	1.10	5.99	N/A	A	
A4119 S	73.01	125.67	N/A	F	
Site Access	0.94	11.00	N/A	B	
A4119 W	1.11	3.58	N/A	A	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D3 - 2022 DM, AM" model duration: 07:30 - 09:00
"D4 - 2022 DM, PM " model duration: 16:30 - 18:00
"D5 - 2037 DM, AM" model duration: 07:30 - 09:00
"D6 - 2037 DM, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:59:20

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	1400945017	718

(Default Analysis Set) - 2022 DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2022 DM, PM	2022 DM	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			62.24	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	49.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	529.00	100.000
A4119 S	ONE HOUR	✓	1645.00	100.000
Site Access	ONE HOUR	✓	263.00	100.000
A4119 W	ONE HOUR	✓	966.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	15.000	16.000	2.000	16.000
	Heol-Y-Sarn	0.000	0.000	326.000	19.000	184.000
	A4119 S	1.000	342.000	0.000	23.000	1279.000
	Site Access	0.000	27.000	85.000	0.000	151.000
	A4119 W	0.000	158.000	721.000	87.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.31	0.33	0.04	0.33
	Heol-Y-Sarn	0.00	0.00	0.62	0.04	0.35
	A4119 S	0.00	0.21	0.00	0.01	0.78
	Site Access	0.00	0.10	0.32	0.00	0.57
	A4119 W	0.00	0.16	0.75	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.020	1.000	1.000
	A4119 S	1.000	1.070	1.000	1.030	1.010
	Site Access	1.000	1.000	1.000	1.000	1.020
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	2.0	0.0	0.0
	A4119 S	0.0	7.0	0.0	3.0	1.0
	Site Access	0.0	0.0	0.0	0.0	2.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.05	0.01	A	44.15	66.22	0.87	0.79	0.01
Heol-Y-Sarn	5.99	1.10	A	490.47	735.71	55.81	4.55	0.62
A4119 S	125.67	73.01	F	1498.07	2247.10	2268.81	60.58	25.21
Site Access	11.00	0.94	B	242.38	363.58	43.52	7.18	0.48
A4119 W	3.58	1.11	A	891.94	1337.91	61.03	2.74	0.68

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	37.52	9.38	37.44	0.75	1080.92	0.00	0.01	0.488	A
Heol-Y-Sarn	395.52	98.88	395.93	412.56	705.79	0.00	0.38	3.042	A
A4119 S	1224.15	306.04	1223.48	869.25	228.89	0.00	2.20	6.346	A
Site Access	197.72	49.43	196.21	94.85	1356.94	0.00	0.17	2.959	A
A4119 W	735.79	183.95	735.88	1206.69	346.46	0.00	0.40	1.829	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	41.87	10.47	41.53	1.00	1270.86	0.00	0.01	0.666	A
Heol-Y-Sarn	477.83	119.46	477.41	483.93	828.47	0.00	0.57	3.983	A
A4119 S	1457.21	364.30	1469.75	1027.69	275.85	0.00	5.51	13.521	B
Site Access	231.89	57.97	229.64	117.83	1631.70	0.00	0.36	5.128	A
A4119 W	869.92	217.48	868.41	1457.55	403.79	0.00	0.66	2.421	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	53.98	13.50	54.82	0.92	1538.11	0.01	0.01	1.055	A
Heol-Y-Sarn	593.98	148.50	592.81	571.00	1021.92	0.57	0.94	5.992	A
A4119 S	1809.28	452.32	1703.23	1265.10	348.72	5.51	43.44	58.303	F
Site Access	300.33	75.08	297.41	145.24	1911.98	0.36	0.86	9.514	A
A4119 W	1062.45	265.61	1062.28	1734.40	474.99	0.66	0.98	3.471	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	49.72	12.43	50.14	1.34	1529.92	0.01	0.01	1.016	A
Heol-Y-Sarn	589.05	147.26	589.30	560.14	1019.92	0.94	1.10	5.933	A
A4119 S	1815.54	453.89	1700.06	1269.86	334.18	43.44	73.01	125.670	F
Site Access	292.48	73.12	295.24	144.57	1884.40	0.86	0.94	11.005	B
A4119 W	1062.03	265.51	1061.62	1710.17	469.47	0.98	1.11	3.584	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	42.62	10.65	42.45	0.75	1315.82	0.01	0.01	0.719	A
Heol-Y-Sarn	478.33	119.58	478.50	513.26	845.01	1.10	0.53	4.192	A
A4119 S	1468.41	367.10	1601.70	1041.06	284.46	73.01	29.10	103.842	F
Site Access	239.83	59.96	237.83	119.25	1773.01	0.94	0.51	7.777	A
A4119 W	885.54	221.39	885.46	1578.97	431.87	1.11	0.65	2.506	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	39.16	9.79	39.33	0.75	1066.11	0.01	0.00	0.493	A
Heol-Y-Sarn	408.12	102.03	408.03	405.19	700.25	0.53	0.33	3.011	A
A4119 S	1213.81	303.45	1238.16	879.00	230.96	29.10	2.88	23.063	C
Site Access	192.05	48.01	189.62	94.31	1381.92	0.51	0.21	3.903	A
A4119 W	735.90	183.97	735.90	1238.91	332.64	0.65	0.37	1.876	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.07	0.01	0.488	A	A
Heol-Y-Sarn	5.09	0.34	3.042	A	A
A4119 S	32.84	2.19	6.346	A	A
Site Access	2.45	0.16	2.959	A	A
A4119 W	5.59	0.37	1.829	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.12	0.01	0.666	A	A
Heol-Y-Sarn	7.94	0.53	3.983	A	A
A4119 S	82.73	5.52	13.521	B	B
Site Access	5.07	0.34	5.128	A	A
A4119 W	8.86	0.59	2.421	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.24	0.02	1.055	A	A
Heol-Y-Sarn	14.70	0.98	5.992	A	A
A4119 S	398.57	26.57	58.303	F	E
Site Access	11.40	0.76	9.514	A	A
A4119 W	15.49	1.03	3.471	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.23	0.02	1.016	A	A
Heol-Y-Sarn	14.45	0.96	5.933	A	A
A4119 S	877.25	58.48	125.670	F	F
Site Access	13.37	0.89	11.005	B	B
A4119 W	16.04	1.07	3.584	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.13	0.01	0.719	A	A
Heol-Y-Sarn	8.51	0.57	4.192	A	A
A4119 S	725.43	48.36	103.842	F	F
Site Access	7.86	0.52	7.777	A	A
A4119 W	9.21	0.61	2.506	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.08	0.01	0.493	A	A
Heol-Y-Sarn	5.12	0.34	3.011	A	A
A4119 S	152.00	10.13	23.063	C	C
Site Access	3.36	0.22	3.903	A	A
A4119 W	5.84	0.39	1.876	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:30-16:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	37.52	9.38	37.44	1164.73	0.032	0.00	0.01	0.488	A
Heol-Y-Sarn	1	1	258.55	64.64	255.38	787.93	0.328	0.00	0.28	3.331	A
Heol-Y-Sarn	1	2	137.38	34.35	136.96	787.93	0.174	0.00	0.08	2.149	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	787.93	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	395.52	98.88	395.93			0.00	0.01	0.128	A
A4119 S	1	2	674.62	168.66	671.11	964.16	0.700	0.00	1.02	5.194	A
A4119 S	1	3	548.86	137.21	551.78	964.16	0.569	0.00	0.58	3.811	A
A4119 S	2	1	1224.15	306.04	1223.48			0.00	0.59	1.758	A
Site Access	1	1	197.72	49.43	196.21	780.43	0.253	0.00	0.17	2.959	A
A4119 W	1	1	377.72	94.43	376.13	983.13	0.384	0.00	0.22	1.860	A
A4119 W	1	2	358.16	89.54	359.08	983.13	0.364	0.00	0.17	1.749	A
A4119 W	2	2	735.79	183.95	735.88			0.00	0.00	0.022	A

Main results: (16:45-17:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	41.87	10.47	41.53	1078.86	0.039	0.01	0.01	0.666	A
Heol-Y-Sarn	1	1	313.12	78.28	311.87	763.27	0.410	0.28	0.39	4.216	A
Heol-Y-Sarn	1	2	164.29	41.07	163.20	763.27	0.215	0.08	0.14	2.619	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	763.27	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	477.83	119.46	477.41			0.01	0.04	0.327	A
A4119 S	1	2	802.14	200.54	806.82	952.84	0.842	1.02	1.60	7.280	A
A4119 S	1	3	667.60	166.90	666.85	952.84	0.701	0.58	0.98	5.391	A
A4119 S	2	1	1457.21	364.30	1469.75			0.59	2.93	7.073	A
Site Access	1	1	231.89	57.97	229.64	673.58	0.344	0.17	0.36	5.128	A
A4119 W	1	1	451.00	112.75	449.33	968.52	0.466	0.22	0.34	2.459	A
A4119 W	1	2	417.41	104.35	418.75	968.52	0.431	0.17	0.28	2.260	A
A4119 W	2	2	869.92	217.48	868.41			0.00	0.04	0.057	A

Main results: (17:00-17:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	53.98	13.50	54.82	958.04	0.056	0.01	0.01	1.055	A
Heol-Y-Sarn	1	1	380.14	95.03	380.64	724.37	0.525	0.39	0.58	5.845	A
Heol-Y-Sarn	1	2	212.67	53.17	211.25	724.37	0.294	0.14	0.20	3.376	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	724.37	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	593.98	148.50	592.81			0.04	0.15	1.010	A
A4119 S	1	2	926.07	231.52	926.07	935.27	0.990	1.60	2.68	10.089	B
A4119 S	1	3	777.16	194.29	782.42	935.27	0.831	0.98	1.72	7.641	A
A4119 S	2	1	1809.28	452.32	1703.23			2.93	39.04	49.294	E
Site Access	1	1	300.33	75.08	297.41	564.58	0.532	0.36	0.86	9.514	A
A4119 W	1	1	543.93	135.98	544.76	950.36	0.572	0.34	0.49	3.399	A
A4119 W	1	2	518.36	129.59	519.28	950.36	0.545	0.28	0.43	3.090	A
A4119 W	2	2	1062.45	265.61	1062.28			0.04	0.06	0.221	A

Main results: (17:15-17:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	49.72	12.43	50.14	961.74	0.052	0.01	0.01	1.016	A
Heol-Y-Sarn	1	1	390.67	97.67	384.82	724.77	0.539	0.58	0.72	5.816	A
Heol-Y-Sarn	1	2	198.64	49.66	199.30	724.77	0.274	0.20	0.18	3.455	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	724.77	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	589.05	147.26	589.30			0.15	0.20	0.945	A
A4119 S	1	2	920.89	230.22	918.97	938.78	0.981	2.68	2.74	10.542	B
A4119 S	1	3	779.16	194.79	775.82	938.78	0.830	1.72	1.77	8.081	A
A4119 S	2	1	1815.54	453.89	1700.06			39.04	68.51	116.253	F
Site Access	1	1	292.48	73.12	295.24	575.31	0.508	0.86	0.94	11.005	B
A4119 W	1	1	542.59	135.65	541.92	951.77	0.570	0.49	0.54	3.462	A
A4119 W	1	2	519.03	129.76	519.86	951.77	0.545	0.43	0.49	3.214	A
A4119 W	2	2	1062.03	265.51	1061.62			0.06	0.09	0.242	A

Main results: (17:30-17:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	42.62	10.65	42.45	1058.53	0.040	0.01	0.01	0.719	A
Heol-Y-Sarn	1	1	303.51	75.88	306.18	759.94	0.399	0.72	0.35	4.407	A
Heol-Y-Sarn	1	2	174.99	43.75	174.32	759.94	0.230	0.18	0.13	2.729	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	759.94	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	478.33	119.58	478.50			0.20	0.04	0.383	A
A4119 S	1	2	874.09	218.52	875.85	950.76	0.919	2.74	2.18	9.844	A
A4119 S	1	3	727.60	181.90	731.95	950.76	0.765	1.77	1.45	7.517	A
A4119 S	2	1	1468.41	367.10	1601.70			68.51	25.48	95.116	F
Site Access	1	1	239.83	59.96	237.83	618.66	0.388	0.94	0.51	7.777	A
A4119 W	1	1	452.67	113.17	454.35	961.36	0.471	0.54	0.31	2.533	A
A4119 W	1	2	432.79	108.20	430.36	961.36	0.450	0.49	0.34	2.352	A
A4119 W	2	2	885.54	221.39	885.46			0.09	0.01	0.064	A

Main results: (17:45-18:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	39.16	9.79	39.33	1171.43	0.033	0.01	0.00	0.493	A
Heol-Y-Sarn	1	1	267.62	66.90	267.53	789.05	0.339	0.35	0.24	3.285	A
Heol-Y-Sarn	1	2	140.42	35.10	142.18	789.05	0.178	0.13	0.08	2.182	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	789.05	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	408.12	102.03	408.03			0.04	0.02	0.122	A
A4119 S	1	2	682.68	170.67	689.87	963.66	0.708	2.18	0.96	6.591	A
A4119 S	1	3	555.48	138.87	555.40	963.66	0.576	1.45	0.64	4.988	A
A4119 S	2	1	1213.81	303.45	1238.16			25.48	1.28	17.422	C
Site Access	1	1	192.05	48.01	189.62	770.71	0.249	0.51	0.21	3.903	A
A4119 W	1	1	387.28	96.82	386.95	986.66	0.393	0.31	0.20	1.922	A
A4119 W	1	2	348.62	87.15	347.28	986.66	0.353	0.34	0.17	1.786	A
A4119 W	2	2	735.90	183.97	735.90			0.01	0.00	0.019	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.07	0.01	0.488	A	A
Heol-Y-Sarn	1	1	3.63	0.24	3.331	A	A
Heol-Y-Sarn	1	2	1.24	0.08	2.149	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.22	0.01	0.128	A	A
A4119 S	1	2	14.75	0.98	5.194	A	A
A4119 S	1	3	8.98	0.60	3.811	A	A
A4119 S	2	1	9.11	0.61	1.758	A	A
Site Access	1	1	2.45	0.16	2.959	A	A
A4119 W	1	1	2.95	0.20	1.860	A	A
A4119 W	1	2	2.57	0.17	1.749	A	A
A4119 W	2	2	0.07	0.00	0.022	A	A

Queueing Delay results: (16:45-17:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.12	0.01	0.666	A	A
Heol-Y-Sarn	1	1	5.50	0.37	4.216	A	A
Heol-Y-Sarn	1	2	1.79	0.12	2.619	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.65	0.04	0.327	A	A
A4119 S	1	2	24.30	1.62	7.280	A	A
A4119 S	1	3	15.23	1.02	5.391	A	A
A4119 S	2	1	43.19	2.88	7.073	A	A
Site Access	1	1	5.07	0.34	5.128	A	A
A4119 W	1	1	4.63	0.31	2.459	A	A
A4119 W	1	2	4.02	0.27	2.260	A	A
A4119 W	2	2	0.21	0.01	0.057	A	A

Queueing Delay results: (17:00-17:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.24	0.02	1.055	A	A
Heol-Y-Sarn	1	1	9.37	0.62	5.845	A	A
Heol-Y-Sarn	1	2	2.84	0.19	3.376	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	2.49	0.17	1.010	A	A
A4119 S	1	2	37.72	2.51	10.089	B	B
A4119 S	1	3	24.60	1.64	7.641	A	A
A4119 S	2	1	336.25	22.42	49.294	E	D
Site Access	1	1	11.40	0.76	9.514	A	A
A4119 W	1	1	7.77	0.52	3.399	A	A
A4119 W	1	2	6.72	0.45	3.090	A	A
A4119 W	2	2	1.00	0.07	0.221	A	A

Queueing Delay results: (17:15-17:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.23	0.02	1.016	A	A
Heol-Y-Sarn	1	1	9.25	0.62	5.816	A	A
Heol-Y-Sarn	1	2	2.89	0.19	3.455	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	2.31	0.15	0.945	A	A
A4119 S	1	2	40.25	2.68	10.542	B	B
A4119 S	1	3	26.42	1.76	8.081	A	A
A4119 S	2	1	810.57	54.04	116.253	F	F
Site Access	1	1	13.37	0.89	11.005	B	B
A4119 W	1	1	7.95	0.53	3.462	A	A
A4119 W	1	2	6.99	0.47	3.214	A	A
A4119 W	2	2	1.09	0.07	0.242	A	A

Queueing Delay results: (17:30-17:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.13	0.01	0.719	A	A
Heol-Y-Sarn	1	1	5.83	0.39	4.407	A	A
Heol-Y-Sarn	1	2	1.89	0.13	2.729	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.79	0.05	0.383	A	A
A4119 S	1	2	36.80	2.45	9.844	A	A
A4119 S	1	3	24.03	1.60	7.517	A	A
A4119 S	2	1	664.60	44.31	95.116	F	F
Site Access	1	1	7.86	0.52	7.777	A	A
A4119 W	1	1	4.79	0.32	2.533	A	A
A4119 W	1	2	4.18	0.28	2.352	A	A
A4119 W	2	2	0.24	0.02	0.064	A	A

Queueing Delay results: (17:45-18:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.08	0.01	0.493	A	A
Heol-Y-Sarn	**1**	**1**	3.64	0.24	3.285	A	A
Heol-Y-Sarn	**1**	**2**	1.28	0.09	2.182	A	A
Heol-Y-Sarn	**1**	**3**	0.00	0.00	0.000	A	A
Heol-Y-Sarn	**2**	**1**	0.21	0.01	0.122	A	A
A4119 S	**1**	**2**	20.32	1.35	6.591	A	A
A4119 S	**1**	**3**	12.83	0.86	4.988	A	A
A4119 S	**2**	**1**	118.85	7.92	17.422	C	B
Site Access	**1**	**1**	3.36	0.22	3.903	A	A
A4119 W	**1**	**1**	3.11	0.21	1.922	A	A
A4119 W	**1**	**2**	2.67	0.18	1.786	A	A
A4119 W	**2**	**2**	0.06	0.00	0.019	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Do Min_Sec Lane.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 12:02:54

