



Response to Technical Note 5 (Update)

**Brook Green
Land at Fritch Way, Rayne
January 2017**

**Response to Technical Note 05 (Update) – Brook Green
January 2017**



Quality Assurance

Site name: Land at Fitch Way, Rayne

Client name: Acorn Property Group

Type of report: Technical Note Response

Prepared and Reviewed by: [REDACTED]

Signed [REDACTED]

Date January 2017



Table of Contents

1	INTRODUCTION	1
	Brief	1
	Background	1
2	TRIP GENERATION	1
3	JUNCTION DESIGN	2
4	CAPACITY ANALYSIS	3
	Assessment of Traffic Impact	3
5	HIGHWAY WORKS TRIGGERS	8
6	PUBLIC TRANSPORT PROVISION	10

Appendices

Appendix 1	Network Flow Diagrams
Appendix 2	A120 North Roundabout Scheme
Appendix 3	Proposed Access Roundabout
Appendix 4	Proposed Springwood Drive Modifications
Appendix 5	Rayne Road Priority Junction
Appendix 6	A120 North Roundabout Existing Layout ARCADY
Appendix 7	A120 North Roundabout Proposed Layout ARCADY
Appendix 8	Springwood Drive Existing Layout ARCADY
Appendix 9	Springwood Drive Proposed Layout ARCADY
Appendix 10	Site Access Roundabout ARCADY
Appendix 11	200 Units Network Flows
Appendix 12	400 Units Network Flows



1 INTRODUCTION

Brief

- 1.1 This report has been undertaken by way of a response to the matters raised by Highways England (HE) via their consultants, AECOM relating to Technical Note 5 and also seeks to address the concerns raised by Essex County Council in their response as Highway Authority in respect of the submitted Transport Assessment and Travel Plan supporting planning application 15/01538/OUT - Brook Green, Braintree. This update reflects comments on the proposed improvement geometry and contains updated capacity assessments reflecting the changes made.

Background

- 1.2 Specifically this report responds to each of the matters raised in the order presented in the Highways England Technical Note 5 and the matters raised by ECC and provides clarification or re-assessment as necessary. This report takes into consideration the matters discussed in the technical meeting held 12th December.

2 Trip Generation

- 2.1 Following a request from the Highway Authority, the trip rates for the Broomhills industrial estate have been revised to conform to those utilised by the Panfield Lane development assessment and the network flows input to the capacity assessment have been revised to reflect this change.
- 2.2 The trip rates and resulting vehicular trip generation has been used based on a gross floor space of 11,387sqm as set out in **Table 2.1** below.

Table 2.1 Broomhills Industrial Estate

	AM Peak		PM Peak	
	Arrivals	Departures	Arrivals	Departures
Ind Est Rate per 100m ²	0.69	0.35	0.16	0.55
Trips per 11,387m ²	78	40	18	63

- 2.3 The network flows have been updated to reflect this adjustment and the network flow diagrams are held in **Appendix 1**.



3 Junction Design

3.1 In view of the range of comments received relating to the proposed highway modifications a full review of the proposed modifications has been undertaken on the following junctions and links:

- A120 North Roundabout
- Pod's Brook Road between the proposed site access and the A120 North Roundabout
- The Proposed Brook Green Access Roundabout
- Springwood Drive
- Rayne Road Access
- Aetheric Road Signals

3.2 Each of the junctions have been re-assessed as follows:

A120 North Roundabout

3.3 In consideration of the design audit comments the segregated left turn lane has been redesigned to comply where possible with the relevant design standards as noted from the audit.

3.4 The principle improvements to the design are as follows:

- The segregated left turn is provided at a constant width throughout the lane in accordance with the entry radius value
- The circulatory carriageway width on the roundabout is constant
- The Entry and Exit Taper lengths have been amended to comply with standard
- The lane width at the start of the entry taper has been reduced to 3.5m
- The visibility envelope along the lane has been improved to accommodate 90.0m forward visibility along the slip road approach
- The Pods Brook road exit width has been modified to comply with standard
- The entry width has been reduced to provide a DMRB compliant entry width and also
- The splitter island on the Pods Brook Road exit has been modified to provide improved exit width
- The gradient of the A120 EB slip road approach has been assessed on site and is confirmed at less than 4%

3.5 The proposed modified A120 north roundabout layout is held in **Appendix 2**.

Pods Brook Road Link

- Total road width has been amended to provide 4 lanes at 3.50m wide



Brook Green Access Roundabout

- The roundabout design has been amended to accommodate the additional northbound lane with additional entry width being provided at the Pod's Brook Road north bound entry.
- Additional exit width is provided at the Pod's Brook Road northbound exit to accommodate the two lane approach

3.6 The proposed Access Roundabout layout is held in **Appendix 3**.

Springwood Drive Roundabout

- The modifications associated with the Panfield Lane development proposals have been incorporated into the design with some additional widening to the Springwood Drive approach.

3.7 The proposed Springwood Drive roundabout modifications are held in **Appendix 4**.

Rayne Road Right Turn Lane

- The right turn lane has been annotated to indicate the positioning of the relocated bus stop

3.8 The modified layout is held in **Appendix 5**.

Aetheric Road Signals

- The proposed modifications incorporate repositioned stop-lines and pedestrian crossing point on the Pierrefitte Way approach allowing for increased stacking availability and will not compromise the proposed improvements associated with nearby town centre developments and can be implemented in isolation or alongside.

4 Capacity Analysis

Assessment of Traffic Impact

4.1 The capacity assessments for the following junctions have been reviewed following design modifications referred to above and to take into consideration the various comments relating to methodology and measurements.

- A120 /A131 North Roundabout
- Pods Brook Road Roundabout
- Springwood Drive Roundabout
- Aetheric Way Signal Junction



- 4.2 The Junctions 9 ARCADY capacity assessments set out the maximum Ratio of Flow to Capacity (RFC) and Maximum Queue (vehicles) for each arm of the junction. Generally where the RFC of an arm is greater than 1.0 then the arm is said to be operating at over its theoretical capacity and would be expected to suffer levels of queuing and delay. An arm with an RFC of between 0.85 and 1.0 is considered to be approaching its practical capacity and some queuing and delay may be expected to occur.

A120 North Roundabout Junction Assessment

- 4.3 The existing roundabout layout has been modelled with the revised traffic flows as set out in section 2.
- 4.4 As previously, capacity intercept correction factors have been applied separately to the AM and PM peak existing layout assessments separately in order to replicate the observed queuing on the A120 Exit of the roundabout.
- 4.5 A detailed assessment of the operation of the A120 northern roundabout with the correction factor applied has been undertaken and is considered in **Table 4.1** below.

Table 4.1 A120 North Roundabout Existing Layout ARCADY Summary

		Pods Brook Rd		A131 Under bridge		A120 Entry	
		RFC	Q	RFC	Q	RFC	Q
AM	2015 Base Flows	0.47	0.9	0.42	0.8	1.08	29.9
PM	2015 Base Flows	0.76	3.2	0.28	0.40	0.92	9.6
AM	2033 Committed	0.65	1.9	0.54	1.2	1.99	224.1
PM	2033 Committed	1.05	40.3	0.37	0.6	1.29	192.4
AM	2033 Total Flows	1.01	33.1	0.60	1.6	3.07	410.7
PM	2033 Total Flows	1.16	111.9	0.51	1.1	1.71	522.5

- 4.6 The Junctions 9 ARCADY assessment with the capacity adjustment summary illustrated in **Table 4.1** identifies that the junction will operate beyond its operational capacity junction in the base year 2015 with queuing predicted in on the A120 entry in the AM and PM peak periods. With the committed development in 2033 the RFC on Pods Brook Road exceeds 1.0 with a level of related queuing and delay and further queuing is predicted on the A120 arm. With the addition of the Brook Green site development flows RFCs are identified to approach and exceed 1.00 in both the AM and PM peak on Pods Brook Road and the A120 Arm with a significant level of queuing estimated.
- 4.7 The full Junctions 9 ARCADY outputs are contained in **Appendix 6**.



Proposed Modified A120 North Roundabout Junction Assessment

- 4.8 In view of the predicted queuing and delay at the roundabout, modifications to the existing layout of the roundabout is proposed with an additional lane into the roundabout from the Pods Brook Road approach and in addition, a segregated dedicated left turn slip from the A120 entry into Pods Brook Road is also proposed.
- 4.9 A detailed assessment of the operation of the modified A120 northern roundabout has been undertaken and is considered in **Table 4.2** below.

Table 4.2 Modified A120 North Roundabout ARCADY Summary

		Pods Brook Rd		A131 Under bridge		A120 Entry	
		RFC	Q	RFC	Q	RFC	Q
AM	2015 Base Flows	0.38	0.60	0.42	0.8	0.67	2.2
PM	2015 Base Flows	0.55	1.2	0.27	0.4	0.71	2.5
AM	2033 Committed	0.55	1.3	0.54	1.2	1.22	37.7
PM	2033 Committed	0.83	4.7	0.36	0.6	0.97	17.1
AM	2033 Total Flows	0.84	5.4	0.60	1.6	1.72	79.2
PM	2033 Total Flows	0.96	15.7	0.49	1.0	1.15	84

- 4.10 The Junctions 9 ARCADY assessment illustrated in **Table 4.2** identifies that the junction will operate within the operational capacity of the junction for the base year 2015. With the committed development and Brook Green Development traffic in 2033 the roundabout will to operate in excess of capacity.
- 4.11 Whilst the addition of development traffic in the design year will result in RFCs in excess of 1.0 on both Pods Brook Road approach and the A120 off slip, the ARCADY assessment indicates that the modified junction will operate in overall terms and on all arms significantly better with the development than the existing arrangement would in the design year with the committed and allocated traffic and as such represents a significant improvement.
- 4.12 In addition, the introduction of the proposed Travel Plan mitigation measures will further reduce queuing and delay at the junction in the 2033 opening year.
- 4.13 The full Junctions 9 ARCADY outputs are contained in **Appendix 7**.



Springwood Drive Roundabout Existing Layout Junction Assessment

- 4.14 The existing layout Springwood Drive roundabout capacity assessment has been re-run to include the amended traffic associated with the Broomhills Industrial estate.
- 4.15 An ARCADY capacity assessment has been undertaken and the results are summarised in **Table 4.3** below.

Table 4.3 Springwood Drive Existing Layout ARCADY Summary

		Springwood Drive		Rayne Road E		Pods Brook Rd		Rayne Rd W	
		RFC	Q	RFC	Q	RFC	Q	RFC	Q
AM	2015 Base Flows	0.24	0.4	0.72	2.6	1.08	47.1	0.46	0.9
PM	2015 Base Flows	0.78	3.5	0.45	0.8	0.69	2.2	0.24	0.3
AM	2033 Committed	0.52	1.2	0.82	4.5	1.39	218.0	0.55	1.2
PM	2033 Committed	1.06	37.8	0.58	1.4	1.00	23.6	0.38	0.6
AM	2033 Total Flows	0.64	2.0	1.00	22.2	1.67	478.8	0.75	3.0
PM	2033 Total Flows	1.16	79.5	0.68	2.2	1.23	125.1	0.48	0.9

- 4.16 The Junctions 9 ARCADY assessment illustrated in **Table 4.3** identifies that the junction will operate within the operational capacity of the junction for the base year 2015. With the committed development in 2033 the RFC on the both Pods Brook Road and Springwood Drive exceeds the 0.85 threshold resulting in significant queuing and delay.
- 4.17 With the development flows the junction will operate significantly in excess of capacity with significant queuing and delay predicted.
- 4.18 In consideration of the above assessment the development proposal will have a detrimental impact on the operation of the junction and as such specific mitigation is be required
- 4.19 The full Junctions 9 ARCADY outputs are contained in **Appendix 9**.

Springwood Drive Roundabout Modified Layout Junction Assessment

- 4.20 In consideration of the above, a capacity assessment has been undertaken on the proposed modified Springwood Drive roundabout as illustrated in **Appendix 4**.
- 4.21 The existing capacity assessment has been re-run and includes the amended traffic flows associated with the Broomhills Industrial estate.
- 4.22 The results of the assessment are summarised in **Table 4.4** below.



Table 4.4 Springwood Drive Modified Layout ARCADY Summary

		Springwood Drive		Rayne Road E		Pods Brook Rd		Rayne Rd W	
		RFC	Q	RFC	Q	RFC	Q	RFC	Q
AM	2015 Base Flows	0.20	0.3	0.63	1.7	0.51	1.1	0.38	0.6
PM	2015 Base Flows	0.62	1.7	0.39	0.7	0.34	0.5	0.2	0.2
AM	2033 Committed	0.44	0.9	0.71	2.5	0.65	2.0	0.54	1.2
PM	2033 Committed	0.84	5.2	0.51	1.0	0.49	1.0	0.31	0.5
AM	2033 Total Flows	0.55	1.4	0.84	4.9	0.77	3.5	0.82	4.2
PM	2033 Total Flows	0.98	18.3	0.62	1.6	0.60	1.5	0.42	0.8

- 4.23 The Junctions 9 ARCADY assessment summarised in **Table 4.4** identifies that the improved junction will operate within the operational capacity of the junction for the base year 2015. With the committed development in 2033 the junction will continue to operate within capacity.
- 4.24 With the development flows the junction will operate marginally in excess of capacity with some queuing and delay predicted on Rayne Road East and Springwood Drive. Notwithstanding the development year queuing, the improved junction will operate significantly better than could be expected without the development traffic and the proposed modifications in 2033.
- 4.25 In consideration of the above the proposed scheme provides appropriate mitigation and can satisfactorily accommodate the additional traffic associated with the development.
- 4.26 The full Junctions 9 ARCADY outputs are contained in **Appendix 9**.

Brook Green Access Roundabout Junction Assessment

- 4.27 The capacity assessment for the proposed access roundabout on Pods Brook Road has been re-run to take into consideration the various modifications as illustrated in amended layout held in **Appendix 3**.
- 4.28 The results of the assessment are summarised in **Table 4.5** below.

Table 4.5 Pods Brook Road Access Roundabout ARCADY Summary

		Pods Brook Rd N		Pods Brook Rd S		Site Access	
		RFC	Q	RFC	Q	RFC	Q
AM	2033 Total Flows	0.85	5.8	0.81	4.4	0.79	3.5
PM	2033 Total Flows	0.79	3.8	0.67	2.1	0.31	0.5



- 4.29 The Junctions 9 ARCADY assessment summarised in **Table 4.5** identifies that the proposed junction will operate within capacity for the design year with the full development.
- 4.30 The full Junctions 9 ARCADY outputs are contained in **Appendix 10**.

Aetheric Road Junction

- 4.31 The comments made with respect to the capacity and proposed improvements for the Aetheric Road/Pierrefitte Way signal junction are considered in this section.
- 4.32 The comments set out that the queuing is potentially underestimated due to the provision allowed for non-blocking right turners on the Rayne Road approaches.
- 4.33 It is agreed that this allowance should not be available and as such right turners will block ahead movements and result in an over estimation of capacity.
- 4.34 Notwithstanding, the allowance was provided for all scenarios for both the existing and modified junction layouts and as such the results, whilst not fully representative of the situation on the ground demonstrate the comparative differences between scenarios and layouts.
- 4.35 In view of this, the assessment carried out demonstrates that with the development flows and the proposed layout, the junction will operate at a better level than it would without the development and the proposed modifications.
- 4.36 In any event, as outlined during meetings with Highways England and Essex County Council, the proposed improvements to the A120 will have the impact of reducing traffic travelling through Braintree Town Centre and as such will improve the operation of that Pierrefitte Way junction. Whilst there is no specific evidence to support the transfer of traffic, it is recognised that such a transfer is very likely to take place.
- 4.37 In view of the developer commitment to fund the proposed A120 works, the development provides for an effective mitigation of the development traffic impacts on the town centre junction.

5 Highway Works Triggers

- 5.1 Given the likely development phasing, the level of development that could be released prior to the Highways England A120 Freeport Slips and other highway works has been investigated.
- 5.2 Both the Springwood Drive Roundabout and the A120 North Roundabout are operating at or above capacity, and as such any additional development is likely to have a detrimental impact on their operation and as such some improvement may be required.



- 5.3 The potential to promote a reduced level of highway improvements to accommodate the traffic associated with phased development scenarios with 200 off the Rayne Road access has been investigated. The network flows assuming 200 units are held in **Appendix 11**.
- 5.4 It is assumed that a 2020 would represent suitable opening year for an initial phase of 200 units and as such has been used in this assessment.
- 5.5 Table 5.1 below provides a summary of the ARCADY assessment assuming 200 residential units in 2020 off Rayne Road.

Table 5.1 Springwood Drive Existing Layout ARCADY Summary 200 Units

		Springwood Drive		Rayne Road E		Pods Brook Rd		Rayne Rd W	
		RFC	Q	RFC	Q	RFC	Q	RFC	Q
AM	2020 200 Units	0.50	1.1	0.71	2.5	1.2	104	0.57	1.4
PM	2020 200 units	0.85	5.5	0.49	1.0	0.92	10.0	0.34	0.5

- 5.6 ARCADY analyses undertaken on the Springwood Drive Roundabout assuming 200 units, indicate that 200 units would significantly increase queuing and delay at the junction which could have an impact on the downstream A120 junction. Given that the length of Pods Brook Road is around 850m between the Springwood Drive Roundabout and the A120 North Roundabout, the predicted queue of 104 vehicles is likely to extend nearly as far as A120 junction. In view of this it is considered that some mitigation would be required to accommodate an initial phase of 200 units at Rayne Road.
- 5.7 The proposed Springwood Drive roundabout improvement works as illustrated in **Appendix 4** would clearly accommodate the traffic associated with a 200 unit phase and given that it would not be practical to implement the improvement works as proposed for the whole development to the Springwood Drive Roundabout as a partial scheme the developer would provide the full improvements for the initial 200 unit phase.
- 5.8 The impact of a 200 unit phase in 2020 has also been assessed in the context of the operation of the A120 north roundabout junction.
- 5.9 **Table 5.2** below provides a summary of the ARCADY assessment of the A120 North Roundabout assuming 200 residential units off Rayne Road

Table 5.2 A120 North Roundabout Existing Layout ARCADY Summary 200 Units

		Pods Brook Rd		A131 Under bridge		A120 Entry	
		RFC	Q	RFC	Q	RFC	Q
AM	2020 200 Units	0.63	1.8	0.48	1.0	1.35	88.5
PM	2020 200 Units	0.94	11.2	0.34	0.5	1.04	44.4



- 5.10 The ARCADY assessment indicates that the addition of the traffic generated by an initial phase of 200 units would result in increased queuing at the junction and specifically on the A120 slip road.
- 5.11 Whilst this phase would lead to an increase in queuing on this arm, the length of the slip road can accommodate estimated queue and as such up to 200 units would be acceptable prior to the improvements detailed in Appendix 2 being required.

Highways England A120 Freeport Improvements

- 5.12 This section provides an assessment of the development impact on the A120 Galleys Corner roundabout and specifically when the Highways England planned improvements could be triggered by the development.
- 5.13 Following an iterative development appraisal, the trip generation associated with 400 units in 2022 has been considered as representing the point beyond which the development is likely to trigger improvements on the A120.
- 5.14 A phase of 400 units utilising the agreed trip generation and distribution and would amount to the following impact on the A120 at Galleys Corner:
- AM peak 34 eastbound trips and 13 westbound trips
 - PM peak 17 Eastbound trips and 31 westbound trips
- 5.15 The traffic flow diagrams held in **Appendix 12** summarise the flows associated with 400 units at Rayne Road assuming a design year of 2022.
- 5.16 The level of trips generated by 400 units as set out above would be likely to be lower than the daily traffic flow variation at the junction and the A120 and would not have a material impact on the operation of the junction or the A120.
- 5.17 Given the foregoing it is considered that it would not be reasonable to trigger the A120/Freeport slips improvements prior to the occupation of the initial 400 unit phase.

6 Public Transport Provision

- 6.1 In terms of bus usage the TRICS trip generation database has been interrogated to consider the level of demand that would be generated from 1600 dwellings and whether such a development could commercially support a viable bus service following a period of initial development led financial support.
- 6.2 TRICS indicates that the development would generate the following demand as set out in Table 61.



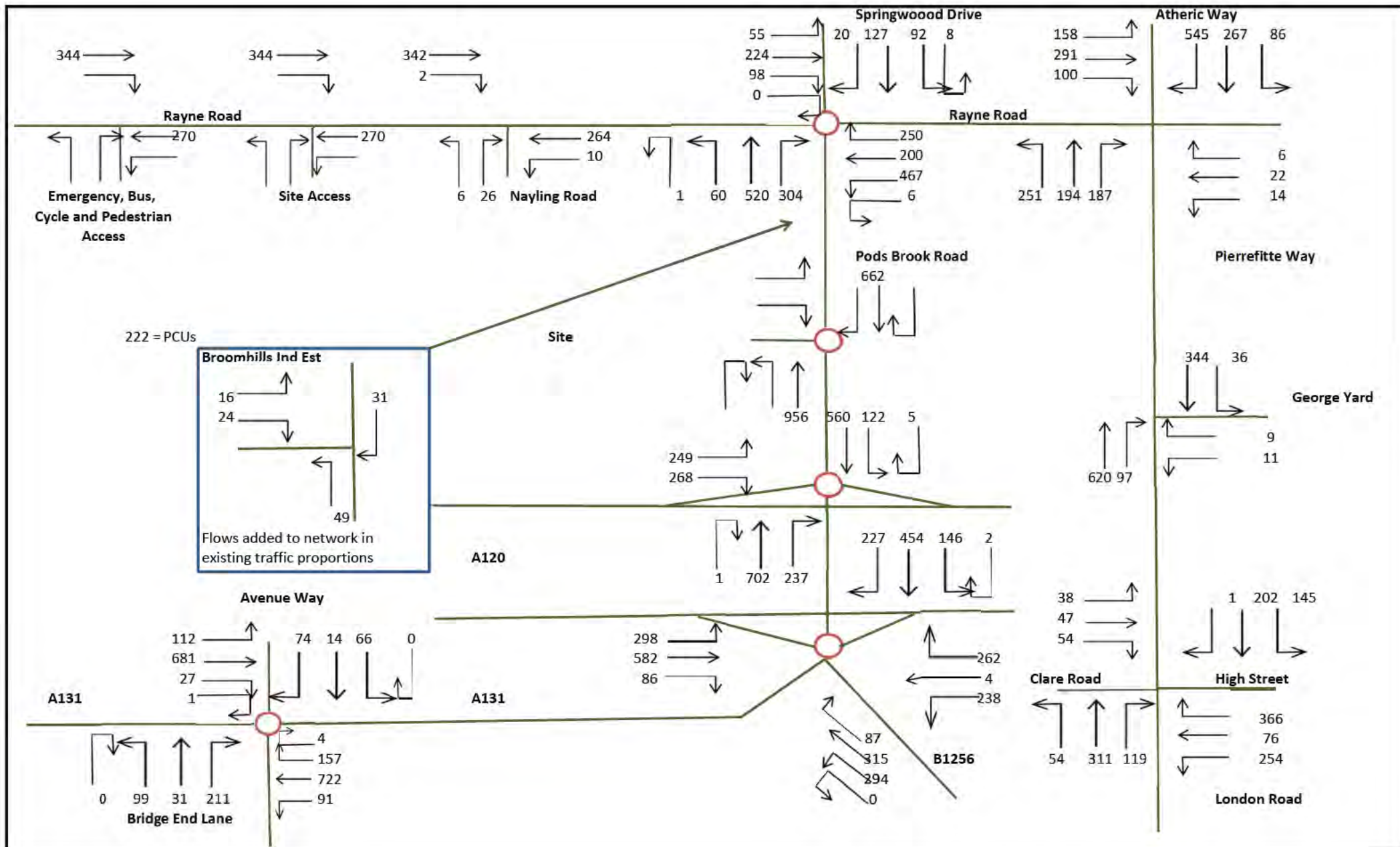
Table 6.1 Brook Green Public Transport Use Demand

	AM Peak		PM Peak		Daily Trips	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Trips per unit	0.002	0.008	0.008	0.002	0.048	0.043
Trips per 1600	4	13	13	4	78	69

- 6.3 Cleary, based solely on the level of demand set out above, the viability of a dedicated bus service would be questionable and would require significant support from the outset, however the existing public transport usage also needs to be considered and given the level of existing and forecast development in the corridor, the use of an improved service as proposed would be significantly greater than indicated by the development alone.
- 6.4 In addition over the life of the development there will be an increase in public transport usage associated with organic and developer led growth.
- 6.5 It is noted that there are limited opportunities to promote a fast service into Braintree town centre due to constraints imposed by the built environment restricting the potential to provide deliverable improvements to services.
- 6.6 Notwithstanding, improvements to public transport need to be delivered as a part of a wider travel strategy for Braintree which could include reducing the attractiveness of sole use car journeys into the town centre through tighter car parking controls with increased charges and reduced long stay availability, this, coupled with reductions in bus travel costs and improved service levels funded through the development could help to promote a long term change in travel behaviour sufficient to ensure a sustainable bus service between the site and the town centre.
- 6.7 In any event the developer has committed to funding a bus service to serve the development and as such is seeking to ensure that the proposed development is as sustainable as it can be in accordance with the aims and objectives of the NPPF and as such the proposal is considered compliant with policy insofar as it will provide the opportunity for residents to access the site via bus based public transport.

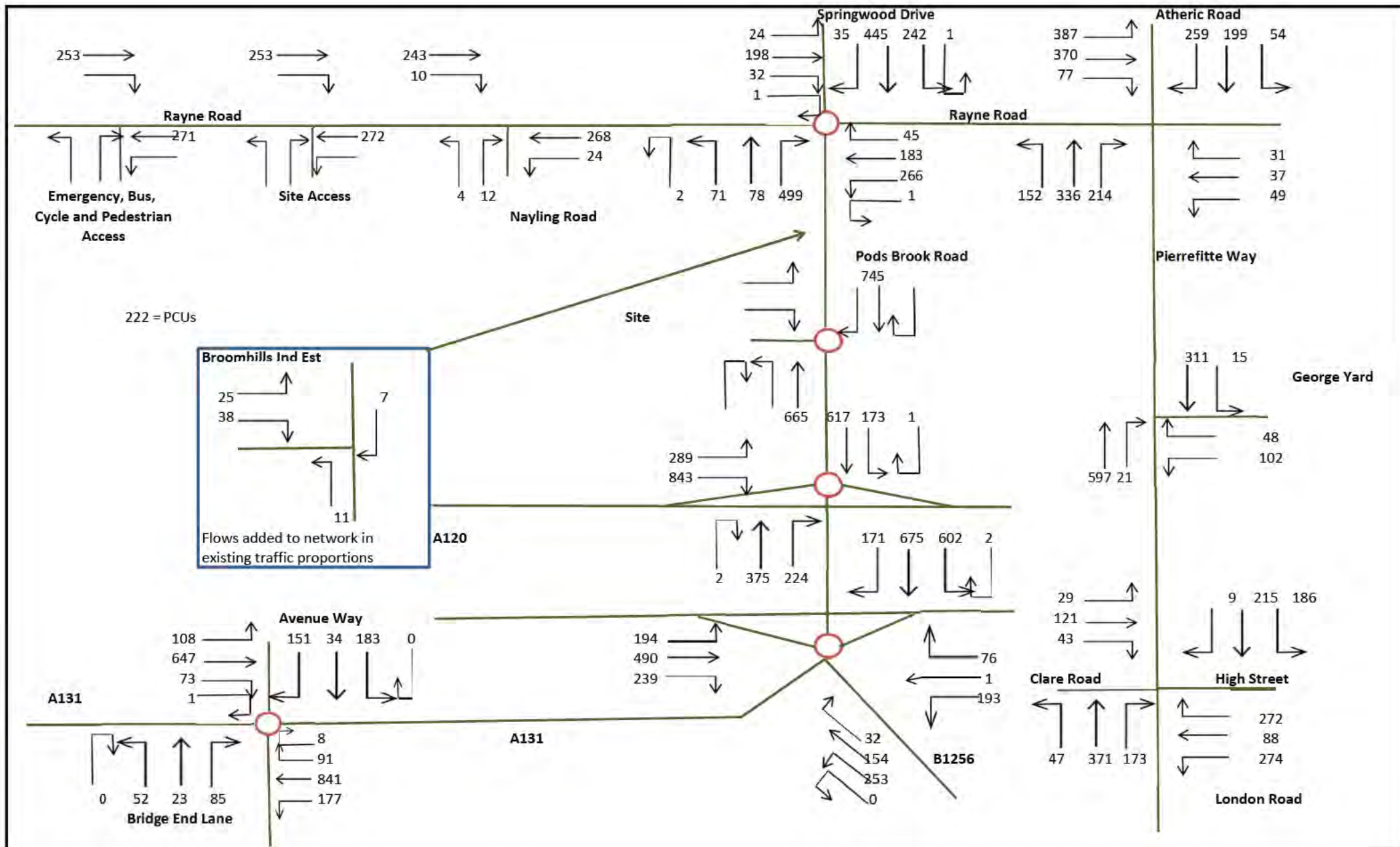


Appendix 1
Network Flow Diagrams



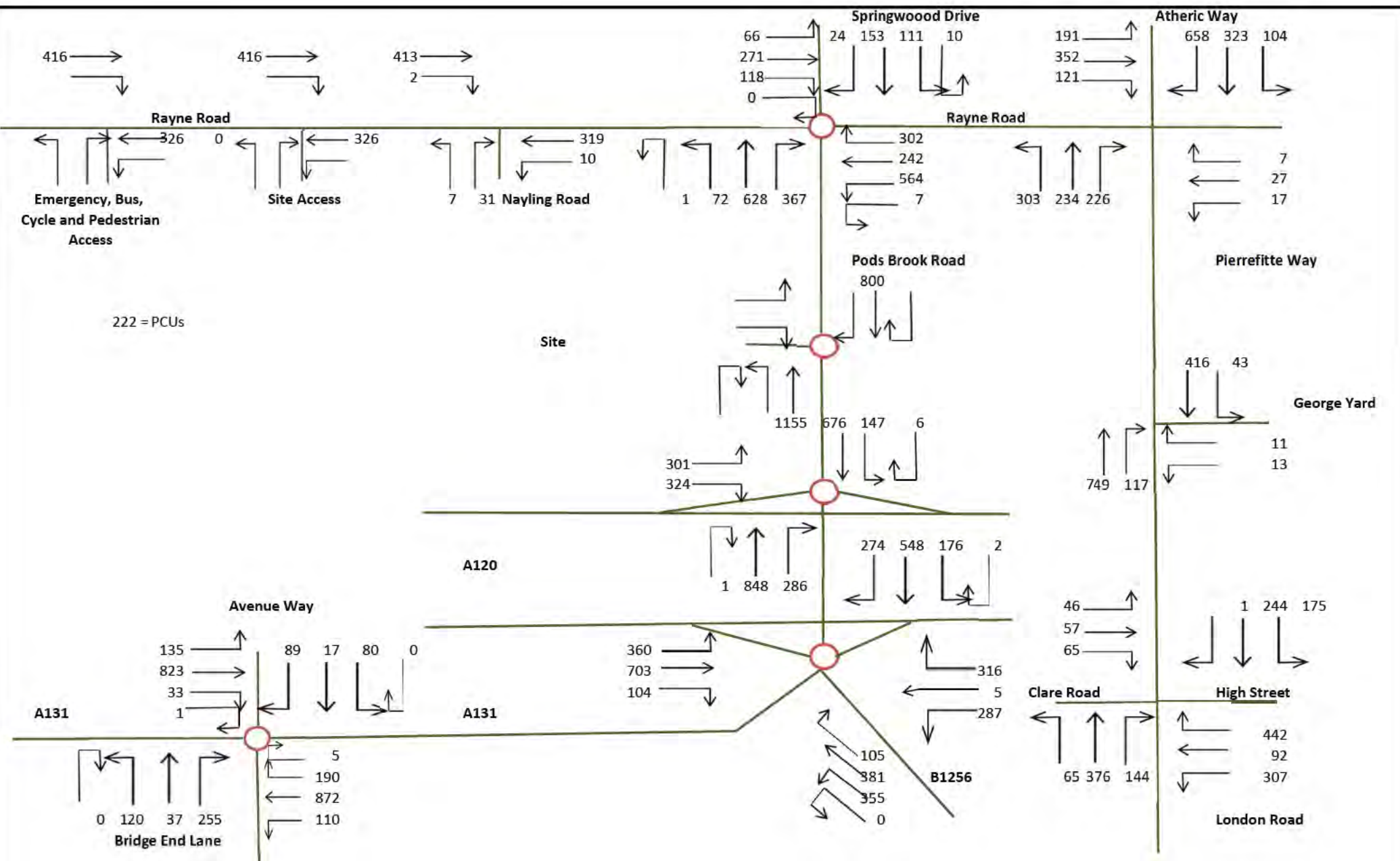
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		Date	25/05/2015
		Ref	Figure 1
Project Title	Brook Green		



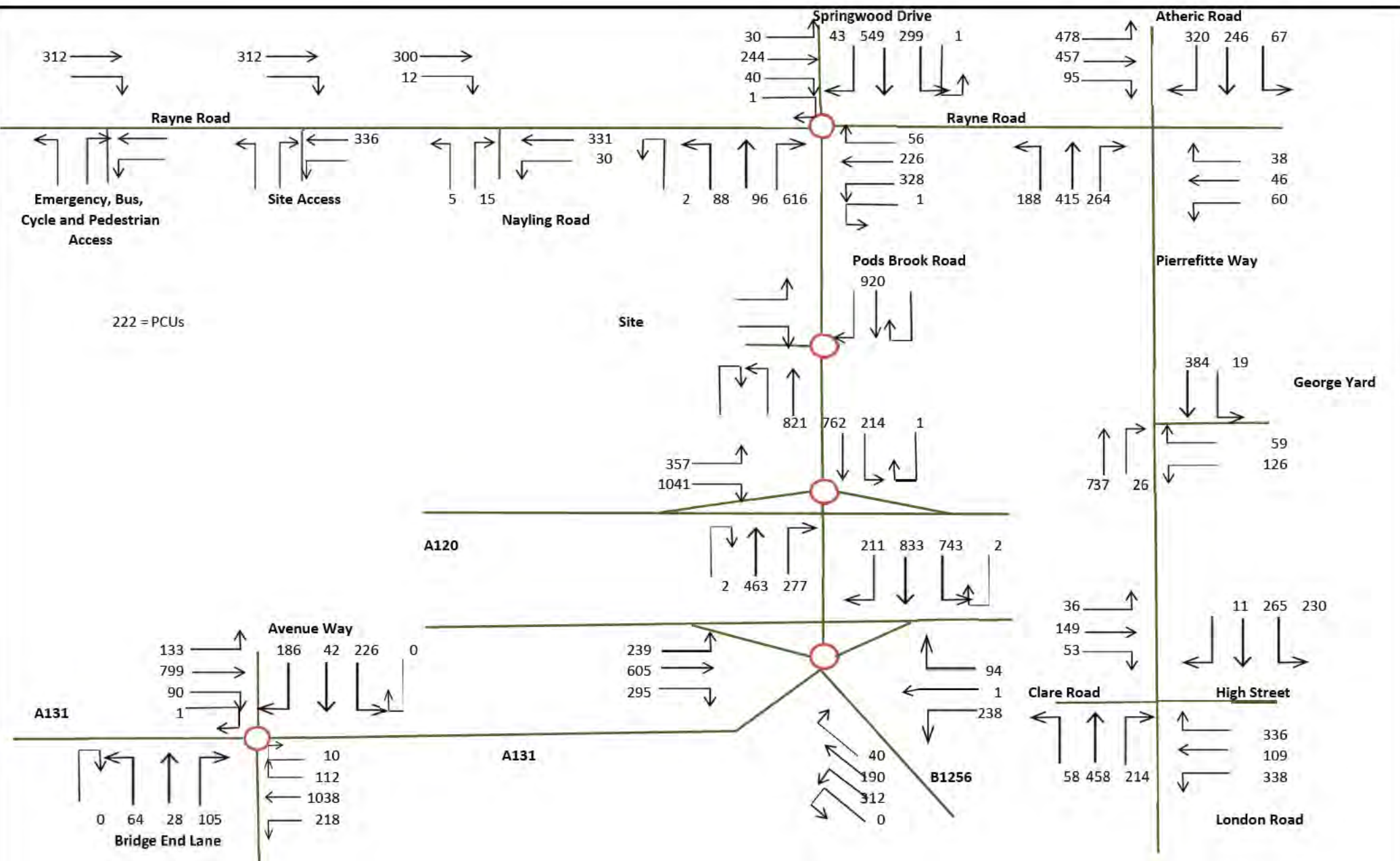


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		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 2