Summary of junction performance

	AM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2037 DM				
Sterling Drive	0.01	1.97	N/A	A	15.22
Heol-Y-Sarn	1.18	7.90	N/A	A	
A4119 S	8.10	20.18	N/A	C	
Site Access	0.09	2.50	N/A	A	
A4119 W	6.72	14.30	N/A	B	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D3 - 2022 DM, AM" model duration: 07:30 - 09:00
"D4 - 2022 DM, PM" model duration: 16:30 - 18:00
"D5 - 2037 DM, AM " model duration: 07:30 - 09:00
"D6 - 2037 DM, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 12:02:54

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	767405219	1261

(Default Analysis Set) - 2037 DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2037 DM, AM	2037 DM	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			15.22	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	12.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	471.00	100.000
A4119 S	ONE HOUR	✓	1267.00	100.000
Site Access	ONE HOUR	✓	104.00	100.000
A4119 W	ONE HOUR	✓	1459.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	3.000	6.000	0.000	3.000
	Heol-Y-Sarn	7.000	0.000	177.000	130.000	157.000
	A4119 S	24.000	368.000	0.000	119.000	756.000
	Site Access	0.000	12.000	38.000	0.000	54.000
	A4119 W	8.000	163.000	1043.000	245.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.25	0.50	0.00	0.25
	Heol-Y-Sarn	0.01	0.00	0.38	0.28	0.33
	A4119 S	0.02	0.29	0.00	0.09	0.60
	Site Access	0.00	0.12	0.37	0.00	0.52
	A4119 W	0.01	0.11	0.71	0.17	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.090	1.000	1.010
	A4119 S	1.000	1.010	1.000	1.050	1.010
	Site Access	1.000	1.000	1.000	1.000	1.040
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	9.0	0.0	1.0
	A4119 S	0.0	1.0	0.0	5.0	1.0
	Site Access	0.0	0.0	0.0	0.0	4.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.97	0.01	A	10.75	16.13	0.37	1.39	0.00
Heol-Y-Sarn	7.90	1.18	A	431.94	647.91	62.97	5.83	0.70
A4119 S	20.18	8.10	C	1161.68	1742.52	320.51	11.04	3.56
Site Access	2.50	0.09	A	96.21	144.32	4.66	1.94	0.05
A4119 W	14.30	6.72	B	1335.46	2003.20	273.12	8.18	3.03

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	8.37	2.09	8.28	29.31	1412.59	0.00	0.00	0.620	A
Heol-Y-Sarn	354.58	88.64	354.62	418.10	1002.78	0.00	0.40	3.505	A
A4119 S	951.10	237.78	951.34	958.52	398.21	0.00	1.07	4.132	A
Site Access	79.79	19.95	78.75	365.85	984.84	0.00	0.04	1.212	A
A4119 W	1095.80	273.95	1097.13	722.05	341.54	0.00	0.96	3.272	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	11.04	2.76	11.09	36.54	1668.06	0.00	0.00	1.118	A
Heol-Y-Sarn	423.05	105.76	423.66	480.81	1198.33	0.00	0.52	4.676	A
A4119 S	1126.58	281.65	1132.43	1134.77	488.85	0.00	2.22	6.730	A
Site Access	90.55	22.64	91.12	442.70	1180.92	0.00	0.03	1.661	A
A4119 W	1306.87	326.72	1306.53	874.02	398.02	0.00	2.01	5.211	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	13.42	3.35	13.42	42.68	2066.60	0.00	0.01	1.972	A
Heol-Y-Sarn	518.64	129.66	518.87	614.23	1465.79	0.52	1.18	7.596	A
A4119 S	1394.51	348.63	1394.99	1386.85	595.05	2.22	7.86	16.893	C
Site Access	114.00	28.50	113.15	539.62	1451.04	0.03	0.09	2.398	A
A4119 W	1596.07	399.02	1603.92	1057.64	506.55	2.01	6.16	12.618	B

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	12.28	3.07	12.56	40.44	2051.80	0.01	0.00	1.942	A
Heol-Y-Sarn	510.74	127.68	510.45	602.43	1461.93	1.18	1.15	7.895	A
A4119 S	1396.46	349.12	1387.14	1391.28	587.53	7.86	8.10	20.177	C
Site Access	114.96	28.74	115.62	534.86	1442.66	0.09	0.08	2.500	A
A4119 W	1613.62	403.41	1605.63	1067.49	490.80	6.16	6.72	14.299	B

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	10.47	2.62	10.66	35.54	1683.71	0.00	0.00	1.129	A
Heol-Y-Sarn	426.76	106.69	425.80	492.47	1201.90	1.15	0.58	4.958	A
A4119 S	1138.10	284.52	1133.15	1139.86	483.85	8.10	2.25	8.113	A
Site Access	94.16	23.54	94.59	441.84	1172.59	0.08	0.04	1.835	A
A4119 W	1316.48	329.12	1315.77	860.60	406.58	6.72	1.98	6.075	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	8.95	2.24	8.95	27.14	1405.90	0.00	0.00	0.806	A
Heol-Y-Sarn	357.90	89.48	357.00	416.67	998.19	0.58	0.39	3.580	A
A4119 S	963.33	240.83	966.57	953.43	402.29	2.25	1.12	4.171	A
Site Access	83.81	20.95	84.05	361.76	1009.00	0.04	0.03	1.316	A
A4119 W	1083.95	270.99	1082.86	746.81	346.24	1.98	1.00	3.348	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.02	0.00	0.620	A	A
Heol-Y-Sarn	5.35	0.36	3.505	A	A
A4119 S	16.51	1.10	4.132	A	A
Site Access	0.42	0.03	1.212	A	A
A4119 W	15.08	1.01	3.272	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.05	0.00	1.118	A	A
Heol-Y-Sarn	8.52	0.57	4.676	A	A
A4119 S	31.95	2.13	6.730	A	A
Site Access	0.66	0.04	1.661	A	A
A4119 W	28.58	1.91	5.211	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.11	0.01	1.972	A	A
Heol-Y-Sarn	16.76	1.12	7.596	A	A
A4119 S	96.52	6.43	16.893	C	B
Site Access	1.17	0.08	2.398	A	A
A4119 W	83.64	5.58	12.618	B	B

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.11	0.01	1.942	A	A
Heol-Y-Sarn	17.55	1.17	7.895	A	A
A4119 S	117.47	7.83	20.177	C	C
Site Access	1.22	0.08	2.500	A	A
A4119 W	95.49	6.37	14.299	B	B

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.05	0.00	1.129	A	A
Heol-Y-Sarn	9.14	0.61	4.958	A	A
A4119 S	40.87	2.72	8.113	A	A
Site Access	0.73	0.05	1.835	A	A
A4119 W	34.61	2.31	6.075	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.03	0.00	0.806	A	A
Heol-Y-Sarn	5.64	0.38	3.580	A	A
A4119 S	17.19	1.15	4.171	A	A
Site Access	0.46	0.03	1.316	A	A
A4119 W	15.73	1.05	3.348	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:30-07:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	**1**	**1**	8.37	2.09	8.28	1014.78	0.008	0.00	0.00	0.620	A
Heol-Y-Sarn	**1**	**1**	231.58	57.89	230.86	728.22	0.318	0.00	0.27	3.847	A
Heol-Y-Sarn	**1**	**2**	117.43	29.36	117.48	728.22	0.161	0.00	0.10	2.419	A
Heol-Y-Sarn	**1**	**3**	5.61	1.40	5.61	728.22	0.008	0.00	0.00	1.898	A
Heol-Y-Sarn	**2**	**1**	354.58	88.64	354.62			0.00	0.03	0.174	A
A4119 S	**1**	**2**	498.56	124.64	501.46	923.34	0.540	0.00	0.51	3.793	A
A4119 S	**1**	**3**	452.78	113.20	451.02	923.34	0.490	0.00	0.41	3.266	A
A4119 S	**2**	**1**	951.10	237.78	951.34			0.00	0.15	0.586	A
Site Access	**1**	**1**	79.79	19.95	78.75	925.14	0.086	0.00	0.04	1.212	A
A4119 W	**1**	**1**	539.05	134.76	540.81	984.39	0.548	0.00	0.44	2.961	A
A4119 W	**1**	**2**	558.08	139.52	559.56	984.39	0.567	0.00	0.45	3.144	A
A4119 W	**2**	**2**	1095.80	273.95	1097.13			0.00	0.07	0.216	A

Main results: (07:45-08:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	11.04	2.76	11.09	899.29	0.012	0.00	0.00	1.118	A
Heol-Y-Sarn	1	1	274.21	68.55	275.59	688.89	0.398	0.27	0.35	4.976	A
Heol-Y-Sarn	1	2	142.60	35.65	142.93	688.89	0.207	0.10	0.12	3.093	A
Heol-Y-Sarn	1	3	6.85	1.71	6.76	688.89	0.010	0.00	0.00	1.849	A
Heol-Y-Sarn	2	1	423.05	105.76	423.66			0.03	0.04	0.396	A
A4119 S	1	2	595.34	148.83	598.24	901.49	0.660	0.51	0.89	5.232	A
A4119 S	1	3	537.10	134.27	536.53	901.49	0.596	0.41	0.69	4.582	A
A4119 S	2	1	1126.58	281.65	1132.43			0.15	0.64	1.801	A
Site Access	1	1	90.55	22.64	91.12	848.88	0.107	0.04	0.03	1.661	A
A4119 W	1	1	645.44	161.36	646.82	969.99	0.665	0.44	0.77	4.244	A
A4119 W	1	2	661.09	165.27	659.76	969.99	0.682	0.45	0.88	4.530	A
A4119 W	2	2	1306.87	326.72	1306.53			0.07	0.36	0.817	A

Main results: (08:00-08:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	13.42	3.35	13.42	719.11	0.019	0.00	0.01	1.972	A
Heol-Y-Sarn	1	1	335.40	83.85	333.50	635.11	0.528	0.35	0.74	7.280	A
Heol-Y-Sarn	1	2	177.29	44.32	176.43	635.11	0.279	0.12	0.22	4.241	A
Heol-Y-Sarn	1	3	6.19	1.55	6.19	635.11	0.010	0.00	0.00	2.102	A
Heol-Y-Sarn	2	1	518.64	129.66	518.87			0.04	0.23	1.427	A
A4119 S	1	2	720.62	180.15	719.14	875.89	0.823	0.89	1.75	7.928	A
A4119 S	1	3	674.37	168.59	676.46	875.89	0.770	0.69	1.38	6.916	A
A4119 S	2	1	1394.51	348.63	1394.99			0.64	4.73	9.422	A
Site Access	1	1	114.00	28.50	113.15	743.84	0.153	0.03	0.09	2.398	A
A4119 W	1	1	793.47	198.37	792.61	942.31	0.842	0.77	1.57	6.848	A
A4119 W	1	2	810.45	202.61	810.12	942.31	0.860	0.88	1.70	7.233	A
A4119 W	2	2	1596.07	399.02	1603.92			0.36	2.89	5.557	A

Main results: (08:15-08:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	12.28	3.07	12.56	725.80	0.017	0.01	0.00	1.942	A
Heol-Y-Sarn	1	1	331.31	82.83	337.49	635.89	0.521	0.74	0.70	7.528	A
Heol-Y-Sarn	1	2	172.39	43.10	172.67	635.89	0.271	0.22	0.20	4.355	A
Heol-Y-Sarn	1	3	6.76	1.69	6.71	635.89	0.011	0.00	0.00	2.174	A
Heol-Y-Sarn	2	1	510.74	127.68	510.45			0.23	0.25	1.540	A
A4119 S	1	2	722.47	180.62	724.81	877.70	0.823	1.75	1.69	8.317	A
A4119 S	1	3	664.66	166.17	665.19	877.70	0.757	1.38	1.34	7.269	A
A4119 S	2	1	1396.46	349.12	1387.14			4.73	5.07	12.364	B
Site Access	1	1	114.96	28.74	115.62	747.09	0.154	0.09	0.08	2.500	A
A4119 W	1	1	790.52	197.63	787.18	946.33	0.835	1.57	1.66	7.197	A
A4119 W	1	2	815.11	203.78	814.26	946.33	0.861	1.70	1.71	7.562	A
A4119 W	2	2	1613.62	403.41	1605.63			2.89	3.35	6.916	A

Main results: (08:30-08:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	10.47	2.62	10.66	892.21	0.012	0.00	0.00	1.129	A
Heol-Y-Sarn	1	1	280.73	70.18	278.30	688.18	0.408	0.70	0.41	5.229	A
Heol-Y-Sarn	1	2	138.94	34.73	137.37	688.18	0.202	0.20	0.12	3.190	A
Heol-Y-Sarn	1	3	6.14	1.53	6.14	688.18	0.009	0.00	0.00	1.853	A
Heol-Y-Sarn	2	1	426.76	106.69	425.80			0.25	0.06	0.492	A
A4119 S	1	2	590.48	147.62	589.91	902.69	0.654	1.69	0.90	5.576	A
A4119 S	1	3	542.66	135.67	540.67	902.69	0.601	1.34	0.68	4.844	A
A4119 S	2	1	1138.10	284.52	1133.15			5.07	0.68	2.954	A
Site Access	1	1	94.16	23.54	94.59	852.12	0.111	0.08	0.04	1.835	A
A4119 W	1	1	644.96	161.24	642.20	967.80	0.666	1.66	0.82	4.573	A
A4119 W	1	2	670.80	167.70	670.47	967.80	0.693	1.71	0.84	4.832	A
A4119 W	2	2	1316.48	329.12	1315.77			3.35	0.32	1.422	A

Main results: (08:45-09:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	8.95	2.24	8.95	1017.81	0.009	0.00	0.00	0.806	A
Heol-Y-Sarn	1	1	230.43	57.61	231.00	729.14	0.316	0.41	0.26	3.892	A
Heol-Y-Sarn	1	2	121.86	30.46	121.76	729.14	0.167	0.12	0.10	2.474	A
Heol-Y-Sarn	1	3	4.71	1.18	4.76	729.14	0.006	0.00	0.00	1.568	A
Heol-Y-Sarn	2	1	357.90	89.48	357.00			0.06	0.03	0.214	A
A4119 S	1	2	508.76	127.19	508.43	922.36	0.552	0.90	0.57	3.846	A
A4119 S	1	3	457.81	114.45	460.05	922.36	0.496	0.68	0.43	3.315	A
A4119 S	2	1	963.33	240.83	966.57			0.68	0.12	0.593	A
Site Access	1	1	83.81	20.95	84.05	915.74	0.092	0.04	0.03	1.316	A
A4119 W	1	1	531.05	132.76	532.90	983.19	0.540	0.82	0.44	3.026	A
A4119 W	1	2	551.81	137.95	553.90	983.19	0.561	0.84	0.50	3.198	A
A4119 W	2	2	1083.95	270.99	1082.86			0.32	0.06	0.241	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.02	0.00	0.620	A	A
Heol-Y-Sarn	1	1	3.84	0.26	3.847	A	A
Heol-Y-Sarn	1	2	1.20	0.08	2.419	A	A
Heol-Y-Sarn	1	3	0.04	0.00	1.898	A	A
Heol-Y-Sarn	2	1	0.27	0.02	0.174	A	A
A4119 S	1	2	8.00	0.53	3.793	A	A
A4119 S	1	3	6.16	0.41	3.266	A	A
A4119 S	2	1	2.34	0.16	0.586	A	A
Site Access	1	1	0.42	0.03	1.212	A	A
A4119 W	1	1	6.68	0.45	2.961	A	A
A4119 W	1	2	7.40	0.49	3.144	A	A
A4119 W	2	2	1.00	0.07	0.216	A	A

Queueing Delay results: (07:45-08:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.05	0.00	1.118	A	A
Heol-Y-Sarn	1	1	5.88	0.39	4.976	A	A
Heol-Y-Sarn	1	2	1.86	0.12	3.093	A	A
Heol-Y-Sarn	1	3	0.05	0.00	1.849	A	A
Heol-Y-Sarn	2	1	0.74	0.05	0.396	A	A
A4119 S	1	2	13.09	0.87	5.232	A	A
A4119 S	1	3	10.33	0.69	4.582	A	A
A4119 S	2	1	8.53	0.57	1.801	A	A
Site Access	1	1	0.66	0.04	1.661	A	A
A4119 W	1	1	11.47	0.76	4.244	A	A
A4119 W	1	2	12.62	0.84	4.530	A	A
A4119 W	2	2	4.49	0.30	0.817	A	A

Queueing Delay results: (08:00-08:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.11	0.01	1.972	A	A
Heol-Y-Sarn	1	1	10.45	0.70	7.280	A	A
Heol-Y-Sarn	1	2	3.09	0.21	4.241	A	A
Heol-Y-Sarn	1	3	0.07	0.00	2.102	A	A
Heol-Y-Sarn	2	1	3.16	0.21	1.427	A	A
A4119 S	1	2	23.84	1.59	7.928	A	A
A4119 S	1	3	18.98	1.27	6.916	A	A
A4119 S	2	1	53.70	3.58	9.422	A	A
Site Access	1	1	1.17	0.08	2.398	A	A
A4119 W	1	1	22.51	1.50	6.848	A	A
A4119 W	1	2	24.30	1.62	7.233	A	A
A4119 W	2	2	36.84	2.46	5.557	A	A

Queueing Delay results: (08:15-08:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.11	0.01	1.942	A	A
Heol-Y-Sarn	1	1	10.84	0.72	7.528	A	A
Heol-Y-Sarn	1	2	3.19	0.21	4.355	A	A
Heol-Y-Sarn	1	3	0.07	0.00	2.174	A	A
Heol-Y-Sarn	2	1	3.45	0.23	1.540	A	A
A4119 S	1	2	25.33	1.69	8.317	A	A
A4119 S	1	3	20.23	1.35	7.269	A	A
A4119 S	2	1	71.91	4.79	12.364	B	B
Site Access	1	1	1.22	0.08	2.500	A	A
A4119 W	1	1	23.82	1.59	7.197	A	A
A4119 W	1	2	25.53	1.70	7.562	A	A
A4119 W	2	2	46.14	3.08	6.916	A	A

Queueing Delay results: (08:30-08:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.05	0.00	1.129	A	A
Heol-Y-Sarn	1	1	6.26	0.42	5.229	A	A
Heol-Y-Sarn	1	2	1.90	0.13	3.190	A	A
Heol-Y-Sarn	1	3	0.05	0.00	1.853	A	A
Heol-Y-Sarn	2	1	0.93	0.06	0.492	A	A
A4119 S	1	2	14.26	0.95	5.576	A	A
A4119 S	1	3	11.17	0.74	4.844	A	A
A4119 S	2	1	15.43	1.03	2.954	A	A
Site Access	1	1	0.73	0.05	1.835	A	A
A4119 W	1	1	12.54	0.84	4.573	A	A
A4119 W	1	2	13.65	0.91	4.832	A	A
A4119 W	2	2	8.42	0.56	1.422	A	A

Queueing Delay results: (08:45-09:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.03	0.00	0.806	A	A
Heol-Y-Sarn	**1**	**1**	3.99	0.27	3.892	A	A
Heol-Y-Sarn	**1**	**2**	1.27	0.08	2.474	A	A
Heol-Y-Sarn	**1**	**3**	0.03	0.00	1.568	A	A
Heol-Y-Sarn	**2**	**1**	0.35	0.02	0.214	A	A
A4119 S	**1**	**2**	8.31	0.55	3.846	A	A
A4119 S	**1**	**3**	6.38	0.43	3.315	A	A
A4119 S	**2**	**1**	2.50	0.17	0.593	A	A
Site Access	**1**	**1**	0.46	0.03	1.316	A	A
A4119 W	**1**	**1**	6.94	0.46	3.026	A	A
A4119 W	**1**	**2**	7.64	0.51	3.198	A	A
A4119 W	**2**	**2**	1.15	0.08	0.241	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

Filename: Base Junction 5 Arcady_v2_val_Do Min_Sec Lane.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 12:05:27

Summary of junction performance

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

	PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2037 DM				
Sterling Drive	0.02	1.24	N/A	A	216.34
Heol-Y-Sarn	1.55	8.39	N/A	A	
A4119 S	209.36	446.19	N/A	F	
Site Access	0.89	8.92	N/A	A	
A4119 W	1.49	4.19	N/A	A	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D3 - 2022 DM, AM" model duration: 07:30 - 09:00
"D4 - 2022 DM, PM" model duration: 16:30 - 18:00
"D5 - 2037 DM, AM" model duration: 07:30 - 09:00
"D6 - 2037 DM, PM " model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 12:05:26

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	171218697	1167

(Default Analysis Set) - 2037 DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Entry Lane Analysis	A4119 S - Entry Lane Analysis	Arm 3: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2037 DM, PM	2037 DM	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			216.34	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	53.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	575.00	100.000
A4119 S	ONE HOUR	✓	1824.00	100.000
Site Access	ONE HOUR	✓	299.00	100.000
A4119 W	ONE HOUR	✓	1064.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.000	15.000	19.000	2.000	17.000
	Heol-Y-Sarn	0.000	0.000	364.000	20.000	191.000
	A4119 S	1.000	343.000	0.000	197.000	1283.000
	Site Access	0.000	31.000	96.000	0.000	172.000
	A4119 W	0.000	161.000	814.000	89.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.00	0.28	0.36	0.04	0.32
	Heol-Y-Sarn	0.00	0.00	0.63	0.03	0.33
	A4119 S	0.00	0.19	0.00	0.11	0.70
	Site Access	0.00	0.10	0.32	0.00	0.58
	A4119 W	0.00	0.15	0.77	0.08	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.020	1.000	1.000
	A4119 S	1.000	1.070	1.000	1.030	1.010
	Site Access	1.000	1.000	1.000	1.000	1.020
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	2.0	0.0	0.0
	A4119 S	0.0	7.0	0.0	3.0	1.0
	Site Access	0.0	0.0	0.0	0.0	2.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.24	0.02	A	48.80	73.20	1.11	0.91	0.01
Heol-Y-Sarn	8.39	1.55	A	526.76	790.15	79.00	6.00	0.88
A4119 S	446.19	209.36	F	1672.55	2508.82	9352.35	223.67	103.91
Site Access	8.92	0.89	A	274.88	412.32	46.63	6.79	0.52
A4119 W	4.19	1.49	A	977.65	1466.47	77.71	3.18	0.86

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	38.87	9.72	38.97	0.62	1157.38	0.00	0.00	0.558	A
Heol-Y-Sarn	435.37	108.84	435.06	413.42	782.93	0.00	0.43	3.498	A
A4119 S	1385.86	346.47	1378.97	980.10	237.02	0.00	4.80	10.894	B
Site Access	228.12	57.03	230.75	231.57	1381.29	0.00	0.19	3.331	A
A4119 W	800.51	200.13	800.98	1255.06	356.97	0.00	0.47	2.017	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	48.11	12.03	48.16	0.77	1365.03	0.00	0.01	0.811	A
Heol-Y-Sarn	515.81	128.95	516.69	489.21	923.98	0.00	0.71	4.927	A
A4119 S	1633.95	408.49	1603.84	1154.46	289.30	0.00	22.64	36.484	E
Site Access	269.33	67.33	266.40	274.94	1616.04	0.00	0.46	5.522	A
A4119 W	954.49	238.62	954.55	1471.08	411.36	0.00	0.75	2.756	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	59.49	14.87	59.54	0.93	1621.39	0.01	0.02	1.188	A
Heol-Y-Sarn	630.41	157.60	628.04	532.44	1148.49	0.71	1.55	8.185	A
A4119 S	2007.84	501.96	1632.09	1426.57	350.12	22.64	116.05	156.227	F
Site Access	334.22	83.55	334.27	296.19	1686.38	0.46	0.78	8.823	A
A4119 W	1170.10	292.53	1172.37	1571.42	449.23	0.75	1.34	4.170	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	56.71	14.18	57.02	0.57	1616.96	0.02	0.01	1.243	A
Heol-Y-Sarn	636.90	159.22	637.92	530.99	1142.98	1.55	1.55	8.390	A
A4119 S	2014.12	503.53	1632.76	1430.53	346.83	116.05	209.36	358.686	F
Site Access	329.95	82.49	325.42	295.47	1685.15	0.78	0.89	8.924	A
A4119 W	1178.34	294.58	1177.77	1568.95	441.61	1.34	1.49	4.195	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	47.65	11.91	47.65	0.72	1388.85	0.01	0.01	0.820	A
Heol-Y-Sarn	517.67	129.42	517.10	501.92	934.58	1.55	0.76	5.080	A
A4119 S	1633.58	408.40	1672.80	1166.14	283.48	209.36	202.31	446.195	F
Site Access	265.83	66.46	270.41	281.11	1675.47	0.89	0.48	6.845	A
A4119 W	952.44	238.11	951.92	1511.89	434.00	1.49	0.72	2.800	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	41.99	10.50	42.04	0.51	1221.05	0.01	0.01	0.600	A
Heol-Y-Sarn	424.43	106.11	423.34	470.43	792.66	0.76	0.42	3.584	A
A4119 S	1359.93	339.98	1658.13	979.09	234.91	202.31	128.14	340.340	F
Site Access	221.84	55.46	219.26	259.76	1635.90	0.48	0.32	5.328	A
A4119 W	810.00	202.50	809.54	1442.11	413.05	0.72	0.56	2.170	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.09	0.01	0.558	A	A
Heol-Y-Sarn	6.38	0.43	3.498	A	A
A4119 S	61.69	4.11	10.894	B	B
Site Access	3.16	0.21	3.331	A	A
A4119 W	6.79	0.45	2.017	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.16	0.01	0.811	A	A
Heol-Y-Sarn	10.72	0.71	4.927	A	A
A4119 S	236.30	15.75	36.484	E	D
Site Access	6.17	0.41	5.522	A	A
A4119 W	11.09	0.74	2.756	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.29	0.02	1.188	A	A
Heol-Y-Sarn	21.65	1.44	8.185	A	A
A4119 S	1052.55	70.17	156.227	F	F
Site Access	12.11	0.81	8.823	A	A
A4119 W	20.49	1.37	4.170	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.30	0.02	1.243	A	A
Heol-Y-Sarn	22.34	1.49	8.390	A	A
A4119 S	2446.61	163.11	358.686	F	F
Site Access	12.26	0.82	8.924	A	A
A4119 W	20.58	1.37	4.195	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.16	0.01	0.820	A	A
Heol-Y-Sarn	11.24	0.75	5.080	A	A
A4119 S	3084.06	205.60	446.195	F	F
Site Access	7.79	0.52	6.845	A	A
A4119 W	11.30	0.75	2.800	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.10	0.01	0.600	A	A
Heol-Y-Sarn	6.67	0.44	3.584	A	A
A4119 S	2471.14	164.74	340.340	F	F
Site Access	5.14	0.34	5.328	A	A
A4119 W	7.45	0.50	2.170	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:30-16:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	38.87	9.72	38.97	1130.17	0.034	0.00	0.00	0.558	A
Heol-Y-Sarn	1	1	292.90	73.23	292.29	772.42	0.379	0.00	0.31	3.766	A
Heol-Y-Sarn	1	2	142.16	35.54	141.90	772.42	0.184	0.00	0.10	2.335	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	772.42	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	435.37	108.84	435.06			0.00	0.02	0.211	A
A4119 S	1	2	792.39	198.10	790.59	962.20	0.824	0.00	1.56	6.791	A
A4119 S	1	3	586.58	146.65	585.24	962.20	0.610	0.00	0.78	4.386	A
A4119 S	2	1	1385.86	346.47	1378.97			0.00	2.47	5.096	A
Site Access	1	1	228.12	57.03	230.75	770.96	0.296	0.00	0.19	3.331	A
A4119 W	1	1	415.12	103.78	413.88	980.46	0.423	0.00	0.27	2.058	A
A4119 W	1	2	385.86	96.47	387.15	980.46	0.394	0.00	0.20	1.916	A
A4119 W	2	2	800.51	200.13	800.98			0.00	0.00	0.027	A

Main results: (16:45-17:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	48.11	12.03	48.16	1036.29	0.046	0.00	0.01	0.811	A
Heol-Y-Sarn	1	1	342.25	85.56	346.11	744.06	0.460	0.31	0.47	5.065	A
Heol-Y-Sarn	1	2	174.44	43.61	173.67	744.06	0.234	0.10	0.18	2.935	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	744.06	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	515.81	128.95	516.69			0.02	0.07	0.577	A
A4119 S	1	2	904.73	226.18	904.53	949.60	0.953	1.56	2.50	9.468	A
A4119 S	1	3	699.11	174.78	697.15	949.60	0.736	0.78	1.28	6.237	A
A4119 S	2	1	1633.95	408.49	1603.84			2.47	18.87	28.360	D
Site Access	1	1	269.33	67.33	266.40	679.67	0.396	0.19	0.46	5.522	A
A4119 W	1	1	490.03	122.51	490.75	966.59	0.507	0.27	0.36	2.746	A
A4119 W	1	2	464.51	116.13	463.69	966.59	0.481	0.20	0.36	2.556	A
A4119 W	2	2	954.49	238.62	954.55			0.00	0.02	0.101	A

Main results: (17:00-17:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	59.49	14.87	59.54	920.39	0.065	0.01	0.02	1.188	A
Heol-Y-Sarn	1	1	418.40	104.60	419.64	698.92	0.599	0.47	0.90	7.244	A
Heol-Y-Sarn	1	2	209.64	52.41	208.56	698.92	0.300	0.18	0.23	3.886	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	698.92	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	630.41	157.60	628.04			0.07	0.42	2.055	A
A4119 S	1	2	915.59	228.90	918.37	934.93	0.979	2.50	2.81	10.934	B
A4119 S	1	3	716.50	179.13	714.08	934.93	0.766	1.28	1.49	7.339	A
A4119 S	2	1	2007.84	501.96	1632.09			18.87	111.75	146.825	F
Site Access	1	1	334.22	83.55	334.27	652.31	0.512	0.46	0.78	8.823	A
A4119 W	1	1	601.60	150.40	601.49	956.93	0.629	0.36	0.66	3.918	A
A4119 W	1	2	570.77	142.69	571.60	956.93	0.596	0.36	0.59	3.634	A
A4119 W	2	2	1170.10	292.53	1172.37			0.02	0.09	0.389	A

Main results: (17:15-17:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	56.71	14.18	57.02	922.39	0.061	0.02	0.01	1.243	A
Heol-Y-Sarn	1	1	428.03	107.01	426.79	700.02	0.611	0.90	0.91	7.394	A
Heol-Y-Sarn	1	2	209.90	52.47	207.58	700.02	0.300	0.23	0.25	3.870	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	700.02	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	636.90	159.22	637.92			0.42	0.38	2.184	A
A4119 S	1	2	924.60	231.15	924.96	935.73	0.988	2.81	2.83	11.014	B
A4119 S	1	3	708.16	177.04	708.83	935.73	0.757	1.49	1.51	7.415	A
A4119 S	2	1	2014.12	503.53	1632.76			111.75	205.02	349.315	F
Site Access	1	1	329.95	82.49	325.42	652.79	0.505	0.78	0.89	8.924	A
A4119 W	1	1	601.44	150.36	598.20	958.87	0.627	0.66	0.70	3.906	A
A4119 W	1	2	576.33	144.08	577.72	958.87	0.601	0.59	0.60	3.651	A
A4119 W	2	2	1178.34	294.58	1177.77			0.09	0.19	0.412	A

Main results: (17:30-17:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	47.65	11.91	47.65	1025.52	0.046	0.01	0.01	0.820	A
Heol-Y-Sarn	1	1	348.11	87.03	347.96	741.93	0.469	0.91	0.50	5.192	A
Heol-Y-Sarn	1	2	168.99	42.25	167.08	741.93	0.228	0.25	0.17	2.845	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	741.93	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	517.67	129.42	517.10			0.38	0.10	0.694	A
A4119 S	1	2	941.63	235.41	941.17	951.00	0.990	2.83	2.80	10.871	B
A4119 S	1	3	731.17	182.79	731.94	951.00	0.769	1.51	1.50	7.165	A
A4119 S	2	1	1633.58	408.40	1672.80			205.02	198.01	436.955	F
Site Access	1	1	265.83	66.46	270.41	656.56	0.405	0.89	0.48	6.845	A
A4119 W	1	1	489.16	122.29	490.81	960.81	0.509	0.70	0.37	2.774	A
A4119 W	1	2	462.76	115.69	464.77	960.81	0.482	0.60	0.33	2.605	A
A4119 W	2	2	952.44	238.11	951.92			0.19	0.02	0.112	A

Main results: (17:45-18:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	41.99	10.50	42.04	1101.38	0.038	0.01	0.01	0.600	A
Heol-Y-Sarn	1	1	284.72	71.18	284.25	770.47	0.370	0.50	0.29	3.861	A
Heol-Y-Sarn	1	2	138.63	34.66	137.08	770.47	0.180	0.17	0.10	2.322	A
Heol-Y-Sarn	1	3	0.00	0.00	0.00	770.47	0.000	0.00	0.00	0.000	A
Heol-Y-Sarn	2	1	424.43	106.11	423.34			0.10	0.03	0.246	A
A4119 S	1	2	931.18	232.80	931.13	962.71	0.967	2.80	2.78	10.645	B
A4119 S	1	3	726.95	181.74	729.62	962.71	0.755	1.50	1.37	7.023	A
A4119 S	2	1	1359.93	339.98	1658.13			198.01	123.98	331.329	F
Site Access	1	1	221.84	55.46	219.26	671.95	0.330	0.48	0.32	5.328	A
A4119 W	1	1	416.81	104.20	416.19	966.15	0.431	0.37	0.29	2.211	A
A4119 W	1	2	392.73	98.18	392.32	966.15	0.406	0.33	0.25	2.046	A
A4119 W	2	2	810.00	202.50	809.54			0.02	0.02	0.040	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.09	0.01	0.558	A	A
Heol-Y-Sarn	1	1	4.60	0.31	3.766	A	A
Heol-Y-Sarn	1	2	1.39	0.09	2.335	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	0.39	0.03	0.211	A	A
A4119 S	1	2	22.10	1.47	6.791	A	A
A4119 S	1	3	10.79	0.72	4.386	A	A
A4119 S	2	1	28.80	1.92	5.096	A	A
Site Access	1	1	3.16	0.21	3.331	A	A
A4119 W	1	1	3.57	0.24	2.058	A	A
A4119 W	1	2	3.12	0.21	1.916	A	A
A4119 W	2	2	0.10	0.01	0.027	A	A