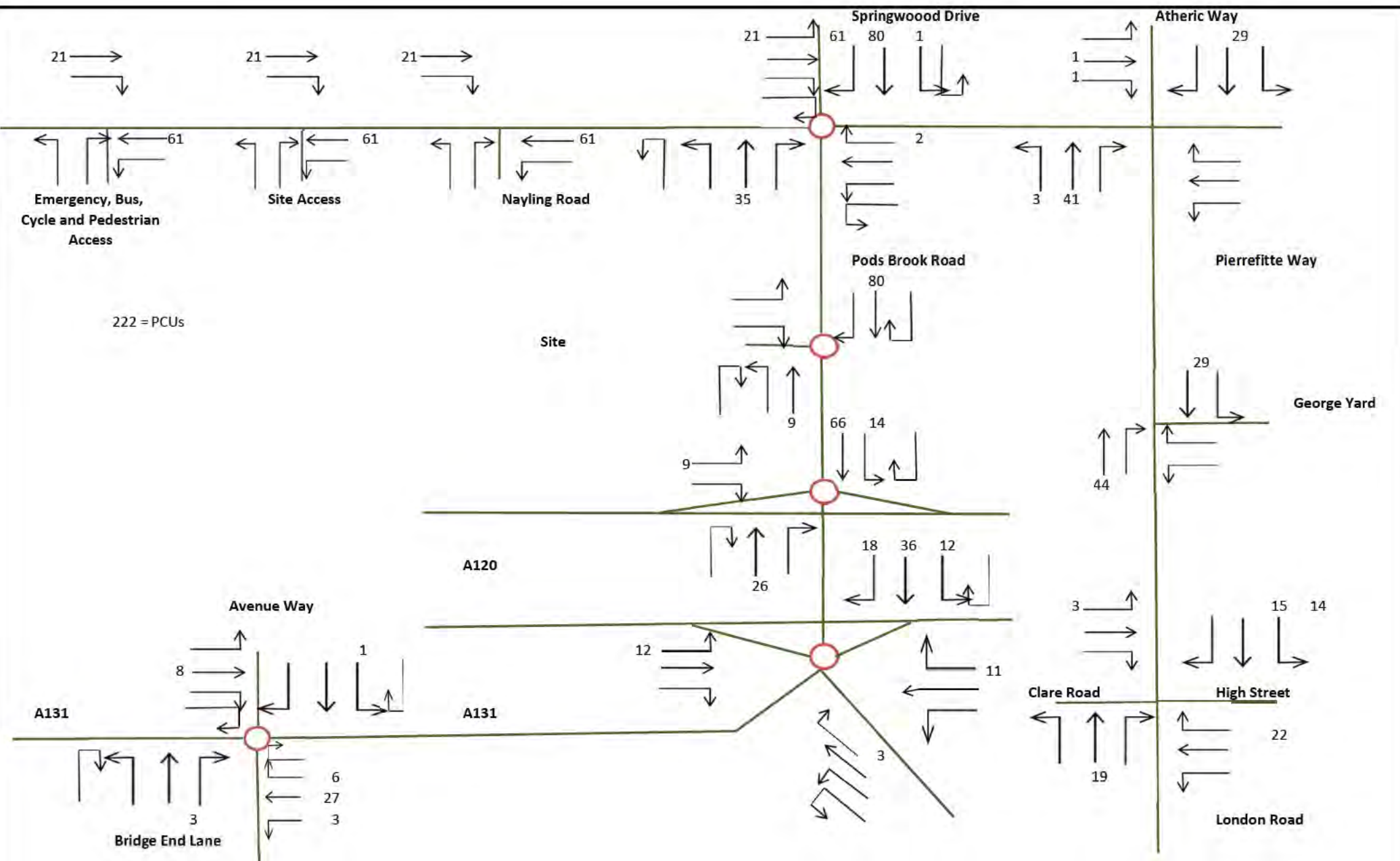


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		Date	25/05/2015
		Ref	Figure 3
Project Title	Brook Green		

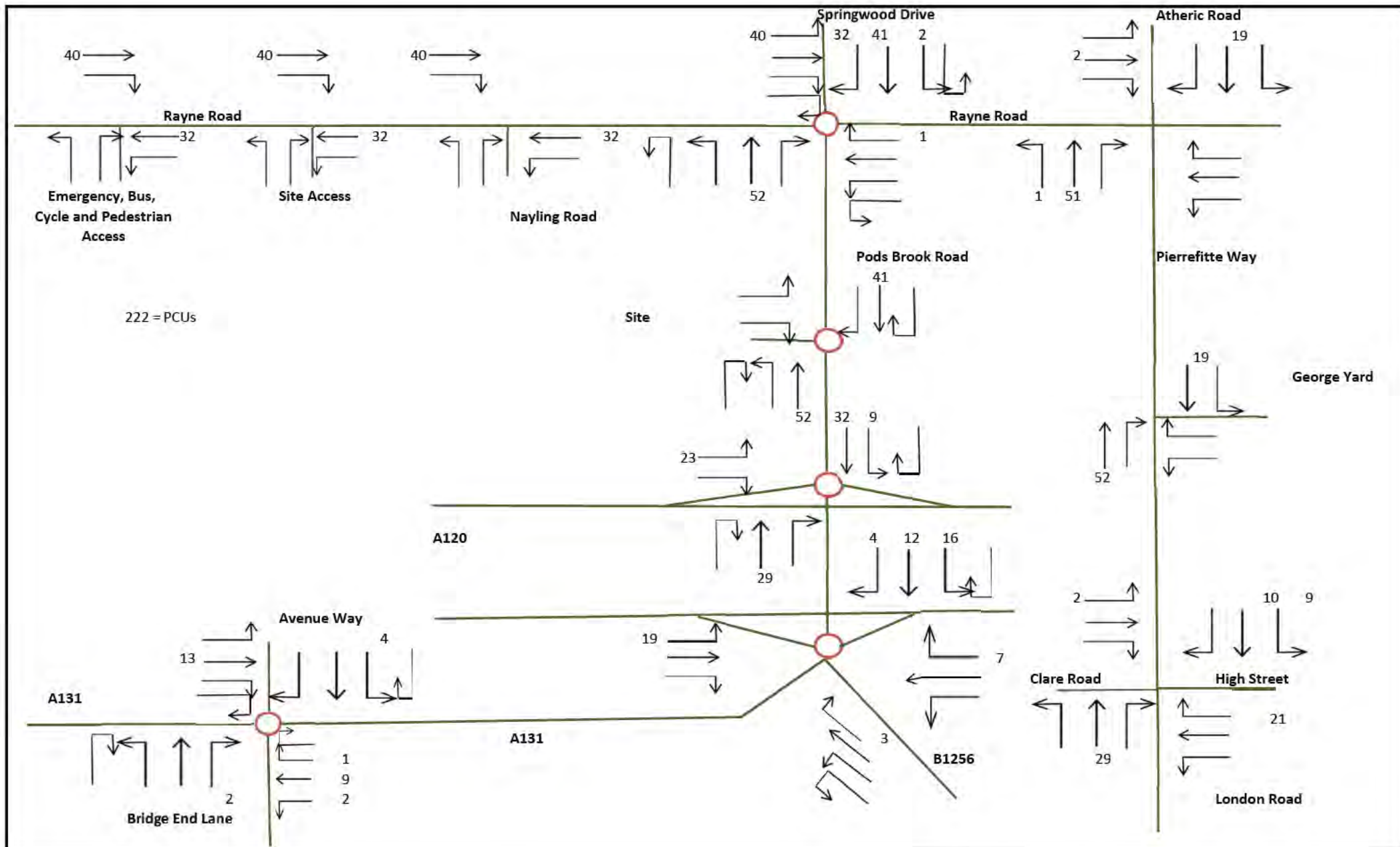


Drawing Title	PM Peak 17:00-18:00 2033 Forecast Flows Braintree	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 4
Project Title	Brook Green		

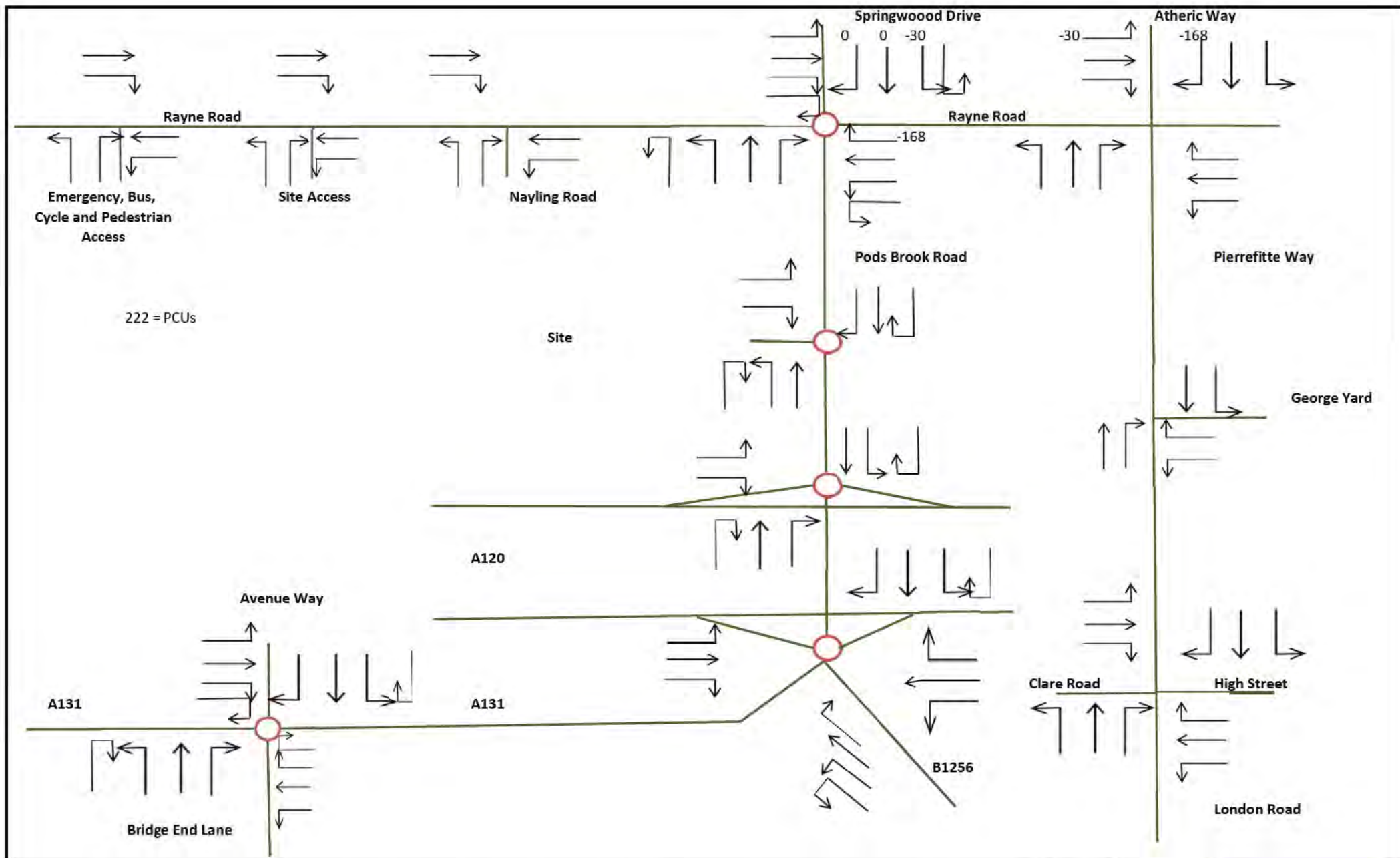




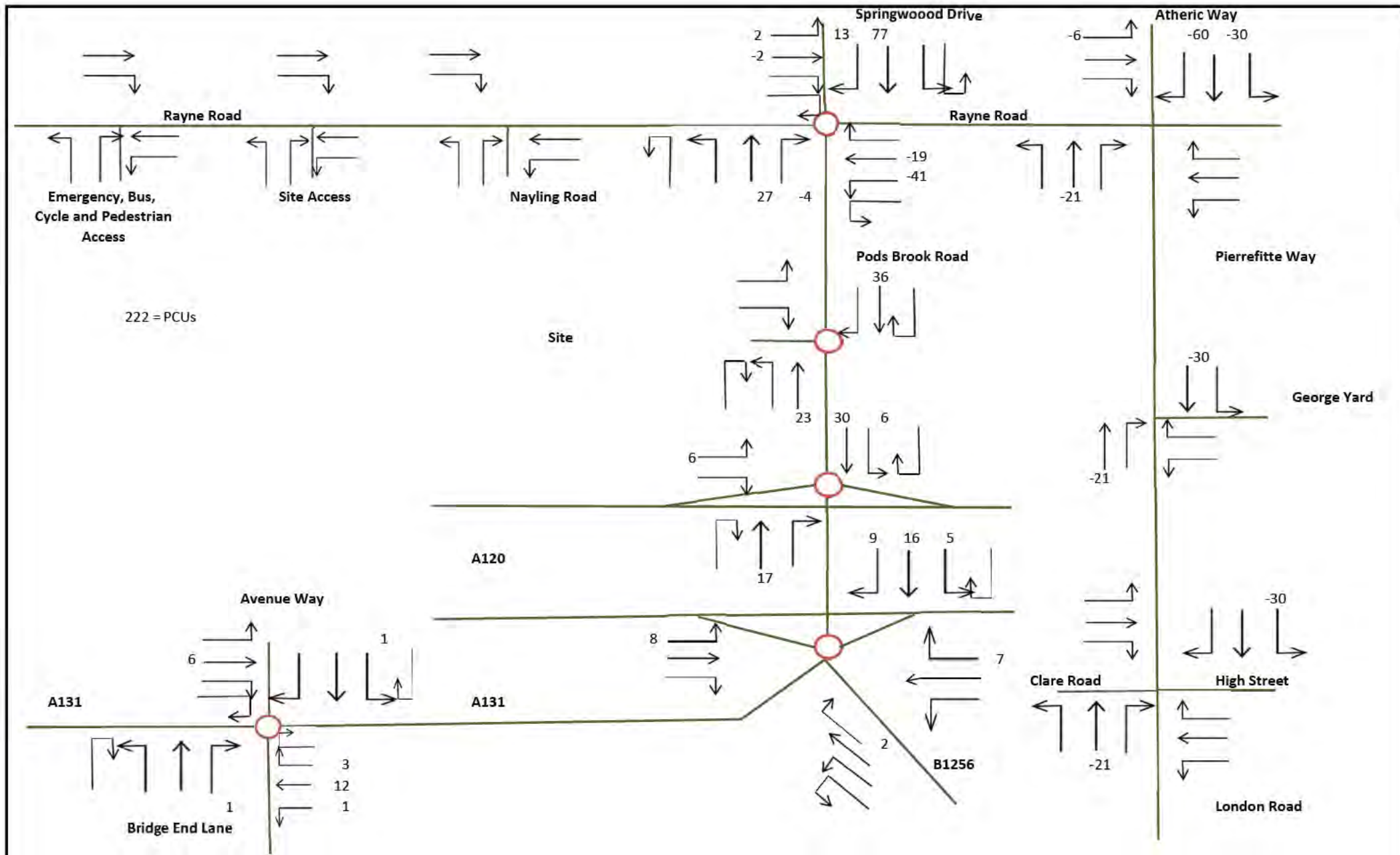
Drawing Title	AM Peak 08:00-09:00 Committed Development Flows Braintree	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 5
Project Title	Brook Green		



Drawing Title	PM Peak 17:00-18:00 Committed Development Flows Braintree	Drawn	SAA	
		Date	25/05/2015	
		Ref	Figure 6	
Project Title	Brook Green			




Drawing Title	AM Peak 08:00-09:00 Existing Springwood Drive Employment Re-Assigned Traffic Braintree	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 7
Project Title	Brook Green		

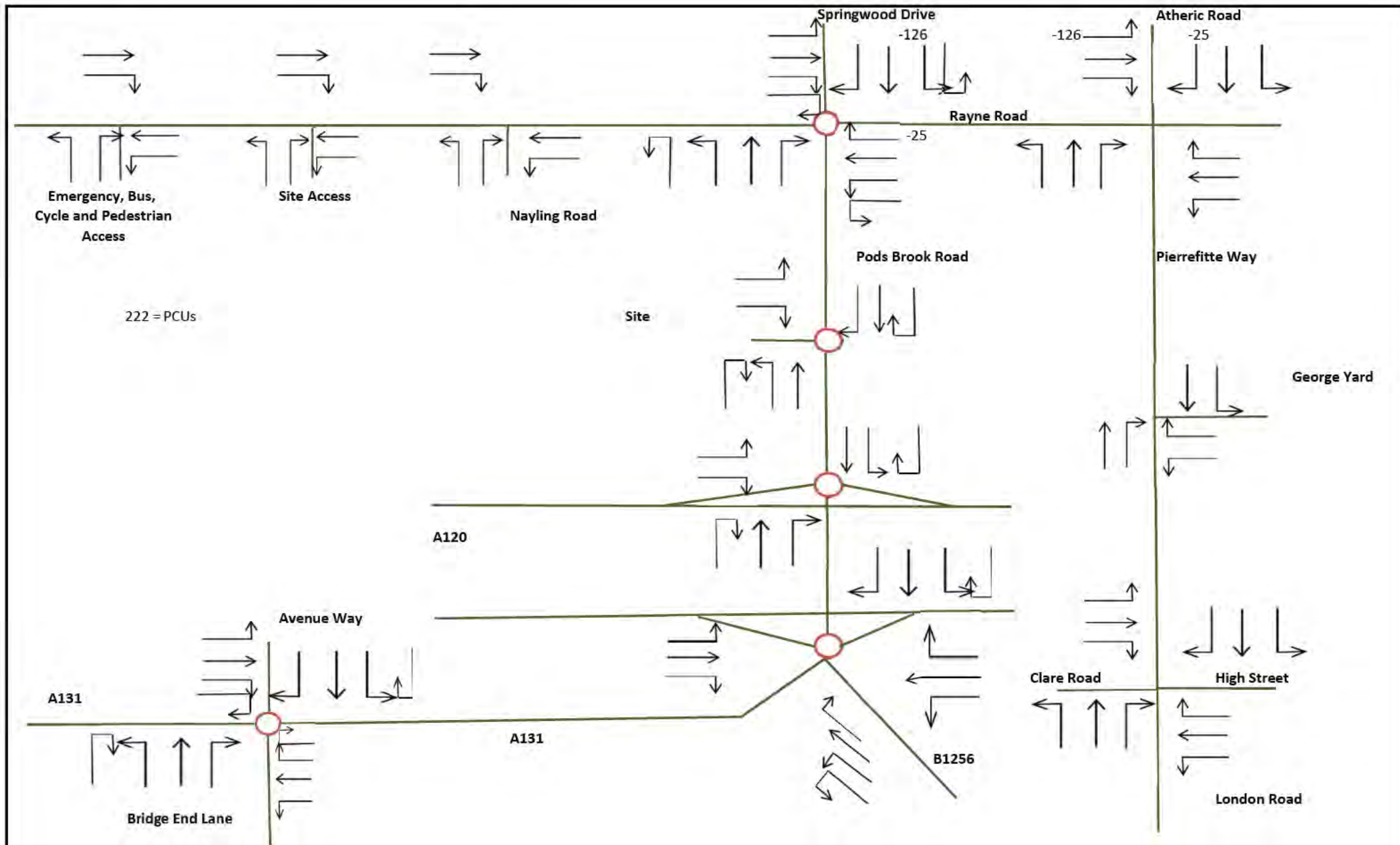


222 = PCUs

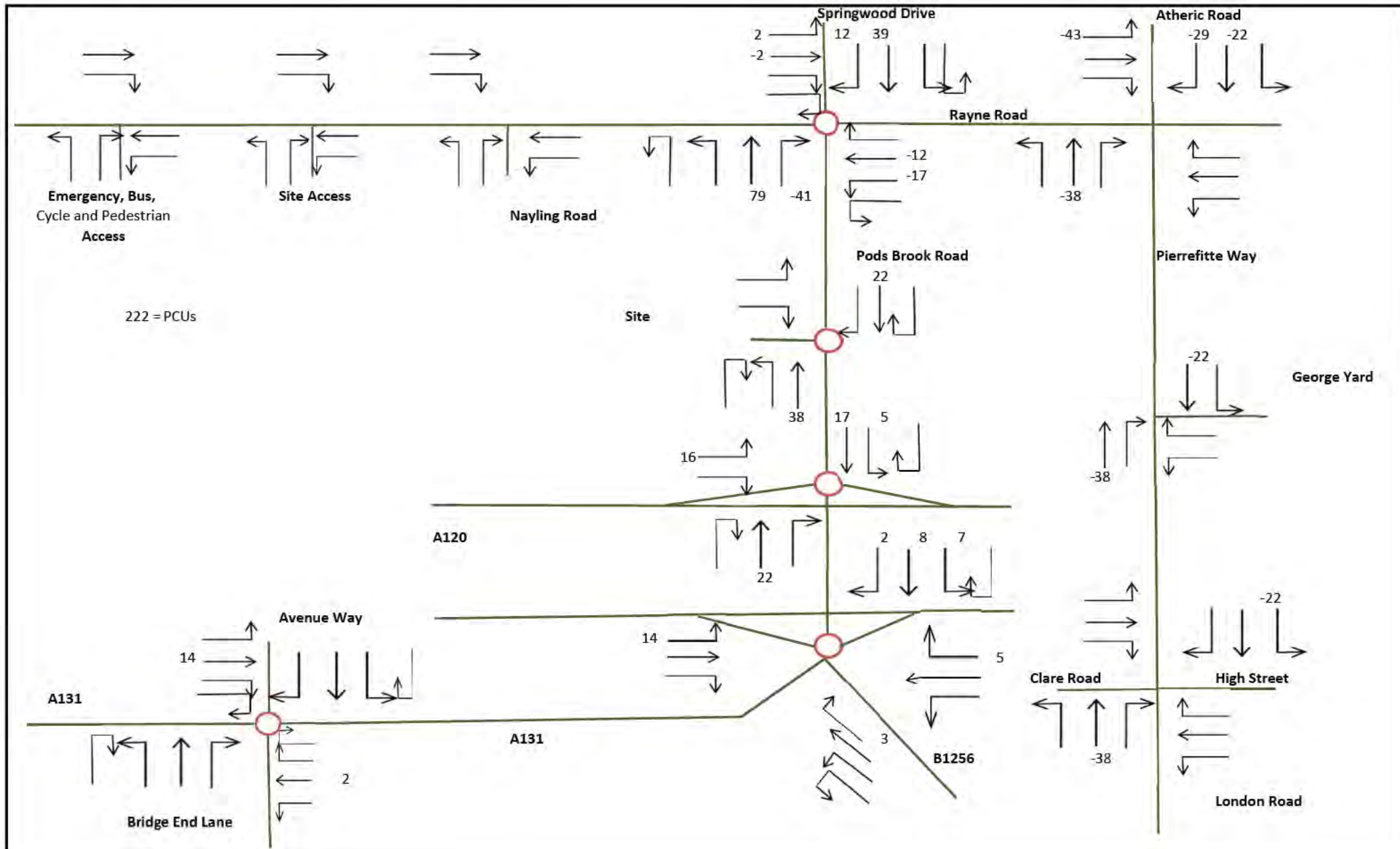
Site

George Yard

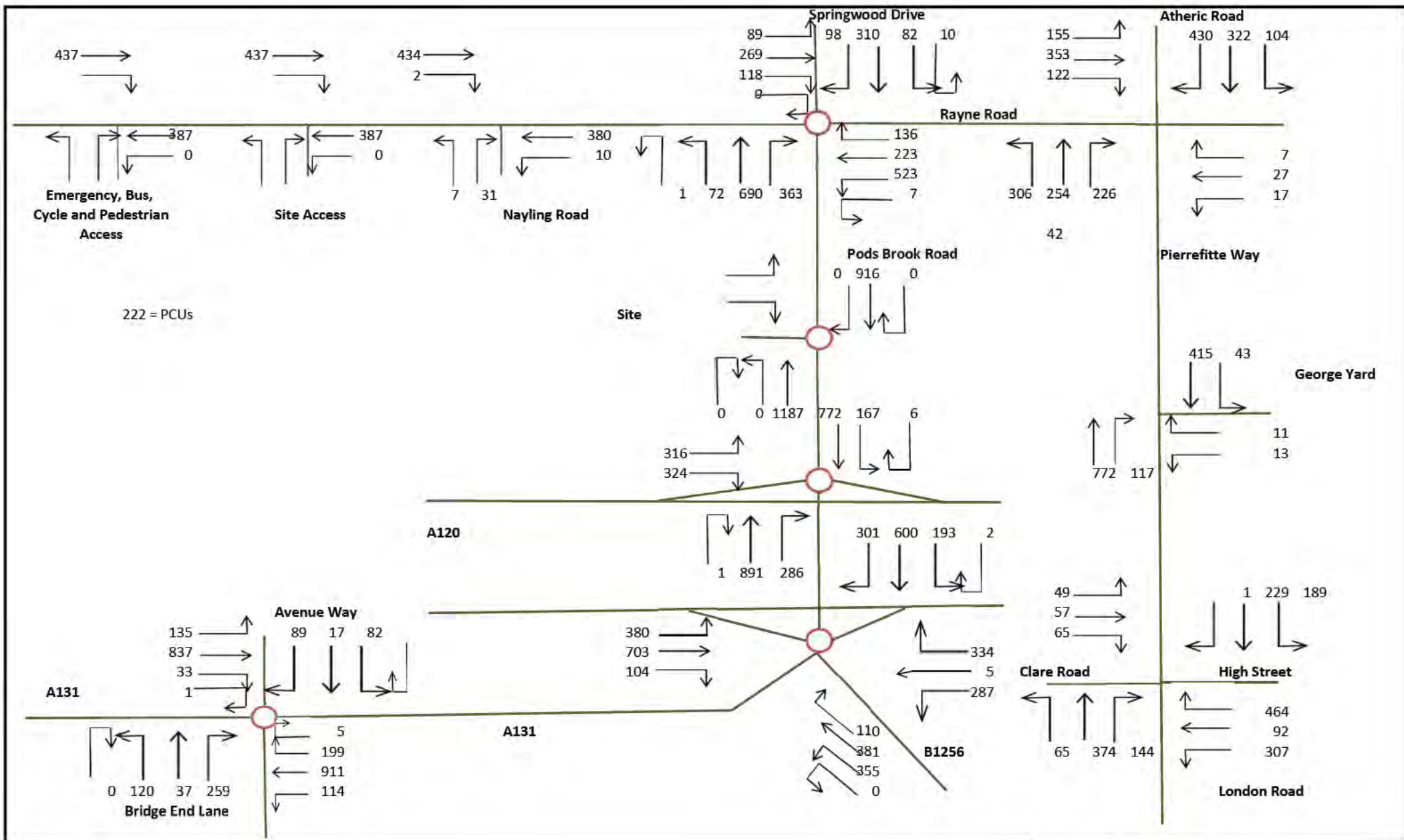
Drawing Title	AM Peak 08:00-09:00 Existing Springwood Drive Residential Re-Assigned Traffic Braintree	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 8
Project Title	Brook Green		




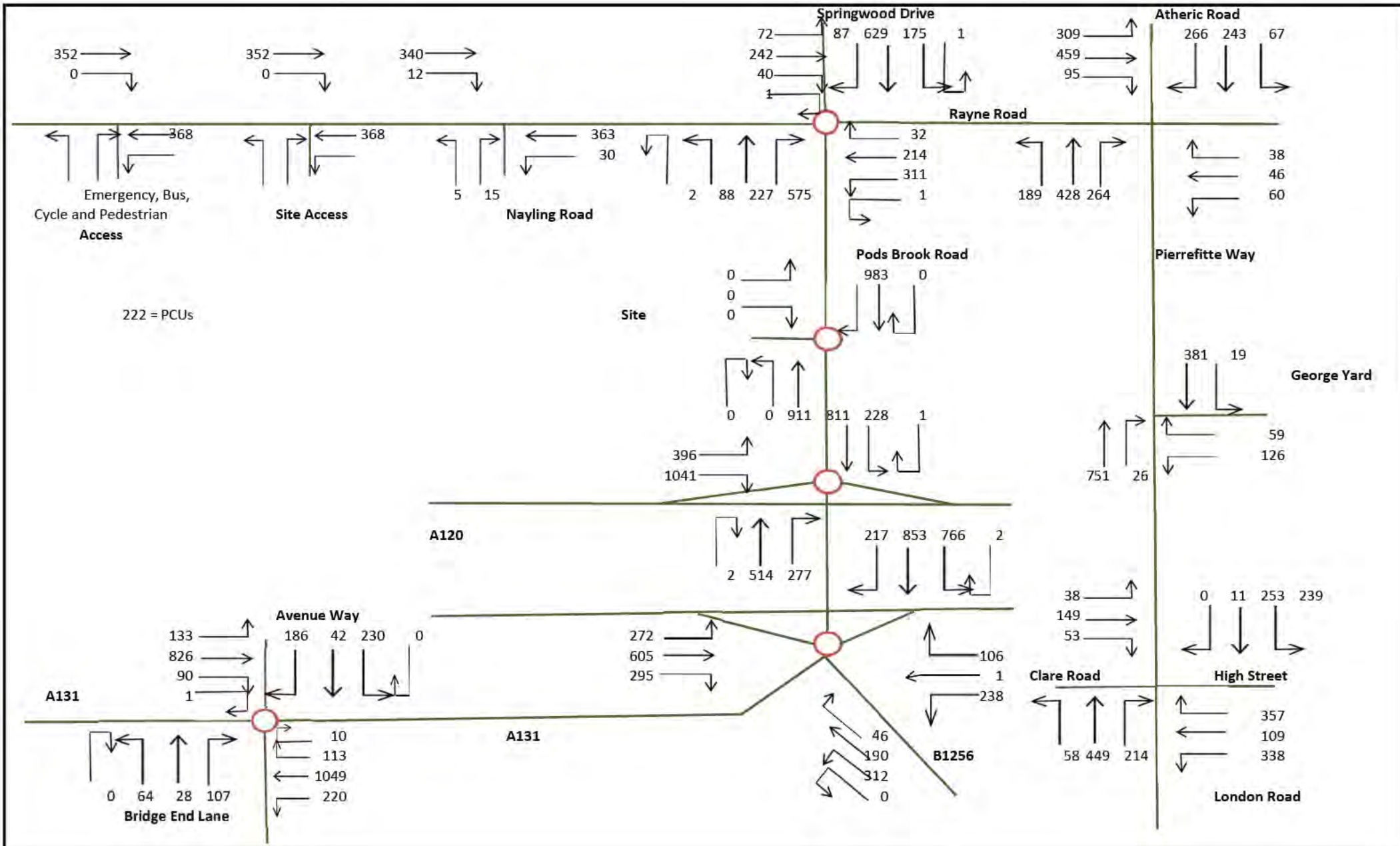
Drawing Title	PM Peak 17:00-18:00 Existing Springwood Drive Employment Re-Assigned Traffic Braintree	Drawn	SAA	
Project Title	Brook Green	Date	25/05/2015	
		Ref	Figure 9	



Drawing Title	PM Peak 17:00-18:00 Existing Springwood Drive Residential Re-Assigned Traffic Braintree	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 10
Project Title	Brook Green		

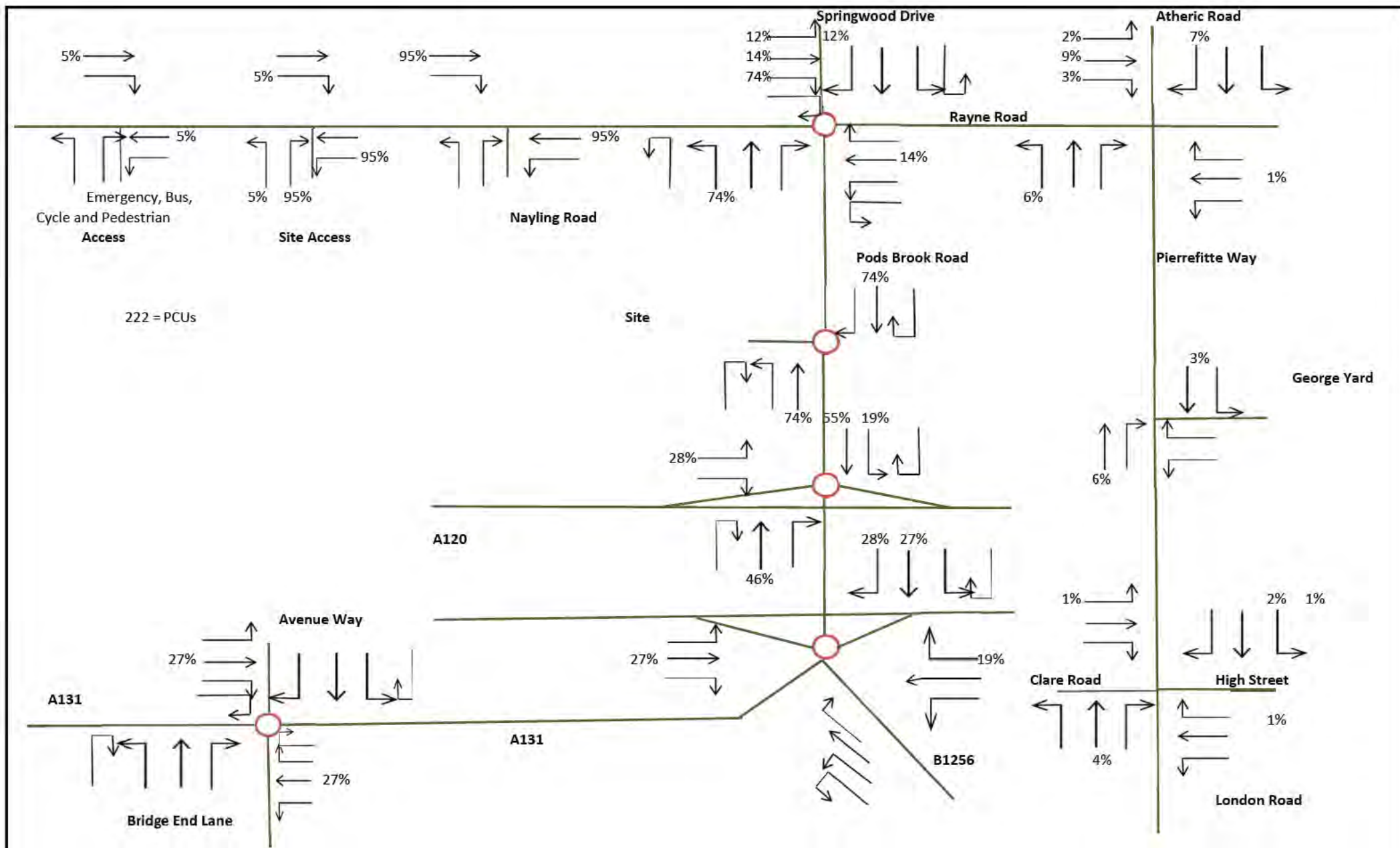


Drawing Title	AM Peak 08:00-09:00 2033 Reassigned Base Flows With Panfield Lane	Drawn	SAA	
		Date	25/05/2015	
		Ref	Figure 11	
Project Title	Brook Green			



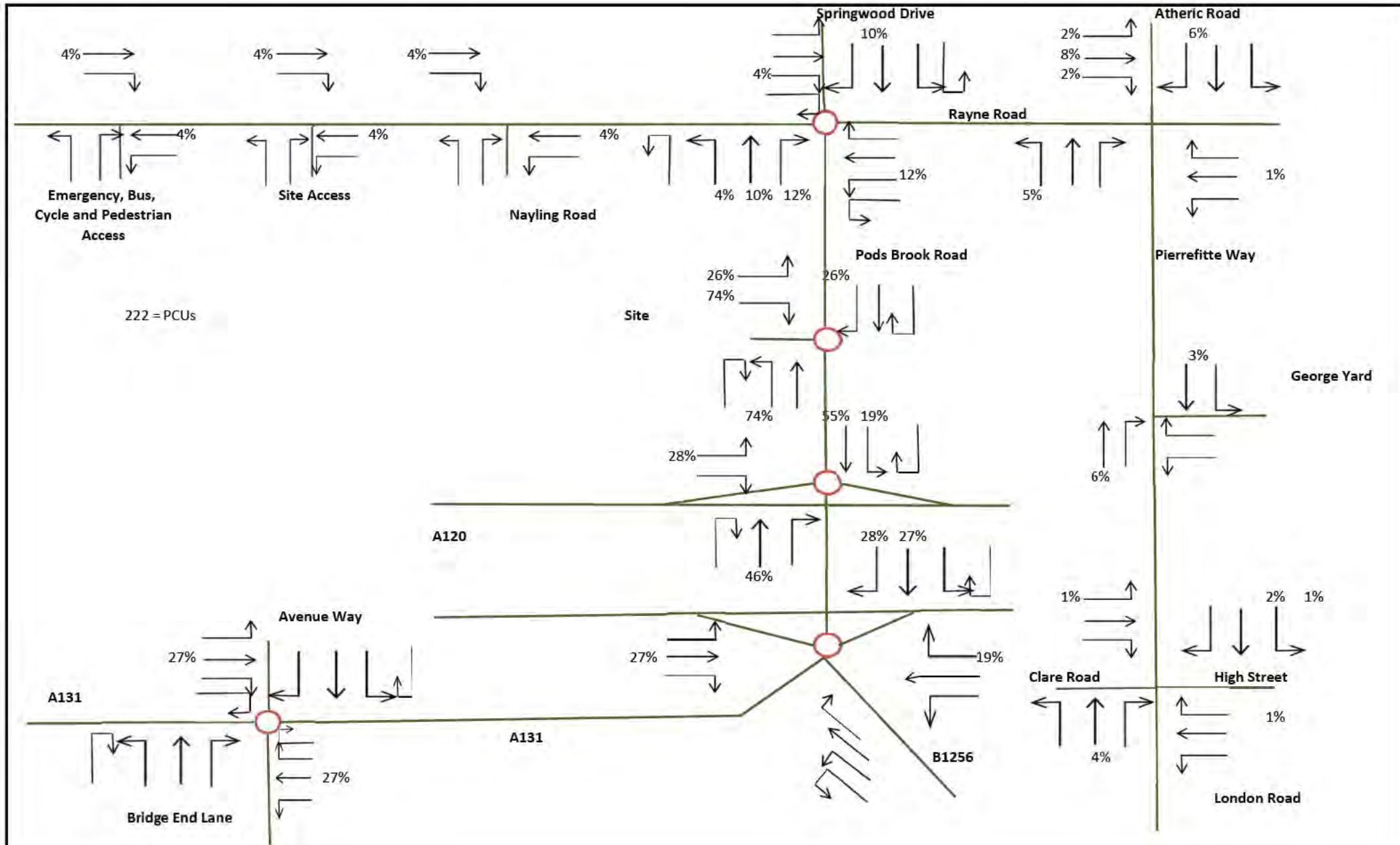
Drawing Title	PM Peak 17:00-18:00 Total 2033 Re-assigned Base Flows with Panfield Lane	Drawn	SAA
		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 12