Queueing Delay results: (16:45-17:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.16	0.01	0.811	A	A
Heol-Y-Sarn	1	1	7.36	0.49	5.065	A	A
Heol-Y-Sarn	1	2	2.09	0.14	2.935	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	1.26	0.08	0.577	A	A
A4119 S	1	2	35.15	2.34	9.468	A	A
A4119 S	1	3	17.98	1.20	6.237	A	A
A4119 S	2	1	183.17	12.21	28.360	D	C
Site Access	1	1	6.17	0.41	5.522	A	A
A4119 W	1	1	5.68	0.38	2.746	A	A
A4119 W	1	2	5.00	0.33	2.556	A	A
A4119 W	2	2	0.41	0.03	0.101	A	A

Queueing Delay results: (17:00-17:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.29	0.02	1.188	A	A
Heol-Y-Sarn	1	1	12.83	0.86	7.244	A	A
Heol-Y-Sarn	1	2	3.40	0.23	3.886	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	5.42	0.36	2.055	A	A
A4119 S	1	2	41.95	2.80	10.934	B	B
A4119 S	1	3	22.03	1.47	7.339	A	A
A4119 S	2	1	988.56	65.90	146.825	F	F
Site Access	1	1	12.11	0.81	8.823	A	A
A4119 W	1	1	9.82	0.65	3.918	A	A
A4119 W	1	2	8.75	0.58	3.634	A	A
A4119 W	2	2	1.92	0.13	0.389	A	A

Queueing Delay results: (17:15-17:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.30	0.02	1.243	A	A
Heol-Y-Sarn	1	1	13.12	0.87	7.394	A	A
Heol-Y-Sarn	1	2	3.39	0.23	3.870	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	5.83	0.39	2.184	A	A
A4119 S	1	2	42.31	2.82	11.014	B	B
A4119 S	1	3	22.31	1.49	7.415	A	A
A4119 S	2	1	2381.99	158.80	349.315	F	F
Site Access	1	1	12.26	0.82	8.924	A	A
A4119 W	1	1	9.80	0.65	3.906	A	A
A4119 W	1	2	8.75	0.58	3.651	A	A
A4119 W	2	2	2.02	0.13	0.412	A	A

Queueing Delay results: (17:30-17:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.16	0.01	0.820	A	A
Heol-Y-Sarn	1	1	7.64	0.51	5.192	A	A
Heol-Y-Sarn	1	2	2.03	0.14	2.845	A	A
Heol-Y-Sarn	1	3	0.00	0.00	0.000	A	A
Heol-Y-Sarn	2	1	1.58	0.11	0.694	A	A
A4119 S	1	2	42.40	2.83	10.871	B	B
A4119 S	1	3	21.93	1.46	7.165	A	A
A4119 S	2	1	3019.72	201.31	436.955	F	F
Site Access	1	1	7.79	0.52	6.845	A	A
A4119 W	1	1	5.74	0.38	2.774	A	A
A4119 W	1	2	5.11	0.34	2.605	A	A
A4119 W	2	2	0.46	0.03	0.112	A	A

Queueing Delay results: (17:45-18:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.10	0.01	0.600	A	A
Heol-Y-Sarn	**1**	**1**	4.80	0.32	3.861	A	A
Heol-Y-Sarn	**1**	**2**	1.41	0.09	2.322	A	A
Heol-Y-Sarn	**1**	**3**	0.00	0.00	0.000	A	A
Heol-Y-Sarn	**2**	**1**	0.47	0.03	0.246	A	A
A4119 S	**1**	**2**	42.03	2.80	10.645	B	B
A4119 S	**1**	**3**	21.78	1.45	7.023	A	A
A4119 S	**2**	**1**	2407.33	160.49	331.329	F	F
Site Access	**1**	**1**	5.14	0.34	5.328	A	A
A4119 W	**1**	**1**	3.91	0.26	2.211	A	A
A4119 W	**1**	**2**	3.41	0.23	2.046	A	A
A4119 W	**2**	**2**	0.14	0.01	0.040	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Option.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:37:28

Summary of junction performance

	AM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2022 DS				
Sterling Drive	0.01	1.84	N/A	A	13.23
Heol-Y-Sarn	0.86	6.51	N/A	A	
A4119 S	5.68	14.65	N/A	B	
Site Access	0.07	2.53	N/A	A	
A4119 W	7.01	14.95	N/A	B	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D7 - 2022 DS, AM " model duration: 07:30 - 09:00
"D8 - 2022 DS, PM" model duration: 16:30 - 18:00
"D9 - 2037 DS, AM" model duration: 07:30 - 09:00
"D10 - 2037 DS, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:37:27

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	568997871	1182

(Default Analysis Set) - 2022 DS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2022 DS, AM	2022 DS	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			13.23	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		✓
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	19.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	446.00	100.000
A4119 S	ONE HOUR	✓	1254.00	100.000
Site Access	ONE HOUR	✓	97.00	100.000
A4119 W	ONE HOUR	✓	1431.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	4.000	10.000	2.000	3.000
	Heol-Y-Sarn	21.000	0.000	160.000	120.000	145.000
	A4119 S	84.000	374.000	0.000	120.000	676.000
	Site Access	1.000	11.000	35.000	0.000	50.000
	A4119 W	30.000	166.000	1015.000	220.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.21	0.53	0.11	0.16
	Heol-Y-Sarn	0.05	0.00	0.36	0.27	0.33
	A4119 S	0.07	0.30	0.00	0.10	0.54
	Site Access	0.01	0.11	0.36	0.00	0.52
	A4119 W	0.02	0.12	0.71	0.15	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.090	1.000	1.010
	A4119 S	1.000	1.010	1.000	1.050	1.010
	Site Access	1.000	1.000	1.000	1.000	1.040
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	9.0	0.0	1.0
	A4119 S	0.0	1.0	0.0	5.0	1.0
	Site Access	0.0	0.0	0.0	0.0	4.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.84	0.01	A	17.14	25.71	0.53	1.24	0.01
Heol-Y-Sarn	6.51	0.86	A	407.46	611.19	51.05	5.01	0.57
A4119 S	14.65	5.68	B	1147.83	1721.74	245.86	8.57	2.73
Site Access	2.53	0.07	A	88.61	132.91	4.24	1.92	0.05
A4119 W	14.95	7.01	B	1313.57	1970.36	281.20	8.56	3.12

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	14.16	3.54	14.21	101.27	1367.46	0.00	0.00	0.616	A
Heol-Y-Sarn	332.28	83.07	332.49	422.84	958.83	0.00	0.29	3.105	A
A4119 S	949.04	237.26	950.10	910.15	381.32	0.00	1.04	3.553	A
Site Access	75.13	18.78	74.77	348.22	985.23	0.00	0.03	1.186	A
A4119 W	1070.66	267.66	1070.46	656.80	403.20	0.00	1.05	3.274	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	16.50	4.12	16.19	120.41	1624.21	0.00	0.01	0.945	A
Heol-Y-Sarn	400.61	100.15	400.46	489.39	1151.02	0.00	0.54	4.197	A
A4119 S	1125.84	281.46	1130.91	1095.43	456.09	0.00	1.88	5.677	A
Site Access	86.80	21.70	86.90	413.96	1167.66	0.00	0.04	1.632	A
A4119 W	1269.24	317.31	1271.83	786.75	467.82	0.00	1.86	5.336	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	20.66	5.16	21.02	151.32	2014.57	0.01	0.01	1.751	A
Heol-Y-Sarn	482.79	120.70	481.98	616.85	1418.73	0.54	0.86	6.276	A
A4119 S	1380.51	345.13	1382.89	1342.49	559.34	1.88	5.68	13.093	B
Site Access	105.33	26.33	106.09	510.05	1435.28	0.04	0.06	2.353	A
A4119 W	1582.23	395.56	1581.02	956.09	585.28	1.86	6.85	13.646	B

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	20.37	5.09	20.63	149.57	2004.59	0.01	0.01	1.841	A
Heol-Y-Sarn	488.64	122.16	490.47	610.21	1415.00	0.86	0.83	6.508	A
A4119 S	1373.95	343.49	1368.37	1340.42	567.03	5.68	5.59	14.648	B
Site Access	103.39	25.85	104.61	508.25	1435.94	0.06	0.07	2.529	A
A4119 W	1595.26	398.81	1581.69	961.83	578.71	6.85	7.01	14.949	B

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	16.87	4.22	17.07	121.37	1639.36	0.01	0.00	1.064	A
Heol-Y-Sarn	405.62	101.41	406.74	511.80	1144.62	0.83	0.50	4.388	A
A4119 S	1132.02	283.01	1128.37	1091.48	459.68	5.59	1.88	6.358	A
Site Access	85.45	21.36	84.79	408.26	1174.04	0.07	0.03	1.679	A
A4119 W	1276.41	319.10	1277.07	778.78	480.05	7.01	1.89	6.256	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	14.28	3.57	14.53	97.04	1375.22	0.00	0.00	0.661	A
Heol-Y-Sarn	334.80	83.70	335.51	412.23	977.53	0.50	0.29	3.179	A
A4119 S	925.61	231.40	929.72	930.08	385.20	1.88	0.89	3.723	A
Site Access	75.55	18.89	76.31	347.10	971.94	0.03	0.02	1.250	A
A4119 W	1087.62	271.91	1087.11	664.01	384.23	1.89	1.06	3.373	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.04	0.00	0.616	A	A
Heol-Y-Sarn	4.47	0.30	3.105	A	A
A4119 S	14.05	0.94	3.553	A	A
Site Access	0.38	0.03	1.186	A	A
A4119 W	14.79	0.99	3.274	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.07	0.00	0.945	A	A
Heol-Y-Sarn	7.24	0.48	4.197	A	A
A4119 S	26.74	1.78	5.677	A	A
Site Access	0.61	0.04	1.632	A	A
A4119 W	28.71	1.91	5.336	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.15	0.01	1.751	A	A
Heol-Y-Sarn	13.16	0.88	6.276	A	A
A4119 S	74.44	4.96	13.093	B	B
Site Access	1.07	0.07	2.353	A	A
A4119 W	88.53	5.90	13.646	B	B

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.16	0.01	1.841	A	A
Heol-Y-Sarn	13.77	0.92	6.508	A	A
A4119 S	84.61	5.64	14.648	B	B
Site Access	1.15	0.08	2.529	A	A
A4119 W	98.50	6.57	14.949	B	B

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.08	0.01	1.064	A	A
Heol-Y-Sarn	7.67	0.51	4.388	A	A
A4119 S	30.98	2.07	6.358	A	A
Site Access	0.64	0.04	1.679	A	A
A4119 W	35.08	2.34	6.256	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.04	0.00	0.661	A	A
Heol-Y-Sarn	4.74	0.32	3.179	A	A
A4119 S	15.04	1.00	3.723	A	A
Site Access	0.40	0.03	1.250	A	A
A4119 W	15.60	1.04	3.373	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:30-07:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	**1**	**1**	14.16	3.54	14.21	1035.19	0.014	0.00	0.00	0.616	A
Heol-Y-Sarn	**1**	**1**	210.25	52.56	210.91	737.05	0.285	0.00	0.20	3.476	A
Heol-Y-Sarn	**1**	**2**	107.16	26.79	106.60	737.05	0.145	0.00	0.08	2.307	A
Heol-Y-Sarn	**1**	**3**	15.08	3.77	15.13	737.05	0.020	0.00	0.01	1.567	A
Heol-Y-Sarn	**2**	**1**	332.28	83.07	332.49			0.00	0.01	0.111	A
A4119 S	**1**	**2**	406.29	101.57	405.53	927.41	0.438	0.00	0.33	2.534	A
A4119 S	**1**	**3**	543.81	135.95	546.60	927.41	0.586	0.00	0.61	3.704	A
A4119 S	**2**	**1**	949.04	237.26	950.10			0.00	0.11	0.346	A
Site Access	**1**	**1**	75.13	18.78	74.77	924.99	0.081	0.00	0.03	1.186	A
A4119 W	**1**	**1**	530.86	132.72	528.38	968.67	0.548	0.00	0.49	3.055	A
A4119 W	**1**	**2**	539.59	134.90	537.16	968.67	0.557	0.00	0.50	3.083	A
A4119 W	**2**	**2**	1070.66	267.66	1070.46			0.00	0.06	0.204	A

Main results: (07:45-08:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	16.50	4.12	16.19	919.11	0.018	0.00	0.01	0.945	A
Heol-Y-Sarn	1	1	253.65	63.41	254.77	698.41	0.363	0.20	0.36	4.613	A
Heol-Y-Sarn	1	2	128.43	32.11	127.06	698.41	0.184	0.08	0.12	2.918	A
Heol-Y-Sarn	1	3	18.38	4.59	18.68	698.41	0.026	0.01	0.01	1.874	A
Heol-Y-Sarn	2	1	400.61	100.15	400.46			0.01	0.05	0.281	A
A4119 S	1	2	499.19	124.80	494.67	909.39	0.549	0.33	0.56	3.589	A
A4119 S	1	3	631.73	157.93	630.86	909.39	0.695	0.61	0.94	5.232	A
A4119 S	2	1	1125.84	281.46	1130.91			0.11	0.38	1.159	A
Site Access	1	1	86.80	21.70	86.90	854.04	0.102	0.03	0.04	1.632	A
A4119 W	1	1	633.10	158.27	634.97	952.19	0.665	0.49	0.78	4.486	A
A4119 W	1	2	638.73	159.68	641.83	952.19	0.671	0.50	0.79	4.517	A
A4119 W	2	2	1269.24	317.31	1271.83			0.06	0.30	0.831	A

Main results: (08:00-08:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	20.66	5.16	21.02	742.63	0.028	0.01	0.01	1.751	A
Heol-Y-Sarn	1	1	303.50	75.88	300.71	644.58	0.471	0.36	0.58	6.405	A
Heol-Y-Sarn	1	2	154.77	38.69	158.63	644.58	0.240	0.12	0.14	3.852	A
Heol-Y-Sarn	1	3	23.71	5.93	23.76	644.58	0.037	0.01	0.02	2.278	A
Heol-Y-Sarn	2	1	482.79	120.70	481.98			0.05	0.11	0.918	A
A4119 S	1	2	621.22	155.30	624.52	884.50	0.702	0.56	1.03	5.667	A
A4119 S	1	3	761.68	190.42	761.47	884.50	0.861	0.94	1.74	7.945	A
A4119 S	2	1	1380.51	345.13	1382.89			0.38	2.91	6.149	A
Site Access	1	1	105.33	26.33	106.09	749.96	0.140	0.04	0.06	2.353	A
A4119 W	1	1	783.91	195.98	782.69	922.24	0.850	0.78	1.67	7.304	A
A4119 W	1	2	797.11	199.28	797.92	922.24	0.864	0.79	1.66	7.428	A
A4119 W	2	2	1582.23	395.56	1581.02			0.30	3.52	6.257	A

Main results: (08:15-08:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	20.37	5.09	20.63	747.14	0.027	0.01	0.01	1.841	A
Heol-Y-Sarn	1	1	307.11	76.78	307.37	645.33	0.476	0.58	0.56	6.678	A
Heol-Y-Sarn	1	2	160.08	40.02	162.32	645.33	0.248	0.14	0.16	3.905	A
Heol-Y-Sarn	1	3	23.27	5.82	22.76	645.33	0.036	0.02	0.02	2.327	A
Heol-Y-Sarn	2	1	488.64	122.16	490.47			0.11	0.10	0.972	A
A4119 S	1	2	614.63	153.66	619.81	882.64	0.696	1.03	1.02	5.996	A
A4119 S	1	3	753.73	188.43	757.34	882.64	0.854	1.74	1.75	8.295	A
A4119 S	2	1	1373.95	343.49	1368.37			2.91	2.81	7.386	A
Site Access	1	1	103.39	25.85	104.61	749.71	0.138	0.06	0.07	2.529	A
A4119 W	1	1	784.12	196.03	783.05	923.91	0.849	1.67	1.72	7.578	A
A4119 W	1	2	797.58	199.39	792.40	923.91	0.863	1.66	1.78	7.687	A
A4119 W	2	2	1595.26	398.81	1581.69			3.52	3.50	7.317	A

Main results: (08:30-08:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	16.87	4.22	17.07	912.26	0.018	0.01	0.00	1.064	A
Heol-Y-Sarn	1	1	252.55	63.14	251.79	699.69	0.361	0.56	0.36	4.751	A
Heol-Y-Sarn	1	2	134.94	33.73	135.34	699.69	0.193	0.16	0.09	2.994	A
Heol-Y-Sarn	1	3	19.25	4.81	19.41	699.69	0.028	0.02	0.01	1.859	A
Heol-Y-Sarn	2	1	405.62	101.41	406.74			0.10	0.03	0.368	A
A4119 S	1	2	490.36	122.59	487.67	908.52	0.540	1.02	0.54	3.838	A
A4119 S	1	3	638.00	159.50	634.95	908.52	0.702	1.75	0.94	5.515	A
A4119 S	2	1	1132.02	283.01	1128.37			2.81	0.40	1.617	A
Site Access	1	1	85.45	21.36	84.79	851.56	0.100	0.07	0.03	1.679	A
A4119 W	1	1	639.83	159.96	642.22	949.07	0.674	1.72	0.77	4.802	A
A4119 W	1	2	637.24	159.31	638.46	949.07	0.671	1.78	0.82	4.905	A
A4119 W	2	2	1276.41	319.10	1277.07			3.50	0.30	1.456	A