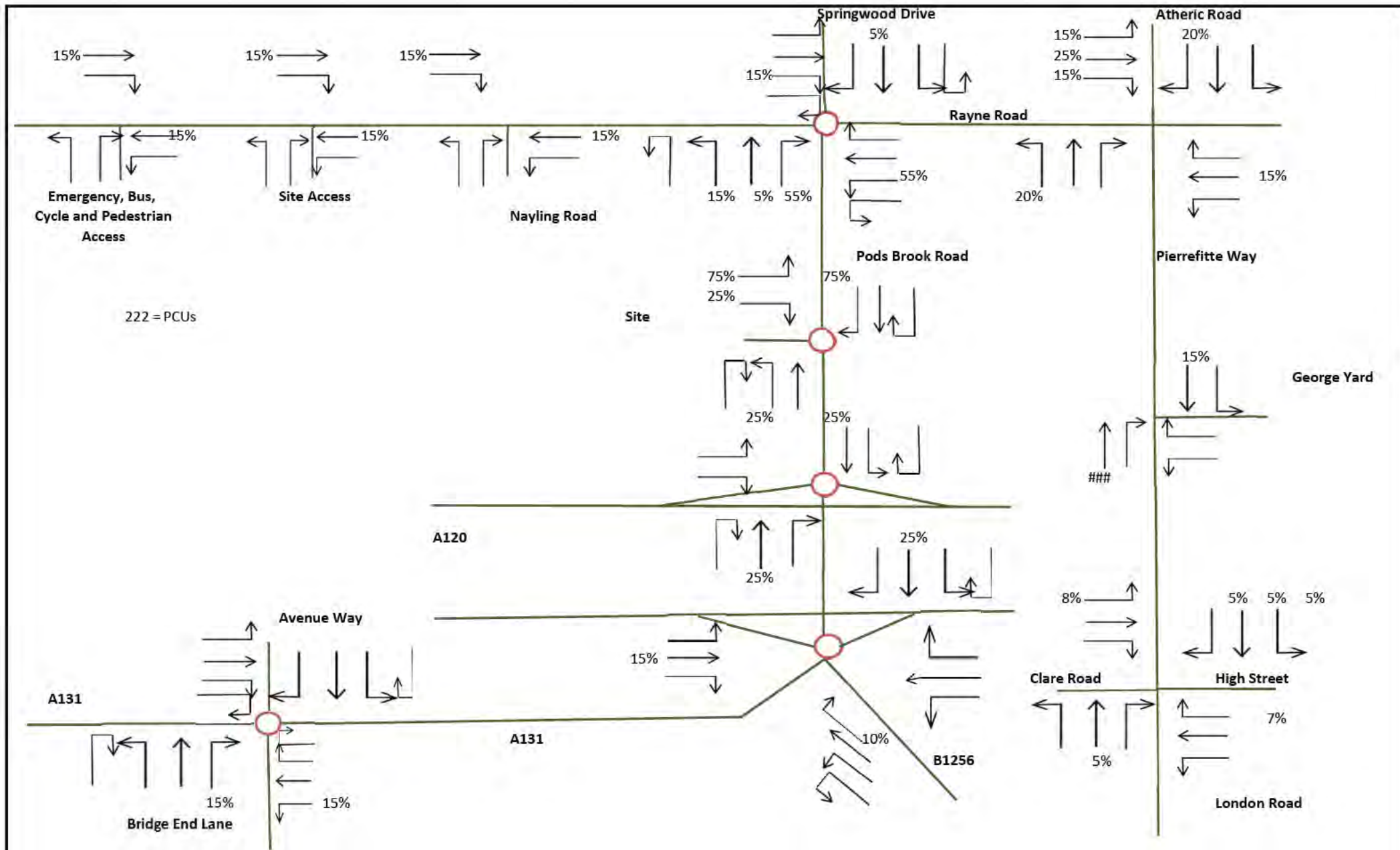



Drawing Title	Rayne Road Access Distribution Highways England Agreed Distribution	Drawn	SAA
		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 13

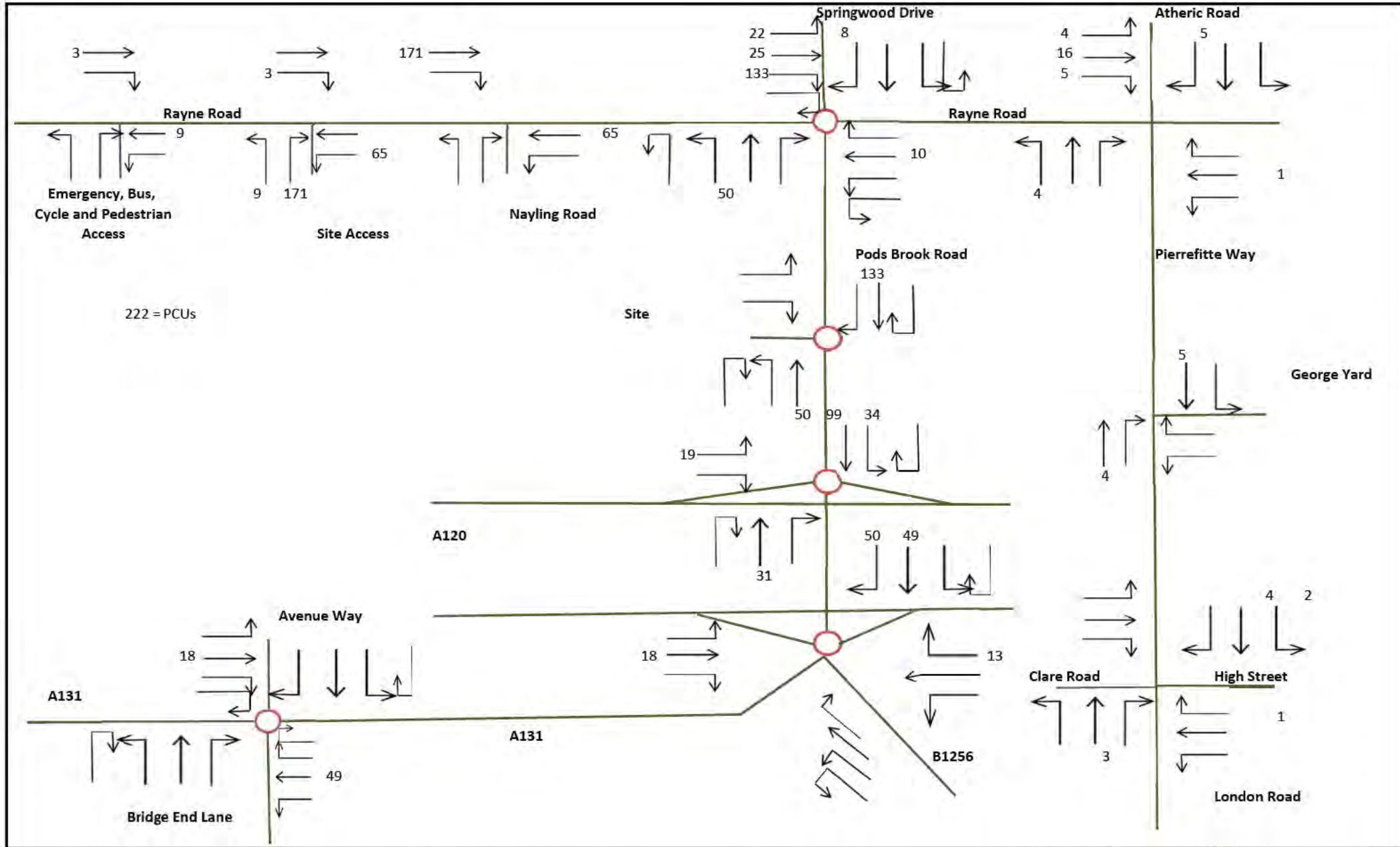





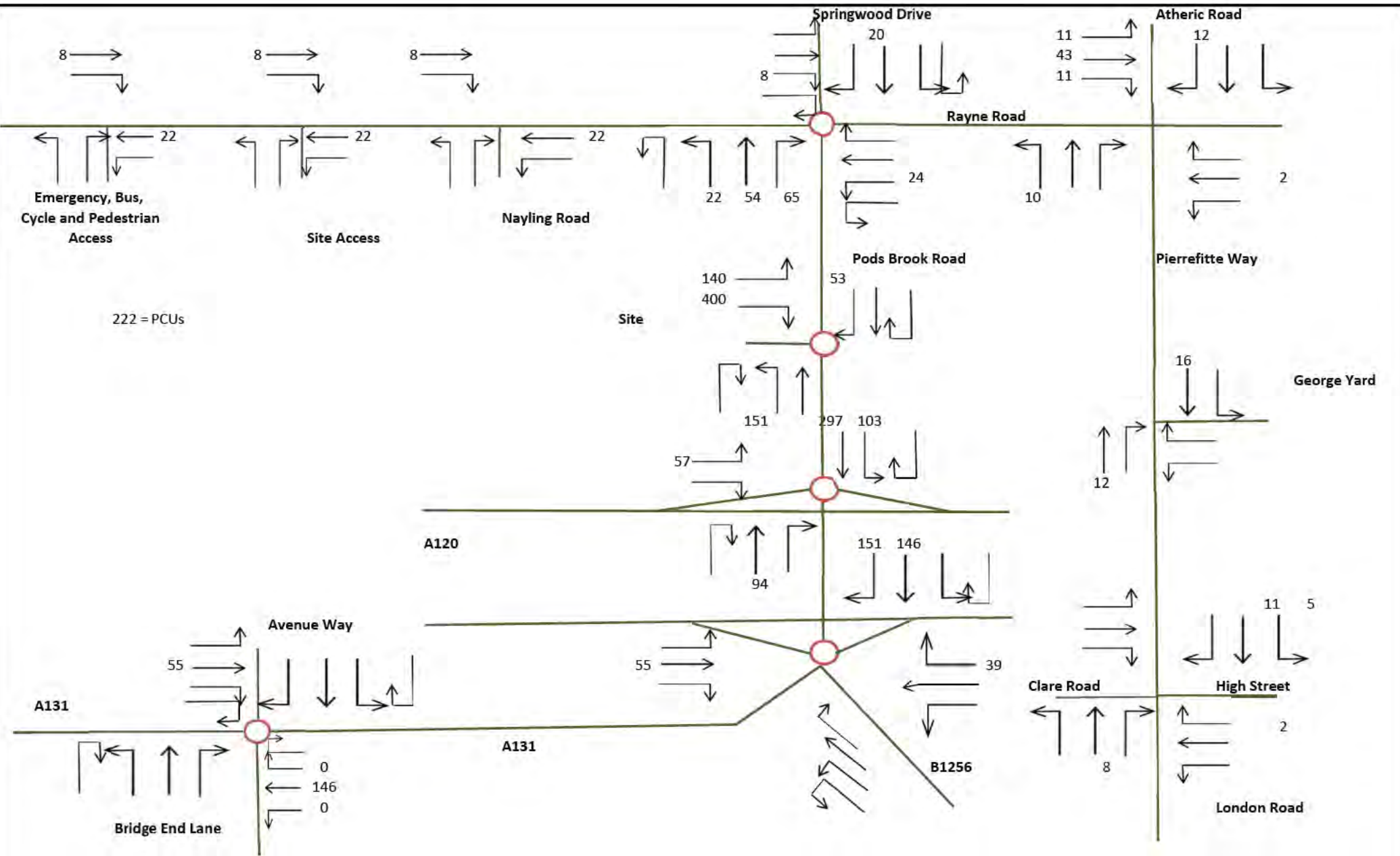
Drawing Title	Pod Brook Road Development Traffic Distribution Highways England Agreed Distribution	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 14
Project Title	Brook Green		



Drawing Title	Pod Brook Road Development Traffic Distribution	Drawn	SAA	
Project Title	Brook Green	Date	25/05/2015	
		Ref	Figure 15	

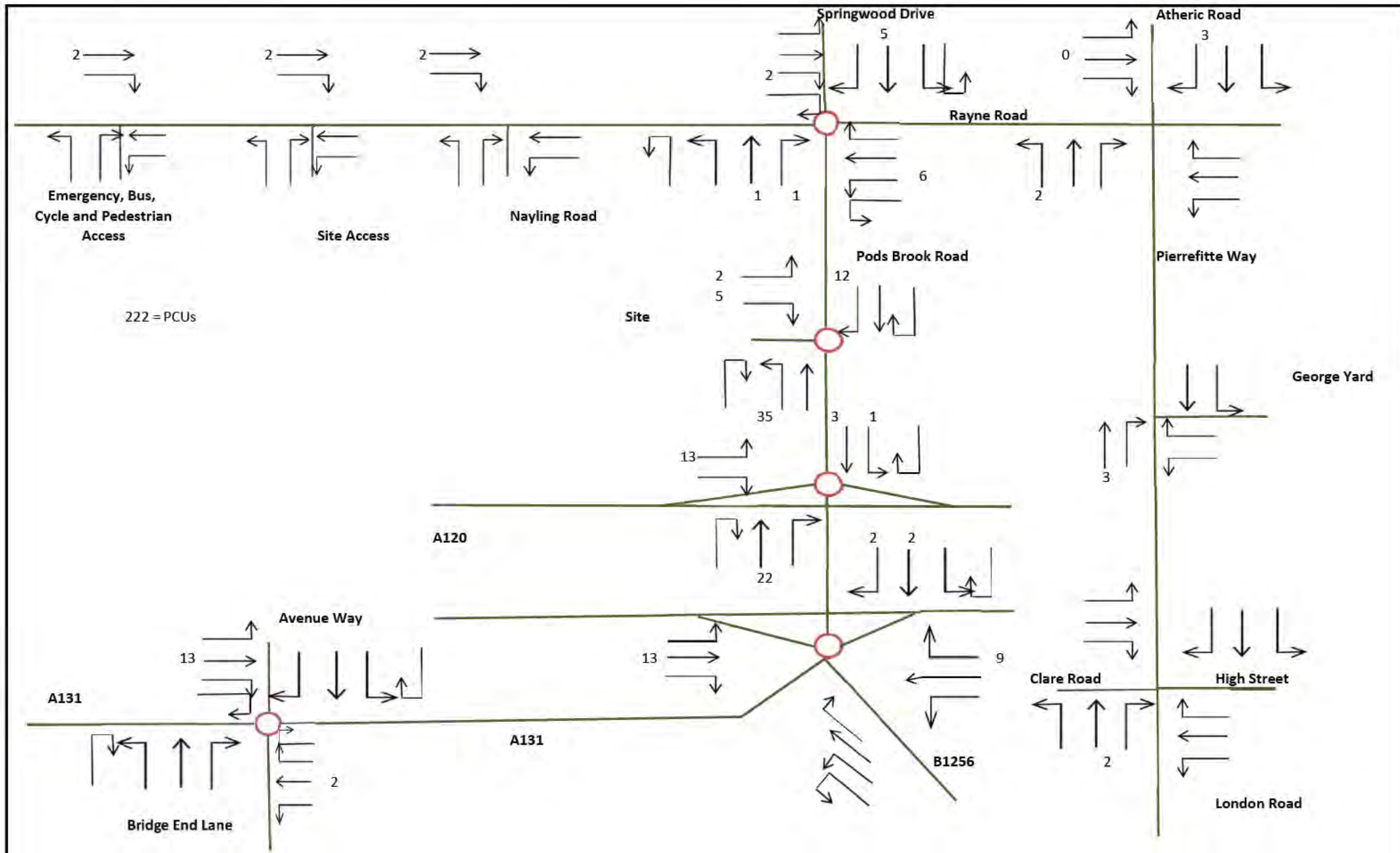


Drawing Title	AM Peak Rayne Road Residential Development Flows	Drawn	SAA	
Project Title	Brook Green	Date	25/05/2015	
		Ref	Figure 16	



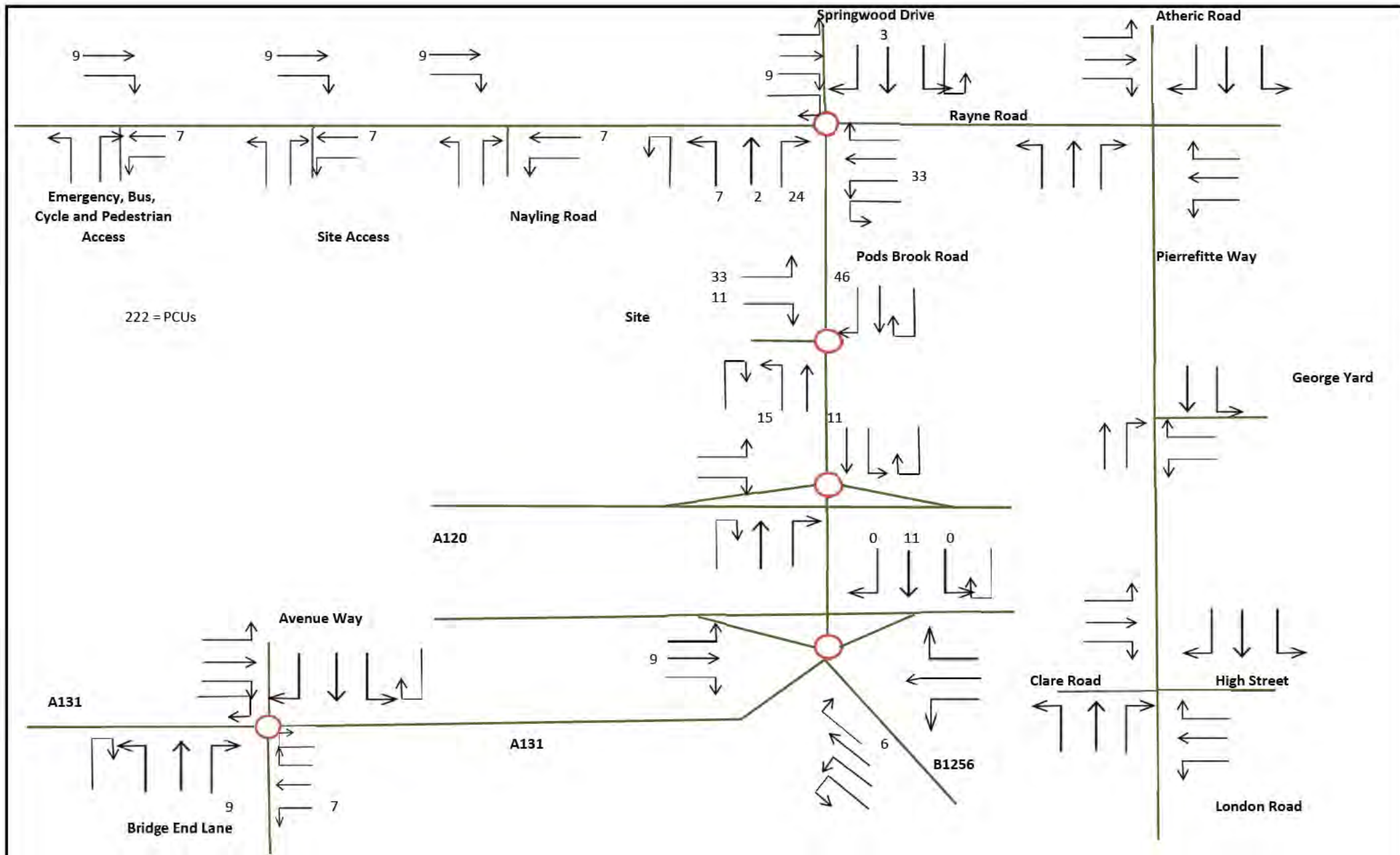
Drawing Title	AM Peak Pods Brook Road Residential Development Flows	Drawn	SAA
		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 17




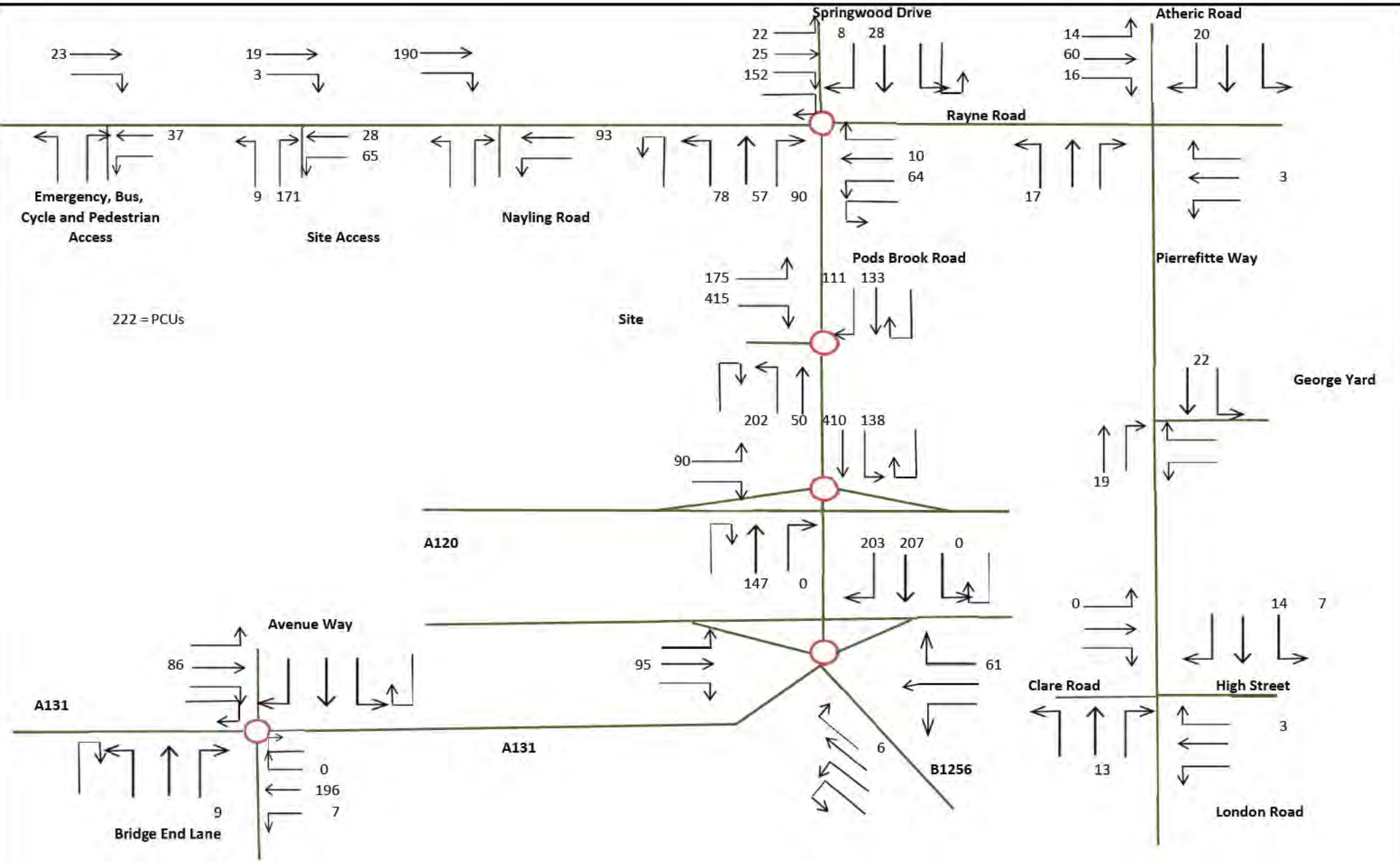


Drawing Title	AM Peak Pods Brook Road Employment Development Flows	Drawn	SAA
		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 18



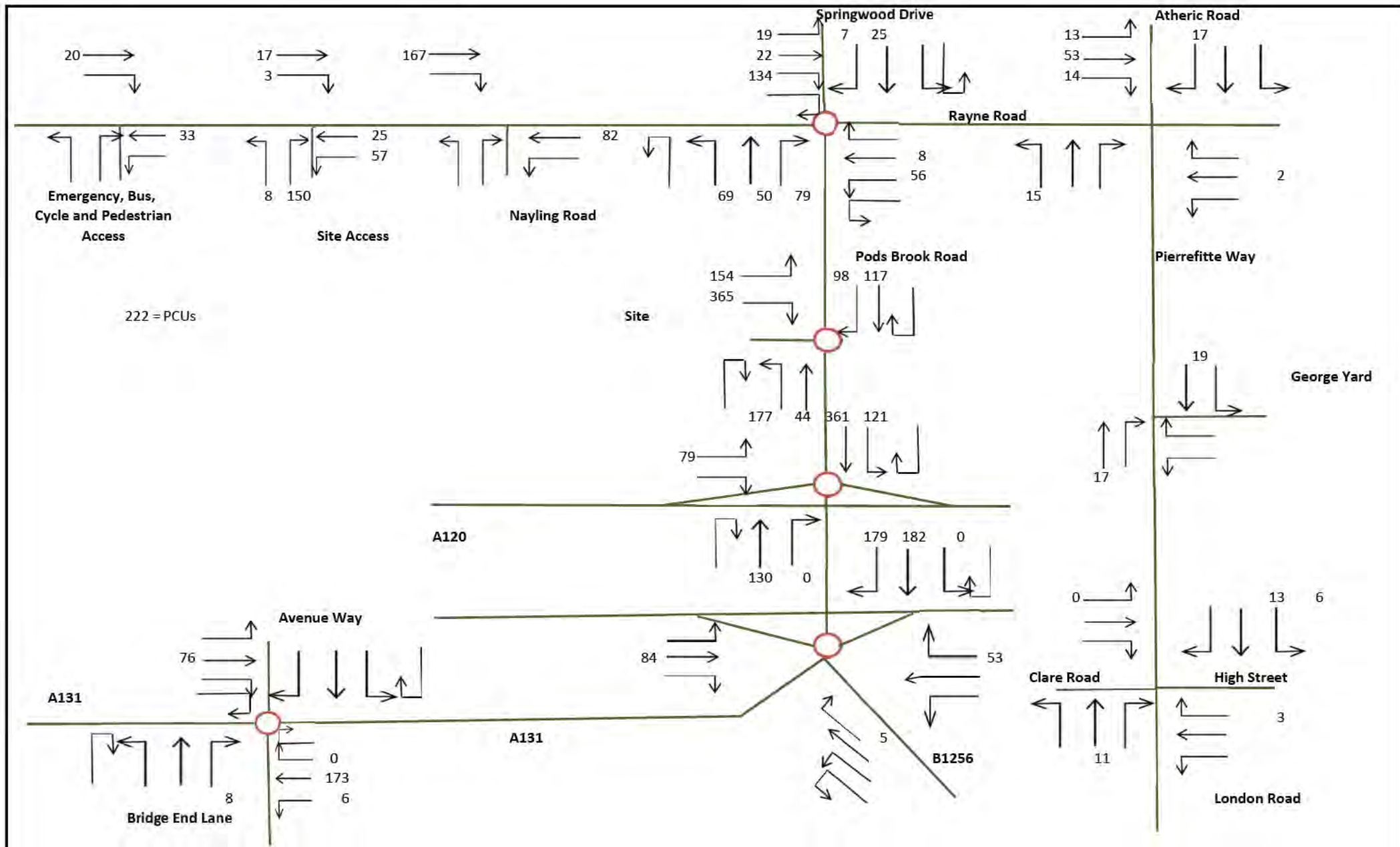



Drawing Title	AM Peak Pods Brook Road School Development Flows	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 19
Project Title	Brook Green		

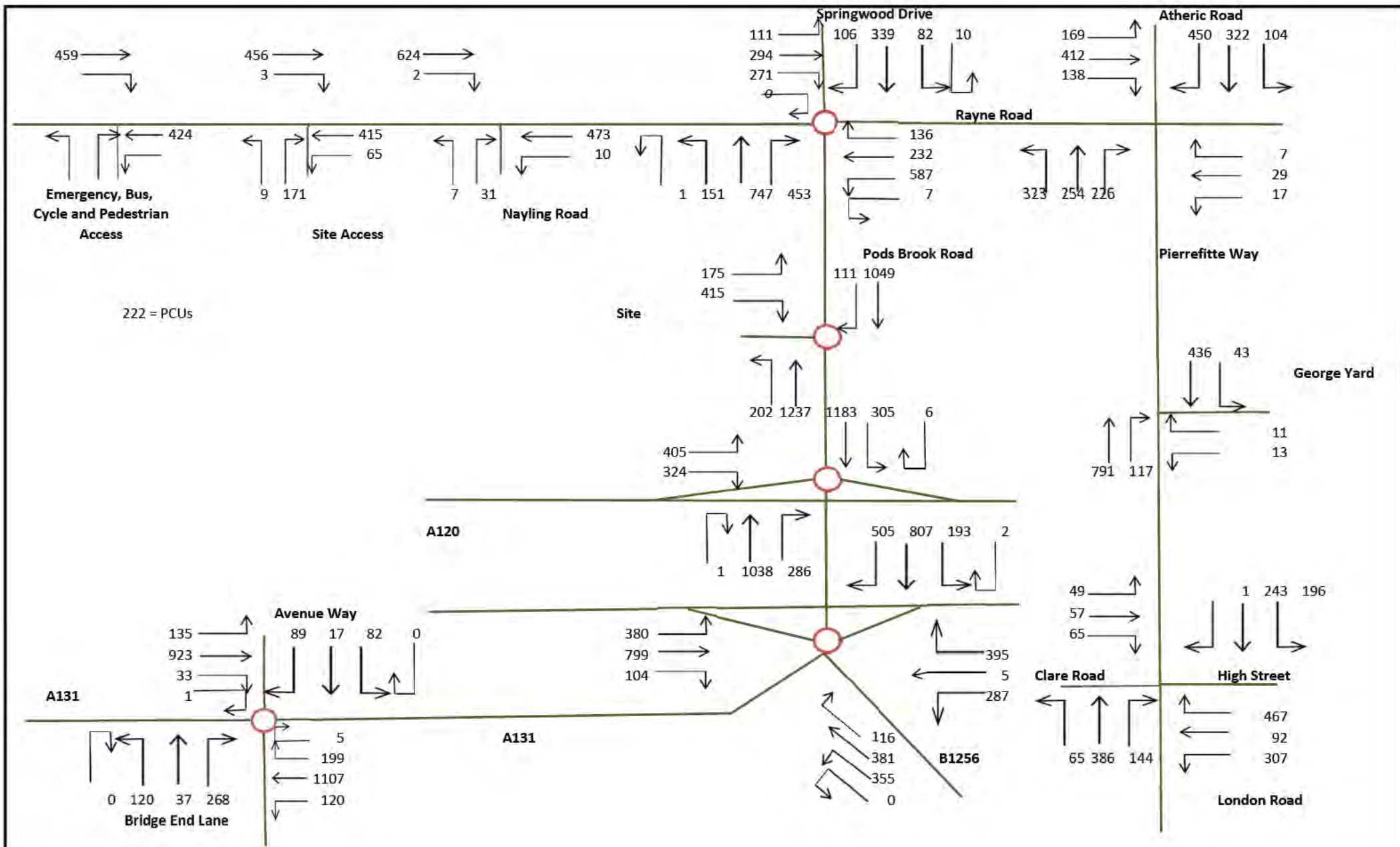



Drawing Title	AM Peak Total Development Flows	Drawn	SAA
		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 20

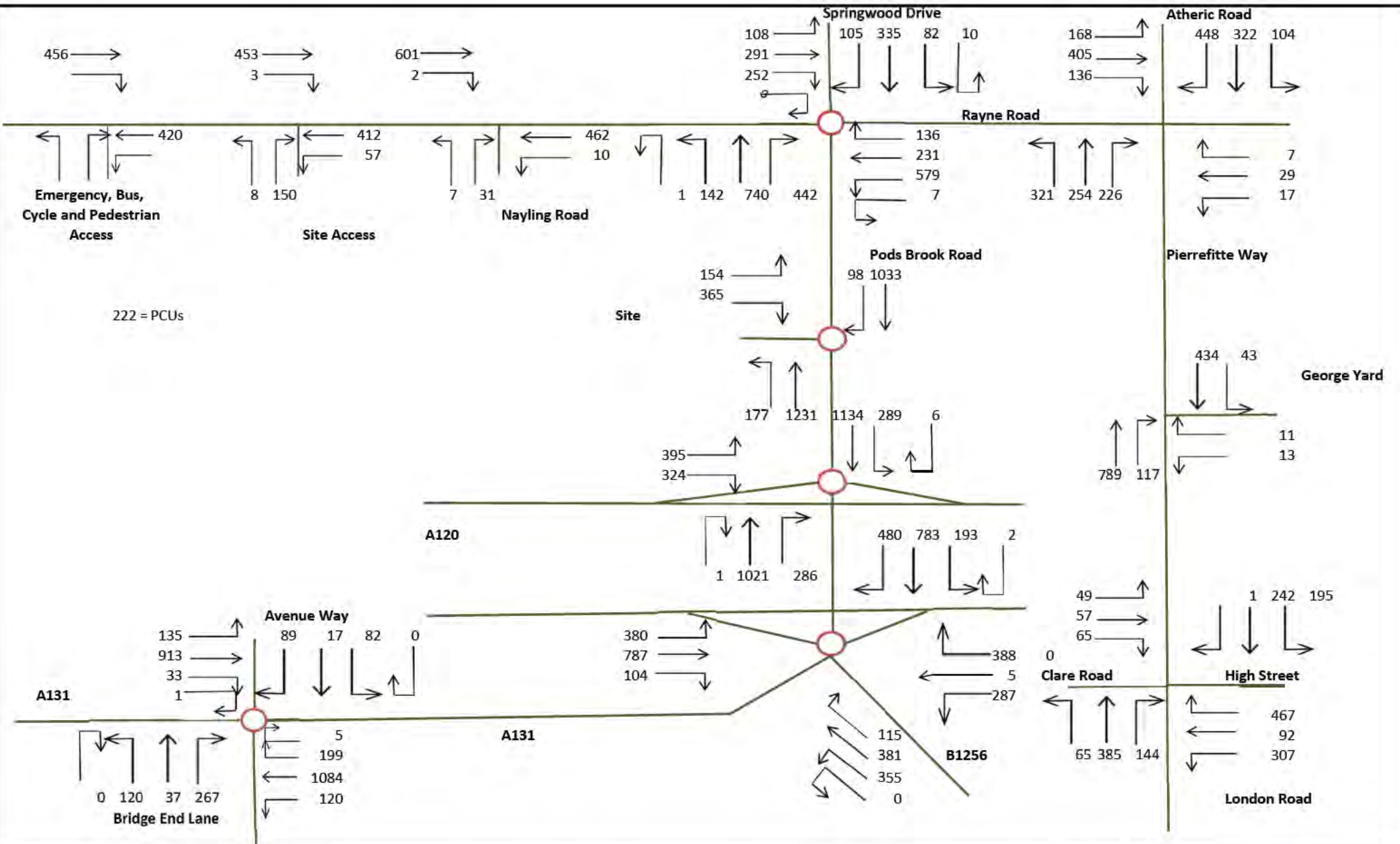




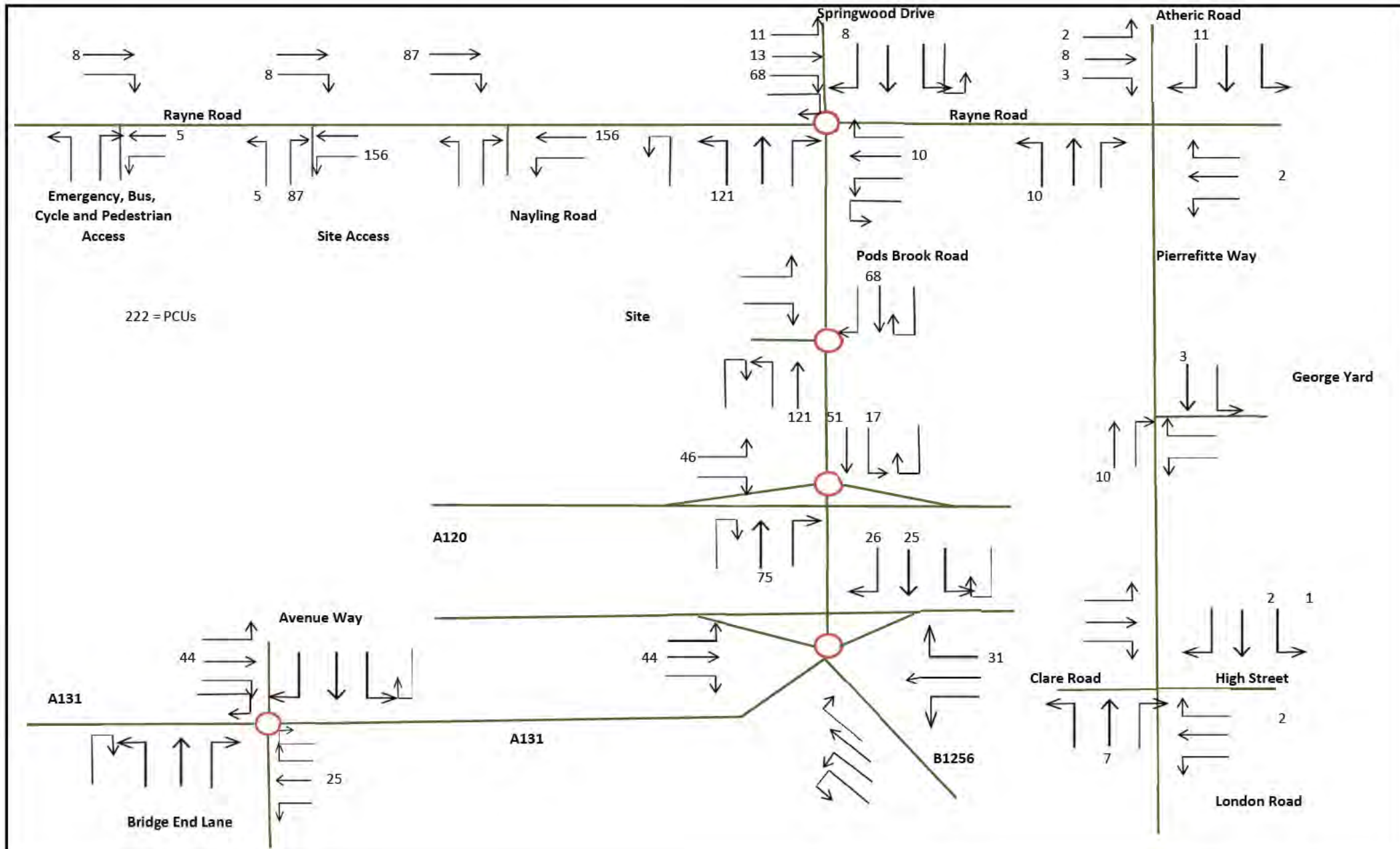
Drawing Title	AM Peak Mitigated Development Flows	Drawn	SAA	
Project Title	Brook Green	Date	25/05/2015	
		Ref	Figure 21	



Drawing Title	AM Peak 2033 Total With Development Flows	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 22
Project Title	Brook Green		