Main results: (08:45-09:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	14.28	3.57	14.53	1031.68	0.014	0.00	0.00	0.661	A
Heol-Y-Sarn	1	1	212.31	53.08	214.65	733.29	0.290	0.36	0.19	3.568	A
Heol-Y-Sarn	1	2	108.92	27.23	109.18	733.29	0.149	0.09	0.08	2.324	A
Heol-Y-Sarn	1	3	14.28	3.57	13.92	733.29	0.019	0.01	0.01	1.461	A
Heol-Y-Sarn	2	1	334.80	83.70	335.51			0.03	0.01	0.126	A
A4119 S	1	2	400.49	100.12	401.76	926.48	0.432	0.54	0.29	2.594	A
A4119 S	1	3	529.23	132.31	532.07	926.48	0.571	0.94	0.52	3.853	A
A4119 S	2	1	925.61	231.40	929.72			0.40	0.08	0.421	A
Site Access	1	1	75.55	18.89	76.31	930.15	0.081	0.03	0.02	1.250	A
A4119 W	1	1	541.17	135.29	540.91	973.50	0.556	0.77	0.48	3.150	A
A4119 W	1	2	545.94	136.49	547.11	973.50	0.561	0.82	0.50	3.169	A
A4119 W	2	2	1087.62	271.91	1087.11			0.30	0.08	0.222	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.04	0.00	0.616	A	A
Heol-Y-Sarn	1	1	3.15	0.21	3.476	A	A
Heol-Y-Sarn	1	2	1.06	0.07	2.307	A	A
Heol-Y-Sarn	1	3	0.10	0.01	1.567	A	A
Heol-Y-Sarn	2	1	0.16	0.01	0.111	A	A
A4119 S	1	2	4.35	0.29	2.534	A	A
A4119 S	1	3	8.33	0.56	3.704	A	A
A4119 S	2	1	1.37	0.09	0.346	A	A
Site Access	1	1	0.38	0.03	1.186	A	A
A4119 W	1	1	6.83	0.46	3.055	A	A
A4119 W	1	2	7.03	0.47	3.083	A	A
A4119 W	2	2	0.93	0.06	0.204	A	A

Queueing Delay results: (07:45-08:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.07	0.00	0.945	A	A
Heol-Y-Sarn	1	1	5.00	0.33	4.613	A	A
Heol-Y-Sarn	1	2	1.60	0.11	2.918	A	A
Heol-Y-Sarn	1	3	0.15	0.01	1.874	A	A
Heol-Y-Sarn	2	1	0.49	0.03	0.281	A	A
A4119 S	1	2	7.50	0.50	3.589	A	A
A4119 S	1	3	13.79	0.92	5.232	A	A
A4119 S	2	1	5.45	0.36	1.159	A	A
Site Access	1	1	0.61	0.04	1.632	A	A
A4119 W	1	1	11.99	0.80	4.486	A	A
A4119 W	1	2	12.24	0.82	4.517	A	A
A4119 W	2	2	4.48	0.30	0.831	A	A

Queueing Delay results: (08:00-08:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.15	0.01	1.751	A	A
Heol-Y-Sarn	1	1	8.41	0.56	6.405	A	A
Heol-Y-Sarn	1	2	2.60	0.17	3.852	A	A
Heol-Y-Sarn	1	3	0.22	0.01	2.278	A	A
Heol-Y-Sarn	2	1	1.93	0.13	0.918	A	A
A4119 S	1	2	14.69	0.98	5.667	A	A
A4119 S	1	3	24.90	1.66	7.945	A	A
A4119 S	2	1	34.85	2.32	6.149	A	A
Site Access	1	1	1.07	0.07	2.353	A	A
A4119 W	1	1	23.71	1.58	7.304	A	A
A4119 W	1	2	24.30	1.62	7.428	A	A
A4119 W	2	2	40.52	2.70	6.257	A	A

Queueing Delay results: (08:15-08:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.16	0.01	1.841	A	A
Heol-Y-Sarn	1	1	8.83	0.59	6.678	A	A
Heol-Y-Sarn	1	2	2.64	0.18	3.905	A	A
Heol-Y-Sarn	1	3	0.23	0.02	2.327	A	A
Heol-Y-Sarn	2	1	2.07	0.14	0.972	A	A
A4119 S	1	2	15.67	1.04	5.996	A	A
A4119 S	1	3	26.23	1.75	8.295	A	A
A4119 S	2	1	42.71	2.85	7.386	A	A
Site Access	1	1	1.15	0.08	2.529	A	A
A4119 W	1	1	24.86	1.66	7.578	A	A
A4119 W	1	2	25.41	1.69	7.687	A	A
A4119 W	2	2	48.24	3.22	7.317	A	A

Queueing Delay results: (08:30-08:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.08	0.01	1.064	A	A
Heol-Y-Sarn	1	1	5.20	0.35	4.751	A	A
Heol-Y-Sarn	1	2	1.66	0.11	2.994	A	A
Heol-Y-Sarn	1	3	0.14	0.01	1.859	A	A
Heol-Y-Sarn	2	1	0.67	0.04	0.368	A	A
A4119 S	1	2	8.13	0.54	3.838	A	A
A4119 S	1	3	14.73	0.98	5.515	A	A
A4119 S	2	1	8.13	0.54	1.617	A	A
Site Access	1	1	0.64	0.04	1.679	A	A
A4119 W	1	1	13.08	0.87	4.802	A	A
A4119 W	1	2	13.48	0.90	4.905	A	A
A4119 W	2	2	8.52	0.57	1.456	A	A

Queueing Delay results: (08:45-09:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.04	0.00	0.661	A	A
Heol-Y-Sarn	**1**	**1**	3.36	0.22	3.568	A	A
Heol-Y-Sarn	**1**	**2**	1.09	0.07	2.324	A	A
Heol-Y-Sarn	**1**	**3**	0.10	0.01	1.461	A	A
Heol-Y-Sarn	**2**	**1**	0.19	0.01	0.126	A	A
A4119 S	**1**	**2**	4.55	0.30	2.594	A	A
A4119 S	**1**	**3**	8.78	0.59	3.853	A	A
A4119 S	**2**	**1**	1.71	0.11	0.421	A	A
Site Access	**1**	**1**	0.40	0.03	1.250	A	A
A4119 W	**1**	**1**	7.19	0.48	3.150	A	A
A4119 W	**1**	**2**	7.36	0.49	3.169	A	A
A4119 W	**2**	**2**	1.05	0.07	0.222	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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Filename: Base Junction 5 Arcady_v2_val_Option.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:46:08

Summary of junction performance

	PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2022 DS				
Sterling Drive	0.05	1.28	N/A	A	29.53
Heol-Y-Sarn	1.11	6.52	N/A	A	
A4119 S	31.71	56.45	N/A	F	
Site Access	1.08	13.34	N/A	B	
A4119 W	1.11	3.65	N/A	A	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D7 - 2022 DS, AM" model duration: 07:30 - 09:00
"D8 - 2022 DS, PM " model duration: 16:30 - 18:00
"D9 - 2037 DS, AM" model duration: 07:30 - 09:00
"D10 - 2037 DS, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:46:08

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	2068447607	1151

(Default Analysis Set) - 2022 DS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2022 DS, PM	2022 DS	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			29.53	D

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		✓
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	92.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	532.00	100.000
A4119 S	ONE HOUR	✓	1648.00	100.000
Site Access	ONE HOUR	✓	263.00	100.000
A4119 W	ONE HOUR	✓	972.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	16.000	54.000	1.000	21.000
	Heol-Y-Sarn	3.000	0.000	326.000	19.000	184.000
	A4119 S	4.000	342.000	0.000	23.000	1279.000
	Site Access	0.000	27.000	85.000	0.000	151.000
	A4119 W	6.000	158.000	721.000	87.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.17	0.59	0.01	0.23
	Heol-Y-Sarn	0.01	0.00	0.61	0.04	0.35
	A4119 S	0.00	0.21	0.00	0.01	0.78
	Site Access	0.00	0.10	0.32	0.00	0.57
	A4119 W	0.01	0.16	0.74	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.020	1.000	1.000
	A4119 S	1.000	1.070	1.000	1.030	1.010
	Site Access	1.000	1.000	1.000	1.000	1.020
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	2.0	0.0	0.0
	A4119 S	0.0	7.0	0.0	3.0	1.0
	Site Access	0.0	0.0	0.0	0.0	2.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.28	0.05	A	84.31	126.47	1.98	0.94	0.02
Heol-Y-Sarn	6.52	1.11	A	488.62	732.94	59.20	4.85	0.66
A4119 S	56.45	31.71	F	1508.51	2262.76	948.78	25.16	10.54
Site Access	13.34	1.08	B	241.50	362.26	47.75	7.91	0.53
A4119 W	3.65	1.11	A	891.54	1337.30	62.15	2.79	0.69

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	67.51	16.88	67.04	9.85	1070.77	0.00	0.02	0.593	A
Heol-Y-Sarn	400.50	100.13	401.18	408.06	729.75	0.00	0.35	3.052	A
A4119 S	1234.82	308.71	1238.11	894.63	237.29	0.00	1.72	4.780	A
Site Access	200.59	50.15	199.24	98.11	1373.64	0.00	0.19	3.020	A
A4119 W	732.30	183.08	732.25	1222.57	350.30	0.00	0.43	1.880	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	82.57	20.64	82.36	11.57	1262.03	0.00	0.02	0.810	A
Heol-Y-Sarn	477.34	119.34	475.57	479.11	865.28	0.00	0.64	4.012	A
A4119 S	1476.39	369.10	1481.29	1058.21	281.44	0.00	3.85	8.797	A
Site Access	237.60	59.40	235.57	116.82	1647.73	0.00	0.35	5.114	A
A4119 W	862.36	215.59	861.22	1469.97	413.33	0.00	0.64	2.445	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	98.21	24.55	97.90	13.19	1561.46	0.02	0.04	1.251	A
Heol-Y-Sarn	587.12	146.78	585.82	589.99	1069.37	0.64	1.11	6.382	A
A4119 S	1820.96	455.24	1754.75	1304.36	346.86	3.85	23.15	32.643	D
Site Access	292.18	73.05	292.60	143.67	1955.24	0.35	1.03	11.588	B
A4119 W	1077.34	269.34	1078.49	1749.02	498.82	0.64	1.09	3.519	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	103.32	25.83	102.64	14.65	1560.78	0.04	0.05	1.275	A
Heol-Y-Sarn	587.44	146.86	587.96	588.53	1074.89	1.11	1.11	6.522	A
A4119 S	1805.06	451.26	1778.78	1306.03	355.10	23.15	31.71	56.446	F
Site Access	287.23	71.81	287.28	149.56	1985.79	1.03	1.08	13.337	B
A4119 W	1072.55	268.14	1073.38	1771.75	501.32	1.09	1.11	3.646	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	82.23	20.56	82.70	10.90	1286.30	0.05	0.01	0.861	A
Heol-Y-Sarn	484.54	121.13	485.32	494.03	874.96	1.11	0.62	4.333	A
A4119 S	1475.84	368.96	1490.14	1071.65	282.37	31.71	4.71	26.676	D
Site Access	235.15	58.79	235.20	112.33	1665.76	1.08	0.37	7.165	A
A4119 W	872.82	218.20	872.97	1479.76	421.20	1.11	0.60	2.534	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	72.05	18.01	71.11	10.33	1067.58	0.01	0.02	0.596	A
Heol-Y-Sarn	394.80	98.70	396.16	411.08	727.62	0.62	0.32	3.168	A
A4119 S	1237.98	309.50	1236.94	887.74	237.55	4.71	1.70	5.190	A
Site Access	196.28	49.07	196.33	95.74	1380.52	0.37	0.19	3.239	A
A4119 W	731.84	182.96	732.05	1229.22	347.63	0.60	0.39	1.862	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.17	0.01	0.593	A	A
Heol-Y-Sarn	5.15	0.34	3.052	A	A
A4119 S	25.11	1.67	4.780	A	A
Site Access	2.52	0.17	3.020	A	A
A4119 W	5.80	0.39	1.880	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.28	0.02	0.810	A	A
Heol-Y-Sarn	8.06	0.54	4.012	A	A
A4119 S	54.48	3.63	8.797	A	A
Site Access	5.03	0.34	5.114	A	A
A4119 W	8.97	0.60	2.445	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.52	0.03	1.251	A	A
Heol-Y-Sarn	15.56	1.04	6.382	A	A
A4119 S	235.09	15.67	32.643	D	C
Site Access	14.01	0.93	11.588	B	B
A4119 W	15.79	1.05	3.519	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.54	0.04	1.275	A	A
Heol-Y-Sarn	16.14	1.08	6.522	A	A
A4119 S	415.54	27.70	56.446	F	E
Site Access	16.14	1.08	13.337	B	B
A4119 W	16.41	1.09	3.646	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.30	0.02	0.861	A	A
Heol-Y-Sarn	8.84	0.59	4.333	A	A
A4119 S	189.97	12.66	26.676	D	C
Site Access	7.29	0.49	7.165	A	A
A4119 W	9.35	0.62	2.534	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.18	0.01	0.596	A	A
Heol-Y-Sarn	5.46	0.36	3.168	A	A
A4119 S	28.59	1.91	5.190	A	A
Site Access	2.76	0.18	3.239	A	A
A4119 W	5.83	0.39	1.862	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:30-16:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	67.51	16.88	67.04	1169.32	0.058	0.00	0.02	0.593	A
Heol-Y-Sarn	1	1	262.26	65.56	263.72	783.12	0.335	0.00	0.25	3.344	A
Heol-Y-Sarn	1	2	136.06	34.01	135.74	783.12	0.174	0.00	0.08	2.151	A
Heol-Y-Sarn	1	3	2.87	0.72	2.71	783.12	0.004	0.00	0.00	1.284	A
Heol-Y-Sarn	2	1	400.50	100.13	401.18			0.00	0.02	0.137	A
A4119 S	1	2	579.93	144.98	577.32	962.14	0.603	0.00	0.62	3.661	A
A4119 S	1	3	658.18	164.54	657.13	962.14	0.684	0.00	0.83	4.440	A
A4119 S	2	1	1234.82	308.71	1238.11			0.00	0.27	0.707	A
Site Access	1	1	200.59	50.15	199.24	773.94	0.259	0.00	0.19	3.020	A
A4119 W	1	1	380.02	95.00	377.93	982.15	0.387	0.00	0.23	1.927	A
A4119 W	1	2	352.23	88.06	352.39	982.15	0.359	0.00	0.19	1.781	A
A4119 W	2	2	732.30	183.08	732.25			0.00	0.01	0.023	A

Main results: (16:45-17:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	82.57	20.64	82.36	1082.85	0.076	0.02	0.02	0.810	A
Heol-Y-Sarn	1	1	304.33	76.08	304.07	755.86	0.403	0.25	0.42	4.294	A
Heol-Y-Sarn	1	2	168.84	42.21	167.96	755.86	0.223	0.08	0.15	2.666	A
Heol-Y-Sarn	1	3	2.40	0.60	2.35	755.86	0.003	0.00	0.00	1.296	A
Heol-Y-Sarn	2	1	477.34	119.34	475.57			0.02	0.07	0.306	A
A4119 S	1	2	709.73	177.43	711.97	951.49	0.746	0.62	1.09	5.421	A
A4119 S	1	3	771.56	192.89	771.14	951.49	0.811	0.83	1.45	6.431	A
A4119 S	2	1	1476.39	369.10	1481.29			0.27	1.31	2.841	A
Site Access	1	1	237.60	59.40	235.57	667.34	0.356	0.19	0.35	5.114	A
A4119 W	1	1	442.68	110.67	441.69	966.08	0.458	0.23	0.35	2.486	A
A4119 W	1	2	418.54	104.64	418.59	966.08	0.433	0.19	0.26	2.267	A
A4119 W	2	2	862.36	215.59	861.22			0.01	0.03	0.064	A

Main results: (17:00-17:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	98.21	24.55	97.90	947.48	0.104	0.02	0.04	1.251	A
Heol-Y-Sarn	1	1	378.77	94.69	376.26	714.83	0.530	0.42	0.68	6.187	A
Heol-Y-Sarn	1	2	204.03	51.01	202.62	714.83	0.285	0.15	0.23	3.569	A
Heol-Y-Sarn	1	3	3.02	0.76	2.97	714.83	0.004	0.00	0.00	1.718	A
Heol-Y-Sarn	2	1	587.12	146.78	585.82			0.07	0.20	1.130	A
A4119 S	1	2	849.12	212.28	848.60	935.72	0.907	1.09	2.19	8.513	A
A4119 S	1	3	905.63	226.41	903.44	935.72	0.968	1.45	2.67	9.858	A
A4119 S	2	1	1820.96	455.24	1754.75			1.31	18.29	23.403	C
Site Access	1	1	292.18	73.05	292.60	547.76	0.533	0.35	1.03	11.588	B
A4119 W	1	1	556.47	139.12	552.72	944.29	0.589	0.35	0.56	3.441	A
A4119 W	1	2	522.02	130.50	523.11	944.29	0.553	0.26	0.45	3.149	A
A4119 W	2	2	1077.34	269.34	1078.49			0.03	0.08	0.218	A

Main results: (17:15-17:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	103.32	25.83	102.64	947.79	0.109	0.04	0.05	1.275	A
Heol-Y-Sarn	1	1	379.60	94.90	378.87	713.72	0.532	0.68	0.67	6.279	A
Heol-Y-Sarn	1	2	204.19	51.05	203.15	713.72	0.286	0.23	0.22	3.491	A
Heol-Y-Sarn	1	3	4.17	1.04	4.22	713.72	0.006	0.00	0.00	1.662	A
Heol-Y-Sarn	2	1	587.44	146.86	587.96			0.20	0.22	1.241	A
A4119 S	1	2	870.50	217.62	872.74	933.73	0.932	2.19	2.21	9.218	A
A4119 S	1	3	908.29	227.07	907.51	933.73	0.973	2.67	2.74	10.631	B
A4119 S	2	1	1805.06	451.26	1778.78			18.29	26.76	46.504	E
Site Access	1	1	287.23	71.81	287.28	535.88	0.536	1.03	1.08	13.337	B
A4119 W	1	1	551.57	137.89	552.56	943.65	0.585	0.56	0.55	3.508	A
A4119 W	1	2	521.81	130.45	521.55	943.65	0.553	0.45	0.47	3.269	A
A4119 W	2	2	1072.55	268.14	1073.38			0.08	0.08	0.254	A

Main results: (17:30-17:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	82.23	20.56	82.70	1071.88	0.077	0.05	0.01	0.861	A
Heol-Y-Sarn	1	1	313.57	78.39	308.56	753.92	0.416	0.67	0.43	4.564	A
Heol-Y-Sarn	1	2	169.46	42.37	168.26	753.92	0.225	0.22	0.15	2.760	A
Heol-Y-Sarn	1	3	2.30	0.57	2.24	753.92	0.003	0.00	0.00	1.325	A
Heol-Y-Sarn	2	1	484.54	121.13	485.32			0.22	0.04	0.430	A
A4119 S	1	2	710.71	177.68	712.70	951.27	0.747	2.21	1.15	6.933	A
A4119 S	1	3	779.43	194.86	783.03	951.27	0.819	2.74	1.45	8.088	A
A4119 S	2	1	1475.84	368.96	1490.14			26.76	2.11	19.335	C
Site Access	1	1	235.15	58.79	235.20	660.33	0.356	1.08	0.37	7.165	A
A4119 W	1	1	449.84	112.46	451.46	964.08	0.467	0.55	0.33	2.585	A
A4119 W	1	2	423.13	105.78	424.54	964.08	0.439	0.47	0.26	2.326	A
A4119 W	2	2	872.82	218.20	872.97			0.08	0.02	0.075	A

Main results: (17:45-18:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	72.05	18.01	71.11	1170.76	0.062	0.01	0.02	0.596	A
Heol-Y-Sarn	1	1	253.15	63.29	253.98	783.55	0.323	0.43	0.24	3.468	A
Heol-Y-Sarn	1	2	141.03	35.26	141.60	783.55	0.180	0.15	0.08	2.217	A
Heol-Y-Sarn	1	3	1.98	0.50	2.09	783.55	0.003	0.00	0.00	1.264	A
Heol-Y-Sarn	2	1	394.80	98.70	396.16			0.04	0.01	0.158	A
A4119 S	1	2	578.92	144.73	580.38	962.07	0.602	1.15	0.59	3.767	A
A4119 S	1	3	658.02	164.50	658.33	962.07	0.684	1.45	0.87	4.593	A
A4119 S	2	1	1237.98	309.50	1236.94			2.11	0.24	1.029	A
Site Access	1	1	196.28	49.07	196.33	771.26	0.254	0.37	0.19	3.239	A
A4119 W	1	1	383.58	95.90	382.07	982.84	0.390	0.33	0.21	1.897	A
A4119 W	1	2	348.47	87.12	348.21	982.84	0.355	0.26	0.17	1.781	A
A4119 W	2	2	731.84	182.96	732.05			0.02	0.00	0.021	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.17	0.01	0.593	A	A
Heol-Y-Sarn	1	1	3.66	0.24	3.344	A	A
Heol-Y-Sarn	1	2	1.24	0.08	2.151	A	A
Heol-Y-Sarn	1	3	0.01	0.00	1.284	A	A
Heol-Y-Sarn	2	1	0.23	0.02	0.137	A	A
A4119 S	1	2	8.94	0.60	3.661	A	A
A4119 S	1	3	12.41	0.83	4.440	A	A
A4119 S	2	1	3.76	0.25	0.707	A	A
Site Access	1	1	2.52	0.17	3.020	A	A
A4119 W	1	1	3.09	0.21	1.927	A	A
A4119 W	1	2	2.64	0.18	1.781	A	A
A4119 W	2	2	0.07	0.00	0.023	A	A

Queueing Delay results: (16:45-17:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.28	0.02	0.810	A	A
Heol-Y-Sarn	1	1	5.59	0.37	4.294	A	A
Heol-Y-Sarn	1	2	1.85	0.12	2.666	A	A
Heol-Y-Sarn	1	3	0.01	0.00	1.296	A	A
Heol-Y-Sarn	2	1	0.61	0.04	0.306	A	A
A4119 S	1	2	15.95	1.06	5.421	A	A
A4119 S	1	3	20.88	1.39	6.431	A	A
A4119 S	2	1	17.65	1.18	2.841	A	A
Site Access	1	1	5.03	0.34	5.114	A	A
A4119 W	1	1	4.72	0.31	2.486	A	A
A4119 W	1	2	4.02	0.27	2.267	A	A
A4119 W	2	2	0.24	0.02	0.064	A	A

Queueing Delay results: (17:00-17:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.52	0.03	1.251	A	A
Heol-Y-Sarn	1	1	9.80	0.65	6.187	A	A
Heol-Y-Sarn	1	2	2.98	0.20	3.569	A	A
Heol-Y-Sarn	1	3	0.02	0.00	1.718	A	A
Heol-Y-Sarn	2	1	2.75	0.18	1.130	A	A
A4119 S	1	2	30.01	2.00	8.513	A	A
A4119 S	1	3	36.94	2.46	9.858	A	A
A4119 S	2	1	168.15	11.21	23.403	C	C
Site Access	1	1	14.01	0.93	11.588	B	B
A4119 W	1	1	7.94	0.53	3.441	A	A
A4119 W	1	2	6.86	0.46	3.149	A	A
A4119 W	2	2	0.99	0.07	0.218	A	A

Queueing Delay results: (17:15-17:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.54	0.04	1.275	A	A
Heol-Y-Sarn	1	1	10.10	0.67	6.279	A	A
Heol-Y-Sarn	1	2	2.93	0.20	3.491	A	A
Heol-Y-Sarn	1	3	0.02	0.00	1.662	A	A
Heol-Y-Sarn	2	1	3.08	0.21	1.241	A	A
A4119 S	1	2	33.37	2.22	9.218	A	A
A4119 S	1	3	40.61	2.71	10.631	B	B
A4119 S	2	1	341.56	22.77	46.504	E	D
Site Access	1	1	16.14	1.08	13.337	B	B
A4119 W	1	1	8.13	0.54	3.508	A	A
A4119 W	1	2	7.13	0.48	3.269	A	A
A4119 W	2	2	1.15	0.08	0.254	A	A

Queueing Delay results: (17:30-17:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.30	0.02	0.861	A	A
Heol-Y-Sarn	1	1	6.01	0.40	4.564	A	A
Heol-Y-Sarn	1	2	1.92	0.13	2.760	A	A
Heol-Y-Sarn	1	3	0.01	0.00	1.325	A	A
Heol-Y-Sarn	2	1	0.89	0.06	0.430	A	A
A4119 S	1	2	22.05	1.47	6.933	A	A
A4119 S	1	3	27.94	1.86	8.088	A	A
A4119 S	2	1	139.97	9.33	19.335	C	B
Site Access	1	1	7.29	0.49	7.165	A	A
A4119 W	1	1	4.92	0.33	2.585	A	A
A4119 W	1	2	4.14	0.28	2.326	A	A
A4119 W	2	2	0.28	0.02	0.075	A	A

Queueing Delay results: (17:45-18:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.18	0.01	0.596	A	A
Heol-Y-Sarn	**1**	**1**	3.87	0.26	3.468	A	A
Heol-Y-Sarn	**1**	**2**	1.30	0.09	2.217	A	A
Heol-Y-Sarn	**1**	**3**	0.01	0.00	1.264	A	A
Heol-Y-Sarn	**2**	**1**	0.27	0.02	0.158	A	A
A4119 S	**1**	**2**	9.40	0.63	3.767	A	A
A4119 S	**1**	**3**	13.06	0.87	4.593	A	A
A4119 S	**2**	**1**	6.13	0.41	1.029	A	A
Site Access	**1**	**1**	2.76	0.18	3.239	A	A
A4119 W	**1**	**1**	3.09	0.21	1.897	A	A
A4119 W	**1**	**2**	2.67	0.18	1.781	A	A
A4119 W	**2**	**2**	0.07	0.00	0.021	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Option.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:47:51

Summary of junction performance

	AM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2037 DS				
Sterling Drive	0.01	1.96	N/A	A	18.31
Heol-Y-Sarn	1.31	7.91	N/A	A	
A4119 S	9.55	22.28	N/A	C	
Site Access	0.09	2.87	N/A	A	
A4119 W	9.08	19.50	N/A	C	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D7 - 2022 DS, AM" model duration: 07:30 - 09:00
"D8 - 2022 DS, PM" model duration: 16:30 - 18:00
"D9 - 2037 DS, AM " model duration: 07:30 - 09:00
"D10 - 2037 DS, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:47:50

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	1016855671	515

(Default Analysis Set) - 2037 DS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2037 DS, AM	2037 DS	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			18.31	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		✓
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	21.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	487.00	100.000
A4119 S	ONE HOUR	✓	1328.00	100.000
Site Access	ONE HOUR	✓	105.00	100.000
A4119 W	ONE HOUR	✓	1480.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.000	4.000	13.000	1.000	3.000
	Heol-Y-Sarn	23.000	0.000	177.000	130.000	157.000
	A4119 S	85.000	368.000	0.000	119.000	756.000
	Site Access	1.000	12.000	38.000	0.000	54.000
	A4119 W	29.000	163.000	1043.000	245.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	**Heol-Y-Sarn**	**A4119 S**	**Site Access**	**A4119 W**
From	**Sterling Drive**	0.00	0.19	0.62	0.05	0.14
	Heol-Y-Sarn	0.05	0.00	0.36	0.27	0.32
	A4119 S	0.06	0.28	0.00	0.09	0.57
	Site Access	0.01	0.11	0.36	0.00	0.51
	A4119 W	0.02	0.11	0.70	0.17	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.090	1.000	1.010
	A4119 S	1.000	1.010	1.000	1.050	1.010
	Site Access	1.000	1.000	1.000	1.000	1.040
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	9.0	0.0	1.0
	A4119 S	0.0	1.0	0.0	5.0	1.0
	Site Access	0.0	0.0	0.0	0.0	4.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.96	0.01	A	19.40	29.10	0.66	1.35	0.01
Heol-Y-Sarn	7.91	1.31	A	449.02	673.53	64.69	5.76	0.72
A4119 S	22.28	9.55	C	1218.10	1827.14	358.17	11.76	3.98
Site Access	2.87	0.09	A	95.96	143.94	5.20	2.17	0.06
A4119 W	19.50	9.08	C	1358.17	2037.26	348.17	10.25	3.87

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	15.15	3.79	14.91	105.20	1412.62	0.00	0.00	0.778	A
Heol-Y-Sarn	367.69	91.92	368.27	411.50	1016.04	0.00	0.39	3.556	A
A4119 S	1010.91	252.73	1006.83	957.90	427.46	0.00	1.23	3.989	A
Site Access	74.56	18.64	74.91	380.27	1047.26	0.00	0.03	1.316	A
A4119 W	1114.60	278.65	1115.53	725.83	396.35	0.00	1.02	3.582	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	17.24	4.31	17.24	120.70	1689.67	0.00	0.01	1.145	A
Heol-Y-Sarn	430.72	107.68	434.33	487.11	1219.81	0.00	0.54	4.736	A
A4119 S	1178.56	294.64	1181.48	1167.73	488.39	0.00	2.12	6.660	A
Site Access	93.44	23.36	92.39	432.35	1237.63	0.00	0.07	1.901	A
A4119 W	1335.61	333.90	1339.92	861.44	468.58	0.00	2.08	5.844	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	27.73	6.93	27.26	148.89	2071.57	0.01	0.01	1.807	A
Heol-Y-Sarn	535.81	133.95	539.77	607.46	1491.38	0.54	1.00	7.347	A
A4119 S	1461.32	365.33	1460.16	1400.85	637.98	2.12	8.49	18.047	C
Site Access	116.85	29.21	118.60	554.56	1535.88	0.07	0.08	2.643	A
A4119 W	1627.69	406.92	1635.26	1071.26	583.22	2.08	8.46	15.723	C

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	22.18	5.54	22.06	156.54	2071.87	0.01	0.01	1.958	A
Heol-Y-Sarn	544.67	136.17	538.83	623.11	1470.82	1.00	1.31	7.910	A
A4119 S	1476.30	369.08	1478.40	1392.61	617.39	8.49	9.55	22.284	C
Site Access	113.81	28.45	116.03	541.05	1555.56	0.08	0.09	2.868	A
A4119 W	1613.35	403.34	1627.82	1066.11	605.49	8.46	9.08	19.504	C

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	17.98	4.49	18.56	122.57	1674.28	0.01	0.00	1.159	A
Heol-Y-Sarn	435.76	108.94	440.19	485.02	1207.82	1.31	0.63	5.064	A
A4119 S	1180.86	295.21	1177.94	1142.92	510.70	9.55	2.23	8.847	A
Site Access	96.89	24.22	95.72	448.37	1247.86	0.09	0.06	1.862	A
A4119 W	1343.35	335.84	1336.69	877.00	466.58	9.08	2.24	7.584	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	16.11	4.03	15.88	107.86	1431.13	0.00	0.01	0.880	A
Heol-Y-Sarn	379.49	94.87	379.26	427.24	1019.77	0.63	0.41	3.432	A
A4119 S	1000.62	250.16	1004.94	972.72	422.80	2.23	1.05	4.221	A
Site Access	80.19	20.05	79.49	377.04	1059.81	0.06	0.04	1.451	A
A4119 W	1114.44	278.61	1116.42	729.46	409.84	2.24	1.07	3.696	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.05	0.00	0.778	A	A
Heol-Y-Sarn	5.65	0.38	3.556	A	A
A4119 S	16.59	1.11	3.989	A	A
Site Access	0.44	0.03	1.316	A	A
A4119 W	16.75	1.12	3.582	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.09	0.01	1.145	A	A
Heol-Y-Sarn	8.90	0.59	4.736	A	A
A4119 S	33.12	2.21	6.660	A	A
Site Access	0.78	0.05	1.901	A	A
A4119 W	32.37	2.16	5.844	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.17	0.01	1.807	A	A
Heol-Y-Sarn	16.74	1.12	7.347	A	A
A4119 S	107.62	7.17	18.047	C	B
Site Access	1.31	0.09	2.643	A	A
A4119 W	104.79	6.99	15.723	C	B

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.19	0.01	1.958	A	A
Heol-Y-Sarn	18.14	1.21	7.910	A	A
A4119 S	135.41	9.03	22.284	C	C
Site Access	1.41	0.09	2.868	A	A
A4119 W	132.00	8.80	19.504	C	B

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.09	0.01	1.159	A	A
Heol-Y-Sarn	9.68	0.65	5.064	A	A
A4119 S	47.31	3.15	8.847	A	A
Site Access	0.75	0.05	1.862	A	A
A4119 W	44.61	2.97	7.584	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.06	0.00	0.880	A	A
Heol-Y-Sarn	5.59	0.37	3.432	A	A
A4119 S	18.11	1.21	4.221	A	A
Site Access	0.50	0.03	1.451	A	A
A4119 W	17.64	1.18	3.696	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:30-07:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	**1**	**1**	15.15	3.79	14.91	1014.77	0.015	0.00	0.00	0.778	A
Heol-Y-Sarn	**1**	**1**	232.54	58.14	231.03	725.55	0.321	0.00	0.30	3.942	A
Heol-Y-Sarn	**1**	**2**	116.04	29.01	119.18	725.55	0.160	0.00	0.05	2.478	A
Heol-Y-Sarn	**1**	**3**	19.69	4.92	19.11	725.55	0.027	0.00	0.02	1.742	A
Heol-Y-Sarn	**2**	**1**	367.69	91.92	368.27			0.00	0.03	0.204	A
A4119 S	**1**	**2**	433.98	108.50	434.80	916.29	0.474	0.00	0.36	2.903	A
A4119 S	**1**	**3**	572.85	143.21	565.28	916.29	0.625	0.00	0.69	4.050	A
A4119 S	**2**	**1**	1010.91	252.73	1006.83			0.00	0.19	0.437	A
Site Access	**1**	**1**	74.56	18.64	74.91	900.86	0.083	0.00	0.03	1.316	A
A4119 W	**1**	**1**	546.52	136.63	545.83	970.41	0.563	0.00	0.47	3.238	A
A4119 W	**1**	**2**	569.01	142.25	575.65	970.41	0.586	0.00	0.48	3.348	A
A4119 W	**2**	**2**	1114.60	278.65	1115.53			0.00	0.07	0.287	A

Main results: (07:45-08:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	17.24	4.31	17.24	889.52	0.019	0.00	0.01	1.145	A
Heol-Y-Sarn	1	1	277.63	69.41	280.19	684.58	0.406	0.30	0.36	5.063	A
Heol-Y-Sarn	1	2	138.41	34.60	137.83	684.58	0.202	0.05	0.14	3.045	A
Heol-Y-Sarn	1	3	18.29	4.57	18.29	684.58	0.027	0.02	0.02	1.869	A
Heol-Y-Sarn	2	1	430.72	107.68	434.33			0.03	0.03	0.495	A
A4119 S	1	2	525.55	131.39	522.64	901.60	0.583	0.36	0.58	4.091	A
A4119 S	1	3	655.92	163.98	658.95	901.60	0.728	0.69	1.03	5.817	A
A4119 S	2	1	1178.56	294.64	1181.48			0.19	0.51	1.610	A
Site Access	1	1	93.44	23.36	92.39	826.83	0.113	0.03	0.07	1.901	A
A4119 W	1	1	667.46	166.86	666.64	952.00	0.701	0.47	0.83	4.663	A
A4119 W	1	2	672.47	168.12	675.15	952.00	0.706	0.48	0.86	4.791	A
A4119 W	2	2	1335.61	333.90	1339.92			0.07	0.39	1.113	A