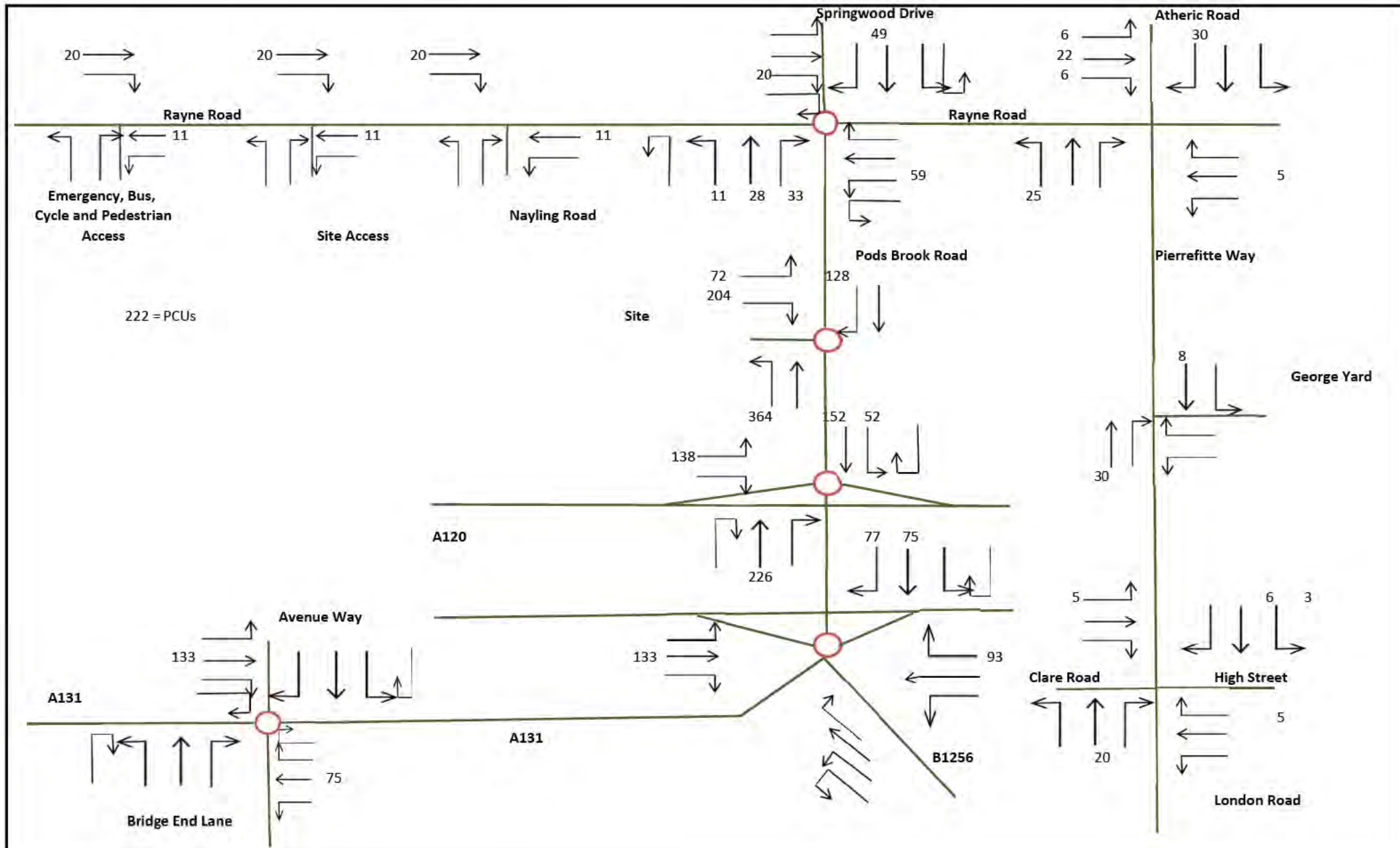


Drawing Title	AM Peak 2033 Total With Mitigated Development Flows	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 23
Project Title	Brook Green		



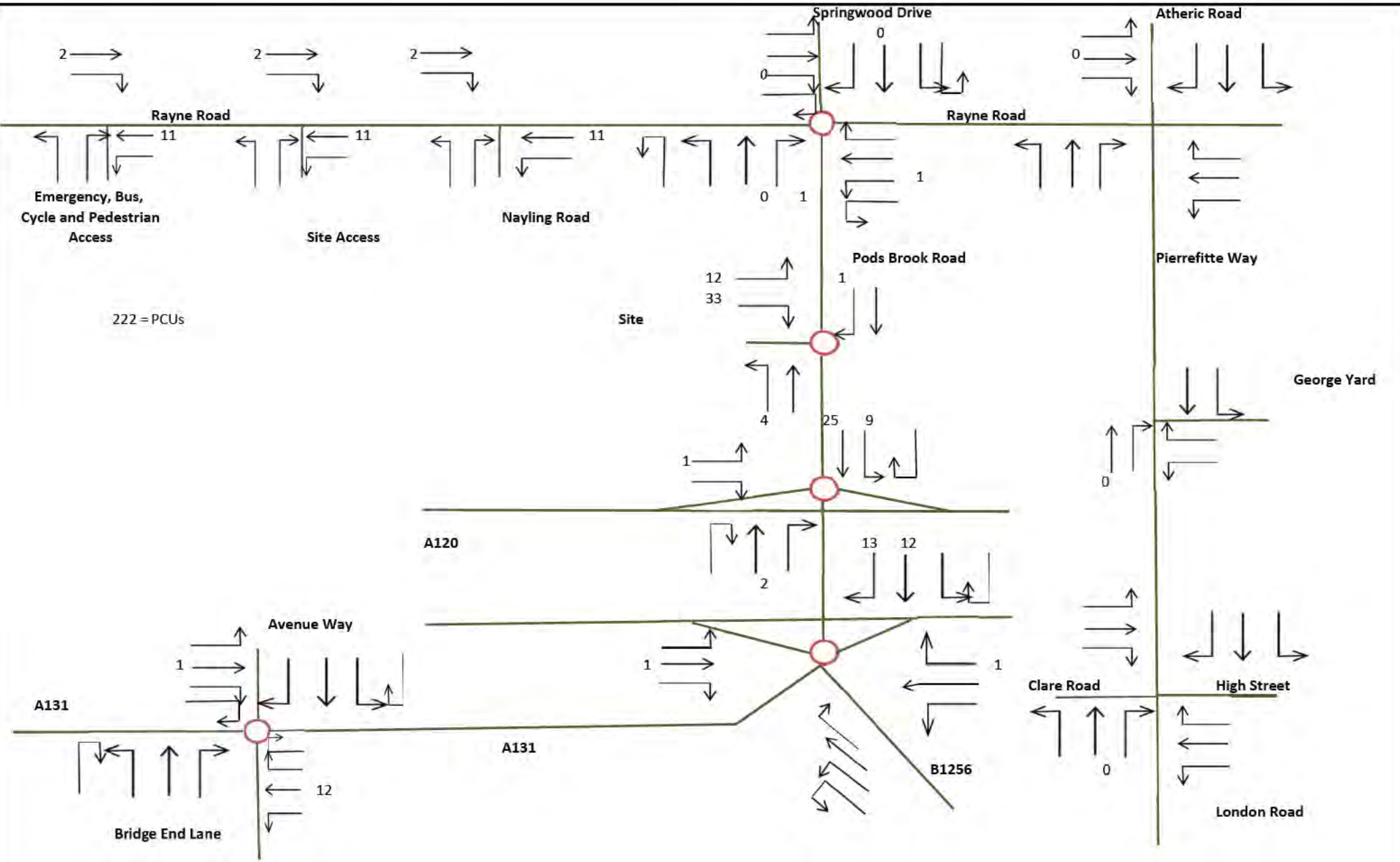
Drawing Title	PM Peak Rayne Road Residential Development Flows	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 24
Project Title	Brook Green		



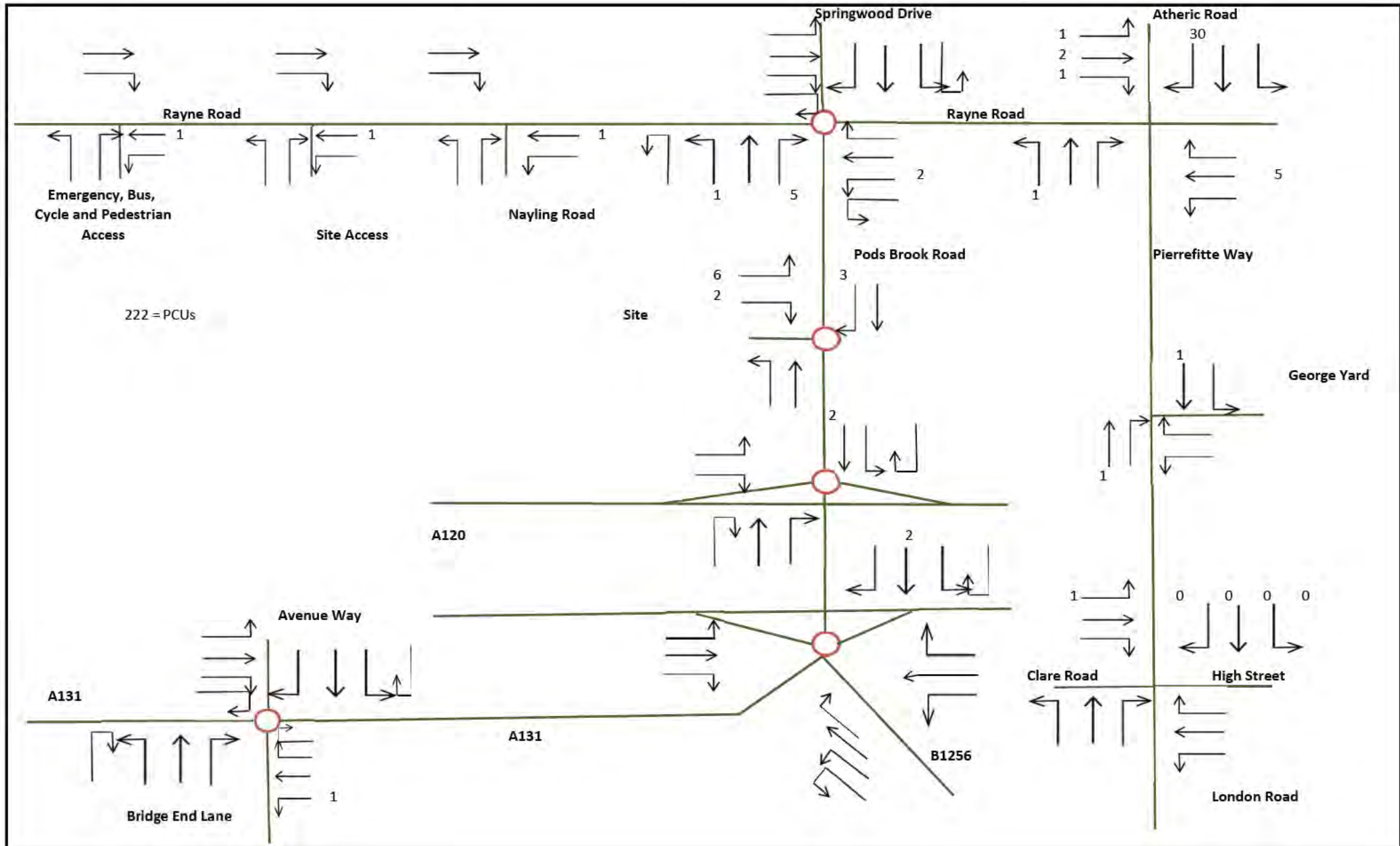



Drawing Title	PM Peak Pods Brook Road Residential Development Flows	Drawn	SAA
		Date	25/05/2015
Project Title	Brook Green	Ref	Figure 25

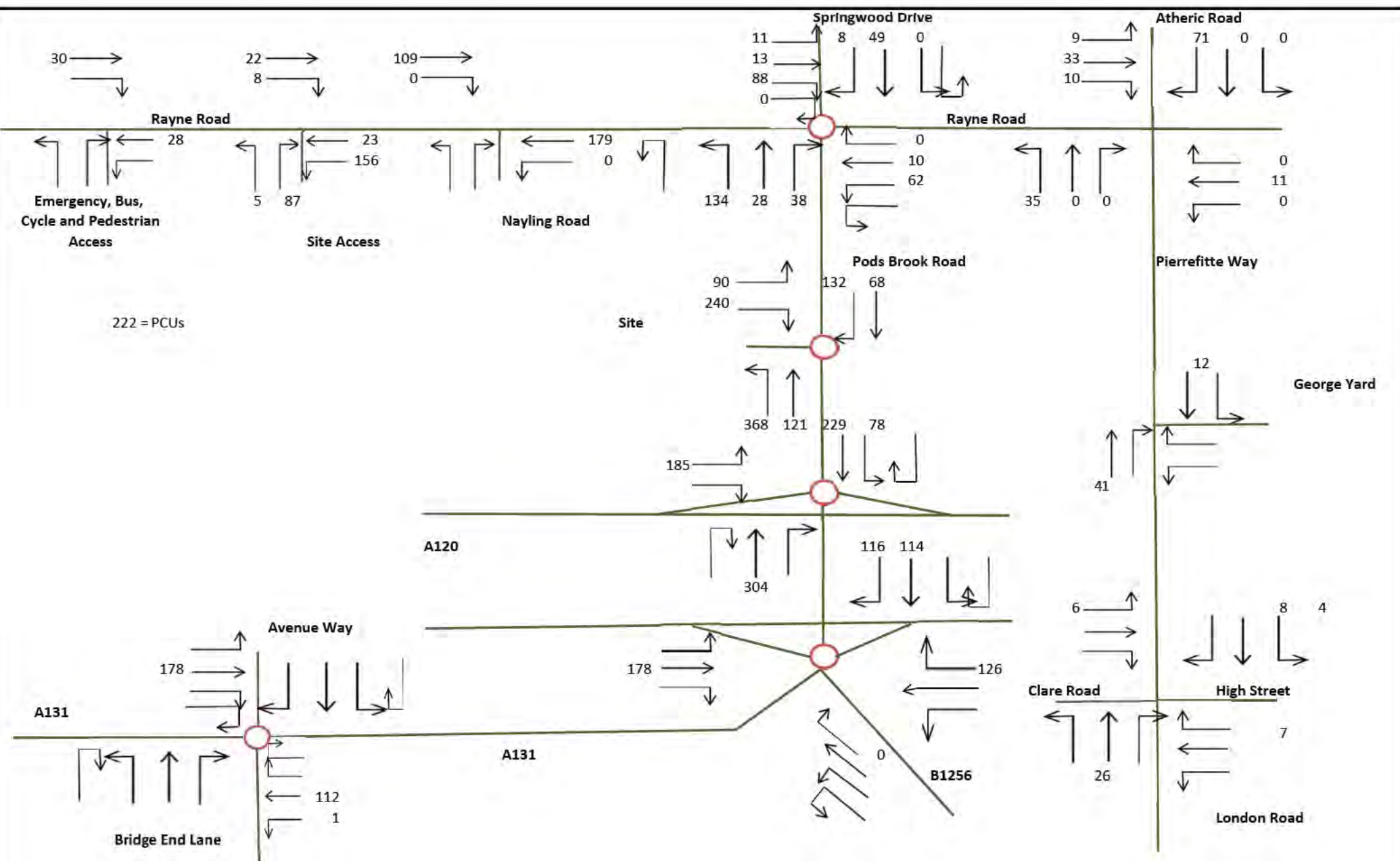




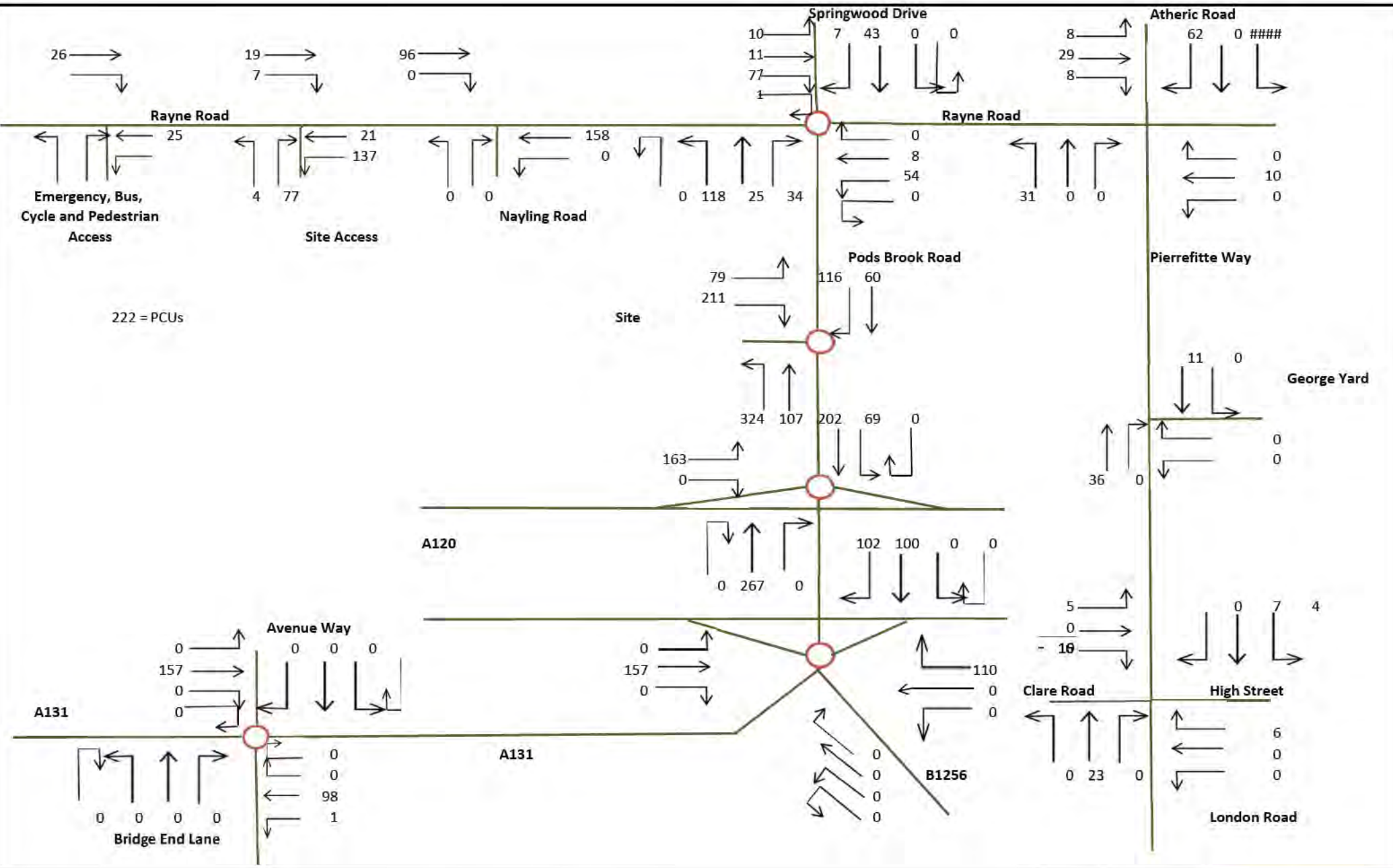
Drawing Title	PM Peak Pods Brook Road Employment Development Flows	Drawn	SAA	
Project Title	Brook Green	Date	25/05/2015	
		Ref	Figure 26	



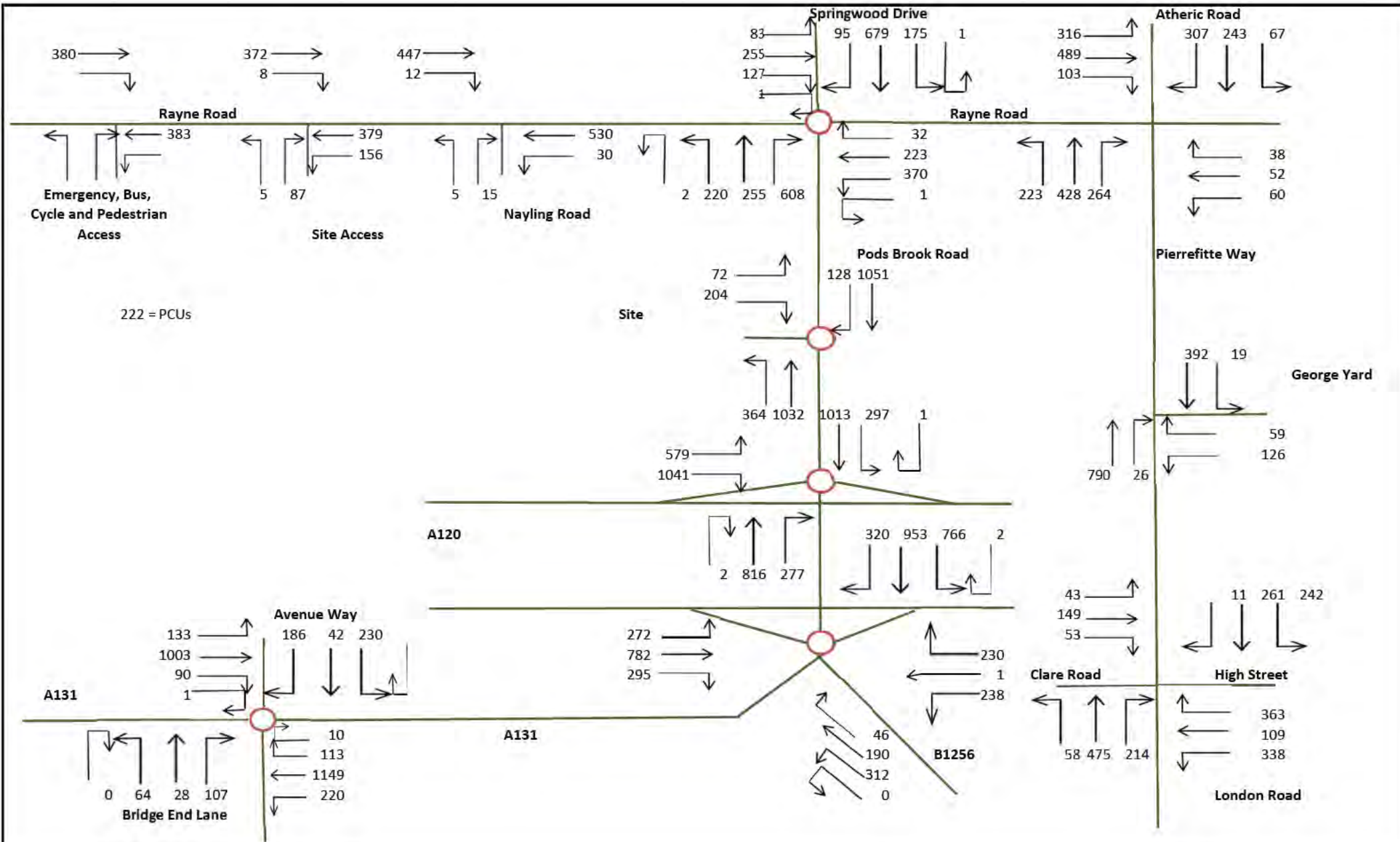
Drawing Title	PM Peak Pods Brook Road School Development Flows	Drawn	SAA	
Project Title	Brook Green	Date	25/05/2015	
		Ref	Figure 27	



Drawing Title	PM Peak Pods Brook Road Total Development Generated Flows	Drawn	SAA
		Date	25/05/2015
		Ref	Figure 28
Project Title	Brook Green		

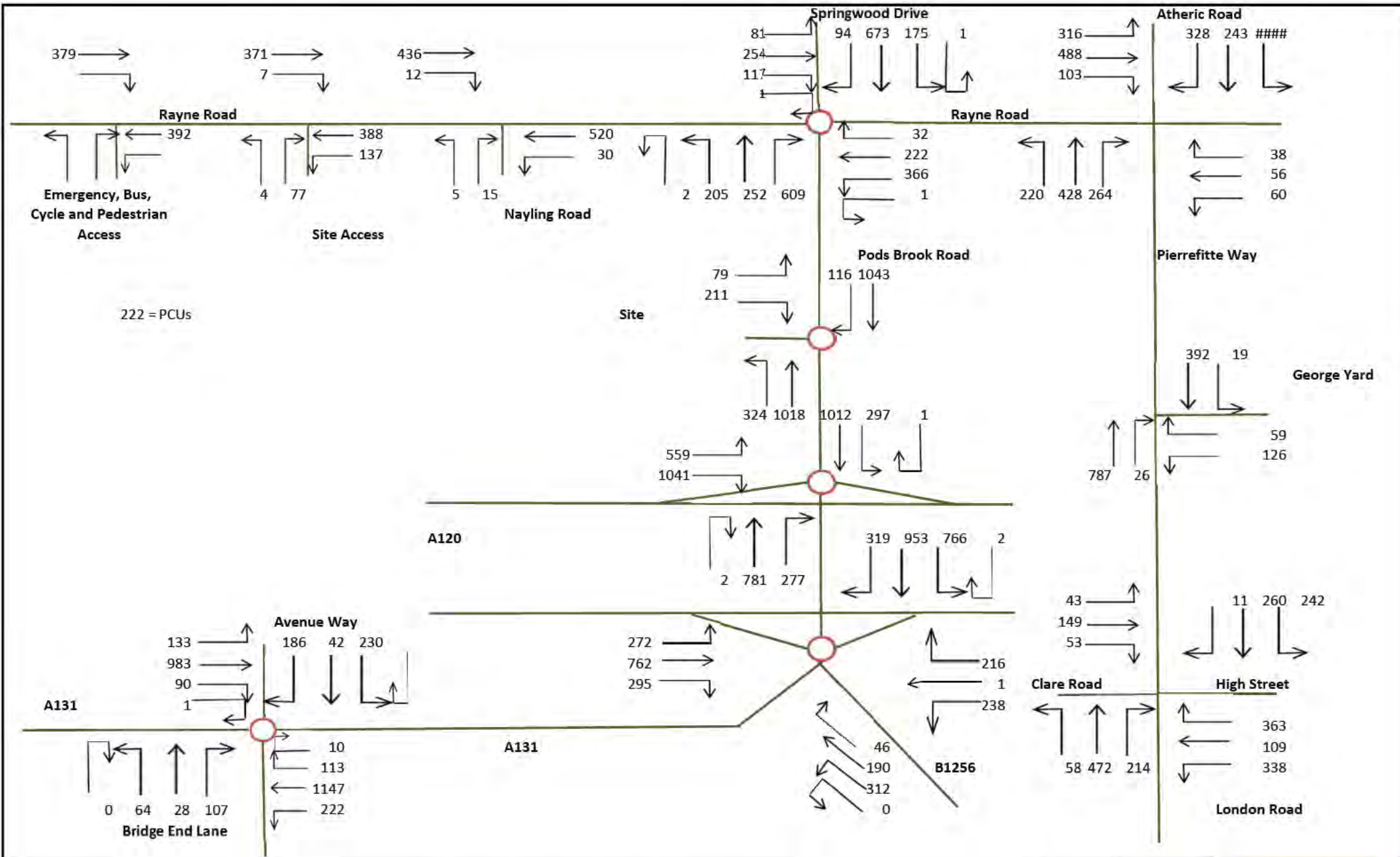



Drawing Title	PM Peak Mitigated Development Trips	Drawn	SAA	
		Date	25/05/2015	
Project Title	Brook Green	Ref	Figure 29	



Drawing Title	PM Peak Total with Development Trips 2033	Drawn	SAA
Project Title	Brook Green	Date	25/05/2015
		Ref	Figure 30

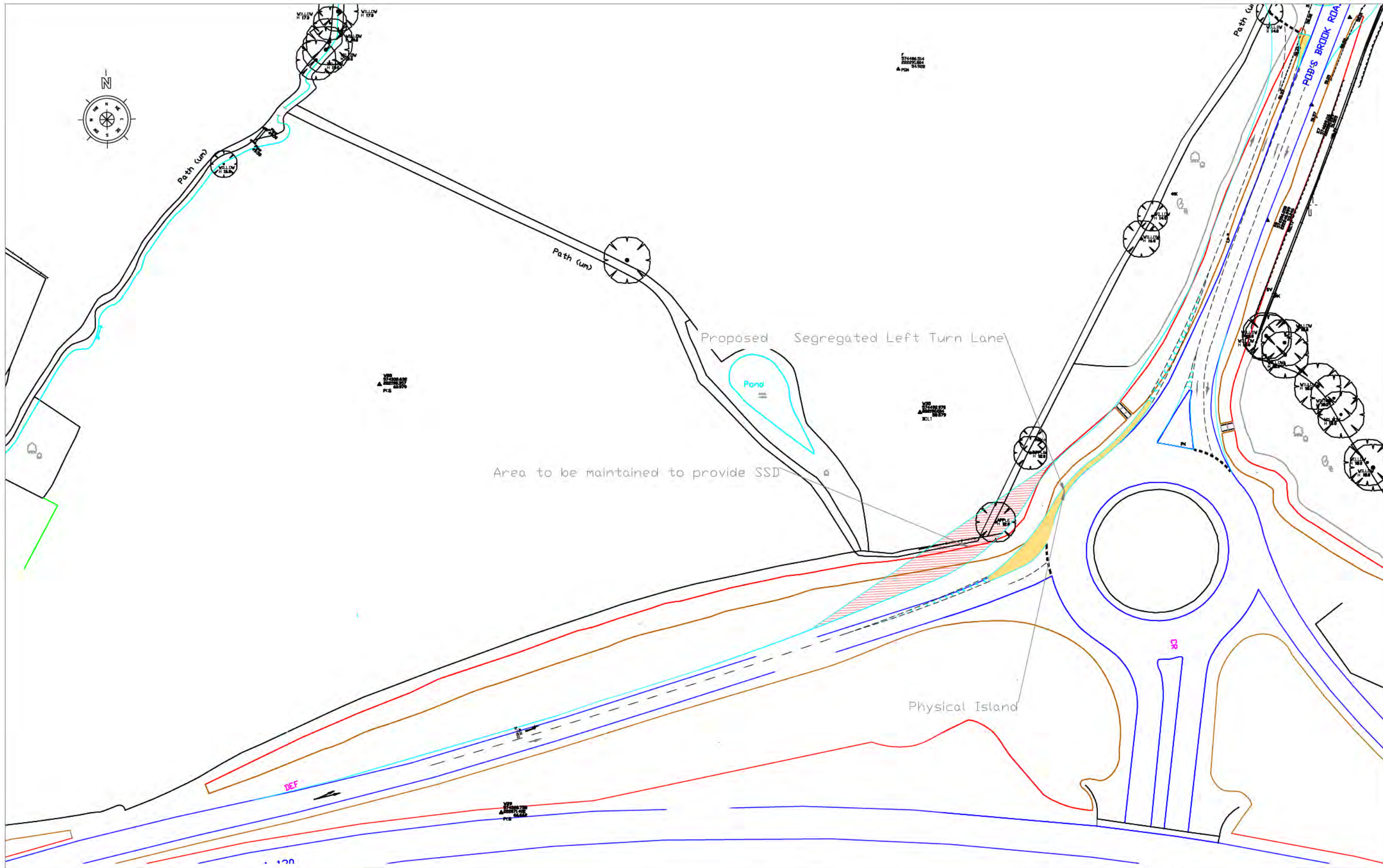




Drawing Title	PM Peak Total with Mitigated Development Trips 2033	Drawn	SAA	
		Date	25/05/2015	
		Ref	Figure 31	
Project Title	Brook Green			



Appendix 2
A120 North Roundabout Scheme

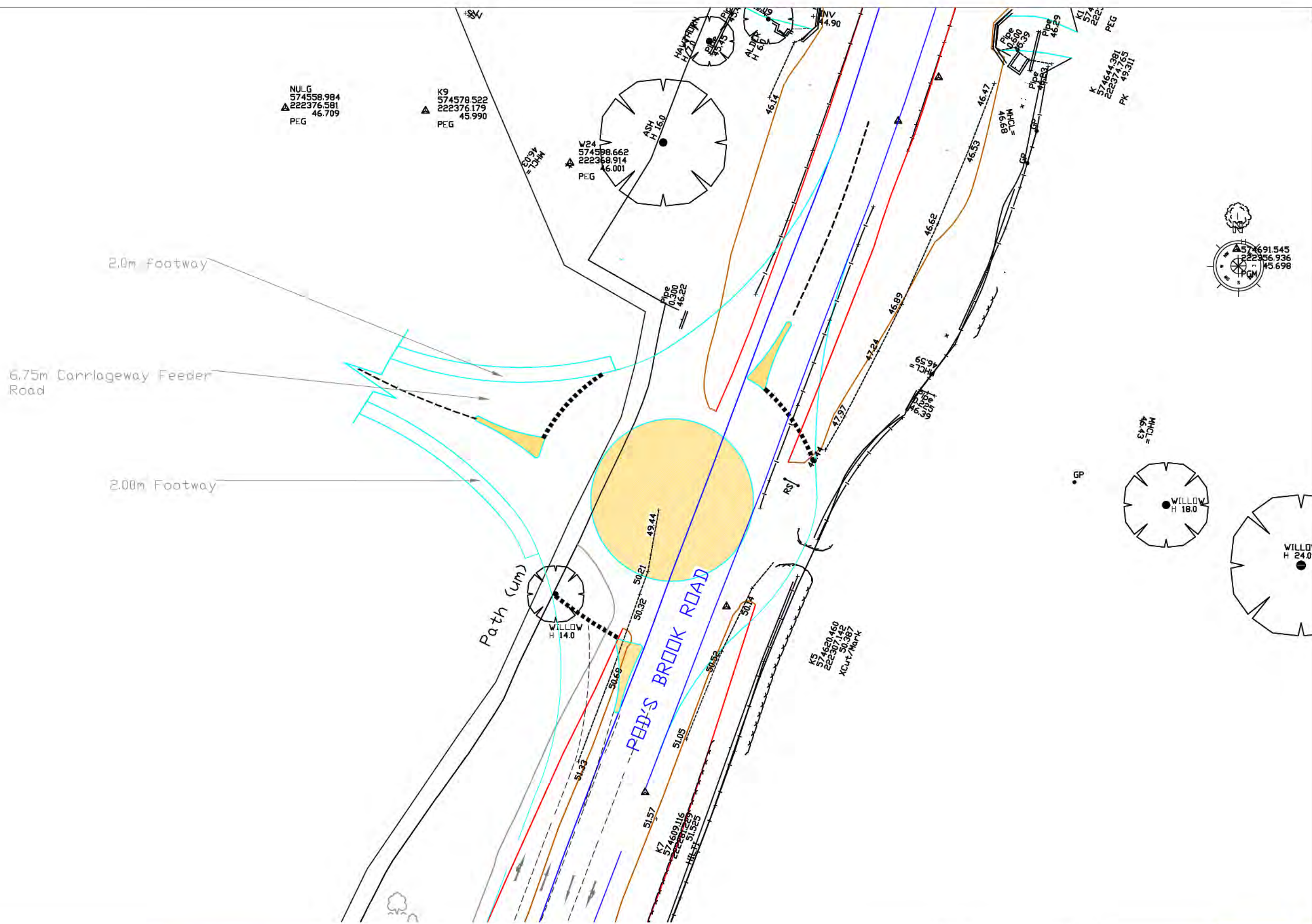


client: Acorn Group Braintree	title: A120 Northern Roundabout Proposed Segregated Left Turn Lane	date: 4/11/2016	scale @ A3 1:1000
project: Brook Green	status: Planning	drawn:	Revision a
discipline: Transport Planning	project no: JTP 06414	chk'd: SAA	dwg no: DR10





Appendix 3
Proposed Site Access Roundabout



client: Acorn Group Braintree

project: Brook Green

discipline: Transport Planning

title: Pods Brook Road Access Roundabout and carriageway widening

status: Planning

project no: JTP 06414

date: 20/01/2017

drawn

chk'd: SAA

scale @ A3: 1:500

Revision: a

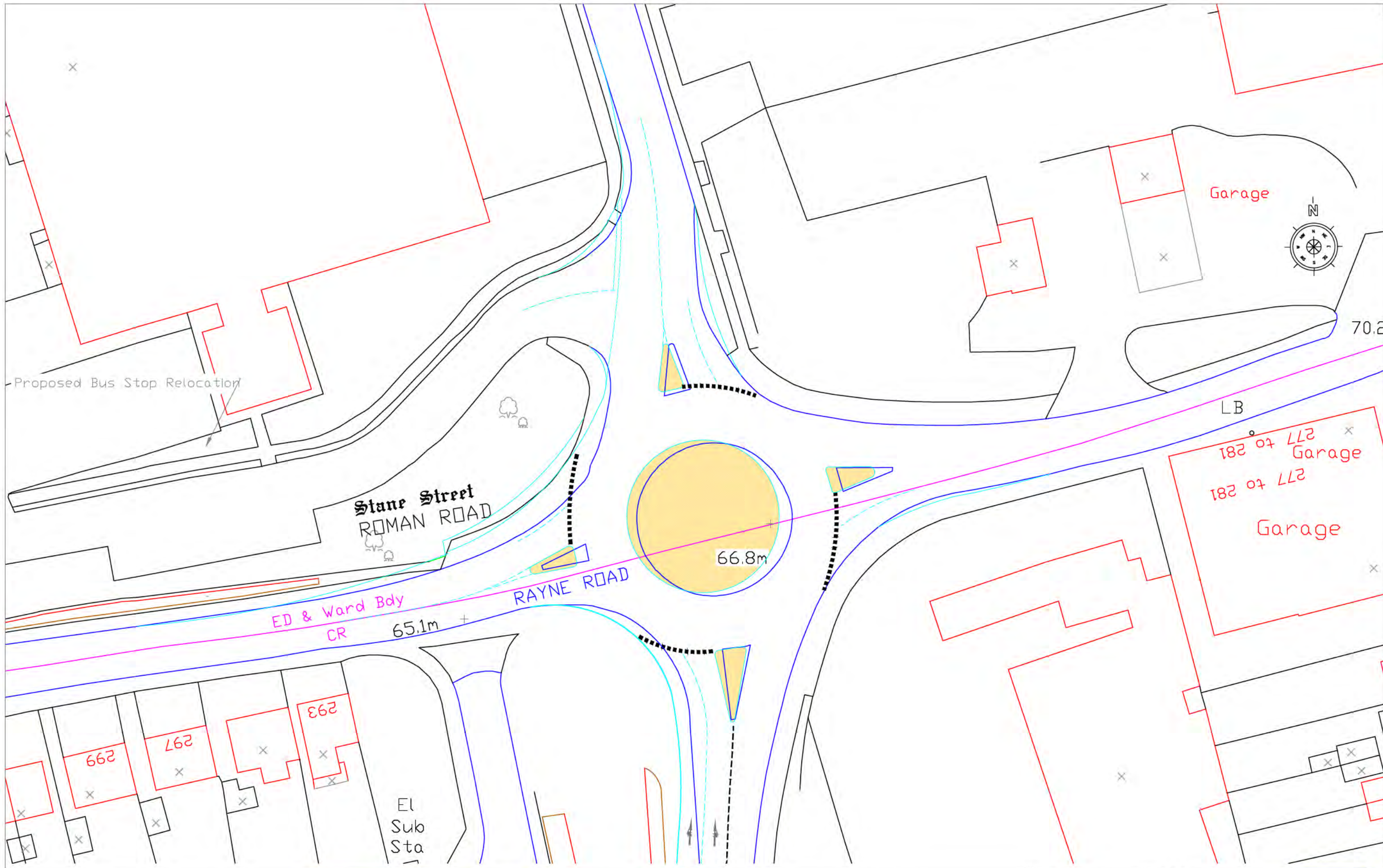
dwg no.

DR11





Appendix 4
Proposed Springwood Drive Improvements



client: Acorn Group Braintree	title: Springwood Drive Roundabout Improvements	date: 5/01/2017	scale @ A3 1:500
project: Brook Green	status: Planning	drawn:	Revision
discipline: Transport Planning	project no: JTP 06414	chk'd: SAA	dwg no: DR12





Appendix 5
Rayne Road Priority Junction



client: Acorn Group Braintree

project: Brook Green

discipline: Transport Planning

title: Rayne Road Site Access

status: Planning

project no.: JTP 06414

date: 19/06/2015

drawn:

chk'd: SAA

scale @ A3: 1:500

Revision:

dwg no.:

DR3





Appendix 6

A120 North Roundabout Existing Layout ARCADY



Appendix 6

A120 North Roundabout Existing Layout ARCADY

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2017
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
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: AM Existing A120 N.j9

Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note

Report generation date: 24/01/2017 11:22:24

- »2015, AM
- »2033, AM
- »2033, AM Reassigned Base
- »2033, AM Reassigned with Development
- »2020, AM Reassigned with 200 Units
- »2020, AM Reassigned with 400 Units

Summary of junction performance

	AM					AM Reassigned Base					AM Reassigned with Development					A	
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity		Queue (PCU)
2015																	
1 - Pods Brook Road North	0.9	4.53	0.47	A	-10 %												
3 - A131 Underbridge	0.8	2.69	0.42	A	[4 - A120 Entry]												
4 - A120 Entry	19.9	126.63	1.02	F													
2033																	
1 - Pods Brook Road North	1.4	5.54	0.57	A	-26 %	2.0	6.90	0.66	A	-30 %	34.9	74.55	1.01	F	-38 %		
3 - A131 Underbridge	1.1	3.17	0.50	A	[4 - A120 Entry]	1.2	3.39	0.54	A	[4 - A120 Entry]	1.6	3.95	0.60	A	[4 - A120 Entry]		
4 - A120 Entry	136.7	825.07	1.59	F		197.4	1366.47	1.85	F		375.7	2451.96	2.81	F			
2020																	
1 - Pods Brook Road North																	1.8
3 - A131 Underbridge																	1.0
4 - A120 Entry																	88.5

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM		ONE HOUR	07:45	09:15	15	✓
D3	2033	AM		ONE HOUR	07:45	09:15	15	✓
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D8	2020	AM Reassigned with 200 Units	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D9	2020	AM Reassigned with 400 Units	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

Analysis Set Details

ID	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	A120 North Roundabout	✓	100 000	100 000

2015, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	33.44	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-10	4 - A120 Entry

Arms

Arms

Arm	Name	Description
1	Pods Brook Road North	
2	A120 Exit	
3	A131 Underbridge	
4	A120 Entry	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Pods Brook Road North	3.65	7.00	25.0	45.0	64.0	28.0	
2 - A120 Exit							✓
3 - A131 Underbridge	7.30	8.45	7.1	20.0	64.0	32.0	
4 - A120 Entry	4.00	8.00	18.5	23.0	64.0	25.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
1 - Pods Brook Road North	None		
2 - A120 Exit			
3 - A131 Underbridge	None		
4 - A120 Entry	Percentage		58.00

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Pods Brook Road North	0.573	1878
2 - A120 Exit		
3 - A131 Underbridge	0.654	2424
4 - A120 Entry	0.587	1145

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	667	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	916	100 000
4 - A120 Entry		ONE HOUR	✓	509	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	5	119	543	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	678	237	1	0
	4 - A120 Entry	241	0	268	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.47	4.53	0.9	A	612	918
2 - A120 Exit						
3 - A131 Underbridge	0.42	2.69	0.8	A	841	1261
4 - A120 Entry	1.02	126 63	19.9	F	467	701

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	502	126	378	1662	0.302	500	692	0.0	0.5	3 245	A
2 - A120 Exit			611				267				
3 - A131 Underbridge	690	172	4	2422	0.285	688	607	0.0	0.4	2.193	A
4 - A120 Entry	383	96	692	739	0.518	379	0	0.0	1.1	10.760	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	600	150	452	1619	0.370	599	828	0.5	0.6	3 697	A
2 - A120 Exit			731				320				
3 - A131 Underbridge	823	206	4	2422	0.340	823	727	0.4	0.5	2 381	A
4 - A120 Entry	458	114	827	660	0.694	453	0	1.1	2.3	18 584	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	734	184	533	1572	0.467	733	996	0.6	0.9	4.488	A
2 - A120 Exit			875				392				
3 - A131 Underbridge	1009	252	5	2421	0.417	1008	870	0.5	0.8	2 693	A
4 - A120 Entry	560	140	1013	551	1.018	516	0	2.3	13.4	73 829	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	734	184	544	1567	0.469	734	1005	0.9	0.9	4.532	A
2 - A120 Exit			886				392				
3 - A131 Underbridge	1009	252	6	2421	0.417	1009	880	0.8	0.8	2.695	A
4 - A120 Entry	560	140	1014	550	1.019	535	0	13.4	19.9	126.633	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	600	150	491	1597	0.376	601	864	0.9	0.6	3.791	A
2 - A120 Exit			772				320				
3 - A131 Underbridge	823	206	5	2422	0.340	824	767	0.8	0.5	2 386	A
4 - A120 Entry	458	114	829	659	0.695	526	0	19.9	2.7	41 609	E

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	502	126	384	1658	0.303	503	699	0.6	0.5	3 267	A
2 - A120 Exit			619				268				
3 - A131 Underbridge	690	172	4	2422	0.285	690	615	0.5	0.4	2 200	A
4 - A120 Entry	383	96	694	738	0.519	389	0	2.7	1.2	11.448	B

2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	203 95	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-26	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D3	2033	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	806	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1106	100 000
4 - A120 Entry		ONE HOUR	✓	615	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	144	656	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	819	286	1	0
	4 - A120 Entry	291	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.57	5.54	1.4	A	740	1109
2 - A120 Exit						
3 - A131 Underbridge	0.50	3.17	1.1	A	1015	1522
4 - A120 Entry	1.59	825.07	136.7	F	564	847

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	607	152	454	1618	0.375	604	834	0.0	0.6	3.712	A
2 - A120 Exit			736				323				
3 - A131 Underbridge	833	208	4	2422	0.344	830	731	0.0	0.6	2.390	A
4 - A120 Entry	463	116	835	655	0.707	453	0	0.0	2.4	18.776	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	725	181	530	1574	0.460	724	986	0.6	0.9	4.429	A
2 - A120 Exit			868				386				
3 - A131 Underbridge	994	249	5	2421	0.411	994	862	0.6	0.7	2.665	A
4 - A120 Entry	553	138	999	559	0.989	517	0	2.4	11.4	66.938	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	887	222	540	1569	0.566	886	1109	0.9	1.3	5.509	A
2 - A120 Exit			953				473				
3 - A131 Underbridge	1218	304	7	2420	0.503	1216	946	0.7	1.1	3.160	A
4 - A120 Entry	677	169	1223	427	1.584	426	0	11.4	74.1	378.800	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	887	222	541	1568	0.566	887	1110	1.3	1.4	5.540	A
2 - A120 Exit			955				473				
3 - A131 Underbridge	1218	304	7	2420	0.503	1218	948	1.1	1.1	3.165	A
4 - A120 Entry	677	169	1224	427	1.587	427	0	74.1	136.7	791.203	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	725	181	550	1563	0.464	726	1004	1.4	0.9	4.519	A
2 - A120 Exit			889				387				
3 - A131 Underbridge	994	249	5	2421	0.411	996	883	1.1	0.7	2.672	A
4 - A120 Entry	553	138	1001	558	0.991	553	0	136.7	136.7	825.069	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	607	152	558	1559	0.389	608	928	0.9	0.7	3.971	A
2 - A120 Exit			841				324				
3 - A131 Underbridge	833	208	5	2421	0.344	833	837	0.7	0.6	2.397	A
4 - A120 Entry	463	116	838	653	0.709	648	0	136.7	90.4	632.342	F

2033, AM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	320 32	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-30	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	945	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1178	100 000
4 - A120 Entry		ONE HOUR	✓	640	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	167	772	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	891	286	1	0
	4 - A120 Entry	316	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.66	6.90	2.0	A	867	1301
2 - A120 Exit						
3 - A131 Underbridge	0.54	3.39	1.2	A	1081	1621
4 - A120 Entry	1.85	1366.47	197.4	F	587	881

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	711	178	453	1619	0.440	708	905	0.0	0.8	4.127	A
2 - A120 Exit			821				340				
3 - A131 Underbridge	887	222	4	2422	0.366	884	817	0.0	0.6	2.471	A
4 - A120 Entry	482	120	889	623	0.773	469	0	0.0	3.3	23 667	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	850	212	513	1584	0.536	848	1054	0.8	1.2	5.111	A
2 - A120 Exit			954				407				
3 - A131 Underbridge	1059	265	5	2421	0.437	1058	948	0.6	0.8	2.791	A
4 - A120 Entry	575	144	1064	521	1.104	503	0	3.3	21.3	113.075	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1040	260	508	1587	0.656	1037	1174	1.2	2.0	6.826	A
2 - A120 Exit			1048				498				
3 - A131 Underbridge	1297	324	7	2420	0.536	1295	1041	0.8	1.2	3.379	A
4 - A120 Entry	705	176	1302	381	1.849	381	0	21.3	102.3	601.505	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1040	260	508	1587	0.656	1040	1175	2.0	2.0	6.900	A
2 - A120 Exit			1050				499				
3 - A131 Underbridge	1297	324	7	2420	0.536	1297	1043	1.2	1.2	3.387	A
4 - A120 Entry	705	176	1304	380	1.853	380	0	102.3	183.4	1366.473	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	850	212	521	1579	0.538	852	1064	2.0	1.2	5.209	A
2 - A120 Exit			966				408				
3 - A131 Underbridge	1059	265	5	2421	0.437	1061	960	1.2	0.8	2.800	A
4 - A120 Entry	575	144	1066	520	1.107	519	0	183.4	197.4	1258.995	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	711	178	529	1575	0.452	713	981	1.2	0.9	4.382	A
2 - A120 Exit			901				342				
3 - A131 Underbridge	887	222	5	2421	0.366	888	896	0.8	0.6	2.483	A
4 - A120 Entry	482	120	892	622	0.775	618	0	197.4	163.3	1051.280	F

2033, AM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	536.67	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-38	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1494	100.000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1325	100.000
4 - A120 Entry		ONE HOUR	✓	729	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	305	1183	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	1038	286	1	0
	4 - A120 Entry	405	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.01	74.55	34.9	F	1371	2056
2 - A120 Exit						
3 - A131 Underbridge	0.60	3.95	1.6	A	1216	1824
4 - A120 Entry	2.81	2451.96	375.7	F	669	1003

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1125	281	441	1626	0.692	1116	1065	0.0	2.3	7 275	A
2 - A120 Exit			1114				442				
3 - A131 Underbridge	998	249	4	2422	0.412	995	1109	0.0	0.7	2 659	A
4 - A120 Entry	549	137	999	559	0.982	507	0	0.0	10.5	55 562	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1343	336	454	1618	0.830	1333	1183	2.3	4.7	12.828	B
2 - A120 Exit			1258				529				
3 - A131 Underbridge	1191	298	5	2421	0.492	1190	1253	0.7	1.0	3.086	A
4 - A120 Entry	655	164	1195	444	1.477	442	0	10.5	63.9	379.550	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1645	411	443	1624	1.013	1569	1307	4.7	23.7	42.896	E
2 - A120 Exit			1377				635				
3 - A131 Underbridge	1459	365	6	2420	0.603	1457	1371	1.0	1.6	3.936	A
4 - A120 Entry	803	201	1463	287	2.799	287	0	63.9	192.9	1466.228	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1645	411	443	1624	1.013	1600	1308	23.7	34.9	74.552	F
2 - A120 Exit			1401				642				
3 - A131 Underbridge	1459	365	6	2420	0.603	1459	1395	1.6	1.6	3.955	A
4 - A120 Entry	803	201	1465	285	2.813	285	0	192.9	322.2	2299.067	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1343	336	455	1618	0.830	1460	1186	34.9	5.8	34.313	D
2 - A120 Exit			1359				556				
3 - A131 Underbridge	1191	298	6	2421	0.492	1193	1353	1.6	1.0	3.106	A
4 - A120 Entry	655	164	1199	441	1.485	441	0	322.2	375.7	2451.959	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1125	281	463	1613	0.697	1138	1095	5.8	2.5	8.154	A
2 - A120 Exit			1153				448				
3 - A131 Underbridge	998	249	5	2421	0.412	999	1148	1.0	0.7	2.674	A
4 - A120 Entry	549	137	1003	556	0.986	555	0	375.7	374.2	2432.871	F

2020, AM Reassigned with 200 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	116.40	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-21	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D8	2020	AM Reassigned with 200 Units	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	907	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1050	100 000
4 - A120 Entry		ONE HOUR	✓	570	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	5	166	736	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	799	250	1	0
	4 - A120 Entry	287	0	283	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.63	6.40	1.8	A	832	1248
2 - A120 Exit						
3 - A131 Underbridge	0.48	3.01	1.0	A	963	1445
4 - A120 Entry	1.35	500.34	88.5	F	523	785

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	683	171	398	1650	0.414	680	816	0.0	0.7	3 876	A
2 - A120 Exit			766				312				
3 - A131 Underbridge	790	198	4	2422	0.326	788	762	0.0	0.5	2 326	A
4 - A120 Entry	429	107	792	680	0.631	422	0	0.0	1.8	14 807	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	815	204	473	1607	0.507	814	973	0.7	1.1	4.747	A
2 - A120 Exit			913				374				
3 - A131 Underbridge	944	236	4	2422	0.390	943	909	0.5	0.7	2 572	A
4 - A120 Entry	512	128	948	589	0.870	498	0	1.8	5.5	37 960	E

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	999	250	504	1589	0.628	996	1116	1.1	1.7	6.330	A
2 - A120 Exit			1043				457				
3 - A131 Underbridge	1156	289	5	2421	0.478	1155	1038	0.7	1.0	3.003	A
4 - A120 Entry	628	157	1160	464	1.352	460	0	5.5	47.4	226.281	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	999	250	506	1588	0.629	999	1118	1.7	1.8	6.396	A
2 - A120 Exit			1047				458				
3 - A131 Underbridge	1156	289	6	2421	0.478	1156	1041	1.0	1.0	3.007	A
4 - A120 Entry	628	157	1162	464	1.354	463	0	47.4	88.5	500.338	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	815	204	514	1583	0.515	818	1016	1.8	1.1	4.943	A
2 - A120 Exit			957				375				
3 - A131 Underbridge	944	236	5	2422	0.390	945	953	1.0	0.7	2.580	A
4 - A120 Entry	512	128	950	588	0.872	581	0	88.5	71.5	480.662	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	683	171	521	1580	0.432	684	942	1.1	0.8	4.219	A
2 - A120 Exit			892				314				
3 - A131 Underbridge	790	198	4	2422	0.326	791	888	0.7	0.5	2.335	A
4 - A120 Entry	429	107	795	679	0.632	668	0	71.5	11.6	230.676	F

2020, AM Reassigned with 400 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	149.87	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-24	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D9	2020	AM Reassigned with 400 Units	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	992	100.000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1092	100.000
4 - A120 Entry		ONE HOUR	✓	587	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	5	186	801	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	834	257	1	0
	4 - A120 Entry	304	0	283	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.68	7.50	2.2	A	910	1365
2 - A120 Exit						
3 - A131 Underbridge	0.50	3.12	1.0	A	1002	1503
4 - A120 Entry	1.48	663.48	113.2	F	539	808

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	747	187	403	1647	0.453	743	855	0.0	0.9	4.157	A
2 - A120 Exit			814				332				
3 - A131 Underbridge	822	206	4	2422	0.339	820	810	0.0	0.5	2 372	A
4 - A120 Entry	442	110	824	662	0.668	434	0	0.0	2.1	16 628	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	892	223	475	1606	0.555	890	1015	0.9	1.3	5 257	A
2 - A120 Exit			967				398				
3 - A131 Underbridge	982	245	4	2422	0.405	981	963	0.5	0.7	2 639	A
4 - A120 Entry	528	132	985	567	0.931	505	0	2.1	7.9	50 524	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1092	273	493	1595	0.685	1089	1148	1.3	2.2	7.388	A
2 - A120 Exit			1095				487				
3 - A131 Underbridge	1202	301	5	2421	0.497	1201	1090	0.7	1.0	3.116	A
4 - A120 Entry	646	162	1207	437	1.478	435	0	7.9	60.7	302.440	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1092	273	494	1595	0.685	1092	1150	2.2	2.2	7.498	A
2 - A120 Exit			1099				488				
3 - A131 Underbridge	1202	301	6	2421	0.497	1202	1093	1.0	1.0	3.121	A
4 - A120 Entry	646	162	1208	436	1.481	436	0	60.7	113.2	654.873	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	892	223	502	1590	0.561	895	1045	2.2	1.4	5.455	A
2 - A120 Exit			998				399				
3 - A131 Underbridge	982	245	5	2422	0.405	983	994	1.0	0.7	2.648	A
4 - A120 Entry	528	132	987	566	0.933	560	0	113.2	105.1	663.483	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	747	187	509	1586	0.471	748	971	1.4	0.9	4.513	A
2 - A120 Exit			924				334				
3 - A131 Underbridge	822	206	4	2422	0.339	823	920	0.7	0.5	2.381	A
4 - A120 Entry	442	110	827	660	0.670	653	0	105.1	52.2	436.487	F



Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2017
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Filename: A120 North Roundabout Existing Layout HE Dist PM.j9
Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note
Report generation date: 24/01/2017 14:23:32

- »2015, PM
- »2033, PM
- »2033, PM Reassigned Base
- »2033, PM Reassigned with Development
- »2020, PM Reassigned with 200 Units
- »2022, PM Reassigned with 400 Units

Summary of junction performance

	PM					PM Reassigned Base					PM Reassigned with Development					PM
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)
2015																
1 - Pods Brook Road North	3.2	13.93	0.76	B	5 %											
3 - A131 Underbridge	0.4	2.17	0.28	A	[4 - A120 Entry]											
4 - A120 Entry	6.9	20.93	0.88	C												
2033																
1 - Pods Brook Road North	22.5	78.30	1.00	F	-15 %	48.9	142.28	1.07	F	-19 %	122.3	368.77	1.18	F	-32 %	
3 - A131 Underbridge	0.5	2.39	0.34	A	[4 - A120 Entry]	0.6	2.49	0.37	A	[4 - A120 Entry]	1.1	3.19	0.51	A	[4 - A120 Entry]	
4 - A120 Entry	115.8	252.51	1.16	F		160.8	394.30	1.23	F		467.0	1267.90	1.63	F		
2020																
1 - Pods Brook Road North																11.2
3 - A131 Underbridge																0.5
4 - A120 Entry																44.4
2022																
1 - Pods Brook Road North																
3 - A131 Underbridge																
4 - A120 Entry																

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2015	PM	2015 AM Base	ONE HOUR	16:45	18:15	15	✓
D4	2033	PM		ONE HOUR	16:45	18:15	15	✓
D6	2033	PM Reassigned Base		ONE HOUR	16:45	18:15	15	✓
D8	2033	PM Reassigned with Development		ONE HOUR	16:45	18:15	15	✓
D9	2020	PM Reassigned with 200 Units		ONE HOUR	16:45	18:15	15	✓
D10	2022	PM Reassigned with 400 Units		ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	A120 North Roundabout	✓	100 000	100 000

2015, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	14.28	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	5	4 - A120 Entry

Arms

Arms

Arm	Name	Description
1	Pods Brook Road North	
2	A120 Exit	
3	A131 Underbridge	
4	A120 Entry	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Pods Brook Road North	3.65	7.00	15.0	45.0	64.0	28.0	
2 - A120 Exit							✓
3 - A131 Underbridge	7.50	7.50	0.0	20.0	64.0	20.0	
4 - A120 Entry	4.00	8.00	18.5	23.0	64.0	25.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
1 - Pods Brook Road North	None		
2 - A120 Exit			
3 - A131 Underbridge	None		
4 - A120 Entry	Percentage		91.00

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Pods Brook Road North	0.553	1756
2 - A120 Exit		
3 - A131 Underbridge	0.652	2351
4 - A120 Entry	0.587	1796

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2015	PM	2015 AM Base	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	766	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	596	100 000
4 - A120 Entry		ONE HOUR	✓	1127	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	167	598	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	370	224	2	0
	4 - A120 Entry	284	0	843	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.76	13.93	3.2	B	703	1054
2 - A120 Exit						
3 - A131 Underbridge	0.28	2.17	0.4	A	547	820
4 - A120 Entry	0.88	20.93	6.9	C	1034	1551

Main Results for each time segment
16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	577	144	801	1313	0.439	574	491	0.0	0.8	4.955	A
2 - A120 Exit			1081				293				
3 - A131 Underbridge	449	112	0.75	2351	0.191	448	1080	0.0	0.2	1.930	A
4 - A120 Entry	848	212	448	1533	0.553	843	0	0.0	1.3	5.311	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	689	172	958	1226	0.562	687	588	0.8	1.3	6.798	A
2 - A120 Exit			1294				351				
3 - A131 Underbridge	536	134	0.90	2351	0.228	536	1293	0.2	0.3	2.025	A
4 - A120 Entry	1013	253	536	1482	0.684	1010	0	1.3	2.2	7.754	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	843	211	1164	1112	0.758	836	717	1.3	3.0	13 029	B
2 - A120 Exit			1572				429				
3 - A131 Underbridge	656	164	1	2351	0.279	656	1571	0.3	0.4	2.169	A
4 - A120 Entry	1241	310	657	1411	0.879	1224	0	2.2	6.4	18 266	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	843	211	1176	1106	0.763	843	721	3.0	3.2	13 926	B
2 - A120 Exit			1588				430				
3 - A131 Underbridge	656	164	1	2351	0.279	656	1587	0.4	0.4	2.169	A
4 - A120 Entry	1241	310	657	1411	0.880	1239	0	6.4	6.9	20 934	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	689	172	975	1217	0.566	696	594	3.2	1.4	7.160	A
2 - A120 Exit			1317				353				
3 - A131 Underbridge	536	134	0.91	2351	0.228	536	1317	0.4	0.3	2.025	A
4 - A120 Entry	1013	253	537	1481	0.684	1031	0	6.9	2.3	8.518	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	577	144	808	1309	0.441	579	494	1.4	0.8	5.055	A
2 - A120 Exit			1092				295				
3 - A131 Underbridge	449	112	0.76	2351	0.191	449	1091	0.3	0.2	1.934	A
4 - A120 Entry	848	212	450	1533	0.554	852	0	2.3	1.3	5.455	A

2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	139.03	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-15	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D4	2033	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	945	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	736	100 000
4 - A120 Entry		ONE HOUR	✓	1392	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	206	738	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	457	277	2	0
	4 - A120 Entry	351	0	1041	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.00	78.30	22.5	F	867	1301
2 - A120 Exit						
3 - A131 Underbridge	0.34	2.39	0.5	A	675	1013
4 - A120 Entry	1.16	252.51	115.8	F	1277	1916

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	711	178	986	1211	0.588	706	606	0.0	1.4	7.208	A
2 - A120 Exit			1330				362				
3 - A131 Underbridge	554	139	0.75	2351	0.236	553	1329	0.0	0.3	2.043	A
4 - A120 Entry	1048	262	554	1472	0.712	1038	0	0.0	2.5	8.334	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	850	212	1173	1107	0.767	843	723	1.4	3.2	13.566	B
2 - A120 Exit			1583				433				
3 - A131 Underbridge	662	165	0.89	2351	0.281	661	1582	0.3	0.4	2.175	A
4 - A120 Entry	1251	313	662	1408	0.889	1234	0	2.5	6.9	19.460	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1040	260	1287	1044	0.996	990	834	3.2	15.7	46.740	E
2 - A120 Exit			1756				521				
3 - A131 Underbridge	810	203	1	2351	0.345	810	1755	0.4	0.5	2.385	A
4 - A120 Entry	1533	383	811	1321	1.160	1310	0	6.9	62.5	105.595	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1040	260	1294	1040	1.000	1013	837	15.7	22.5	78.299	F
2 - A120 Exit			1781				526				
3 - A131 Underbridge	810	203	1	2351	0.345	810	1780	0.5	0.5	2.385	A
4 - A120 Entry	1533	383	811	1320	1.161	1319	0	62.5	115.8	247.374	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	850	212	1294	1040	0.817	919	764	22.5	5.2	39.388	E
2 - A120 Exit			1764				450				
3 - A131 Underbridge	662	165	0.97	2351	0.281	662	1763	0.5	0.4	2.178	A
4 - A120 Entry	1251	313	663	1407	0.889	1395	0	115.8	79.9	252.507	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	711	178	1224	1079	0.660	724	687	5.2	2.0	10.719	B
2 - A120 Exit			1582				367				
3 - A131 Underbridge	554	139	0.77	2351	0.236	554	1581	0.4	0.3	2 047	A
4 - A120 Entry	1048	262	555	1471	0.713	1356	0	79.9	2.8	82.435	F

2033, PM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	219.13	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-19	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D6	2033	PM Reassigned Base	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1040	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	793	100 000
4 - A120 Entry		ONE HOUR	✓	1437	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	228	811	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	514	277	2	0
	4 - A120 Entry	396	0	1041	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.07	142.28	48.9	F	954	1431
2 - A120 Exit						
3 - A131 Underbridge	0.37	2.49	0.6	A	728	1092
4 - A120 Entry	1.23	394.30	160.8	F	1319	1978

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	783	196	985	1211	0.646	776	682	0.0	1.8	8.315	A
2 - A120 Exit			1382				378				
3 - A131 Underbridge	597	149	0.75	2351	0.254	596	1382	0.0	0.3	2.090	A
4 - A120 Entry	1082	270	596	1447	0.748	1070	0	0.0	2.9	9.535	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	935	234	1165	1111	0.841	923	811	1.8	4.8	18.454	C
2 - A120 Exit			1637				451				
3 - A131 Underbridge	713	178	0.89	2351	0.303	713	1636	0.3	0.4	2.243	A
4 - A120 Entry	1292	323	713	1378	0.938	1263	0	2.9	10.2	26.937	D

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1145	286	1233	1074	1.066	1048	919	4.8	29.0	71.089	F
2 - A120 Exit			1747				535				
3 - A131 Underbridge	873	218	1	2351	0.371	872	1746	0.4	0.6	2.484	A
4 - A120 Entry	1582	396	873	1284	1.232	1279	0	10.2	86.1	145.026	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1145	286	1237	1072	1.068	1065	921	29.0	48.9	142.278	F
2 - A120 Exit			1764				539				
3 - A131 Underbridge	873	218	1	2351	0.371	873	1763	0.6	0.6	2.486	A
4 - A120 Entry	1582	396	874	1284	1.233	1283	0	86.1	160.8	346.158	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	935	234	1242	1069	0.875	1047	841	48.9	20.9	124.166	F
2 - A120 Exit			1811				479				
3 - A131 Underbridge	713	178	1	2351	0.303	714	1810	0.6	0.4	2.245	A
4 - A120 Entry	1292	323	715	1377	0.938	1369	0	160.8	141.6	394.302	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	783	196	1250	1065	0.735	854	784	20.9	3.0	22.885	C
2 - A120 Exit			1708				396				
3 - A131 Underbridge	597	149	0.82	2351	0.254	597	1707	0.4	0.3	2.097	A
4 - A120 Entry	1082	270	598	1445	0.748	1435	0	141.6	53.3	246.755	F

2033, PM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	633 25	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-32	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D8	2033	PM Reassigned with Development	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1281	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1088	100 000
4 - A120 Entry		ONE HOUR	✓	1614	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	290	990	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	809	277	2	0
	4 - A120 Entry	573	0	1041	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.18	368.77	122.3	F	1175	1763
2 - A120 Exit						
3 - A131 Underbridge	0.51	3.19	1.1	A	998	1498
4 - A120 Entry	1.63	1267.90	467.0	F	1481	2222

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	964	241	970	1219	0.791	950	1027	0.0	3.6	13 048	B
2 - A120 Exit			1497				423				
3 - A131 Underbridge	819	205	0.74	2351	0.348	817	1497	0.0	0.5	2 392	A
4 - A120 Entry	1215	304	818	1317	0.923	1180	0	0.0	8.8	23 003	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1152	288	1034	1184	0.973	1112	1159	3.6	13.5	38.314	E
2 - A120 Exit			1646				501				
3 - A131 Underbridge	978	245	0.87	2351	0.416	977	1645	0.5	0.7	2.673	A
4 - A120 Entry	1451	363	978	1223	1.187	1215	0	8.8	67.8	126.481	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1410	353	1012	1196	1.179	1191	1279	13 5	68.5	134.695	F
2 - A120 Exit			1629				574				
3 - A131 Underbridge	1198	299	0.93	2351	0.510	1197	1628	0.7	1.1	3.181	A
4 - A120 Entry	1777	444	1198	1094	1.625	1094	0	67 8	238.6	510.661	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1410	353	1012	1196	1.179	1195	1280	68.5	122.3	295.351	F
2 - A120 Exit			1632				576				
3 - A131 Underbridge	1198	299	0.93	2351	0.510	1198	1631	1.1	1.1	3.186	A
4 - A120 Entry	1777	444	1199	1093	1.626	1093	0	238 6	409.6	1003.900	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1152	288	1039	1181	0.975	1172	1163	122.3	117.3	368.765	F
2 - A120 Exit			1696				515				
3 - A131 Underbridge	978	245	0.91	2351	0.416	979	1695	1.1	0.7	2.681	A
4 - A120 Entry	1451	363	980	1221	1.188	1221	0	409.6	467.0	1267.902	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	964	241	1056	1172	0.823	1162	1076	117.3	68.0	288.758	F
2 - A120 Exit			1746				472				
3 - A131 Underbridge	819	205	0.91	2351	0.348	820	1745	0.7	0.5	2.402	A
4 - A120 Entry	1215	304	821	1315	0.924	1312	0	467.0	442.8	1248.291	F

2020, PM Reassigned with 200 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	60.22	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-8	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D9	2020	PM Reassigned with 200 Units	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	933	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	724	100 000
4 - A120 Entry		ONE HOUR	✓	1258	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	206	726	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	485	237	2	0
	4 - A120 Entry	367	0	891	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.94	41.67	11.2	E	856	1284
2 - A120 Exit						
3 - A131 Underbridge	0.34	2.36	0.5	A	664	997
4 - A120 Entry	1.04	107.27	44.4	F	1154	1732

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	702	176	845	1288	0.545	698	639	0.0	1.2	6.180	A
2 - A120 Exit			1211				332				
3 - A131 Underbridge	545	136	0.75	2351	0.232	544	1210	0.0	0.3	2.033	A
4 - A120 Entry	947	237	545	1477	0.641	940	0	0.0	1.8	6.788	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	839	210	1010	1197	0.700	834	764	1.2	2.3	10.015	B
2 - A120 Exit			1447				397				
3 - A131 Underbridge	651	163	0.89	2351	0.277	651	1446	0.3	0.4	2.161	A
4 - A120 Entry	1131	283	651	1414	0.800	1123	0	1.8	3.8	12.328	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1027	257	1177	1105	0.930	1000	911	2.3	9.0	29.710	D
2 - A120 Exit			1696				482				
3 - A131 Underbridge	797	199	1	2351	0.339	797	1695	0.4	0.5	2.365	A
4 - A120 Entry	1385	346	798	1328	1.043	1291	0	3.8	27.4	55.073	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1027	257	1196	1095	0.939	1019	919	9.0	11.2	41.671	E
2 - A120 Exit			1729				486				
3 - A131 Underbridge	797	199	1	2351	0.339	797	1728	0.5	0.5	2.365	A
4 - A120 Entry	1385	346	798	1328	1.043	1317	0	27.4	44.4	107.267	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	839	210	1129	1132	0.741	871	814	11.2	3.1	15 661	C
2 - A120 Exit			1594				406				
3 - A131 Underbridge	651	163	0.93	2351	0.277	651	1593	0.5	0.4	2.163	A
4 - A120 Entry	1131	283	652	1414	0.800	1290	0	44.4	4.6	49.411	E

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	702	176	859	1281	0.548	710	646	3.1	1.3	6.520	A
2 - A120 Exit			1233				335				
3 - A131 Underbridge	545	136	0.76	2351	0.232	545	1232	0.4	0.3	2.035	A
4 - A120 Entry	947	237	546	1476	0.642	958	0	4.6	1.9	7.279	A

2022, PM Reassigned with 400 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	102 90	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D10	2022	PM Reassigned with 400 Units	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	989	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	778	100 000
4 - A120 Entry		ONE HOUR	✓	1313	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	219	769	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	533	243	2	0
	4 - A120 Entry	398	0	915	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.98	62.94	18.5	F	908	1361
2 - A120 Exit						
3 - A131 Underbridge	0.36	2.46	0.6	A	714	1071
4 - A120 Entry	1.12	192.52	86.1	F	1205	1807

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	745	186	867	1276	0.583	739	698	0.0	1.4	6.777	A
2 - A120 Exit			1260				346				
3 - A131 Underbridge	586	146	0.75	2351	0.249	584	1259	0.0	0.3	2.080	A
4 - A120 Entry	988	247	585	1453	0.680	980	0	0.0	2.1	7.675	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	889	222	1034	1184	0.751	883	834	1.4	2.9	11.982	B
2 - A120 Exit			1503				414				
3 - A131 Underbridge	699	175	0.89	2351	0.298	699	1502	0.3	0.4	2.225	A
4 - A120 Entry	1180	295	700	1386	0.852	1168	0	2.1	5.3	16.075	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1089	272	1159	1115	0.977	1046	975	2.9	13.6	39.727	E
2 - A120 Exit			1707				499				
3 - A131 Underbridge	857	214	1	2351	0.364	856	1706	0.4	0.6	2.457	A
4 - A120 Entry	1446	361	857	1294	1.118	1277	0	5.3	47.4	85.436	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1089	272	1169	1109	0.982	1069	979	13.6	18.5	62.942	F
2 - A120 Exit			1734				504				
3 - A131 Underbridge	857	214	1	2351	0.364	857	1733	0.6	0.6	2.459	A
4 - A120 Entry	1446	361	858	1293	1.118	1291	0	47.4	86.1	192.524	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	889	222	1174	1106	0.804	944	895	18.5	4.6	28.158	D
2 - A120 Exit			1691				428				
3 - A131 Underbridge	699	175	0.95	2351	0.298	700	1690	0.6	0.4	2.228	A
4 - A120 Entry	1180	295	701	1385	0.852	1369	0	86.1	39.0	166.834	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	745	186	976	1216	0.612	756	746	4.6	1.6	8 200	A
2 - A120 Exit			1382				351				
3 - A131 Underbridge	586	146	0.76	2351	0.249	586	1381	0.4	0.3	2 084	A
4 - A120 Entry	988	247	587	1452	0.681	1135	0	39.0	2.3	18 254	C



Appendix 7

A120 North Roundabout Proposed Layout ARCADY

Junctions 9
ARCADY 9 - Roundabout Module
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Filename: A120 North RAB Full SLTL HE Dist AM.j9

Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note

Report generation date: 23/01/2017 14:25:30

- »2015, AM
- »2033, AM
- »2033, AM Reassigned Base
- »2033, AM Reassigned with Development
- »2033, AM Reassigned with Development TP Mitigated
- »2022, AM Reassigned with 400 Units

Summary of junction performance

	AM					AM Reassigned Base					AM Reassigned with Development					A Deve
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)
2015																
1 - Pods Brook Road North	0.6	3.16	0.38	A	4 %											
3 - A131 Underbridge	0.8	2.70	0.42	A	[4 - A120 Entry]											
4 - A120 Entry	2.2	27.21	0.67	D												
2033																
1 - Pods Brook Road North	0.9	3.81	0.47	A	-14 %	1.3	4.40	0.55	A	-17 %	5.4	12.24	0.84	B	-24 %	4.3
3 - A131 Underbridge	1.1	3.17	0.50	A	[4 - A120 Entry]	1.2	3.39	0.54	A	[4 - A120 Entry]	1.6	3.96	0.60	A	[4 - A120 Entry]	1.5
4 - A120 Entry	20.9	203.46	1.07	F		37.7	357.31	1.22	F		79.2	824.89	1.72	F		74.2
2022																
1 - Pods Brook Road North																
3 - A131 Underbridge																
4 - A120 Entry																

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM		ONE HOUR	07:45	09:15	15	✓
D3	2033	AM		ONE HOUR	07:45	09:15	15	✓
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D9	2033	AM Reassigned with Development TP Mitigated	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D10	2022	AM Reassigned with 400 Units	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

Analysis Set Details

ID	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	A120 North Roundabout	✓	100 000	100 000

2015, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Full SLTL	Standard Roundabout	1,2,3,4	8.81	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	4	4 - A120 Entry

Arms

Arms

Arm	Name	Description
1	Pods Brook Road North	
2	A120 Exit	
3	A131 Underbridge	
4	A120 Entry	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Pods Brook Road North	7.00	8.00	5.0	52.0	64.0	42.0	
2 - A120 Exit							✓
3 - A131 Underbridge	7.30	8.45	7.1	20.0	64.0	32.0	
4 - A120 Entry	3.65	7.00	18.0	15.0	64.0	37.0	