Main results: (08:00-08:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	27.73	6.93	27.26	716.86	0.039	0.01	0.01	1.807	A
Heol-Y-Sarn	1	1	331.57	82.89	335.42	629.97	0.526	0.36	0.65	7.263	A
Heol-Y-Sarn	1	2	181.05	45.26	184.54	629.97	0.287	0.14	0.19	4.122	A
Heol-Y-Sarn	1	3	27.15	6.79	27.50	629.97	0.043	0.02	0.00	2.270	A
Heol-Y-Sarn	2	1	535.81	133.95	539.77			0.03	0.16	1.374	A
A4119 S	1	2	676.31	169.08	671.88	865.54	0.781	0.58	1.34	6.755	A
A4119 S	1	3	783.84	195.96	780.58	865.54	0.906	1.03	2.03	8.941	A
A4119 S	2	1	1461.32	365.33	1460.16			0.51	5.13	10.077	B
Site Access	1	1	116.85	29.21	118.60	710.84	0.164	0.07	0.08	2.643	A
A4119 W	1	1	804.70	201.17	804.35	922.76	0.872	0.83	1.82	7.634	A
A4119 W	1	2	830.56	207.64	832.89	922.76	0.900	0.86	1.91	7.888	A
A4119 W	2	2	1627.69	406.92	1635.26			0.39	4.73	7.929	A

Main results: (08:15-08:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	22.18	5.54	22.06	716.72	0.031	0.01	0.01	1.958	A
Heol-Y-Sarn	1	1	338.17	84.54	339.57	634.10	0.533	0.65	0.76	7.545	A
Heol-Y-Sarn	1	2	175.56	43.89	173.93	634.10	0.277	0.19	0.23	4.498	A
Heol-Y-Sarn	1	3	25.10	6.27	25.68	634.10	0.040	0.00	0.01	2.534	A
Heol-Y-Sarn	2	1	544.67	136.17	538.83			0.16	0.31	1.597	A
A4119 S	1	2	677.16	169.29	673.42	870.50	0.778	1.34	1.40	7.156	A
A4119 S	1	3	801.25	200.31	805.80	870.50	0.920	2.03	2.04	9.483	A
A4119 S	2	1	1476.30	369.08	1478.40			5.13	6.11	13.868	B
Site Access	1	1	113.81	28.45	116.03	703.19	0.162	0.08	0.09	2.868	A
A4119 W	1	1	808.25	202.06	804.40	917.09	0.881	1.82	1.86	8.213	A
A4119 W	1	2	819.57	204.89	818.52	917.09	0.894	1.91	1.92	8.432	A
A4119 W	2	2	1613.35	403.34	1627.82			4.73	5.29	11.185	B

Main results: (08:30-08:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	17.98	4.49	18.56	896.47	0.020	0.01	0.00	1.159	A
Heol-Y-Sarn	1	1	274.32	68.58	279.11	686.99	0.399	0.76	0.42	5.366	A
Heol-Y-Sarn	1	2	145.10	36.27	145.68	686.99	0.211	0.23	0.14	3.293	A
Heol-Y-Sarn	1	3	20.78	5.19	21.01	686.99	0.030	0.01	0.01	1.961	A
Heol-Y-Sarn	2	1	435.76	108.94	440.19			0.31	0.06	0.569	A
A4119 S	1	2	525.64	131.41	533.93	896.22	0.587	1.40	0.56	4.612	A
A4119 S	1	3	652.30	163.07	651.60	896.22	0.728	2.04	1.08	6.277	A
A4119 S	2	1	1180.86	295.21	1177.94			6.11	0.59	3.396	A
Site Access	1	1	96.89	24.22	95.72	822.85	0.118	0.09	0.06	1.862	A
A4119 W	1	1	664.44	166.11	661.17	952.51	0.698	1.86	0.87	5.213	A
A4119 W	1	2	672.26	168.06	669.11	952.51	0.706	1.92	0.93	5.390	A
A4119 W	2	2	1343.35	335.84	1336.69			5.29	0.44	2.355	A

Main results: (08:45-09:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	16.11	4.03	15.88	1006.40	0.016	0.00	0.01	0.880	A
Heol-Y-Sarn	1	1	242.68	60.67	240.00	724.80	0.335	0.42	0.31	3.809	A
Heol-Y-Sarn	1	2	118.95	29.74	118.02	724.80	0.164	0.14	0.09	2.500	A
Heol-Y-Sarn	1	3	17.63	4.41	17.74	724.80	0.024	0.01	0.00	1.537	A
Heol-Y-Sarn	2	1	379.49	94.87	379.26			0.06	0.01	0.184	A
A4119 S	1	2	442.88	110.72	446.15	917.41	0.483	0.56	0.35	3.032	A
A4119 S	1	3	562.06	140.52	567.90	917.41	0.613	1.08	0.62	4.189	A
A4119 S	2	1	1000.62	250.16	1004.94			0.59	0.08	0.553	A
Site Access	1	1	80.19	20.05	79.49	895.98	0.090	0.06	0.04	1.451	A
A4119 W	1	1	545.84	136.46	554.01	966.97	0.564	0.87	0.46	3.281	A
A4119 W	1	2	570.58	142.65	575.14	966.97	0.590	0.93	0.50	3.468	A
A4119 W	2	2	1114.44	278.61	1116.42			0.44	0.11	0.331	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.05	0.00	0.778	A	A
Heol-Y-Sarn	1	1	3.95	0.26	3.942	A	A
Heol-Y-Sarn	1	2	1.24	0.08	2.478	A	A
Heol-Y-Sarn	1	3	0.13	0.01	1.742	A	A
Heol-Y-Sarn	2	1	0.34	0.02	0.204	A	A
A4119 S	1	2	5.36	0.36	2.903	A	A
A4119 S	1	3	9.42	0.63	4.050	A	A
A4119 S	2	1	1.81	0.12	0.437	A	A
Site Access	1	1	0.44	0.03	1.316	A	A
A4119 W	1	1	7.47	0.50	3.238	A	A
A4119 W	1	2	7.93	0.53	3.348	A	A
A4119 W	2	2	1.35	0.09	0.287	A	A

Queueing Delay results: (07:45-08:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.09	0.01	1.145	A	A
Heol-Y-Sarn	1	1	5.99	0.40	5.063	A	A
Heol-Y-Sarn	1	2	1.80	0.12	3.045	A	A
Heol-Y-Sarn	1	3	0.16	0.01	1.869	A	A
Heol-Y-Sarn	2	1	0.95	0.06	0.495	A	A
A4119 S	1	2	9.23	0.62	4.091	A	A
A4119 S	1	3	15.92	1.06	5.817	A	A
A4119 S	2	1	7.98	0.53	1.610	A	A
Site Access	1	1	0.78	0.05	1.901	A	A
A4119 W	1	1	12.74	0.85	4.663	A	A
A4119 W	1	2	13.46	0.90	4.791	A	A
A4119 W	2	2	6.18	0.41	1.113	A	A

Queueing Delay results: (08:00-08:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.17	0.01	1.807	A	A
Heol-Y-Sarn	1	1	10.35	0.69	7.263	A	A
Heol-Y-Sarn	1	2	3.00	0.20	4.122	A	A
Heol-Y-Sarn	1	3	0.25	0.02	2.270	A	A
Heol-Y-Sarn	2	1	3.15	0.21	1.374	A	A
A4119 S	1	2	18.70	1.25	6.755	A	A
A4119 S	1	3	28.98	1.93	8.941	A	A
A4119 S	2	1	59.95	4.00	10.077	B	B
Site Access	1	1	1.31	0.09	2.643	A	A
A4119 W	1	1	25.41	1.69	7.634	A	A
A4119 W	1	2	26.62	1.77	7.888	A	A
A4119 W	2	2	52.76	3.52	7.929	A	A

Queueing Delay results: (08:15-08:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.19	0.01	1.958	A	A
Heol-Y-Sarn	1	1	10.98	0.73	7.545	A	A
Heol-Y-Sarn	1	2	3.24	0.22	4.498	A	A
Heol-Y-Sarn	1	3	0.26	0.02	2.534	A	A
Heol-Y-Sarn	2	1	3.66	0.24	1.597	A	A
A4119 S	1	2	20.19	1.35	7.156	A	A
A4119 S	1	3	31.07	2.07	9.483	A	A
A4119 S	2	1	84.15	5.61	13.868	B	B
Site Access	1	1	1.41	0.09	2.868	A	A
A4119 W	1	1	27.63	1.84	8.213	A	A
A4119 W	1	2	28.86	1.92	8.432	A	A
A4119 W	2	2	75.51	5.03	11.185	B	B

Queueing Delay results: (08:30-08:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.09	0.01	1.159	A	A
Heol-Y-Sarn	1	1	6.38	0.43	5.366	A	A
Heol-Y-Sarn	1	2	2.00	0.13	3.293	A	A
Heol-Y-Sarn	1	3	0.17	0.01	1.961	A	A
Heol-Y-Sarn	2	1	1.13	0.08	0.569	A	A
A4119 S	1	2	10.64	0.71	4.612	A	A
A4119 S	1	3	17.73	1.18	6.277	A	A
A4119 S	2	1	18.94	1.26	3.396	A	A
Site Access	1	1	0.75	0.05	1.862	A	A
A4119 W	1	1	14.65	0.98	5.213	A	A
A4119 W	1	2	15.42	1.03	5.390	A	A
A4119 W	2	2	14.54	0.97	2.355	A	A

Queueing Delay results: (08:45-09:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.06	0.00	0.880	A	A
Heol-Y-Sarn	**1**	**1**	3.88	0.26	3.809	A	A
Heol-Y-Sarn	**1**	**2**	1.28	0.09	2.500	A	A
Heol-Y-Sarn	**1**	**3**	0.11	0.01	1.537	A	A
Heol-Y-Sarn	**2**	**1**	0.31	0.02	0.184	A	A
A4119 S	**1**	**2**	5.73	0.38	3.032	A	A
A4119 S	**1**	**3**	9.98	0.67	4.189	A	A
A4119 S	**2**	**1**	2.40	0.16	0.553	A	A
Site Access	**1**	**1**	0.50	0.03	1.451	A	A
A4119 W	**1**	**1**	7.67	0.51	3.281	A	A
A4119 W	**1**	**2**	8.36	0.56	3.468	A	A
A4119 W	**2**	**2**	1.61	0.11	0.331	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

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: Base Junction 5 Arcady_v2_val_Option.arc8
Path: P:\Schemes_CS\cs0951xx\cs095111\03 Delivery\04 Transport\06 Modelling\Jct5
Report generation date: 28/05/2019 11:49:31

Summary of junction performance

	PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	A1 [Entry Lane Simulation] - 2037 DS				
Sterling Drive	0.05	1.61	N/A	A	81.79
Heol-Y-Sarn	1.62	9.20	N/A	A	
A4119 S	107.25	166.29	N/A	F	
Site Access	1.19	12.15	N/A	B	
A4119 W	1.77	4.48	N/A	A	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D1 - Base, AM" model duration: 07:30 - 09:00
"D2 - Base, PM" model duration: 16:30 - 18:00
"D7 - 2022 DS, AM" model duration: 07:30 - 09:00
"D8 - 2022 DS, PM" model duration: 16:30 - 18:00
"D9 - 2037 DS, AM" model duration: 07:30 - 09:00
"D10 - 2037 DS, PM " model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 28/05/2019 11:49:30

File summary

Title	(untitled)
Location	Ynysmaerdy
Site Number	Junction 5
Date	08/01/2018
Version	
Status	(new file)
Identifier	
Client	RCT
Jobnumber	093813
Enumerator	Callan.Burchell
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	1924839683	538

(Default Analysis Set) - 2037 DS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2037 DS, PM	2037 DS	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4,5			81.79	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Sterling Drive	1	Sterling Drive	
Heol-Y-Sarn	2	Heol-Y-Sarn	
A4119 S	3	A4119 S	
Site Access	4	Site Access	
A4119 W	5	A4119 W	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	0.00	99999.00
Heol-Y-Sarn	0.00	99999.00
A4119 S	0.00	99999.00
Site Access	0.00	99999.00
A4119 W	0.00	99999.00

Roundabout Geometry

Name	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
Sterling Drive	3.70	7.40	10.00	24.00	90.00	29.00	
Heol-Y-Sarn	7.30	10.50	24.00	23.00	90.00	42.00	
A4119 S	7.50	7.50	0.00	24.00	90.00	62.00	
Site Access	2.70	5.80	15.00	15.00	90.00	41.00	
A4119 W	7.00	8.00	2.00	25.00	90.00	45.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive		(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn		(calculated)	(calculated)	0.603	2789.566
A4119 S		(calculated)	(calculated)	0.482	2038.682
Site Access		(calculated)	(calculated)	0.389	1308.131
A4119 W		(calculated)	(calculated)	0.510	2142.958

The slope and intercept shown above include any corrections and adjustments.

Entry Lane Analysis: Arm options

Name	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
Sterling Drive	Evenly split	10.00
Heol-Y-Sarn	Evenly split	10.00
A4119 S	Evenly split	50.00
Site Access	Evenly split	10.00
A4119 W	Evenly split	5.00

Lanes

Name	Lane Level	Lane	Has Limited Storage	Storage (PCU)	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Sterling Drive	**1**	1		Infinity	0.00	99999.00
Heol-Y-Sarn	**1**	1	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	2	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**1**	3	✓	3.00	0.00	99999.00
Heol-Y-Sarn	**2**	1		Infinity		
A4119 S	**1**	2	✓	3.00	0.00	99999.00
A4119 S	**1**	3	✓	3.00	0.00	99999.00
A4119 S	**2**	1		Infinity		
Site Access	**1**	1		Infinity	0.00	99999.00
A4119 W	**1**	1	✓	3.00	0.00	99999.00
A4119 W	**1**	2	✓	3.00	0.00	99999.00
A4119 W	**2**	2		Infinity		

Entry Lane slope and intercept

Name	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Sterling Drive	(calculated)	(calculated)	0.452	1653.416
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
Heol-Y-Sarn	(calculated)	(calculated)	0.201	929.855
A4119 S	(calculated)	(calculated)	0.241	1019.341
A4119 S	(calculated)	(calculated)	0.241	1019.341
Site Access	(calculated)	(calculated)	0.389	1308.131
A4119 W	(calculated)	(calculated)	0.255	1071.479
A4119 W	(calculated)	(calculated)	0.255	1071.479

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
(untitled)	**Sterling Drive**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**Heol-Y-Sarn**	**1**	**1**			✓	✓	
(untitled)	**Heol-Y-Sarn**	**1**	**2**					✓
(untitled)	**Heol-Y-Sarn**	**1**	**3**	✓	✓			
(untitled)	**Heol-Y-Sarn**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 S**	**1**	**2**				✓	✓
(untitled)	**A4119 S**	**1**	**3**	✓	✓	✓		✓
(untitled)	**A4119 S**	**2**	**1**	✓	✓	✓	✓	✓
(untitled)	**Site Access**	**1**	**1**	✓	✓	✓	✓	✓
(untitled)	**A4119 W**	**1**	**1**	✓	✓	✓		
(untitled)	**A4119 W**	**1**	**2**			✓	✓	✓
(untitled)	**A4119 W**	**2**	**2**	✓	✓	✓	✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Sterling Drive	ONE HOUR	✓	99.00	100.000
Heol-Y-Sarn	ONE HOUR	✓	578.00	100.000
A4119 S	ONE HOUR	✓	1827.00	100.000
Site Access	ONE HOUR	✓	299.00	100.000
A4119 W	ONE HOUR	✓	1069.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.000	17.000	60.000	1.000	21.000
	Heol-Y-Sarn	3.000	0.000	364.000	20.000	191.000
	A4119 S	4.000	343.000	0.000	197.000	1283.000
	Site Access	0.000	31.000	96.000	0.000	172.000
	A4119 W	5.000	161.000	814.000	89.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.00	0.17	0.61	0.01	0.21
	Heol-Y-Sarn	0.01	0.00	0.63	0.03	0.33
	A4119 S	0.00	0.19	0.00	0.11	0.70
	Site Access	0.00	0.10	0.32	0.00	0.58
	A4119 W	0.00	0.15	0.76	0.08	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	1.000	1.000	1.000	1.000	1.000
	Heol-Y-Sarn	1.000	1.000	1.020	1.000	1.000
	A4119 S	1.000	1.070	1.000	1.030	1.010
	Site Access	1.000	1.000	1.000	1.000	1.020
	A4119 W	1.000	1.010	1.010	1.020	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To				
		Sterling Drive	Heol-Y-Sarn	A4119 S	Site Access	A4119 W
From	Sterling Drive	0.0	0.0	0.0	0.0	0.0
	Heol-Y-Sarn	0.0	0.0	2.0	0.0	0.0
	A4119 S	0.0	7.0	0.0	3.0	1.0
	Site Access	0.0	0.0	0.0	0.0	2.0
	A4119 W	0.0	1.0	1.0	2.0	0.0

Results

Results Summary for whole modelled period

Name	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)
Sterling Drive	1.61	0.05	A	90.94	136.42	2.55	1.12	0.03
Heol-Y-Sarn	9.20	1.62	A	532.01	798.01	83.45	6.27	0.93
A4119 S	166.29	107.25	F	1672.87	2509.30	3546.23	84.79	39.40
Site Access	12.15	1.19	B	275.03	412.55	56.79	8.26	0.63
A4119 W	4.48	1.77	A	986.90	1480.35	81.45	3.30	0.91