Bypass

Arm	Arm has bypass	Bypass utilisation (%)
1 - Pods Brook Road North		
2 - A120 Exit		
3 - A131 Underbridge		
4 - A120 Entry	✓	100

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
1 - Pods Brook Road North	None		
2 - A120 Exit			
3 - A131 Underbridge	None		
4 - A120 Entry	Percentage		58.00

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Pods Brook Road North	0.629	2279
2 - A120 Exit		
3 - A131 Underbridge	0.654	2424
4 - A120 Entry	0.520	969

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	667	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	916	100 000
4 - A120 Entry		ONE HOUR	✓	509	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	5	119	543	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	678	237	1	0
	4 - A120 Entry	241	0	268	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.38	3.16	0.6	A	612	918
2 - A120 Exit						
3 - A131 Underbridge	0.42	2.70	0.8	A	841	1261
4 - A120 Entry	0.67	27.21	2.2	D	467	369

Main Results for each time segment
07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	502	502	126	0	181	378	2041	0.246	501	513	0.0	0.3	2.446
2 - A120 Exit						612				267			
3 - A131 Underbridge	690	690	172	0	0	4	2421	0.285	688	608	0.0	0.4	2.194
4 - A120 Entry	383	202	50	181	0	692	610	0.331	200	0	0.0	0.5	9.781

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	600	600	150	0	217	453	1994	0.301	599	614	0.3	0.4	2.704
2 - A120 Exit						733				320			
3 - A131 Underbridge	823	823	206	0	0	4	2421	0.340	823	728	0.4	0.5	2.382
4 - A120 Entry	458	241	60	217	0	827	539	0.447	240	0	0.5	0.9	13.40

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	734	734	184	0	265	552	1932	0.380	734	751	0.4	0.6	3.146
2 - A120 Exit						894				392			
3 - A131 Underbridge	1009	1009	252	0	0	5	2420	0.417	1008	889	0.5	0.8	2.694
4 - A120 Entry	560	295	74	265	0	1013	442	0.667	290	0	0.9	2.1	25.73

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	734	734	184	0	265	557	1929	0.381	734	752	0.6	0.6	3.156
2 - A120 Exit						899				392			
3 - A131 Underbridge	1009	1009	252	0	0	6	2420	0.417	1009	894	0.8	0.8	2.696
4 - A120 Entry	560	295	74	265	0	1014	442	0.668	295	0	2.1	2.2	27.21

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	600	600	150	0	217	460	1990	0.301	600	615	0.6	0.5	2.717
2 - A120 Exit						740				320			
3 - A131 Underbridge	823	823	206	0	0	5	2421	0.340	824	735	0.8	0.5	2.385
4 - A120 Entry	458	241	60	217	0	829	538	0.448	246	0	2.2	0.9	14.00

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	502	502	126	0	181	383	2039	0.246	503	515	0.5	0.3	2.458
2 - A120 Exit						617				268			
3 - A131 Underbridge	690	690	172	0	0	4	2421	0.285	690	613	0.5	0.4	2.200
4 - A120 Entry	383	202	50	181	0	694	609	0.332	203	0	0.9	0.6	9.982

2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Full SLTL	Standard Roundabout	1,2,3,4	52.12	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-14	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D3	2033	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	806	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1106	100 000
4 - A120 Entry		ONE HOUR	✓	615	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	144	656	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	819	286	1	0
	4 - A120 Entry	291	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.47	3.81	0.9	A	740	1109
2 - A120 Exit						
3 - A131 Underbridge	0.50	3.17	1.1	A	1015	1522
4 - A120 Entry	1.07	203.46	20.9	F	564	446

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	607	607	152	0	219	456	1993	0.305	605	619	0.0	0.5	2.715
2 - A120 Exit						738				323			
3 - A131 Underbridge	833	833	208	0	0	5	2421	0.344	830	733	0.0	0.6	2.390
4 - A120 Entry	463	244	61	219	0	835	535	0.456	240	0	0.0	0.9	13.51

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	725	725	181	0	262	545	1937	0.374	724	741	0.5	0.6	3.105
2 - A120 Exit						883				386			
3 - A131 Underbridge	994	994	249	0	0	5	2420	0.411	994	877	0.6	0.7	2.666
4 - A120 Entry	553	291	73	262	0	999	450	0.647	287	0	0.9	1.9	24.20

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	887	887	222	0	320	628	1885	0.471	886	907	0.6	0.9	3.77
2 - A120 Exit						1041				473			
3 - A131 Underbridge	1218	1218	304	0	0	7	2420	0.503	1216	1035	0.7	1.1	3.16
4 - A120 Entry	677	357	89	320	0	1223	333	1.070	312	0	1.9	13.1	112.6

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	887	887	222	0	320	641	1876	0.473	887	908	0.9	0.9	3.81
2 - A120 Exit						1055				473			
3 - A131 Underbridge	1218	1218	304	0	0	7	2420	0.503	1218	1049	1.1	1.1	3.16
4 - A120 Entry	677	357	89	320	0	1224	333	1.072	325	0	13.1	20.9	203.4

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	725	725	181	0	262	624	1887	0.384	726	743	0.9	0.7	3.250
2 - A120 Exit						962				387			
3 - A131 Underbridge	994	994	249	0	0	5	2420	0.411	996	957	1.1	0.7	2.676
4 - A120 Entry	553	291	73	262	0	1001	449	0.649	365	0	20.9	2.3	73.52

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	607	607	152	0	219	466	1986	0.305	608	622	0.7	0.5	2.737
2 - A120 Exit						749				324			
3 - A131 Underbridge	833	833	208	0	0	5	2421	0.344	833	745	0.7	0.6	2.400
4 - A120 Entry	463	244	61	219	0	838	534	0.457	249	0	2.3	1.0	14.44

2033, AM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Full SLTL	Standard Roundabout	1,2,3,4	85.71	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-17	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	945	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1178	100 000
4 - A120 Entry		ONE HOUR	✓	640	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	167	772	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	891	286	1	0
	4 - A120 Entry	316	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.55	4.40	1.3	A	867	1301
2 - A120 Exit						
3 - A131 Underbridge	0.54	3.39	1.2	A	1081	1621
4 - A120 Entry	1.22	357.31	37.7	F	587	446

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	711	711	178	0	238	455	1993	0.357	709	673	0.0	0.6	2.933
2 - A120 Exit						824				340			
3 - A131 Underbridge	887	887	222	0	0	5	2421	0.366	884	820	0.0	0.6	2.472
4 - A120 Entry	482	244	61	238	0	889	507	0.481	240	0	0.0	1.0	14.87

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	850	850	212	0	284	544	1937	0.438	849	806	0.6	0.8	3.460
2 - A120 Exit						985				407			
3 - A131 Underbridge	1059	1059	265	0	0	5	2420	0.438	1058	980	0.6	0.8	2.792
4 - A120 Entry	575	291	73	284	0	1064	416	0.700	286	0	1.0	2.4	29.74

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1040	1040	260	0	348	598	1903	0.547	1039	986	0.8	1.3	4.35
2 - A120 Exit						1138				498			
3 - A131 Underbridge	1297	1297	324	0	0	7	2420	0.536	1295	1132	0.8	1.2	3.38
4 - A120 Entry	705	357	89	348	0	1302	292	1.221	282	0	2.4	21.0	177.2

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1040	1040	260	0	348	606	1898	0.548	1040	988	1.3	1.3	4.39
2 - A120 Exit						1147				499			
3 - A131 Underbridge	1297	1297	324	0	0	7	2420	0.536	1297	1141	1.2	1.2	3.38
4 - A120 Entry	705	357	89	348	0	1304	291	1.224	290	0	21.0	37.7	357.3

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	850	850	212	0	284	661	1863	0.456	851	808	1 3	0.9	3.73
2 - A120 Exit						1105				408			
3 - A131 Underbridge	1059	1059	265	0	0	5	2420	0.438	1061	1099	1 2	0.8	2.80
4 - A120 Entry	575	291	73	284	0	1066	415	0.702	403	0	37.7	9.8	221 0

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	711	711	178	0	238	495	1968	0.362	713	676	0 9	0.6	3.006
2 - A120 Exit						866				341			
3 - A131 Underbridge	887	887	222	0	0	5	2421	0.366	888	862	0 8	0.6	2.482
4 - A120 Entry	482	244	61	238	0	892	505	0.483	279	0	9 8	1.1	20.45

2033, AM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Full SLTL	Standard Roundabout	1,2,3,4	176.12	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-24	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1494	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1325	100 000
4 - A120 Entry		ONE HOUR	✓	729	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	305	1183	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	1038	286	1	0
	4 - A120 Entry	405	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.84	12.24	5.4	B	1371	2056
2 - A120 Exit						
3 - A131 Underbridge	0.60	3.96	1.6	A	1216	1824
4 - A120 Entry	1.72	824.89	79.2	F	669	446

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1125	1125	281	0	305	454	1994	0.564	1119	784	0.0	1.3	4.293
2 - A120 Exit						1130				443			
3 - A131 Underbridge	998	998	249	0	0	4	2421	0.412	995	1126	0.0	0.7	2.660
4 - A120 Entry	549	244	61	305	0	999	450	0.542	239	0	0.0	1.3	18.69

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1343	1343	336	0	364	537	1942	0.692	1339	938	1.3	2.3	6.227
2 - A120 Exit						1346				530			
3 - A131 Underbridge	1191	1191	298	0	0	5	2420	0.492	1190	1341	0.7	1.0	3.087
4 - A120 Entry	655	291	73	364	0	1195	348	0.838	279	0	1.3	4.2	51.89

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1645	1645	411	0	446	522	1951	0.843	1633	1148	2.3	5.2	11.47
2 - A120 Exit						1507				648			
3 - A131 Underbridge	1459	1459	365	0	0	7	2420	0.603	1457	1501	1.0	1.6	3.93
4 - A120 Entry	803	357	89	446	0	1463	208	1.711	206	0	4.2	41.8	433.6

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1645	1645	411	0	446	523	1950	0.843	1644	1149	5.2	5.4	12.24
2 - A120 Exit						1517				651			
3 - A131 Underbridge	1459	1459	365	0	0	7	2420	0.603	1459	1510	1.6	1.6	3.95
4 - A120 Entry	803	357	89	446	0	1465	207	1.721	207	0	41.8	79.2	824.8

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1343	1343	336	0	364	600	1902	0.706	1354	940	5.4	2.6	7.02
2 - A120 Exit						1420				534			
3 - A131 Underbridge	1191	1191	298	0	0	5	2420	0.492	1193	1414	1.6	1.0	3.10
4 - A120 Entry	655	291	73	364	0	1199	346	0.842	341	0	79.2	66.8	698.5

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1125	1125	281	0	305	657	1866	0.603	1129	787	2.6	1.6	5.14
2 - A120 Exit						1339				446			
3 - A131 Underbridge	998	998	249	0	0	5	2421	0.412	999	1335	1.0	0.7	2.67
4 - A120 Entry	549	244	61	305	0	1003	448	0.545	440	0	66.8	17.7	352.5

2033, AM Reassigned with Development TP Mitigated

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Full SLTL	Standard Roundabout	1,2,3,4	164.05	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-23	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D9	2033	AM Reassigned with Development TP Mitigated	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1429	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1308	100 000
4 - A120 Entry		ONE HOUR	✓	719	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	6	289	1134	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	1021	286	1	0
	4 - A120 Entry	395	0	324	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
From		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.81	10.13	4.3	B	1311	1967
2 - A120 Exit						
3 - A131 Underbridge	0.60	3.88	1.5	A	1200	1800
4 - A120 Entry	1.64	761.34	74.2	F	660	446

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1076	1076	269	0	297	454	1993	0.540	1071	771	0.0	1.2	4.070
2 - A120 Exit						1094				431			
3 - A131 Underbridge	985	985	246	0	0	4	2421	0.407	982	1090	0.0	0.7	2.636
4 - A120 Entry	541	244	61	297	0	986	456	0.534	239	0	0.0	1.2	18.16

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1285	1285	321	0	355	538	1941	0.662	1281	922	1.2	2.0	5.698
2 - A120 Exit						1304				516			
3 - A131 Underbridge	1176	1176	294	0	0	5	2420	0.486	1175	1298	0.7	1.0	3.050
4 - A120 Entry	646	291	73	355	0	1180	356	0.819	281	0	1.2	3.9	48.19

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1573	1573	393	0	435	531	1945	0.809	1565	1129	2.0	4.2	9.69
2 - A120 Exit						1465				631			
3 - A131 Underbridge	1440	1440	360	0	0	7	2420	0.595	1438	1458	1.0	1.5	3.86
4 - A120 Entry	792	357	89	435	0	1445	218	1.635	216	0	3.9	39.2	390.8

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1573	1573	393	0	435	533	1944	0.809	1573	1131	4.2	4.3	10.13
2 - A120 Exit						1473				633			
3 - A131 Underbridge	1440	1440	360	0	0	7	2420	0.595	1440	1466	1.5	1.5	3.88
4 - A120 Entry	792	357	89	435	0	1447	217	1.644	217	0	39.2	74.2	761.3

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1285	1285	321	0	355	607	1898	0.677	1293	925	4.3	2.2	6.32
2 - A120 Exit						1381				519			
3 - A131 Underbridge	1176	1176	294	0	0	5	2420	0.486	1178	1376	1.5	1.0	3.06
4 - A120 Entry	646	291	73	355	0	1183	354	0.823	349	0	74.2	59.8	637.4

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1076	1076	269	0	297	662	1863	0.578	1079	774	2.2	1.5	4.83
2 - A120 Exit						1308				434			
3 - A131 Underbridge	985	985	246	0	0	5	2421	0.407	986	1303	1.0	0.7	2.65
4 - A120 Entry	541	244	61	297	0	990	454	0.537	446	0	59.8	9.3	288.1

2022, AM Reassigned with 400 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Full SLTL	Standard Roundabout	1,2,3,4	25.94	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-10	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D10	2022	AM Reassigned with 400 Units	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	992	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1092	100 000
4 - A120 Entry		ONE HOUR	✓	594	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	5	186	801	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	834	257	1	0
	4 - A120 Entry	304	0	290	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	20	8	4	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	5	8	0	5
	4 - A120 Entry	6	0	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.57	4.64	1.4	A	910	1365
2 - A120 Exit						
3 - A131 Underbridge	0.50	3.12	1.0	A	1002	1503
4 - A120 Entry	0.94	103.43	8.7	F	545	399

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	747	747	187	0	229	409	2022	0.369	744	630	0.0	0.6	2.948
2 - A120 Exit						821				333			
3 - A131 Underbridge	822	822	206	0	0	4	2421	0.340	820	817	0.0	0.5	2.372
4 - A120 Entry	447	218	55	229	0	824	541	0.404	215	0	0.0	0.7	12.27

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	892	892	223	0	273	490	1971	0.452	891	754	0.6	0.9	3.488
2 - A120 Exit						983				398			
3 - A131 Underbridge	982	982	245	0	0	4	2421	0.405	981	978	0.5	0.7	2.640
4 - A120 Entry	534	261	65	273	0	985	457	0.571	258	0	0.7	1.4	19.99

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1092	1092	273	0	335	582	1914	0.571	1090	923	0.9	1.4	4.571
2 - A120 Exit						1185				487			
3 - A131 Underbridge	1202	1202	301	0	0	5	2420	0.497	1201	1179	0.7	1.0	3.118
4 - A120 Entry	654	319	80	335	0	1207	342	0.934	298	0	1.4	6.8	71.32

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	1092	1092	273	0	335	596	1905	0.573	1092	924	1.4	1.4	4.64
2 - A120 Exit						1200				488			
3 - A131 Underbridge	1202	1202	301	0	0	6	2420	0.497	1202	1195	1.0	1.0	3.12
4 - A120 Entry	654	319	80	335	0	1208	341	0.936	312	0	6.8	8.7	103.4

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	892	892	223	0	273	521	1952	0.457	894	755	1.4	0.9	3 575
2 - A120 Exit						1016				399			
3 - A131 Underbridge	982	982	245	0	0	5	2421	0.405	983	1012	1 0	0.7	2 645
4 - A120 Entry	534	261	65	273	0	987	456	0.572	289	0	8.7	1.6	27.78

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction demand (PCU/hr)	Junction Arrivals (PCU)	Bypass demand (PCU/hr)	Bypass exit flow (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Pods Brook Road North	747	747	187	0	229	416	2018	0.370	748	632	0.9	0.6	2 973
2 - A120 Exit						830				334			
3 - A131 Underbridge	822	822	206	0	0	4	2421	0.340	823	826	0.7	0.5	2 380
4 - A120 Entry	447	218	55	229	0	827	540	0.405	222	0	1.6	0.8	12.80

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2017
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Filename: A120 North Roundabout Existing Layout HE Dist PM.j9
Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note
Report generation date: 24/01/2017 11:21:46

- »2015, PM
- »2033, PM
- »2033, PM Reassigned Base
- »2033, PM Reassigned with Development
- »2020, PM Reassigned with 200 Units
- »2022, PM Reassigned with 400 Units

Summary of junction performance

	PM					PM Reassigned Base					PM Reassigned with Development					PM
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)
2015																
1 - Pods Brook Road North	3.2	13.93	0.76	B	5 %											
3 - A131 Underbridge	0.4	2.17	0.28	A	[4 - A120 Entry]											
4 - A120 Entry	6.9	20.93	0.88	C												
2033																
1 - Pods Brook Road North	22.5	78.30	1.00	F	-15 %	48.9	142.28	1.07	F	-19 %	122.3	368.77	1.18	F	-32 %	
3 - A131 Underbridge	0.5	2.39	0.34	A	[4 - A120 Entry]	0.6	2.49	0.37	A	[4 - A120 Entry]	1.1	3.19	0.51	A	[4 - A120 Entry]	
4 - A120 Entry	115.8	252.51	1.16	F		160.8	394.30	1.23	F		467.0	1267.90	1.63	F		
2020																
1 - Pods Brook Road North																11.2
3 - A131 Underbridge																0.5
4 - A120 Entry																44.4
2022																
1 - Pods Brook Road North																
3 - A131 Underbridge																
4 - A120 Entry																

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2015	PM	2015 AM Base	ONE HOUR	16:45	18:15	15	✓
D4	2033	PM		ONE HOUR	16:45	18:15	15	✓
D6	2033	PM Reassigned Base		ONE HOUR	16:45	18:15	15	✓
D8	2033	PM Reassigned with Development		ONE HOUR	16:45	18:15	15	✓
D9	2020	PM Reassigned with 200 Units		ONE HOUR	16:45	18:15	15	✓
D10	2022	PM Reassigned with 400 Units		ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	A120 North Roundabout	✓	100 000	100 000

2015, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	14.28	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	5	4 - A120 Entry

Arms

Arms

Arm	Name	Description
1	Pods Brook Road North	
2	A120 Exit	
3	A131 Underbridge	
4	A120 Entry	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Pods Brook Road North	3.65	7.00	15.0	45.0	64.0	28.0	
2 - A120 Exit							✓
3 - A131 Underbridge	7.50	7.50	0.0	20.0	64.0	20.0	
4 - A120 Entry	4.00	8.00	18.5	23.0	64.0	25.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
1 - Pods Brook Road North	None		
2 - A120 Exit			
3 - A131 Underbridge	None		
4 - A120 Entry	Percentage		91.00

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Pods Brook Road North	0.553	1756
2 - A120 Exit		
3 - A131 Underbridge	0.652	2351
4 - A120 Entry	0.587	1796

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2015	PM	2015 AM Base	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	766	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	596	100 000
4 - A120 Entry		ONE HOUR	✓	1127	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	167	598	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	370	224	2	0
	4 - A120 Entry	284	0	843	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.76	13.93	3.2	B	703	1054
2 - A120 Exit						
3 - A131 Underbridge	0.28	2.17	0.4	A	547	820
4 - A120 Entry	0.88	20.93	6.9	C	1034	1551

Main Results for each time segment
16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	577	144	801	1313	0.439	574	491	0.0	0.8	4.955	A
2 - A120 Exit			1081				293				
3 - A131 Underbridge	449	112	0.75	2351	0.191	448	1080	0.0	0.2	1.930	A
4 - A120 Entry	848	212	448	1533	0.553	843	0	0.0	1.3	5.311	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	689	172	958	1226	0.562	687	588	0.8	1.3	6.798	A
2 - A120 Exit			1294				351				
3 - A131 Underbridge	536	134	0.90	2351	0.228	536	1293	0.2	0.3	2.025	A
4 - A120 Entry	1013	253	536	1482	0.684	1010	0	1.3	2.2	7.754	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	843	211	1164	1112	0.758	836	717	1.3	3.0	13 029	B
2 - A120 Exit			1572				429				
3 - A131 Underbridge	656	164	1	2351	0.279	656	1571	0.3	0.4	2.169	A
4 - A120 Entry	1241	310	657	1411	0.879	1224	0	2.2	6.4	18 266	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	843	211	1176	1106	0.763	843	721	3.0	3.2	13 926	B
2 - A120 Exit			1588				430				
3 - A131 Underbridge	656	164	1	2351	0.279	656	1587	0.4	0.4	2.169	A
4 - A120 Entry	1241	310	657	1411	0.880	1239	0	6.4	6.9	20 934	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	689	172	975	1217	0.566	696	594	3.2	1.4	7.160	A
2 - A120 Exit			1317				353				
3 - A131 Underbridge	536	134	0.91	2351	0.228	536	1317	0.4	0.3	2.025	A
4 - A120 Entry	1013	253	537	1481	0.684	1031	0	6.9	2.3	8.518	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	577	144	808	1309	0.441	579	494	1.4	0.8	5.055	A
2 - A120 Exit			1092				295				
3 - A131 Underbridge	449	112	0.76	2351	0.191	449	1091	0.3	0.2	1.934	A
4 - A120 Entry	848	212	450	1533	0.554	852	0	2.3	1.3	5.455	A

2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	139.03	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-15	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D4	2033	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	945	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	736	100 000
4 - A120 Entry		ONE HOUR	✓	1392	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	206	738	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	457	277	2	0
	4 - A120 Entry	351	0	1041	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.00	78.30	22.5	F	867	1301
2 - A120 Exit						
3 - A131 Underbridge	0.34	2.39	0.5	A	675	1013
4 - A120 Entry	1.16	252.51	115.8	F	1277	1916

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	711	178	986	1211	0.588	706	606	0.0	1.4	7.208	A
2 - A120 Exit			1330				362				
3 - A131 Underbridge	554	139	0.75	2351	0.236	553	1329	0.0	0.3	2.043	A
4 - A120 Entry	1048	262	554	1472	0.712	1038	0	0.0	2.5	8.334	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	850	212	1173	1107	0.767	843	723	1.4	3.2	13.566	B
2 - A120 Exit			1583				433				
3 - A131 Underbridge	662	165	0.89	2351	0.281	661	1582	0.3	0.4	2.175	A
4 - A120 Entry	1251	313	662	1408	0.889	1234	0	2.5	6.9	19.460	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1040	260	1287	1044	0.996	990	834	3.2	15.7	46.740	E
2 - A120 Exit			1756				521				
3 - A131 Underbridge	810	203	1	2351	0.345	810	1755	0.4	0.5	2.385	A
4 - A120 Entry	1533	383	811	1321	1.160	1310	0	6.9	62.5	105.595	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1040	260	1294	1040	1.000	1013	837	15.7	22.5	78.299	F
2 - A120 Exit			1781				526				
3 - A131 Underbridge	810	203	1	2351	0.345	810	1780	0.5	0.5	2.385	A
4 - A120 Entry	1533	383	811	1320	1.161	1319	0	62.5	115.8	247.374	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	850	212	1294	1040	0.817	919	764	22.5	5.2	39.388	E
2 - A120 Exit			1764				450				
3 - A131 Underbridge	662	165	0.97	2351	0.281	662	1763	0.5	0.4	2.178	A
4 - A120 Entry	1251	313	663	1407	0.889	1395	0	115.8	79.9	252.507	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	711	178	1224	1079	0.660	724	687	5.2	2.0	10.719	B
2 - A120 Exit			1582				367				
3 - A131 Underbridge	554	139	0.77	2351	0.236	554	1581	0.4	0.3	2 047	A
4 - A120 Entry	1048	262	555	1471	0.713	1356	0	79.9	2.8	82.435	F

2033, PM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	219.13	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-19	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D6	2033	PM Reassigned Base	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1040	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	793	100 000
4 - A120 Entry		ONE HOUR	✓	1437	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	228	811	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	514	277	2	0
	4 - A120 Entry	396	0	1041	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.07	142.28	48.9	F	954	1431
2 - A120 Exit						
3 - A131 Underbridge	0.37	2.49	0.6	A	728	1092
4 - A120 Entry	1.23	394.30	160.8	F	1319	1978

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	783	196	985	1211	0.646	776	682	0.0	1.8	8.315	A
2 - A120 Exit			1382				378				
3 - A131 Underbridge	597	149	0.75	2351	0.254	596	1382	0.0	0.3	2.090	A
4 - A120 Entry	1082	270	596	1447	0.748	1070	0	0.0	2.9	9.535	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	935	234	1165	1111	0.841	923	811	1.8	4.8	18.454	C
2 - A120 Exit			1637				451				
3 - A131 Underbridge	713	178	0.89	2351	0.303	713	1636	0.3	0.4	2.243	A
4 - A120 Entry	1292	323	713	1378	0.938	1263	0	2.9	10.2	26.937	D

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1145	286	1233	1074	1.066	1048	919	4.8	29.0	71.089	F
2 - A120 Exit			1747				535				
3 - A131 Underbridge	873	218	1	2351	0.371	872	1746	0.4	0.6	2.484	A
4 - A120 Entry	1582	396	873	1284	1.232	1279	0	10.2	86.1	145.026	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1145	286	1237	1072	1.068	1065	921	29.0	48.9	142.278	F
2 - A120 Exit			1764				539				
3 - A131 Underbridge	873	218	1	2351	0.371	873	1763	0.6	0.6	2.486	A
4 - A120 Entry	1582	396	874	1284	1.233	1283	0	86.1	160.8	346.158	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	935	234	1242	1069	0.875	1047	841	48.9	20.9	124.166	F
2 - A120 Exit			1811				479				
3 - A131 Underbridge	713	178	1	2351	0.303	714	1810	0.6	0.4	2.245	A
4 - A120 Entry	1292	323	715	1377	0.938	1369	0	160.8	141.6	394.302	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	783	196	1250	1065	0.735	854	784	20.9	3.0	22.885	C
2 - A120 Exit			1708				396				
3 - A131 Underbridge	597	149	0.82	2351	0.254	597	1707	0.4	0.3	2.097	A
4 - A120 Entry	1082	270	598	1445	0.748	1435	0	141.6	53.3	246.755	F

2033, PM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	633 25	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-32	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D8	2033	PM Reassigned with Development	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	1281	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	1088	100 000
4 - A120 Entry		ONE HOUR	✓	1614	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	290	990	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	809	277	2	0
	4 - A120 Entry	573	0	1041	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	1.18	368.77	122.3	F	1175	1763
2 - A120 Exit						
3 - A131 Underbridge	0.51	3.19	1.1	A	998	1498
4 - A120 Entry	1.63	1267.90	467.0	F	1481	2222

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	964	241	970	1219	0.791	950	1027	0.0	3.6	13 048	B
2 - A120 Exit			1497				423				
3 - A131 Underbridge	819	205	0.74	2351	0.348	817	1497	0.0	0.5	2 392	A
4 - A120 Entry	1215	304	818	1317	0.923	1180	0	0.0	8.8	23 003	C

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1152	288	1034	1184	0.973	1112	1159	3.6	13.5	38.314	E
2 - A120 Exit			1646				501				
3 - A131 Underbridge	978	245	0.87	2351	0.416	977	1645	0.5	0.7	2.673	A
4 - A120 Entry	1451	363	978	1223	1.187	1215	0	8.8	67.8	126.481	F

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1410	353	1012	1196	1.179	1191	1279	13 5	68.5	134.695	F
2 - A120 Exit			1629				574				
3 - A131 Underbridge	1198	299	0.93	2351	0.510	1197	1628	0.7	1.1	3.181	A
4 - A120 Entry	1777	444	1198	1094	1.625	1094	0	67 8	238.6	510.661	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1410	353	1012	1196	1.179	1195	1280	68.5	122.3	295.351	F
2 - A120 Exit			1632				576				
3 - A131 Underbridge	1198	299	0.93	2351	0.510	1198	1631	1.1	1.1	3.186	A
4 - A120 Entry	1777	444	1199	1093	1.626	1093	0	238 6	409.6	1003.900	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1152	288	1039	1181	0.975	1172	1163	122.3	117.3	368.765	F
2 - A120 Exit			1696				515				
3 - A131 Underbridge	978	245	0.91	2351	0.416	979	1695	1.1	0.7	2.681	A
4 - A120 Entry	1451	363	980	1221	1.188	1221	0	409.6	467.0	1267.902	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	964	241	1056	1172	0.823	1162	1076	117.3	68.0	288.758	F
2 - A120 Exit			1746				472				
3 - A131 Underbridge	819	205	0.91	2351	0.348	820	1745	0.7	0.5	2.402	A
4 - A120 Entry	1215	304	821	1315	0.924	1312	0	467.0	442.8	1248.291	F

2020, PM Reassigned with 200 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	60.22	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-8	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D9	2020	PM Reassigned with 200 Units	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	933	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	724	100 000
4 - A120 Entry		ONE HOUR	✓	1258	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	206	726	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	485	237	2	0
	4 - A120 Entry	367	0	891	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.94	41.67	11.2	E	856	1284
2 - A120 Exit						
3 - A131 Underbridge	0.34	2.36	0.5	A	664	997
4 - A120 Entry	1.04	107.27	44.4	F	1154	1732

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	702	176	845	1288	0.545	698	639	0.0	1.2	6.180	A
2 - A120 Exit			1211				332				
3 - A131 Underbridge	545	136	0.75	2351	0.232	544	1210	0.0	0.3	2.033	A
4 - A120 Entry	947	237	545	1477	0.641	940	0	0.0	1.8	6.788	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	839	210	1010	1197	0.700	834	764	1.2	2.3	10.015	B
2 - A120 Exit			1447				397				
3 - A131 Underbridge	651	163	0.89	2351	0.277	651	1446	0.3	0.4	2.161	A
4 - A120 Entry	1131	283	651	1414	0.800	1123	0	1.8	3.8	12.328	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1027	257	1177	1105	0.930	1000	911	2.3	9.0	29.710	D
2 - A120 Exit			1696				482				
3 - A131 Underbridge	797	199	1	2351	0.339	797	1695	0.4	0.5	2.365	A
4 - A120 Entry	1385	346	798	1328	1.043	1291	0	3.8	27.4	55.073	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1027	257	1196	1095	0.939	1019	919	9.0	11.2	41.671	E
2 - A120 Exit			1729				486				
3 - A131 Underbridge	797	199	1	2351	0.339	797	1728	0.5	0.5	2.365	A
4 - A120 Entry	1385	346	798	1328	1.043	1317	0	27.4	44.4	107.267	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	839	210	1129	1132	0.741	871	814	11.2	3.1	15 661	C
2 - A120 Exit			1594				406				
3 - A131 Underbridge	651	163	0.93	2351	0.277	651	1593	0.5	0.4	2.163	A
4 - A120 Entry	1131	283	652	1414	0.800	1290	0	44.4	4.6	49.411	E

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	702	176	859	1281	0.548	710	646	3.1	1.3	6.520	A
2 - A120 Exit			1233				335				
3 - A131 Underbridge	545	136	0.76	2351	0.232	545	1232	0.4	0.3	2.035	A
4 - A120 Entry	947	237	546	1476	0.642	958	0	4.6	1.9	7.279	A

2022, PM Reassigned with 400 Units

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A120 North Existing Roundabout	Standard Roundabout	1,2,3,4	102 90	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	4 - A120 Entry

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D10	2022	PM Reassigned with 400 Units	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Pods Brook Road North		ONE HOUR	✓	989	100 000
2 - A120 Exit					
3 - A131 Underbridge		ONE HOUR	✓	778	100 000
4 - A120 Entry		ONE HOUR	✓	1313	100 000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	1	219	769	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	533	243	2	0
	4 - A120 Entry	398	0	915	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Pods Brook Road North	2 - A120 Exit	3 - A131 Underbridge	4 - A120 Entry
From	1 - Pods Brook Road North	0	3	2	0
	2 - A120 Exit	Exit-only	Exit-only	Exit-only	Exit-only
	3 - A131 Underbridge	2	2	50	0
	4 - A120 Entry	4	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Pods Brook Road North	0.98	62.94	18.5	F	908	1361
2 - A120 Exit						
3 - A131 Underbridge	0.36	2.46	0.6	A	714	1071
4 - A120 Entry	1.12	192.52	86.1	F	1205	1807

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	745	186	867	1276	0.583	739	698	0.0	1.4	6.777	A
2 - A120 Exit			1260				346				
3 - A131 Underbridge	586	146	0.75	2351	0.249	584	1259	0.0	0.3	2.080	A
4 - A120 Entry	988	247	585	1453	0.680	980	0	0.0	2.1	7.675	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	889	222	1034	1184	0.751	883	834	1.4	2.9	11.982	B
2 - A120 Exit			1503				414				
3 - A131 Underbridge	699	175	0.89	2351	0.298	699	1502	0.3	0.4	2.225	A
4 - A120 Entry	1180	295	700	1386	0.852	1168	0	2.1	5.3	16.075	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1089	272	1159	1115	0.977	1046	975	2.9	13.6	39.727	E
2 - A120 Exit			1707				499				
3 - A131 Underbridge	857	214	1	2351	0.364	856	1706	0.4	0.6	2.457	A
4 - A120 Entry	1446	361	857	1294	1.118	1277	0	5.3	47.4	85.436	F

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	1089	272	1169	1109	0.982	1069	979	13.6	18.5	62.942	F
2 - A120 Exit			1734				504				
3 - A131 Underbridge	857	214	1	2351	0.364	857	1733	0.6	0.6	2.459	A
4 - A120 Entry	1446	361	858	1293	1.118	1291	0	47.4	86.1	192.524	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	889	222	1174	1106	0.804	944	895	18.5	4.6	28.158	D
2 - A120 Exit			1691				428				
3 - A131 Underbridge	699	175	0.95	2351	0.298	700	1690	0.6	0.4	2.228	A
4 - A120 Entry	1180	295	701	1385	0.852	1369	0	86.1	39.0	166.834	F

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Pods Brook Road North	745	186	976	1216	0.612	756	746	4.6	1.6	8 200	A
2 - A120 Exit			1382				351				
3 - A131 Underbridge	586	146	0.76	2351	0.249	586	1381	0.4	0.3	2 084	A
4 - A120 Entry	988	247	587	1452	0.681	1135	0	39.0	2.3	18 254	C





Appendix 8

Springwood Drive Roundabout Existing Layout ARCADY

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2017
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Filename: Springwood Drive Existing Layout.j9
Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note
Report generation date: 24/01/2017 10:26:22

- »2015, AM
- »2015, PM
- »2033, AM
- »2033, PM
- »2033, AM Reassigned Base
- »2033, PM Reassigned Base
- »2033, AM Reassigned with Development
- »2033, PM Reassigned with Development
- »2020 200 Units, AM
- »2020 200 Units, PM

Summary of junction performance

	AM					PM					AM Reassigned Base					PM R		
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	
2015																		
1 - Springwood Drive	0.4	5.01	0.24	A	-14 %	3.5	16.69	0.78	C	10 %								
2 - Rayne Road East	2.6	9.51	0.72	A	[3 - Pods Brook Road]	0.8	5.56	0.45	A	[1 - Springwood Drive]								
3 - Pods Brook Road	47.1	163.74	1.08	F		2.2	11.77	0.69	B									
4 - Rayne Road West	0.9	7.67	0.46	A		0.3	4.14	0.24	A									
2033																		
1 - Springwood Drive	0.5	5.64	0.31	A	-29 %	48.3	162.52	1.09	F	-11 %	1.2	8.00	0.52	A	-29 %	34.0	117.9	
2 - Rayne Road East	7.8	24.51	0.90	C	[3 - Pods Brook Road]	1.4	7.56	0.58	A	[1 - Springwood Drive]	4.1	15.85	0.81	C	[3 - Pods Brook Road]	1.4	8.14	
3 - Pods Brook Road	207.3	796.35	1.40	F		6.8	29.97	0.88	D		202.7	741.61	1.37	F		19.3	73.87	
4 - Rayne Road West	1.3	9.54	0.57	A		0.5	5.09	0.33	A		1.2	8.37	0.54	A		0.6	5.82	
2020 200 Units																		
1 - Springwood Drive	1.1	7.85	0.50	A	-21 %	5.5	24.61	0.85	C	-2 %								
2 - Rayne Road East	2.5	10.87	0.71	B	[3 - Pods Brook Road]	1.0	6.70	0.49	A	[3 - Pods Brook Road]								
3 - Pods Brook Road	104.1	362.70	1.20	F		10.0	41.78	0.92	E									
4 - Rayne Road West	1.4	8.79	0.57	A		0.5	5.23	0.34	A									

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM		ONE HOUR	07:45	09:15	15	✓
D2	2015	PM		ONE HOUR	16:45	18:15	15	✓
D3	2033	AM		ONE HOUR	07:45	09:15	15	✓
D4	2033	PM		ONE HOUR	16:45	18:15	15	✓
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D6	2033	PM Reassigned Base		ONE HOUR	16:45	18:15	15	✓
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D8	2033	PM Reassigned with Development		ONE HOUR	16:45	18:15	15	✓
D9	2020 200 Units	AM	200 Units	ONE HOUR	07:45	09:15	15	✓
D10	2020 200 Units	PM	200 Units	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2015, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Exisitng RAB	Standard Roundabout	1,2,3,4	64.80	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-14	3 - Pods Brook Road

Arms

Arms

Arm	Name	Description
1	Springwood Drive	
2	Rayne Road East	
3	Pods Brook Road	
4	Rayne Road West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Springwood Drive	3.50	6.50	7.5	25.0	39.0	25.2	
2 - Rayne Road East	3.80	7.10	5.5	29.6	39.0	21.5	
3 - Pods Brook Road	3.50	4.50	3.2	15.0	39.0	35.5	
4 - Rayne Road West	3.65	6.70	8.1	32.8	39.0	21.9	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Springwood Drive	0.612	1498
2 - Rayne Road East	0.630	1562
3 - Pods Brook Road	0.527	1169
4 - Rayne Road West	0.638	1597

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	243	100.000
2 - Rayne Road East		ONE HOUR	✓	911	100.000
3 - Pods Brook Road		ONE HOUR	✓	872	100.000
4 - Rayne Road West		ONE HOUR	✓	374	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	8	92	123	20
	2 - Rayne Road East	250	6	455	200
	3 - Pods Brook Road	512	299	1	60
	4 - Rayne Road West	55	224	95	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.24	5.01	0.4	A	223	334
2 - Rayne Road East	0.72	9.51	2.6	A	836	1254
3 - Pods Brook Road	1.08	163.74	47.1	F	800	1200
4 - Rayne Road West	0.46	7.67	0.9	A	343	515

2015, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Existing RAB	Standard Roundabout	1,2,3,4	11 07	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	10	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2015	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	719	100.000
2 - Rayne Road East		ONE HOUR	✓	494	100.000
3 - Pods Brook Road		ONE HOUR	✓	637	100.000
4 - Rayne Road West		ONE HOUR	✓	255	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	242	441	35
	2 - Rayne Road East	45	1	265	183
	3 - Pods Brook Road	76	489	2	70
	4 - Rayne Road West	24	198	32	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.78	16.69	3.5	C	660	990
2 - Rayne Road East	0.45	5.56	0.8	A	453	680
3 - Pods Brook Road	0.69	11.77	2.2	B	585	877
4 - Rayne Road West	0.24	4.14	0.3	A	234	351

2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Existing RAB	Standard Roundabout	1,2,3,4	301.20	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-29	3 - Pods Brook Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D3	2033	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	294	100.000
2 - Rayne Road East		ONE HOUR	✓	1101	100.000
3 - Pods Brook Road		ONE HOUR	✓	1057	100.000
4 - Rayne Road West		ONE HOUR	✓	452	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	10	111	149	24
	2 - Rayne Road East	302	7	550	242
	3 - Pods Brook Road	618	366	1	72
	4 - Rayne Road West	66	271	115	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.31	5.64	0.5	A	270	405
2 - Rayne Road East	0.90	24.51	7.8	C	1010	1515
3 - Pods Brook Road	1.40	796.35	207.3	F	970	1455
4 - Rayne Road West	0.57	9.54	1.3	A	415	622

2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Existing RAB	Standard Roundabout	1,2,3,4	66.95	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-11	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D4	2033	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	887	100.000
2 - Rayne Road East		ONE HOUR	✓	610	100.000
3 - Pods Brook Road		ONE HOUR	✓	786	100.000
4 - Rayne Road West		ONE HOUR	✓	315	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	299	544	43
	2 - Rayne Road East	56	1	327	226
	3 - Pods Brook Road	94	604	2	86
	4 - Rayne Road West	30	244	40	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	1.09	162.52	48.3	F	814	1221
2 - Rayne Road East	0.58	7.56	1.4	A	560	840
3 - Pods Brook Road	0.88	29.97	6.8	D	721	1082
4 - Rayne Road West	0.33	5.09	0.5	A	289	434

2033, AM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Exisitng RAB	Standard Roundabout	1,2,3,4	286.05	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-29	3 - Pods Brook Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	496	100.000
2 - Rayne Road East		ONE HOUR	✓	875	100.000
3 - Pods Brook Road		ONE HOUR	✓	1110	100.000
4 - Rayne Road West		ONE HOUR	✓	473	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	10	82	306	98
	2 - Rayne Road East	136	7	509	223
	3 - Pods Brook Road	680	357	1	72
	4 - Rayne Road West	89	269	115	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.52	8.00	1.2	A	455	683
2 - Rayne Road East	0.81	15.85	4.1	C	803	1204
3 - Pods Brook Road	1.37	741.61	202.7	F	1019	1528
4 - Rayne Road West	0.54	8.37	1.2	A	434	651

2033, PM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Exisitng RAB	Standard Roundabout	1,2,3,4	65.77	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-10	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D6	2033	PM Reassigned Base	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	887	100.000
2 - Rayne Road East		ONE HOUR	✓	557	100.000
3 - Pods Brook Road		ONE HOUR	✓	876	100.000
4 - Rayne Road West		ONE HOUR	✓	355	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	175	624	87
	2 - Rayne Road East	32	1	310	214
	3 - Pods Brook Road	225	563	2	86
	4 - Rayne Road West	72	242	40	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	1.05	117.97	34.0	F	814	1221
2 - Rayne Road East	0.58	8.14	1.4	A	511	767
3 - Pods Brook Road	0.99	73.87	19.3	F	804	1206
4 - Rayne Road West	0.38	5.82	0.6	A	326	489

2033, AM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Exisitng RAB	Standard Roundabout	1,2,3,4	693.67	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-40	3 - Pods Brook Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	537	100.000
2 - Rayne Road East		ONE HOUR	✓	962	100.000
3 - Pods Brook Road		ONE HOUR	✓	1352	100.000
4 - Rayne Road West		ONE HOUR	✓	676	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	10	82	339	106
	2 - Rayne Road East	136	7	587	232
	3 - Pods Brook Road	747	453	1	151
	4 - Rayne Road West	111	294	271	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.64	12.09	2.0	B	493	739
2 - Rayne Road East	1.00	78.70	23.2	F	883	1324
3 - Pods Brook Road	1.67	1741.34	474.8	F	1241	1861
4 - Rayne Road West	0.75	14.94	3.0	B	620	930

2033, PM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Exisitng RAB	Standard Roundabout	1,2,3,4	240.04	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-24	3 - Pods Brook Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D8	2033	PM Reassigned with Development	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	950	100.000
2 - Rayne Road East		ONE HOUR	✓	626	100.000
3 - Pods Brook Road		ONE HOUR	✓	1085	100.000
4 - Rayne Road West		ONE HOUR	✓	466	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	175	679	95
	2 - Rayne Road East	32	1	370	223
	3 - Pods Brook Road	255	608	2	220
	4 - Rayne Road West	83	255	127	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	1.16	268.30	79.5	F	872	1308
2 - Rayne Road East	0.68	11.56	2.2	B	574	862
3 - Pods Brook Road	1.23	447.39	125.1	F	996	1493
4 - Rayne Road West	0.48	6.58	0.9	A	428	641

2020 200 Units, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Existing RAB	Standard Roundabout	1,2,3,4	140.29	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-21	3 - Pods Brook Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D9	2020 200 Units	AM	200 Units	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	466	100.000
2 - Rayne Road East		ONE HOUR	✓	752	100.000
3 - Pods Brook Road		ONE HOUR	✓	1016	100.000
4 - Rayne Road West		ONE HOUR	✓	509	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	8	68	291	99
	2 - Rayne Road East	98	6	451	197
	3 - Pods Brook Road	610	317	1	88
	4 - Rayne Road West	92	247	170	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.50	7.85	1.1	A	428	641
2 - Rayne Road East	0.71	10.87	2.5	B	690	1035
3 - Pods Brook Road	1.20	362.70	104.1	F	932	1398
4 - Rayne Road West	0.57	8.79	1.4	A	467	701

2020 200 Units, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Exisitng RAB	Standard Roundabout	1,2,3,4	24 31	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-2	3 - Pods Brook Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D10	2020 200 Units	PM	200 Units	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	768	100.000
2 - Rayne Road East		ONE HOUR	✓	475	100.000
3 - Pods Brook Road		ONE HOUR	✓	837	100.000
4 - Rayne Road West		ONE HOUR	✓	340	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	132	550	85
	2 - Rayne Road East	24	1	264	186
	3 - Pods Brook Road	213	486	2	136
	4 - Rayne Road West	73	198	68	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.85	24.61	5.5	C	705	1057
2 - Rayne Road East	0.49	6.70	1.0	A	436	654
3 - Pods Brook Road	0.92	41.78	10.0	E	768	1152
4 - Rayne Road West	0.34	5.23	0.5	A	312	468





Appendix 9

Springwood Drive Roundabout Proposed Layout ARCADY

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2017
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
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Filename: Springwood Drive Modified Layout.j9
Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note
Report generation date: 24/01/2017 10:27:21

- »2015, AM
- »2015, PM
- »2033, AM
- »2033, PM
- »2033, AM Reassigned Base
- »2033, PM Reassigned Base
- »2033, AM Reassigned with Development
- »2033, PM Reassigned with Development
- »2033, AM Reassigned with Development Mitigated
- »2033, PM Reassigned with Development Mitigated

Summary of junction performance

	AM					PM					AM Reassigned Base					PM Reassigned Base		
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	
1 - Springwood Drive	0.3	3.86	0.20	A	42 %	1.7	7.76	0.62	A	29 %								
2 - Rayne Road East	1.7	6.26	0.63	A	[2 - Rayne Road East]	0.7	4.32	0.39	A	[1 - Springwood Drive]								
3 - Pods Brook Road	1.1	4.08	0.51	A		0.5	2.70	0.34	A									
4 - Rayne Road West	0.6	5.49	0.38	A		0.2	3.20	0.20	A									
1 - Springwood Drive	0.4	4.49	0.26	A	13 %	5.6	21.72	0.86	C	4 %	0.9	5.94	0.44	A	22 %	5.2	19.89	
2 - Rayne Road East	4.6	13.26	0.82	B	[2 - Rayne Road East]	1.1	5.78	0.51	A	[1 - Springwood Drive]	2.5	9.25	0.71	A	[2 - Rayne Road East]	1.0	6.15	
3 - Pods Brook Road	2.0	6.34	0.66	A		0.8	3.21	0.43	A		2.0	5.77	0.65	A		1.0	3.66	
4 - Rayne Road West	1.2	8.89	0.55	A		0.4	3.77	0.26	A		1.2	8.05	0.54	A		0.5	4.30	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	11/05/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM		ONE HOUR	07:45	09:15	15	✓
D2	2015	PM		ONE HOUR	16:45	18:15	15	✓
D3	2033	AM		ONE HOUR	07:45	09:15	15	✓
D4	2033	PM		ONE HOUR	16:45	18:15	15	✓
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D6	2033	PM Reassigned Base		ONE HOUR	16:45	18:15	15	✓
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D8	2033	PM Reassigned with Development		ONE HOUR	16:45	18:15	15	✓
D9	2033	AM Reassigned with Development Mitigated	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓
D10	2033	PM Reassigned with Development Mitigated		ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2015, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	5.11	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	42	2 - Rayne Road East

Arms

Arms

Arm	Name	Description
1	Springwood Drive	
2	Rayne Road East	
3	Pods Brook Road	
4	Rayne Road West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Springwood Drive	3.50	8.00	15.0	25.0	39.0	25.2	
2 - Rayne Road East	3.80	7.60	11.0	29.6	39.0	21.5	
3 - Pods Brook Road	7.30	8.00	4.0	18.0	39.0	35.5	
4 - Rayne Road West	3.85	8.00	16.0	17.0	39.0	21.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Springwood Drive	0.673	1803
2 - Rayne Road East	0.673	1775
3 - Pods Brook Road	0.755	2290
4 - Rayne Road West	0.689	1892

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2015	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	243	100.000
2 - Rayne Road East		ONE HOUR	✓	911	100.000
3 - Pods Brook Road		ONE HOUR	✓	872	100.000
4 - Rayne Road West		ONE HOUR	✓	374	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	8	92	123	20
	2 - Rayne Road East	250	6	455	200
	3 - Pods Brook Road	512	299	1	60
	4 - Rayne Road West	55	224	95	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.20	3.86	0.3	A	223	334
2 - Rayne Road East	0.63	6.26	1.7	A	836	1254
3 - Pods Brook Road	0.51	4.08	1.1	A	800	1200
4 - Rayne Road West	0.38	5.49	0.6	A	343	515

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	183	46	469	1487	0.123	182	619	0 0	0.2	3.168	A
2 - Rayne Road East	686	171	185	1651	0.416	683	466	0 0	0.7	3.803	A
3 - Pods Brook Road	656	164	363	2016	0.326	654	505	0 0	0.5	2.778	A
4 - Rayne Road West	282	70	807	1336	0.211	280	210	0 0	0.3	3.453	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	218	55	561	1425	0.153	218	741	0.2	0.2	3.427	A
2 - Rayne Road East	819	205	222	1626	0.504	818	558	0.7	1.0	4.560	A
3 - Pods Brook Road	784	196	434	1962	0.399	783	605	0.5	0.7	3.211	A
4 - Rayne Road West	336	84	966	1227	0.274	336	251	0.3	0.4	4.094	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	268	67	687	1341	0.200	267	907	0.2	0.3	3.853	A
2 - Rayne Road East	1003	251	272	1593	0.630	1000	682	1.0	1.7	6.203	A
3 - Pods Brook Road	960	240	531	1889	0.508	959	740	0.7	1.1	4.065	A
4 - Rayne Road West	412	103	1182	1078	0.382	411	308	0.4	0.6	5.464	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	268	67	688	1340	0.200	268	908	0.3	0.3	3.857	A
2 - Rayne Road East	1003	251	272	1592	0.630	1003	684	1.7	1.7	6.260	A
3 - Pods Brook Road	960	240	533	1888	0.509	960	742	1.1	1.1	4.082	A
4 - Rayne Road West	412	103	1185	1076	0.383	412	308	0.6	0.6	5.491	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	218	55	563	1424	0.153	219	743	0.3	0.2	3.432	A
2 - Rayne Road East	819	205	222	1626	0.504	822	559	1.7	1.1	4.607	A
3 - Pods Brook Road	784	196	436	1961	0.400	785	608	1.1	0.7	3.229	A
4 - Rayne Road West	336	84	969	1224	0.275	337	252	0.6	0.4	4.118	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	183	46	471	1486	0.123	183	622	0.2	0.2	3.175	A
2 - Rayne Road East	686	171	186	1650	0.416	687	468	1.1	0.7	3.837	A
3 - Pods Brook Road	656	164	365	2015	0.326	657	508	0.7	0.5	2.793	A
4 - Rayne Road West	282	70	811	1333	0.211	282	211	0.4	0.3	3.470	A

2015, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	4.87	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	29	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2015	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	719	100.000
2 - Rayne Road East		ONE HOUR	✓	494	100.000
3 - Pods Brook Road		ONE HOUR	✓	637	100.000
4 - Rayne Road West		ONE HOUR	✓	255	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	242	441	35
	2 - Rayne Road East	45	1	265	183
	3 - Pods Brook Road	76	489	2	70
	4 - Rayne Road West	24	198	32	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.62	7.76	1.7	A	660	990
2 - Rayne Road East	0.39	4.32	0.7	A	453	680
3 - Pods Brook Road	0.34	2.70	0.5	A	585	877
4 - Rayne Road West	0.20	3.20	0.2	A	234	351

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	541	135	543	1437	0.377	539	110	0 0	0.6	4.101	A
2 - Rayne Road East	372	93	384	1517	0.245	371	698	0 0	0.3	3.211	A
3 - Pods Brook Road	480	120	200	2140	0.224	478	555	0 0	0.3	2.223	A
4 - Rayne Road West	192	48	461	1575	0.122	191	217	0 0	0.1	2.646	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	646	162	650	1366	0.473	645	131	0 6	0.9	5.119	A
2 - Rayne Road East	444	111	459	1466	0.303	444	835	0 3	0.4	3.601	A
3 - Pods Brook Road	573	143	239	2110	0.271	572	664	0 3	0.4	2.403	A
4 - Rayne Road West	229	57	552	1512	0.152	229	260	0 1	0.2	2.854	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	792	198	795	1268	0.625	789	161	0 9	1.7	7.665	A
2 - Rayne Road East	544	136	562	1397	0.389	543	1022	0 4	0.6	4.309	A
3 - Pods Brook Road	701	175	292	2070	0.339	701	812	0 4	0.5	2.698	A
4 - Rayne Road West	281	70	675	1427	0.197	280	318	0 2	0.2	3.195	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	792	198	796	1267	0.625	792	161	1 7	1.7	7.765	A
2 - Rayne Road East	544	136	564	1396	0.390	544	1024	0 6	0.7	4.323	A
3 - Pods Brook Road	701	175	293	2069	0.339	701	815	0 5	0.5	2.701	A
4 - Rayne Road West	281	70	676	1427	0.197	281	318	0 2	0.2	3.196	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	646	162	651	1365	0.474	649	131	1 7	0.9	5.186	A
2 - Rayne Road East	444	111	462	1464	0.303	445	838	0 7	0.4	3.616	A
3 - Pods Brook Road	573	143	240	2109	0.271	573	668	0 5	0.4	2.407	A
4 - Rayne Road West	229	57	553	1512	0.152	230	260	0 2	0.2	2.859	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	541	135	545	1436	0.377	543	110	0.9	0.6	4.139	A
2 - Rayne Road East	372	93	386	1515	0.245	372	701	0.4	0.3	3.226	A
3 - Pods Brook Road	480	120	201	2139	0.224	480	558	0.4	0.3	2.227	A
4 - Rayne Road West	192	48	463	1574	0.122	192	218	0.2	0.1	2.651	A

2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	9.26	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	13	2 - Rayne Road East

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D3	2033	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	293	100.000
2 - Rayne Road East		ONE HOUR	✓	1161	100.000
3 - Pods Brook Road		ONE HOUR	✓	1052	100.000
4 - Rayne Road West		ONE HOUR	✓	452	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	9	111	149	24
	2 - Rayne Road East	302	7	550	302
	3 - Pods Brook Road	618	361	1	72
	4 - Rayne Road West	66	271	115	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.26	4.49	0.4	A	269	403
2 - Rayne Road East	0.82	13.26	4.6	B	1065	1598
3 - Pods Brook Road	0.66	6.34	2.0	A	965	1448
4 - Rayne Road West	0.55	8.89	1.2	A	415	622

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	221	55	566	1422	0.155	220	746	0 0	0.2	3.441	A
2 - Rayne Road East	874	219	223	1625	0.538	869	562	0 0	1.2	4.858	A
3 - Pods Brook Road	792	198	482	1926	0.411	789	611	0 0	0.7	3.323	A
4 - Rayne Road West	340	85	973	1222	0.279	339	298	0 0	0.4	4.125	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	263	66	678	1347	0.196	263	893	0 2	0.3	3.818	A
2 - Rayne Road East	1044	261	268	1595	0.654	1041	673	1 2	1.9	6.627	A
3 - Pods Brook Road	946	236	577	1854	0.510	944	731	0 7	1.1	4.155	A
4 - Rayne Road West	406	102	1165	1090	0.373	406	357	0 4	0.6	5.325	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	323	81	828	1246	0.259	322	1090	0 3	0.4	4.479	A
2 - Rayne Road East	1278	320	327	1555	0.822	1268	823	1 9	4.4	12.458	B
3 - Pods Brook Road	1158	290	704	1759	0.658	1155	892	1 1	2.0	6.231	A
4 - Rayne Road West	498	124	1423	912	0.546	495	435	0 6	1.2	8.709	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	323	81	831	1243	0.259	323	1095	0 4	0.4	4.493	A
2 - Rayne Road East	1278	320	328	1554	0.822	1278	826	4 4	4.6	13.258	B
3 - Pods Brook Road	1158	290	709	1755	0.660	1158	897	2 0	2.0	6.342	A
4 - Rayne Road West	498	124	1429	908	0.548	498	438	1 2	1.2	8.889	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	263	66	682	1344	0.196	264	900	0 4	0.3	3.832	A
2 - Rayne Road East	1044	261	269	1594	0.655	1054	677	4 6	2.0	6.962	A
3 - Pods Brook Road	946	236	584	1849	0.511	949	738	2 0	1.1	4.228	A
4 - Rayne Road West	406	102	1173	1084	0.375	409	361	1 2	0.6	5.422	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	221	55	570	1419	0.155	221	751	0.3	0.2	3.452	A
2 - Rayne Road East	874	219	225	1624	0.538	877	566	2.0	1.2	4.965	A
3 - Pods Brook Road	792	198	487	1923	0.412	793	615	1.1	0.7	3.360	A
4 - Rayne Road West	340	85	979	1218	0.280	341	301	0.6	0.4	4.168	A

2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	10.20	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	4	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D4	2033	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	887	100.000
2 - Rayne Road East		ONE HOUR	✓	610	100.000
3 - Pods Brook Road		ONE HOUR	✓	786	100.000
4 - Rayne Road West		ONE HOUR	✓	315	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	299	544	43
	2 - Rayne Road East	56	1	327	226
	3 - Pods Brook Road	94	604	2	86
	4 - Rayne Road West	30	244	40	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.86	21.72	5.6	C	814	1221
2 - Rayne Road East	0.51	5.78	1.1	A	560	840
3 - Pods Brook Road	0.43	3.21	0.8	A	721	1082
4 - Rayne Road West	0.26	3.77	0.4	A	289	434

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	668	167	670	1352	0.494	664	136	0 0	1.0	5.338	A
2 - Rayne Road East	459	115	472	1457	0.315	457	861	0 0	0.5	3.678	A
3 - Pods Brook Road	592	148	246	2105	0.281	590	684	0 0	0.4	2.438	A
4 - Rayne Road West	237	59	569	1500	0.158	236	267	0 0	0.2	2.898	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	797	199	801	1264	0.631	794	163	1 0	1.7	7.826	A
2 - Rayne Road East	548	137	565	1395	0.393	548	1030	0 5	0.7	4.345	A
3 - Pods Brook Road	707	177	294	2068	0.342	706	819	0 4	0.5	2.713	A
4 - Rayne Road West	283	71	681	1423	0.199	283	320	0 2	0.3	3.213	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	977	244	981	1143	0.855	962	199	1.7	5.3	19.164	C
2 - Rayne Road East	672	168	685	1314	0.511	670	1258	0.7	1.1	5.706	A
3 - Pods Brook Road	865	216	360	2019	0.429	864	996	0.5	0.8	3.198	A
4 - Rayne Road West	347	87	834	1318	0.263	346	391	0.3	0.4	3.769	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	977	244	982	1142	0.855	975	199	5.3	5.6	21.715	C
2 - Rayne Road East	672	168	694	1308	0.513	672	1263	1.1	1.1	5.785	A
3 - Pods Brook Road	865	216	361	2018	0.429	865	1004	0.8	0.8	3.206	A
4 - Rayne Road West	347	87	835	1317	0.263	347	392	0.4	0.4	3.774	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	797	199	803	1262	0.632	813	163	5 6	1.8	8.478	A
2 - Rayne Road East	548	137	577	1387	0.395	550	1038	1.1	0.7	4.412	A
3 - Pods Brook Road	707	177	296	2067	0.342	708	831	0 8	0.5	2.720	A
4 - Rayne Road West	283	71	682	1422	0.199	284	321	0 4	0.3	3.218	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	668	167	672	1350	0.495	671	136	1.8	1.0	5.460	A
2 - Rayne Road East	459	115	477	1454	0.316	460	866	0.7	0.5	3.707	A
3 - Pods Brook Road	592	148	247	2103	0.281	592	690	0.5	0.4	2.447	A
4 - Rayne Road West	237	59	571	1499	0.158	237	269	0.3	0.2	2.904	A

2033, AM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	7.20	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	22	2 - Rayne Road East

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2033	AM Reassigned Base	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	500	100.000
2 - Rayne Road East		ONE HOUR	✓	889	100.000
3 - Pods Brook Road		ONE HOUR	✓	1126	100.000
4 - Rayne Road West		ONE HOUR	✓	476	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	10	82	310	98
	2 - Rayne Road East	136	7	523	223
	3 - Pods Brook Road	690	363	1	72
	4 - Rayne Road West	89	269	118	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.44	5.94	0.9	A	459	688
2 - Rayne Road East	0.71	9.25	2.5	A	816	1224
3 - Pods Brook Road	0.65	5.77	2.0	A	1033	1550
4 - Rayne Road West	0.54	8.05	1.2	A	437	655

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	376	94	568	1420	0.265	375	694	0 0	0.4	3.917	A
2 - Rayne Road East	669	167	403	1504	0.445	666	541	0 0	0.8	4.389	A
3 - Pods Brook Road	848	212	355	2022	0.419	845	713	0 0	0.8	3.211	A
4 - Rayne Road West	358	90	905	1269	0.282	357	295	0 0	0.4	3.993	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	449	112	680	1345	0.334	449	830	0.4	0.6	4.573	A
2 - Rayne Road East	799	200	482	1451	0.551	797	647	0 8	1.2	5.638	A
3 - Pods Brook Road	1012	253	425	1969	0.514	1011	854	0 8	1.1	3.949	A
4 - Rayne Road West	428	107	1083	1146	0.373	427	353	0.4	0.6	5.069	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	551	138	832	1243	0.443	549	1015	0 6	0.9	5.899	A
2 - Rayne Road East	979	245	590	1378	0.710	974	791	1 2	2.4	9.026	A
3 - Pods Brook Road	1240	310	520	1898	0.653	1236	1044	1.1	1.9	5.698	A
4 - Rayne Road West	524	131	1325	979	0.535	522	431	0 6	1.1	7.933	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	551	138	834	1241	0.444	550	1018	0 9	0.9	5.936	A
2 - Rayne Road East	979	245	591	1377	0.711	979	794	2.4	2.5	9.251	A
3 - Pods Brook Road	1240	310	522	1896	0.654	1240	1048	1 9	2.0	5.769	A
4 - Rayne Road West	524	131	1329	977	0.537	524	433	1.1	1.2	8.052	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	449	112	684	1342	0.335	451	835	0.9	0.6	4.607	A
2 - Rayne Road East	799	200	484	1449	0.551	804	651	2.5	1.3	5.764	A
3 - Pods Brook Road	1012	253	428	1967	0.515	1016	860	2.0	1.1	3.999	A
4 - Rayne Road West	428	107	1089	1142	0.375	430	355	1.2	0.6	5.137	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	376	94	572	1418	0.265	377	698	0.6	0.4	3.943	A
2 - Rayne Road East	669	167	405	1503	0.445	671	544	1.3	0.8	4.452	A
3 - Pods Brook Road	848	212	358	2020	0.420	849	718	1.1	0.8	3.239	A
4 - Rayne Road West	358	90	910	1265	0.283	359	297	0.6	0.4	4.030	A

2033, PM Reassigned Base

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	9.63	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	5	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D6	2033	PM Reassigned Base	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	892	100.000
2 - Rayne Road East		ONE HOUR	✓	558	100.000
3 - Pods Brook Road		ONE HOUR	✓	892	100.000
4 - Rayne Road West		ONE HOUR	✓	355	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	175	629	87
	2 - Rayne Road East	32	1	311	214
	3 - Pods Brook Road	227	575	2	88
	4 - Rayne Road West	72	242	40	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.84	19.89	5.2	C	819	1228
2 - Rayne Road East	0.51	6.15	1.0	A	512	768
3 - Pods Brook Road	0.49	3.66	1.0	A	819	1228
4 - Rayne Road West	0.31	4.30	0.5	A	326	489

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	672	168	646	1368	0.491	668	249	0 0	1.0	5.275	A
2 - Rayne Road East	420	105	569	1392	0.302	418	745	0 0	0.4	3.773	A
3 - Pods Brook Road	672	168	252	2100	0.320	670	735	0 0	0.5	2.632	A
4 - Rayne Road West	267	67	629	1459	0.183	266	292	0 0	0.2	3.120	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	802	200	773	1282	0.625	799	298	1 0	1.7	7.642	A
2 - Rayne Road East	502	125	681	1317	0.381	501	891	0.4	0.6	4.508	A
3 - Pods Brook Road	802	200	301	2063	0.389	801	880	0 5	0.7	2.987	A
4 - Rayne Road West	319	80	753	1374	0.232	319	350	0 2	0.3	3.528	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	982	246	947	1166	0.842	969	365	1.7	4.9	17.847	C
2 - Rayne Road East	614	154	826	1219	0.504	613	1090	0.6	1.0	6.056	A
3 - Pods Brook Road	982	246	368	2012	0.488	981	1071	0.7	1.0	3.649	A
4 - Rayne Road West	391	98	921	1258	0.311	390	427	0.3	0.5	4.289	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	982	246	948	1165	0.843	981	366	4.9	5.2	19.889	C
2 - Rayne Road East	614	154	836	1213	0.507	614	1093	1.0	1.0	6.152	A
3 - Pods Brook Road	982	246	370	2011	0.488	982	1080	1.0	1.0	3.663	A
4 - Rayne Road West	391	98	923	1257	0.311	391	429	0.5	0.5	4.298	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	802	200	775	1281	0.626	816	299	5 2	1.8	8.205	A
2 - Rayne Road East	502	125	694	1308	0.384	503	897	1 0	0.6	4.583	A
3 - Pods Brook Road	802	200	304	2061	0.389	803	893	1 0	0.7	3.003	A
4 - Rayne Road West	319	80	755	1372	0.233	320	353	0 5	0.3	3.536	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	672	168	649	1366	0.492	675	250	1 8	1.0	5.397	A
2 - Rayne Road East	420	105	575	1389	0.303	421	749	0 6	0.4	3.809	A
3 - Pods Brook Road	672	168	254	2099	0.320	672	742	0.7	0.5	2.645	A
4 - Rayne Road West	267	67	632	1457	0.183	268	294	0 3	0.2	3.128	A

2033, AM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	13.71	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	4	4 - Rayne Road West

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D7	2033	AM Reassigned with Development	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	532	100.000
2 - Rayne Road East		ONE HOUR	✓	953	100.000
3 - Pods Brook Road		ONE HOUR	✓	1325	100.000
4 - Rayne Road West		ONE HOUR	✓	651	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	10	82	335	105
	2 - Rayne Road East	136	7	579	231
	3 - Pods Brook Road	740	442	1	142
	4 - Rayne Road West	108	291	252	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.55	8.50	1.4	A	488	732
2 - Rayne Road East	0.84	17.65	4.9	C	874	1312
3 - Pods Brook Road	0.77	8.88	3.5	A	1216	1824
4 - Rayne Road West	0.82	22.02	4.2	C	597	896

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	401	100	744	1302	0.308	399	745	0 0	0.5	4.528	A
2 - Rayne Road East	717	179	526	1421	0.505	713	616	0 0	1.0	5.189	A
3 - Pods Brook Road	998	249	366	2014	0.495	993	874	0 0	1.0	3.696	A
4 - Rayne Road West	490	123	1001	1202	0.408	487	358	0 0	0.7	5.096	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	478	120	890	1204	0.397	477	892	0 5	0.7	5.638	A
2 - Rayne Road East	857	214	630	1351	0.634	854	737	1 0	1.7	7.384	A
3 - Pods Brook Road	1191	298	438	1959	0.608	1189	1046	1 0	1.6	4.900	A
4 - Rayne Road West	585	146	1199	1067	0.549	583	429	0 7	1.2	7.532	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	586	146	1082	1075	0.545	583	1087	0 7	1.3	8.304	A
2 - Rayne Road East	1049	262	768	1259	0.834	1038	897	1 7	4.7	15.937	C
3 - Pods Brook Road	1459	365	533	1888	0.773	1452	1272	1 6	3.4	8.550	A
4 - Rayne Road West	717	179	1463	885	0.810	706	522	1 2	3.9	19.438	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	586	146	1092	1068	0.549	586	1094	1 3	1.4	8.501	A
2 - Rayne Road East	1049	262	773	1255	0.836	1048	904	4 7	4.9	17.647	C
3 - Pods Brook Road	1459	365	538	1884	0.774	1458	1284	3 4	3.5	8.879	A
4 - Rayne Road West	717	179	1470	879	0.815	716	526	3 9	4.2	22.015	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	478	120	905	1194	0.401	481	901	1.4	0.8	5.768	A
2 - Rayne Road East	857	214	639	1346	0.637	869	747	4.9	1.8	7.942	A
3 - Pods Brook Road	1191	298	445	1954	0.609	1199	1063	3.5	1.7	5.061	A
4 - Rayne Road West	585	146	1210	1059	0.553	597	434	4.2	1.3	8.106	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	401	100	750	1298	0.309	402	751	0.8	0.5	4.582	A
2 - Rayne Road East	717	179	531	1418	0.506	721	621	1.8	1.1	5.320	A
3 - Pods Brook Road	998	249	370	2011	0.496	1000	882	1.7	1.0	3.753	A
4 - Rayne Road West	490	123	1009	1197	0.409	492	361	1.3	0.7	5.205	A

2033, PM Reassigned with Development

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	23.86	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-4	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D8	2033	PM Reassigned with Development	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	950	100.000
2 - Rayne Road East		ONE HOUR	✓	626	100.000
3 - Pods Brook Road		ONE HOUR	✓	1085	100.000
4 - Rayne Road West		ONE HOUR	✓	466	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	175	679	95
	2 - Rayne Road East	32	1	370	223
	3 - Pods Brook Road	255	608	2	220
	4 - Rayne Road West	83	255	127	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.98	64.87	18.3	F	872	1308
2 - Rayne Road East	0.62	8.64	1.6	A	574	862
3 - Pods Brook Road	0.60	4.67	1.5	A	996	1493
4 - Rayne Road West	0.42	5.34	0.8	A	428	641

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	715	179	746	1301	0.550	710	278	0 0	1.2	6.240	A
2 - Rayne Road East	471	118	677	1320	0.357	469	779	0 0	0.6	4.319	A
3 - Pods Brook Road	817	204	264	2091	0.391	814	882	0 0	0.7	2.935	A
4 - Rayne Road West	351	88	675	1428	0.246	349	404	0 0	0.3	3.451	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	854	214	893	1202	0.710	849	333	1.2	2.4	10.391	B
2 - Rayne Road East	563	141	810	1230	0.457	562	932	0.6	0.9	5.499	A
3 - Pods Brook Road	975	244	316	2051	0.475	974	1055	0.7	0.9	3.483	A
4 - Rayne Road West	419	105	807	1336	0.314	418	483	0.3	0.5	4.057	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	1046	261	1092	1068	0.980	1001	408	2.4	13.7	40.834	E
2 - Rayne Road East	689	172	959	1130	0.610	686	1134	0.9	1.6	8.258	A
3 - Pods Brook Road	1195	299	383	2001	0.597	1192	1263	0.9	1.5	4.630	A
4 - Rayne Road West	513	128	988	1212	0.423	512	587	0.5	0.8	5.315	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	1046	261	1094	1066	0.981	1027	408	13.7	18.3	64.874	F
2 - Rayne Road East	689	172	981	1115	0.618	689	1141	1.6	1.6	8.641	A
3 - Pods Brook Road	1195	299	387	1998	0.598	1195	1284	1.5	1.5	4.672	A
4 - Rayne Road West	513	128	990	1210	0.424	513	591	0.8	0.8	5.342	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	854	214	896	1200	0.712	917	334	18.3	2.7	15.913	C
2 - Rayne Road East	563	141	865	1193	0.472	566	947	1.6	0.9	5.894	A
3 - Pods Brook Road	975	244	325	2045	0.477	978	1106	1.5	1.0	3.525	A
4 - Rayne Road West	419	105	810	1334	0.314	420	492	0.8	0.5	4.081	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	715	179	749	1298	0.551	721	280	2.7	1.3	6.495	A
2 - Rayne Road East	471	118	686	1314	0.359	473	784	0.9	0.6	4.387	A
3 - Pods Brook Road	817	204	267	2089	0.391	818	892	1.0	0.7	2.957	A
4 - Rayne Road West	351	88	678	1425	0.246	351	407	0.5	0.3	3.473	A

2033, AM Reassigned with Development Mitigated

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	13.71	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	4	4 - Rayne Road West

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D9	2033	AM Reassigned with Development Mitigated	Reassigned Flows	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	532	100.000
2 - Rayne Road East		ONE HOUR	✓	953	100.000
3 - Pods Brook Road		ONE HOUR	✓	1325	100.000
4 - Rayne Road West		ONE HOUR	✓	651	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	10	82	335	105
	2 - Rayne Road East	136	7	579	231
	3 - Pods Brook Road	740	442	1	142
	4 - Rayne Road West	108	291	252	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	16	17	5
	2 - Rayne Road East	2	17	2	4
	3 - Pods Brook Road	6	4	0	5
	4 - Rayne Road West	0	1	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.55	8.50	1.4	A	488	732
2 - Rayne Road East	0.84	17.65	4.9	C	874	1312
3 - Pods Brook Road	0.77	8.88	3.5	A	1216	1824
4 - Rayne Road West	0.82	22.02	4.2	C	597	896

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	401	100	744	1302	0.308	399	745	0 0	0.5	4.528	A
2 - Rayne Road East	717	179	526	1421	0.505	713	616	0 0	1.0	5.189	A
3 - Pods Brook Road	998	249	366	2014	0.495	993	874	0 0	1.0	3.696	A
4 - Rayne Road West	490	123	1001	1202	0.408	487	358	0 0	0.7	5.096	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	478	120	890	1204	0.397	477	892	0 5	0.7	5.638	A
2 - Rayne Road East	857	214	630	1351	0.634	854	737	1 0	1.7	7.384	A
3 - Pods Brook Road	1191	298	438	1959	0.608	1189	1046	1 0	1.6	4.900	A
4 - Rayne Road West	585	146	1199	1067	0.549	583	429	0 7	1.2	7.532	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	586	146	1082	1075	0.545	583	1087	0 7	1.3	8.304	A
2 - Rayne Road East	1049	262	768	1259	0.834	1038	897	1 7	4.7	15.937	C
3 - Pods Brook Road	1459	365	533	1888	0.773	1452	1272	1 6	3.4	8.550	A
4 - Rayne Road West	717	179	1463	885	0.810	706	522	1 2	3.9	19.438	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	586	146	1092	1068	0.549	586	1094	1 3	1.4	8.501	A
2 - Rayne Road East	1049	262	773	1255	0.836	1048	904	4 7	4.9	17.647	C
3 - Pods Brook Road	1459	365	538	1884	0.774	1458	1284	3 4	3.5	8.879	A
4 - Rayne Road West	717	179	1470	879	0.815	716	526	3 9	4.2	22.015	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	478	120	905	1194	0.401	481	901	1.4	0.8	5.768	A
2 - Rayne Road East	857	214	639	1346	0.637	869	747	4.9	1.8	7.942	A
3 - Pods Brook Road	1191	298	445	1954	0.609	1199	1063	3.5	1.7	5.061	A
4 - Rayne Road West	585	146	1210	1059	0.553	597	434	4.2	1.3	8.106	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	401	100	750	1298	0.309	402	751	0.8	0.5	4.582	A
2 - Rayne Road East	717	179	531	1418	0.506	721	621	1.8	1.1	5.320	A
3 - Pods Brook Road	998	249	370	2011	0.496	1000	882	1.7	1.0	3.753	A
4 - Rayne Road West	490	123	1009	1197	0.409	492	361	1.3	0.7	5.205	A