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	76.51	19.13	76.73	8.03	1155.39	0.00	0.01	0.623	A
Heol-Y-Sarn	434.72	108.68	435.17	405.39	826.73	0.00	0.38	3.573	A
A4119 S	1373.20	343.30	1373.31	1017.21	247.70	0.00	2.66	6.228	A
Site Access	228.74	57.18	230.74	234.20	1387.36	0.00	0.21	3.287	A
A4119 W	817.70	204.42	817.25	1271.04	347.06	0.00	0.52	2.076	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	89.83	22.46	89.72	11.28	1371.73	0.00	0.03	0.948	A
Heol-Y-Sarn	532.85	133.21	530.50	492.51	968.94	0.00	0.83	5.062	A
A4119 S	1618.55	404.64	1636.31	1216.09	282.23	0.00	6.94	14.679	B
Site Access	269.05	67.26	266.48	270.61	1654.19	0.00	0.44	5.807	A
A4119 W	956.31	239.08	955.31	1487.37	433.30	0.00	0.82	2.836	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	109.05	27.26	109.27	12.29	1670.84	0.03	0.05	1.518	A
Heol-Y-Sarn	631.17	157.79	629.27	567.04	1213.07	0.83	1.54	8.348	A
A4119 S	1996.87	499.22	1836.98	1489.61	349.05	6.94	59.66	71.601	F
Site Access	338.10	84.53	334.41	320.22	1870.95	0.44	1.19	11.121	B
A4119 W	1196.98	299.25	1192.96	1708.94	496.42	0.82	1.77	4.475	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	107.26	26.82	106.82	12.63	1659.22	0.05	0.05	1.613	A
Heol-Y-Sarn	640.67	160.17	641.45	570.73	1195.31	1.54	1.62	9.198	A
A4119 S	2022.57	505.64	1790.50	1481.12	358.88	59.66	107.25	166.285	F
Site Access	325.47	81.37	320.89	317.77	1837.77	1.19	1.15	12.155	B
A4119 W	1179.89	294.97	1181.90	1670.61	488.04	1.77	1.41	4.363	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	88.94	22.23	87.93	11.73	1411.06	0.05	0.03	0.949	A
Heol-Y-Sarn	520.67	130.17	521.90	516.42	982.57	1.62	0.78	5.461	A
A4119 S	1648.49	412.12	1786.37	1210.39	296.65	107.25	60.21	163.581	F
Site Access	268.38	67.09	267.82	299.33	1779.55	1.15	0.63	8.882	A
A4119 W	958.88	239.72	959.44	1597.43	449.94	1.41	0.69	2.919	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	74.08	18.52	73.63	8.38	1162.91	0.03	0.02	0.714	A
Heol-Y-Sarn	431.96	107.99	433.18	419.11	817.43	0.78	0.43	3.724	A
A4119 S	1377.54	344.39	1443.02	1015.31	240.11	60.21	6.27	51.275	F
Site Access	220.45	55.11	222.79	242.01	1441.23	0.63	0.25	5.141	A
A4119 W	811.62	202.91	811.51	1303.58	360.45	0.69	0.46	2.115	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.20	0.01	0.623	A	A
Heol-Y-Sarn	6.54	0.44	3.573	A	A
A4119 S	35.84	2.39	6.228	A	A
Site Access	3.14	0.21	3.287	A	A
A4119 W	7.04	0.47	2.076	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.35	0.02	0.948	A	A
Heol-Y-Sarn	10.97	0.73	5.062	A	A
A4119 S	99.52	6.63	14.679	B	B
Site Access	6.52	0.43	5.807	A	A
A4119 W	11.47	0.76	2.836	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.69	0.05	1.518	A	A
Heol-Y-Sarn	22.21	1.48	8.348	A	A
A4119 S	530.60	35.37	71.601	F	E
Site Access	15.19	1.01	11.121	B	B
A4119 W	22.10	1.47	4.475	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.73	0.05	1.613	A	A
Heol-Y-Sarn	24.49	1.63	9.198	A	A
A4119 S	1250.94	83.40	166.285	F	F
Site Access	16.77	1.12	12.155	B	B
A4119 W	21.69	1.45	4.363	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.35	0.02	0.949	A	A
Heol-Y-Sarn	12.22	0.81	5.461	A	A
A4119 S	1246.24	83.08	163.581	F	F
Site Access	10.11	0.67	8.882	A	A
A4119 W	11.84	0.79	2.919	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	0.23	0.02	0.714	A	A
Heol-Y-Sarn	7.01	0.47	3.724	A	A
A4119 S	383.09	25.54	51.275	F	D
Site Access	5.06	0.34	5.141	A	A
A4119 W	7.30	0.49	2.115	A	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:30-16:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	76.51	19.13	76.73	1131.06	0.068	0.00	0.01	0.623	A
Heol-Y-Sarn	1	1	285.61	71.40	289.07	763.62	0.374	0.00	0.24	3.890	A
Heol-Y-Sarn	1	2	147.21	36.80	146.99	763.62	0.193	0.00	0.10	2.344	A
Heol-Y-Sarn	1	3	2.34	0.59	2.12	763.62	0.003	0.00	0.00	1.754	A
Heol-Y-Sarn	2	1	434.72	108.68	435.17			0.00	0.03	0.210	A
A4119 S	1	2	675.17	168.79	673.05	959.63	0.704	0.00	0.99	4.632	A
A4119 S	1	3	698.14	174.54	700.82	959.63	0.728	0.00	1.04	5.140	A
A4119 S	2	1	1373.20	343.30	1373.31			0.00	0.63	1.331	A
Site Access	1	1	228.74	57.18	230.74	768.60	0.298	0.00	0.21	3.287	A
A4119 W	1	1	417.77	104.44	417.66	982.98	0.425	0.00	0.27	2.135	A
A4119 W	1	2	399.48	99.87	398.70	982.98	0.406	0.00	0.24	1.943	A
A4119 W	2	2	817.70	204.42	817.25			0.00	0.01	0.034	A

Main results: (16:45-17:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	89.83	22.46	89.72	1033.26	0.087	0.01	0.03	0.948	A
Heol-Y-Sarn	1	1	355.42	88.85	357.21	735.02	0.484	0.24	0.56	5.234	A
Heol-Y-Sarn	1	2	171.84	42.96	168.83	735.02	0.234	0.10	0.17	2.813	A
Heol-Y-Sarn	1	3	3.24	0.81	3.35	735.02	0.004	0.00	0.00	1.541	A
Heol-Y-Sarn	2	1	532.85	133.21	530.50			0.03	0.11	0.645	A
A4119 S	1	2	799.78	199.94	807.15	951.30	0.841	0.99	1.60	7.023	A
A4119 S	1	3	836.54	209.13	835.42	951.30	0.879	1.04	1.85	7.602	A
A4119 S	2	1	1618.55	404.64	1636.31			0.63	3.50	7.345	A
Site Access	1	1	269.05	67.26	266.48	664.83	0.405	0.21	0.44	5.807	A
A4119 W	1	1	494.86	123.72	492.96	960.99	0.515	0.27	0.40	2.820	A
A4119 W	1	2	460.45	115.11	456.76	960.99	0.479	0.24	0.39	2.639	A
A4119 W	2	2	956.31	239.08	955.31			0.01	0.04	0.103	A

Main results: (17:00-17:15)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	109.05	27.26	109.27	898.03	0.121	0.03	0.05	1.518	A
Heol-Y-Sarn	1	1	418.88	104.72	418.32	685.93	0.611	0.56	0.91	7.523	A
Heol-Y-Sarn	1	2	207.37	51.84	204.13	685.93	0.302	0.17	0.26	3.863	A
Heol-Y-Sarn	1	3	3.02	0.75	3.13	685.93	0.004	0.00	0.00	1.727	A
Heol-Y-Sarn	2	1	631.17	157.79	629.27			0.11	0.36	2.068	A
A4119 S	1	2	910.06	227.51	912.18	935.19	0.973	1.60	2.53	9.870	A
A4119 S	1	3	926.93	231.73	929.94	935.19	0.991	1.85	2.72	10.463	B
A4119 S	2	1	1996.87	499.22	1836.98			3.50	54.41	61.391	F
Site Access	1	1	338.10	84.53	334.41	580.54	0.582	0.44	1.19	11.121	B
A4119 W	1	1	607.49	151.87	601.34	944.90	0.643	0.40	0.82	4.103	A
A4119 W	1	2	585.47	146.37	585.36	944.90	0.620	0.39	0.66	3.781	A
A4119 W	2	2	1196.98	299.25	1192.96			0.04	0.30	0.525	A

Main results: (17:15-17:30)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	107.26	26.82	106.82	903.28	0.119	0.05	0.05	1.613	A
Heol-Y-Sarn	1	1	425.36	106.34	430.28	689.50	0.617	0.91	0.90	7.903	A
Heol-Y-Sarn	1	2	212.74	53.18	211.06	689.50	0.309	0.26	0.24	4.085	A
Heol-Y-Sarn	1	3	3.35	0.84	3.35	689.50	0.005	0.00	0.00	1.740	A
Heol-Y-Sarn	2	1	640.67	160.17	641.45			0.36	0.48	2.595	A
A4119 S	1	2	885.81	221.45	889.83	932.82	0.950	2.53	2.52	10.257	B
A4119 S	1	3	904.69	226.17	906.82	932.82	0.970	2.72	2.79	10.907	B
A4119 S	2	1	2022.57	505.64	1790.50			54.41	101.94	155.728	F
Site Access	1	1	325.47	81.37	320.89	593.44	0.548	1.19	1.15	12.155	B
A4119 W	1	1	601.01	150.25	604.02	947.03	0.635	0.82	0.69	4.074	A
A4119 W	1	2	580.89	145.22	579.78	947.03	0.613	0.66	0.62	3.787	A
A4119 W	2	2	1179.89	294.97	1181.90			0.30	0.10	0.434	A

Main results: (17:30-17:45)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	88.94	22.23	87.93	1015.48	0.088	0.05	0.03	0.949	A
Heol-Y-Sarn	1	1	346.70	86.68	349.72	732.28	0.473	0.90	0.56	5.596	A
Heol-Y-Sarn	1	2	172.29	43.07	171.84	732.28	0.235	0.24	0.14	2.967	A
Heol-Y-Sarn	1	3	2.91	0.73	2.91	732.28	0.004	0.00	0.00	1.945	A
Heol-Y-Sarn	2	1	520.67	130.17	521.90			0.48	0.08	0.782	A
A4119 S	1	2	883.02	220.75	879.33	947.83	0.932	2.52	2.39	9.856	A
A4119 S	1	3	903.35	225.84	902.91	947.83	0.953	2.79	2.63	10.474	B
A4119 S	2	1	1648.49	412.12	1786.37			101.94	55.20	153.459	F
Site Access	1	1	268.38	67.09	267.82	616.08	0.436	1.15	0.63	8.882	A
A4119 W	1	1	498.32	124.58	502.68	956.75	0.521	0.69	0.36	2.890	A
A4119 W	1	2	461.12	115.28	470.17	956.75	0.482	0.62	0.31	2.712	A
A4119 W	2	2	958.88	239.72	959.44			0.10	0.02	0.115	A

Main results: (17:45-18:00)

Name	Lane Level	Lane	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Sterling Drive	1	1	74.08	18.52	73.63	1127.67	0.066	0.03	0.02	0.714	A
Heol-Y-Sarn	1	1	293.18	73.30	296.76	765.49	0.383	0.56	0.32	3.982	A
Heol-Y-Sarn	1	2	138.10	34.53	139.22	765.49	0.180	0.14	0.07	2.483	A
Heol-Y-Sarn	1	3	1.90	0.47	2.01	765.49	0.002	0.00	0.00	1.218	A
Heol-Y-Sarn	2	1	431.96	107.99	433.18			0.08	0.05	0.271	A
A4119 S	1	2	708.94	177.23	708.38	961.46	0.737	2.39	1.17	7.518	A
A4119 S	1	3	734.08	183.52	734.75	961.46	0.764	2.63	1.24	7.931	A
A4119 S	2	1	1377.54	344.39	1443.02			55.20	3.86	43.815	E
Site Access	1	1	220.45	55.11	222.79	747.65	0.295	0.63	0.25	5.141	A
A4119 W	1	1	419.66	104.92	419.55	979.57	0.428	0.36	0.26	2.175	A
A4119 W	1	2	391.84	97.96	391.28	979.57	0.400	0.31	0.19	1.988	A
A4119 W	2	2	811.62	202.91	811.51			0.02	0.01	0.032	A

Lanes: Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.20	0.01	0.623	A	A
Heol-Y-Sarn	1	1	4.74	0.32	3.890	A	A
Heol-Y-Sarn	1	2	1.40	0.09	2.344	A	A
Heol-Y-Sarn	1	3	0.02	0.00	1.754	A	A
Heol-Y-Sarn	2	1	0.39	0.03	0.210	A	A
A4119 S	1	2	12.92	0.86	4.632	A	A
A4119 S	1	3	15.20	1.01	5.140	A	A
A4119 S	2	1	7.72	0.51	1.331	A	A
Site Access	1	1	3.14	0.21	3.287	A	A
A4119 W	1	1	3.72	0.25	2.135	A	A
A4119 W	1	2	3.20	0.21	1.943	A	A
A4119 W	2	2	0.12	0.01	0.034	A	A

Queueing Delay results: (16:45-17:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.35	0.02	0.948	A	A
Heol-Y-Sarn	1	1	7.56	0.50	5.234	A	A
Heol-Y-Sarn	1	2	1.99	0.13	2.813	A	A
Heol-Y-Sarn	1	3	0.02	0.00	1.541	A	A
Heol-Y-Sarn	2	1	1.41	0.09	0.645	A	A
A4119 S	1	2	23.44	1.56	7.023	A	A
A4119 S	1	3	26.36	1.76	7.602	A	A
A4119 S	2	1	49.72	3.31	7.345	A	A
Site Access	1	1	6.52	0.43	5.807	A	A
A4119 W	1	1	5.87	0.39	2.820	A	A
A4119 W	1	2	5.18	0.35	2.639	A	A
A4119 W	2	2	0.42	0.03	0.103	A	A

Queueing Delay results: (17:00-17:15)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.69	0.05	1.518	A	A
Heol-Y-Sarn	1	1	13.33	0.89	7.523	A	A
Heol-Y-Sarn	1	2	3.35	0.22	3.863	A	A
Heol-Y-Sarn	1	3	0.03	0.00	1.727	A	A
Heol-Y-Sarn	2	1	5.50	0.37	2.068	A	A
A4119 S	1	2	36.51	2.43	9.870	A	A
A4119 S	1	3	39.88	2.66	10.463	B	B
A4119 S	2	1	454.20	30.28	61.391	F	E
Site Access	1	1	15.19	1.01	11.121	B	B
A4119 W	1	1	10.37	0.69	4.103	A	A
A4119 W	1	2	9.14	0.61	3.781	A	A
A4119 W	2	2	2.59	0.17	0.525	A	A

Queueing Delay results: (17:15-17:30)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.73	0.05	1.613	A	A
Heol-Y-Sarn	1	1	14.02	0.93	7.903	A	A
Heol-Y-Sarn	1	2	3.55	0.24	4.085	A	A
Heol-Y-Sarn	1	3	0.02	0.00	1.740	A	A
Heol-Y-Sarn	2	1	6.90	0.46	2.595	A	A
A4119 S	1	2	38.33	2.56	10.257	B	B
A4119 S	1	3	41.84	2.79	10.907	B	B
A4119 S	2	1	1170.76	78.05	155.728	F	F
Site Access	1	1	16.77	1.12	12.155	B	B
A4119 W	1	1	10.34	0.69	4.074	A	A
A4119 W	1	2	9.18	0.61	3.787	A	A
A4119 W	2	2	2.17	0.14	0.434	A	A

Queueing Delay results: (17:30-17:45)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	1	1	0.35	0.02	0.949	A	A
Heol-Y-Sarn	1	1	8.25	0.55	5.596	A	A
Heol-Y-Sarn	1	2	2.15	0.14	2.967	A	A
Heol-Y-Sarn	1	3	0.02	0.00	1.945	A	A
Heol-Y-Sarn	2	1	1.81	0.12	0.782	A	A
A4119 S	1	2	37.18	2.48	9.856	A	A
A4119 S	1	3	40.73	2.72	10.474	B	B
A4119 S	2	1	1168.33	77.89	153.459	F	F
Site Access	1	1	10.11	0.67	8.882	A	A
A4119 W	1	1	6.03	0.40	2.890	A	A
A4119 W	1	2	5.34	0.36	2.712	A	A
A4119 W	2	2	0.47	0.03	0.115	A	A

Queueing Delay results: (17:45-18:00)

Name	Lane Level	Lane	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Sterling Drive	**1**	**1**	0.23	0.02	0.714	A	A
Heol-Y-Sarn	**1**	**1**	4.96	0.33	3.982	A	A
Heol-Y-Sarn	**1**	**2**	1.52	0.10	2.483	A	A
Heol-Y-Sarn	**1**	**3**	0.01	0.00	1.218	A	A
Heol-Y-Sarn	**2**	**1**	0.52	0.03	0.271	A	A
A4119 S	**1**	**2**	24.51	1.63	7.518	A	A
A4119 S	**1**	**3**	27.09	1.81	7.931	A	A
A4119 S	**2**	**1**	331.50	22.10	43.815	E	D
Site Access	**1**	**1**	5.06	0.34	5.141	A	A
A4119 W	**1**	**1**	3.87	0.26	2.175	A	A
A4119 W	**1**	**2**	3.32	0.22	1.988	A	A
A4119 W	**2**	**2**	0.11	0.01	0.032	A	A

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