2033, PM Reassigned with Development Mitigated

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	Springwood Drive Modified RAB	Standard Roundabout	1,2,3,4	21.33	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-4	1 - Springwood Drive

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D10	2033	PM Reassigned with Development Mitigated	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Springwood Drive		ONE HOUR	✓	943	100.000
2 - Rayne Road East		ONE HOUR	✓	621	100.000
3 - Pods Brook Road		ONE HOUR	✓	1068	100.000
4 - Rayne Road West		ONE HOUR	✓	453	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	1	175	673	94
	2 - Rayne Road East	32	1	366	222
	3 - Pods Brook Road	252	609	2	205
	4 - Rayne Road West	81	254	117	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Springwood Drive	2 - Rayne Road East	3 - Pods Brook Road	4 - Rayne Road West
From	1 - Springwood Drive	0	0	4	4
	2 - Rayne Road East	4	0	3	1
	3 - Pods Brook Road	18	1	0	0
	4 - Rayne Road West	17	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Springwood Drive	0.97	56.60	15.6	F	865	1298
2 - Rayne Road East	0.61	8.34	1.6	A	570	855
3 - Pods Brook Road	0.59	4.56	1.5	A	980	1470
4 - Rayne Road West	0.41	5.22	0.7	A	416	624

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	710	177	738	1306	0.544	705	275	0 0	1.2	6.137	A
2 - Rayne Road East	468	117	664	1328	0.352	465	779	0 0	0.6	4.259	A
3 - Pods Brook Road	804	201	263	2092	0.384	801	867	0 0	0.6	2.904	A
4 - Rayne Road West	341	85	673	1429	0.239	340	391	0 0	0.3	3.416	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	848	212	884	1208	0.702	843	329	1.2	2.3	10.058	B
2 - Rayne Road East	558	140	794	1241	0.450	557	932	0.6	0.8	5.381	A
3 - Pods Brook Road	960	240	315	2053	0.468	959	1037	0.6	0.9	3.431	A
4 - Rayne Road West	407	102	805	1337	0.305	407	468	0.3	0.5	4.001	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	1038	260	1081	1075	0.966	999	402	2.3	12.2	37.415	E
2 - Rayne Road East	684	171	945	1139	0.600	681	1135	0.8	1.5	7.995	A
3 - Pods Brook Road	1176	294	381	2002	0.587	1174	1245	0.9	1.5	4.521	A
4 - Rayne Road West	499	125	986	1213	0.411	498	569	0.5	0.7	5.198	A

17:30 - 17:45

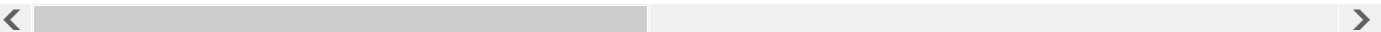
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	1038	260	1083	1074	0.967	1025	403	12.2	15.6	56.604	F
2 - Rayne Road East	684	171	967	1125	0.608	684	1141	1.5	1.6	8.339	A
3 - Pods Brook Road	1176	294	385	2000	0.588	1176	1265	1.5	1.5	4.559	A
4 - Rayne Road West	499	125	988	1212	0.412	499	573	0.7	0.7	5.222	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	848	212	887	1206	0.703	900	330	15.6	2.5	14.123	B
2 - Rayne Road East	558	140	841	1209	0.462	561	946	1.6	0.9	5.707	A
3 - Pods Brook Road	960	240	322	2047	0.469	962	1080	1.5	0.9	3.468	A
4 - Rayne Road West	407	102	808	1335	0.305	408	476	0.7	0.5	4.023	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Springwood Drive	710	177	742	1304	0.545	715	276	2.5	1.3	6.371	A
2 - Rayne Road East	468	117	673	1322	0.354	469	784	0.9	0.6	4.323	A
3 - Pods Brook Road	804	201	265	2090	0.385	805	876	0.9	0.7	2.927	A
4 - Rayne Road West	341	85	676	1426	0.239	342	394	0.5	0.3	3.434	A





Appendix 10
Site Access ARCADY

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2017
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
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Brook Green Site Access.j9

Path: C:\Users\Steve\OneDrive\Journey\Projects\2014 Projects\064_14 Brook Green\Dec 16 Tech Note

Report generation date: 24/01/2017 14:46:00

«Pods Brook Access Roundabout - 2033 With Development, AM

- »Junction Network
- »Arms
- »Traffic Demand
- »Origin-Destination Data
- »Vehicle Mix
- »Results

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
Pods Brook Access Roundabout - 2033 With Development										
Arm A	5.8	17.00	0.85	C	5 % [Arm C]	3.8	10.68	0.79	B	18 % [Arm A]
Arm B	4.4	10.38	0.81	B		2.1	4.94	0.67	A	
Arm C	3.5	20.01	0.79	C		0.5	5.37	0.31	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	19/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STEVE-PC\Steve
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Pods Brook Access Roundabout	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2033 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Pods Brook Access Roundabout - 2033 With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	A,B,C	14.57	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	5	Arm C

Arms

Arms

Arm	Name	Description
A	Pods Brook Road North	
B	Pods Brook Road South	
C	Site Access	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.50	7.40	18.0	84.0	40 0	34 0	
B	7.00	7.80	7.0	43.0	40 0	24 0	
C	3.00	7.60	18.0	51.0	40 0	32 0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.669	1799
B	0.797	2406
C	0.652	1714

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

Traffic Demand

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1160	100.000
B		ONE HOUR	✓	1439	100.000
C		ONE HOUR	✓	590	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1049	111
	B	1237	0	202
	C	175	0	415

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	0
	B	6	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.85	17.00	5.8	C	1064	1597
B	0.81	10.38	4.4	B	1320	1981
C	0.79	20.01	3.5	C	541	812

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	873	218	311	1592	0.549	868	1058	0.0	1.3	5.175	A
B	1083	271	394	2093	0.518	1079	785	0.0	1.1	3.701	A
C	444	111	927	1110	0.400	442	545	0.0	0.7	5.372	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1043	261	372	1551	0.672	1039	1266	1.3	2.1	7.321	A
B	1294	323	471	2031	0.637	1291	940	1.1	1.8	5.074	A
C	530	133	1110	991	0.535	529	652	0.7	1.1	7.754	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1277	319	451	1498	0.853	1264	1544	2.1	5.4	15.293	C
B	1584	396	572	1951	0.812	1574	1143	1.8	4.3	9.772	A
C	650	162	1353	832	0.781	641	793	1.1	3.3	18.102	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1277	319	456	1494	0.855	1276	1554	5.4	5.8	17.003	C
B	1584	396	578	1945	0.814	1584	1154	4.3	4.4	10.376	B
C	650	162	1361	827	0.786	649	801	3.3	3.5	20.007	C

08:45 - 09:00

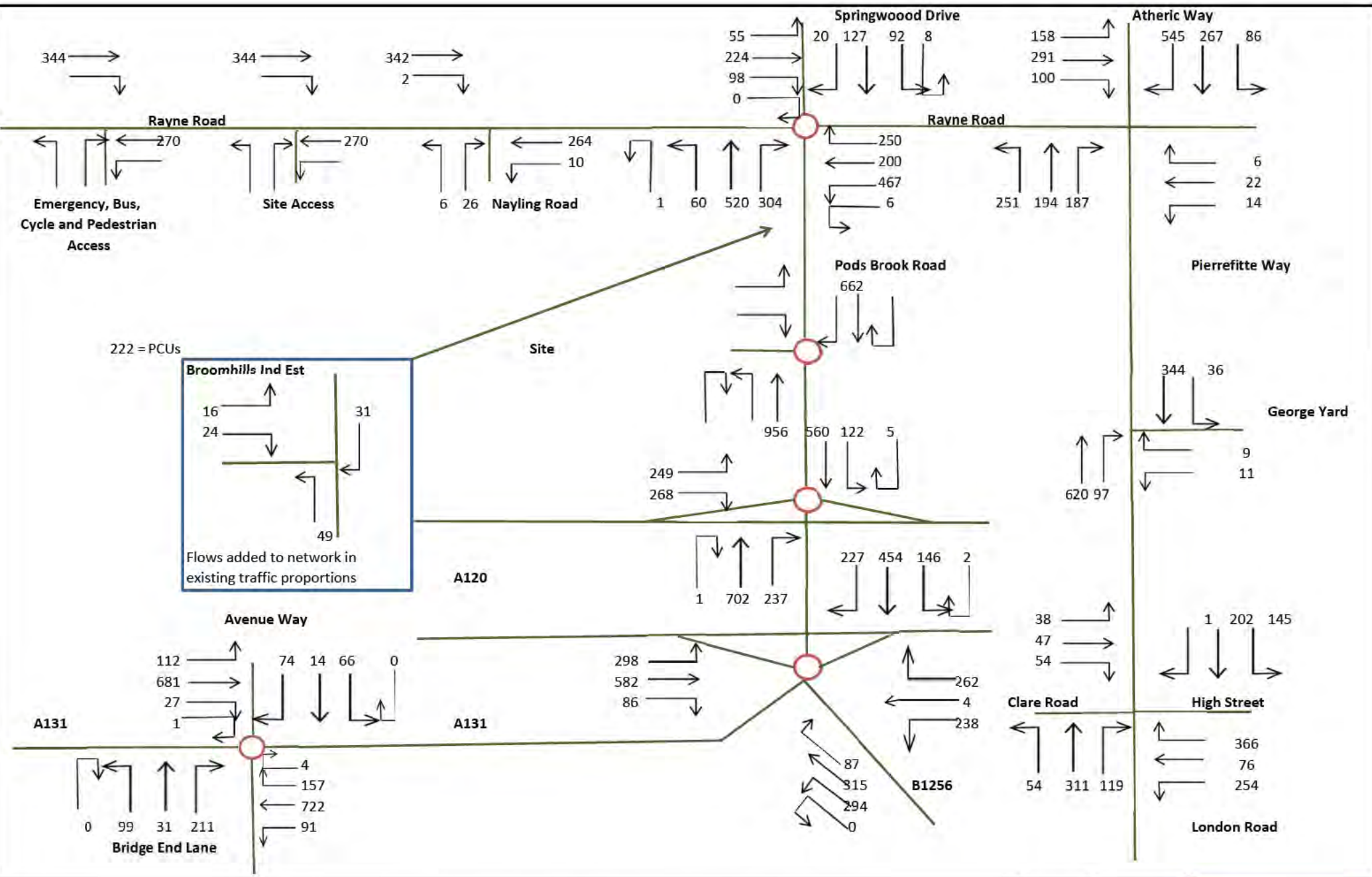
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1043	261	379	1546	0.675	1057	1281	5.8	2.2	7.927	A
B	1294	323	481	2023	0.639	1304	956	4.4	1.9	5.310	A
C	530	133	1121	984	0.539	539	664	3.5	1.2	8.265	A

09:00 - 09:15

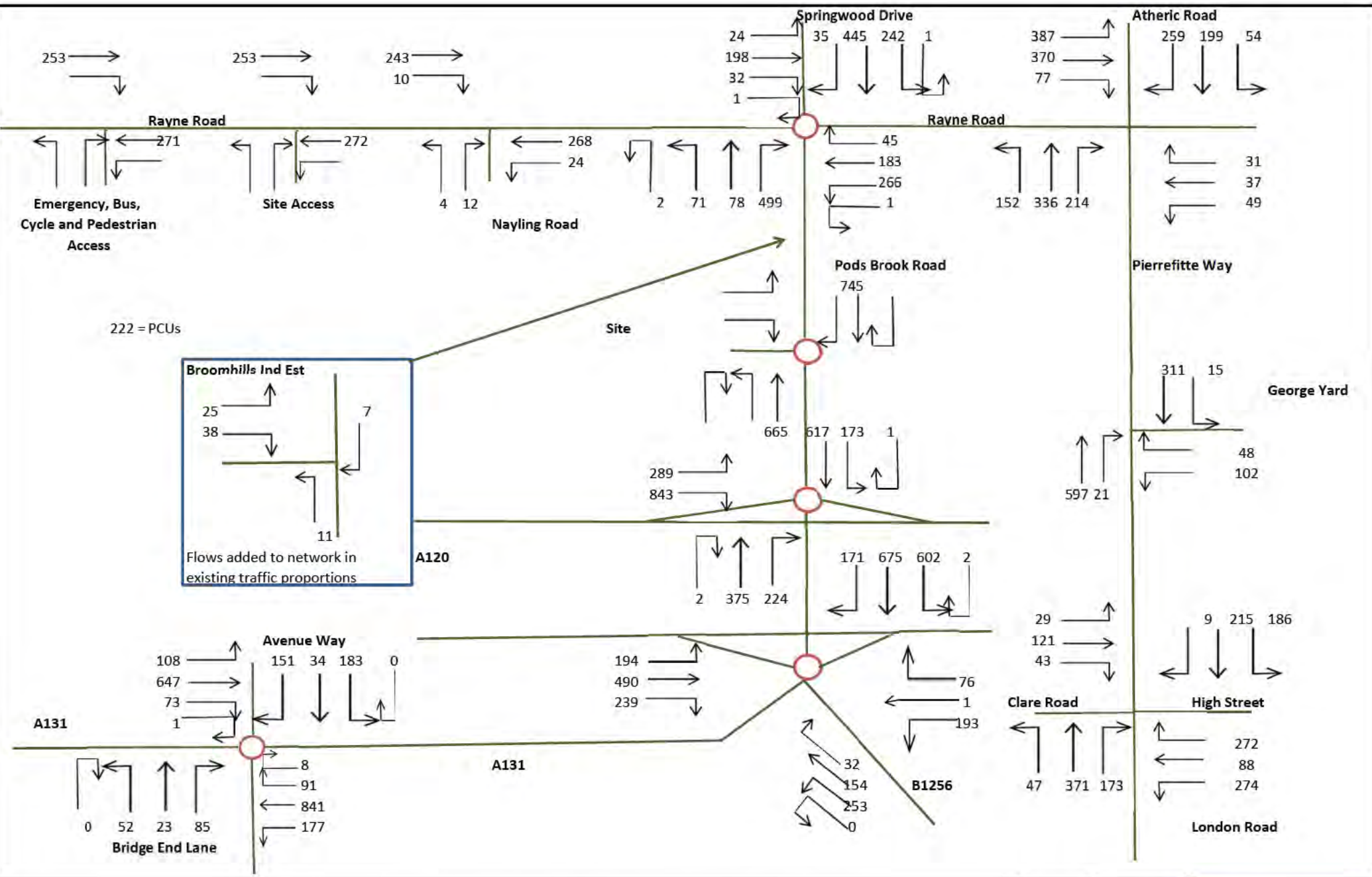
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	873	218	314	1590	0.549	877	1066	2.2	1.3	5.315	A
B	1083	271	398	2089	0.519	1086	793	1.9	1.1	3.767	A
C	444	111	934	1105	0.402	446	550	1.2	0.7	5.479	A



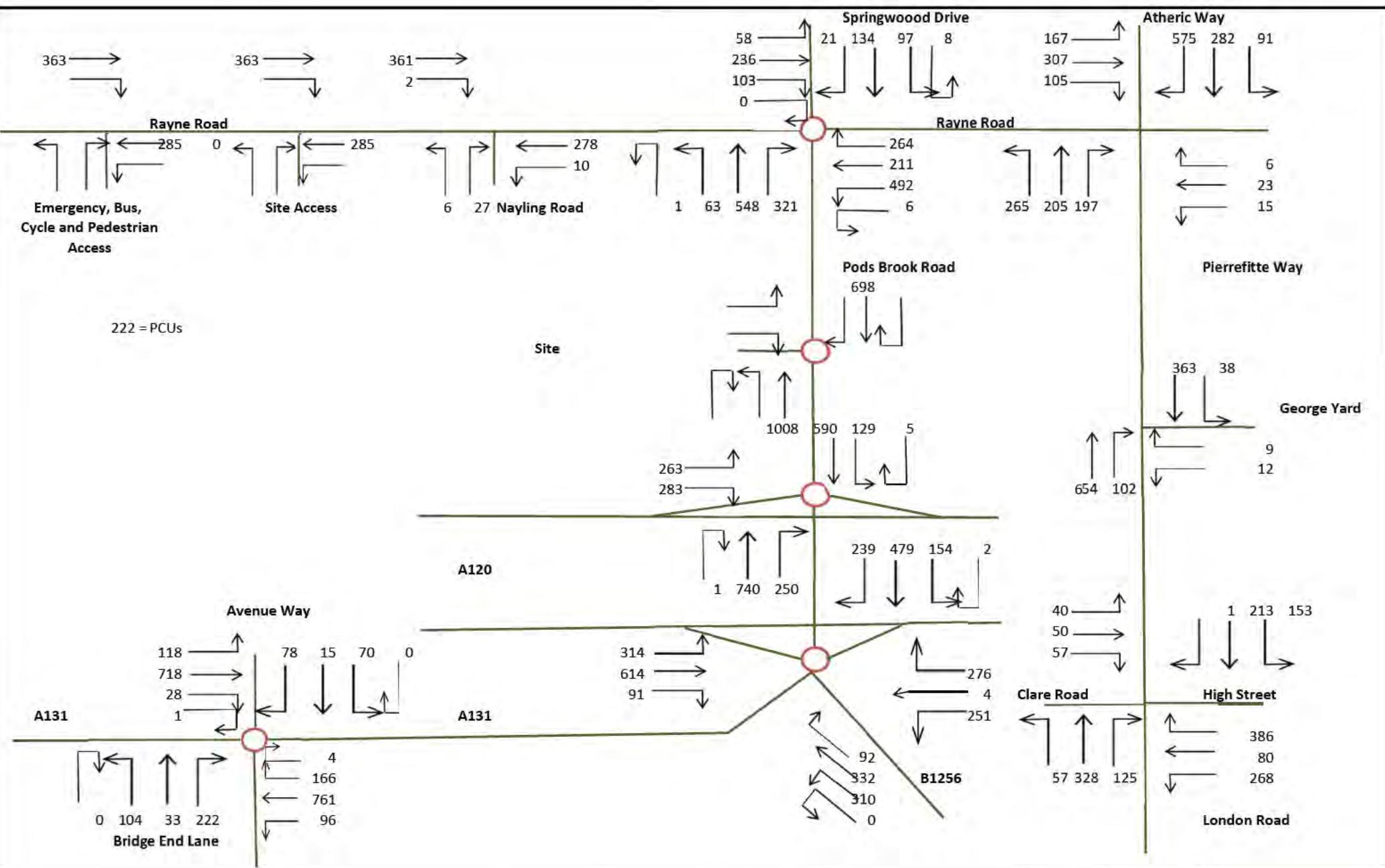
Appendix 11
Network Flows 200 Units



Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units	Drawn	SAA	
	Braintree	Date	20/01/2017	
	200 Units	Ref	Figure 1	
Project Title	Brook Green			



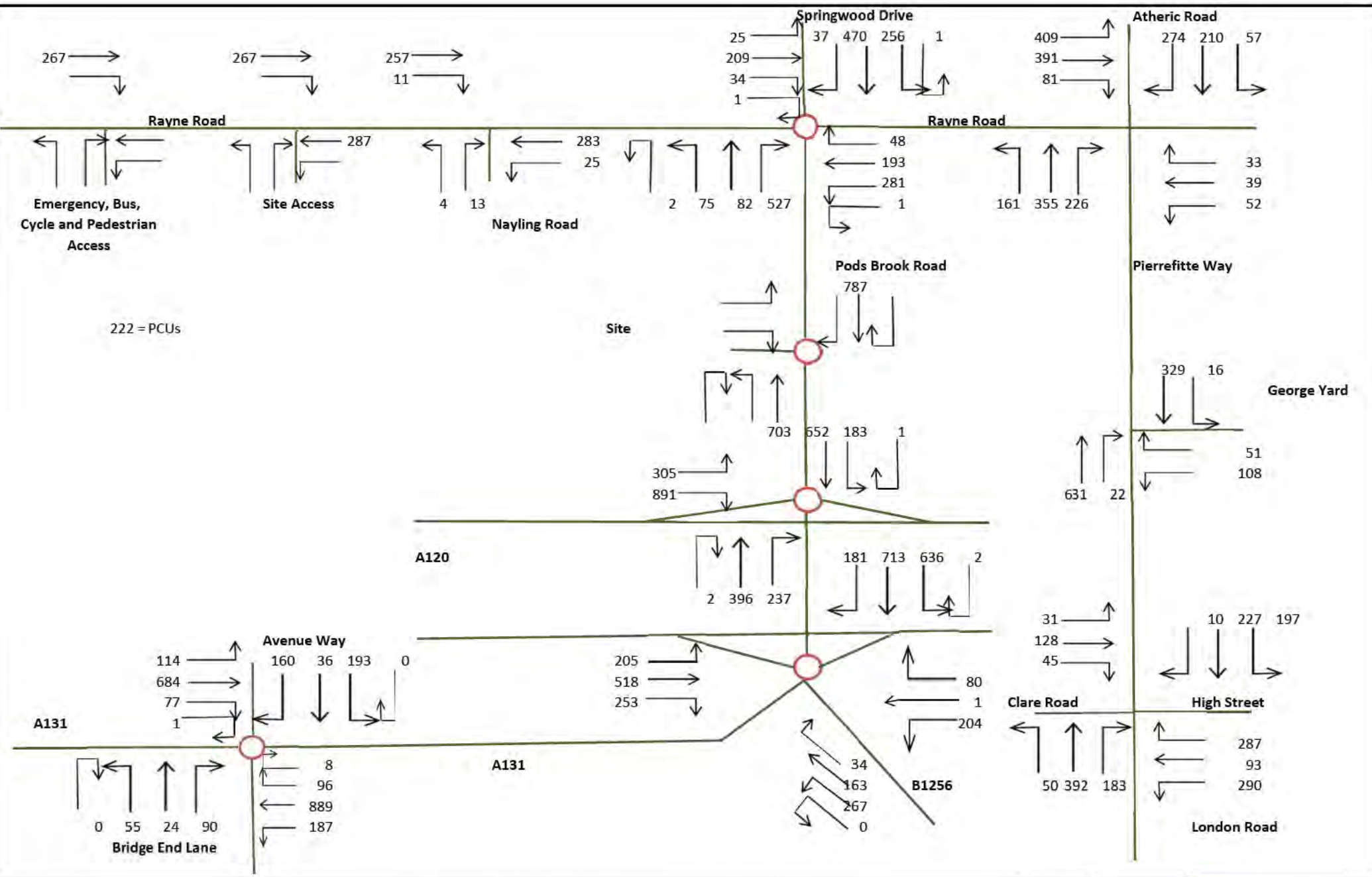
Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units Braintree 200 Units	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 2	
Project Title	Brook Green			




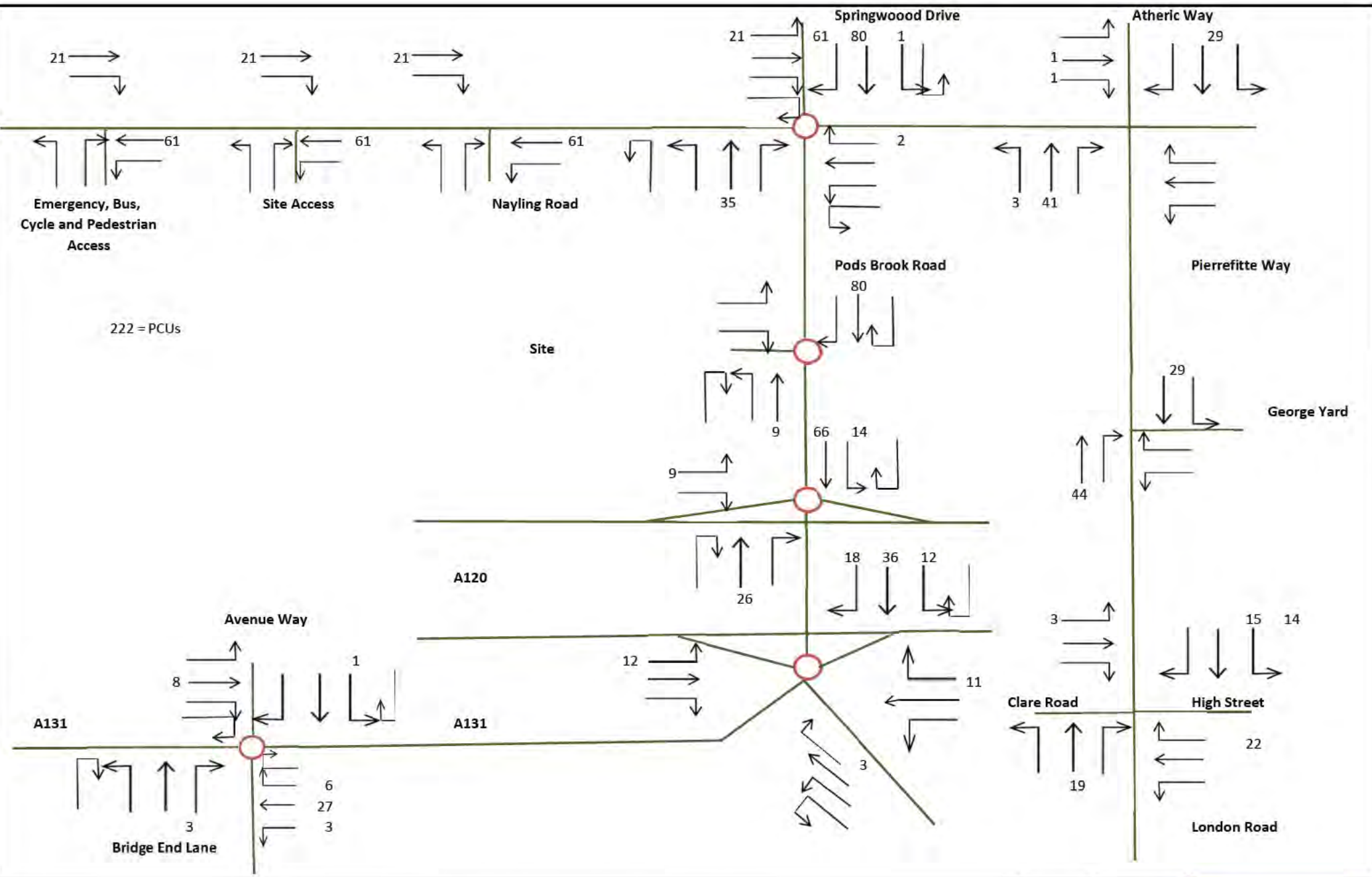
Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units Braintree Local Adjusted Growth Factor 1.0544 2015-2020 200 Units
Project Title	Brook Green


Drawn	SAA
Date	20/01/2017
Ref	Figure 3

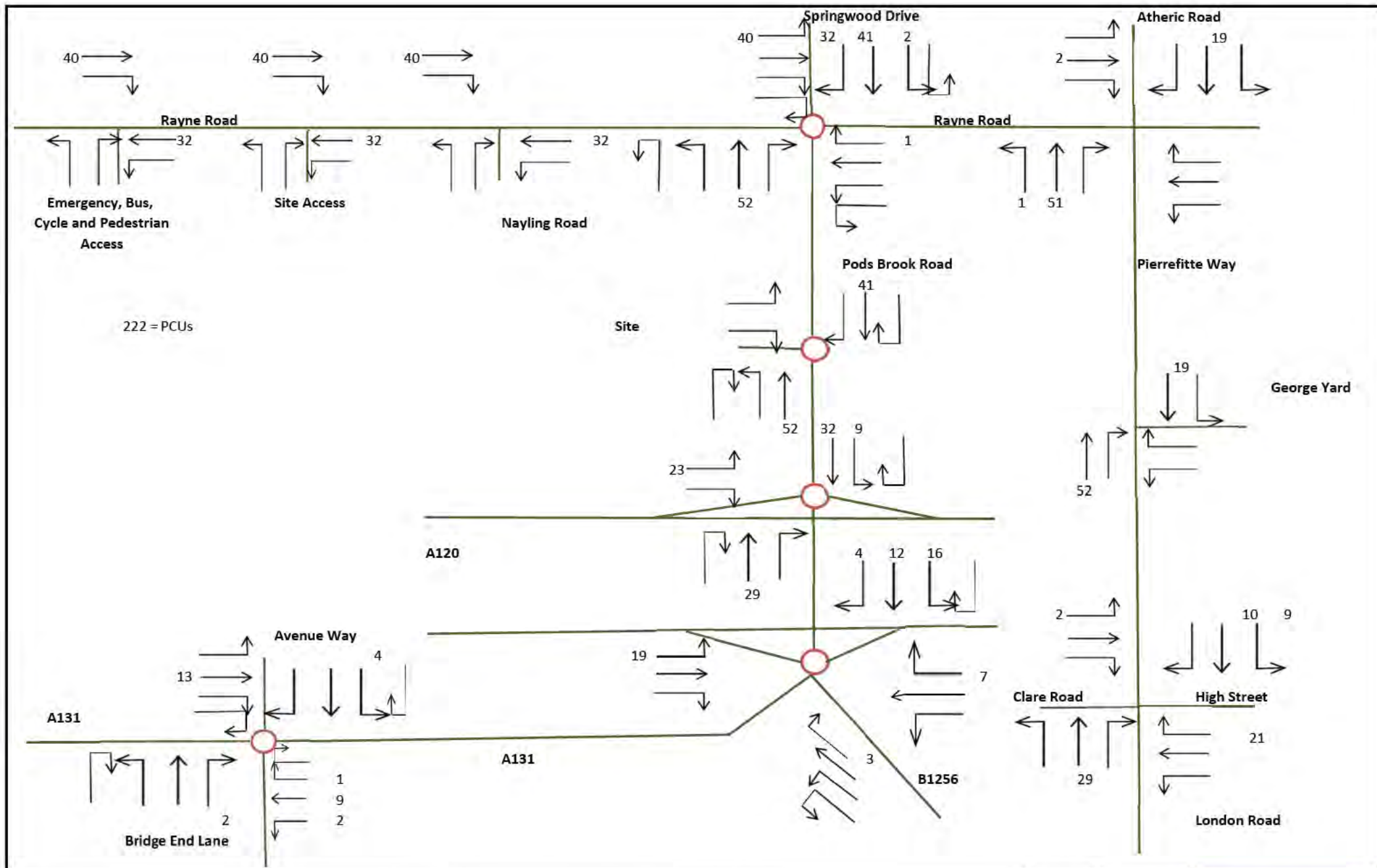




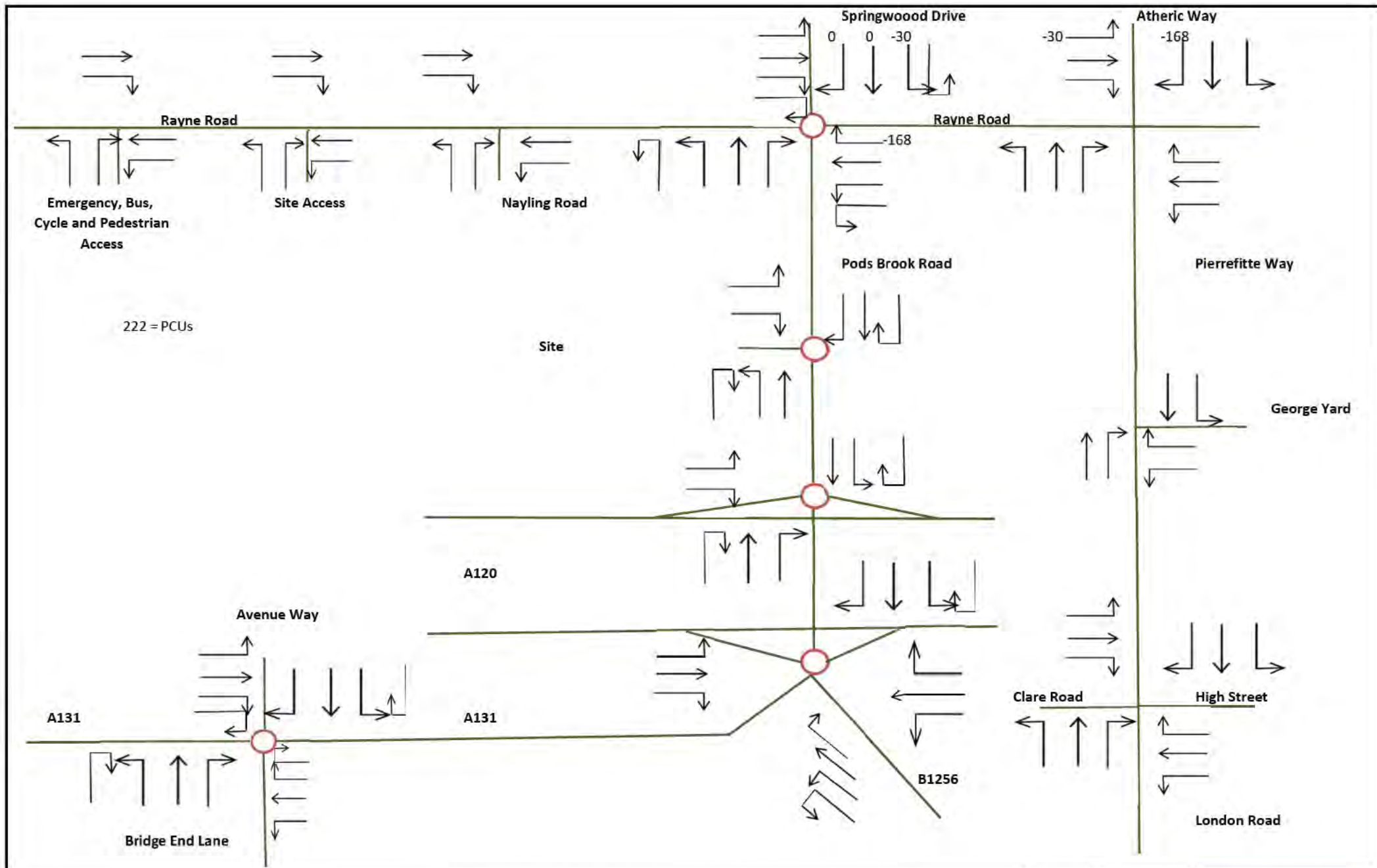
Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units Braintree Local Adjusted Growth Factor 1.0568 2015-2020 200 Units	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 4	
Project Title	Brook Green			



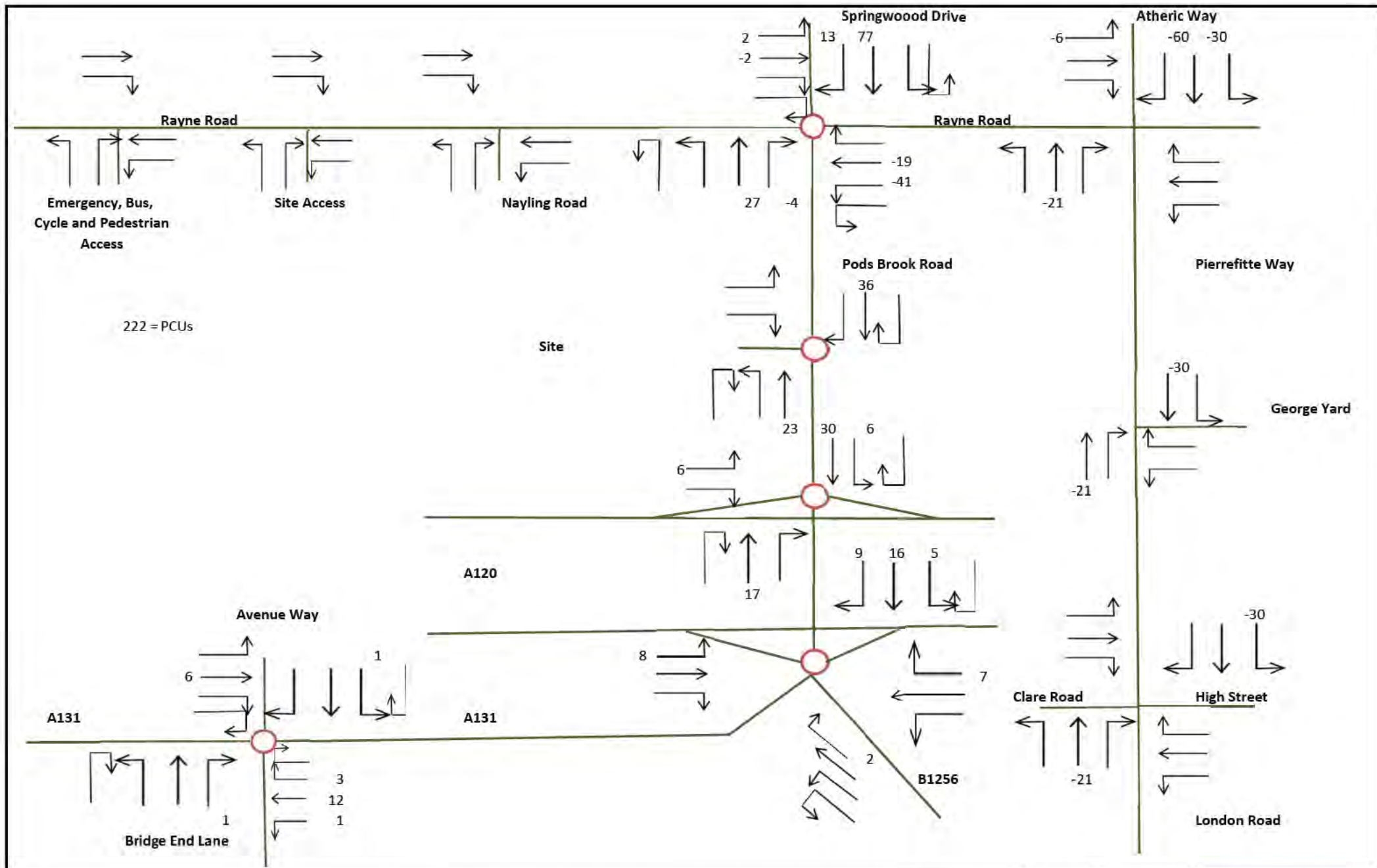
Drawing Title	AM Peak 08:00-09:00 Committed Development Flows	Drawn	SAA	
	Braintree	Date	20/01/2017	
	200 Units	Ref	Figure 5	
Project Title	Brook Green			




Drawing Title	PM Peak 17:00-18:00 Committed Development Flows Braintree 200 Units	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 6	
Project Title	Brook Green			

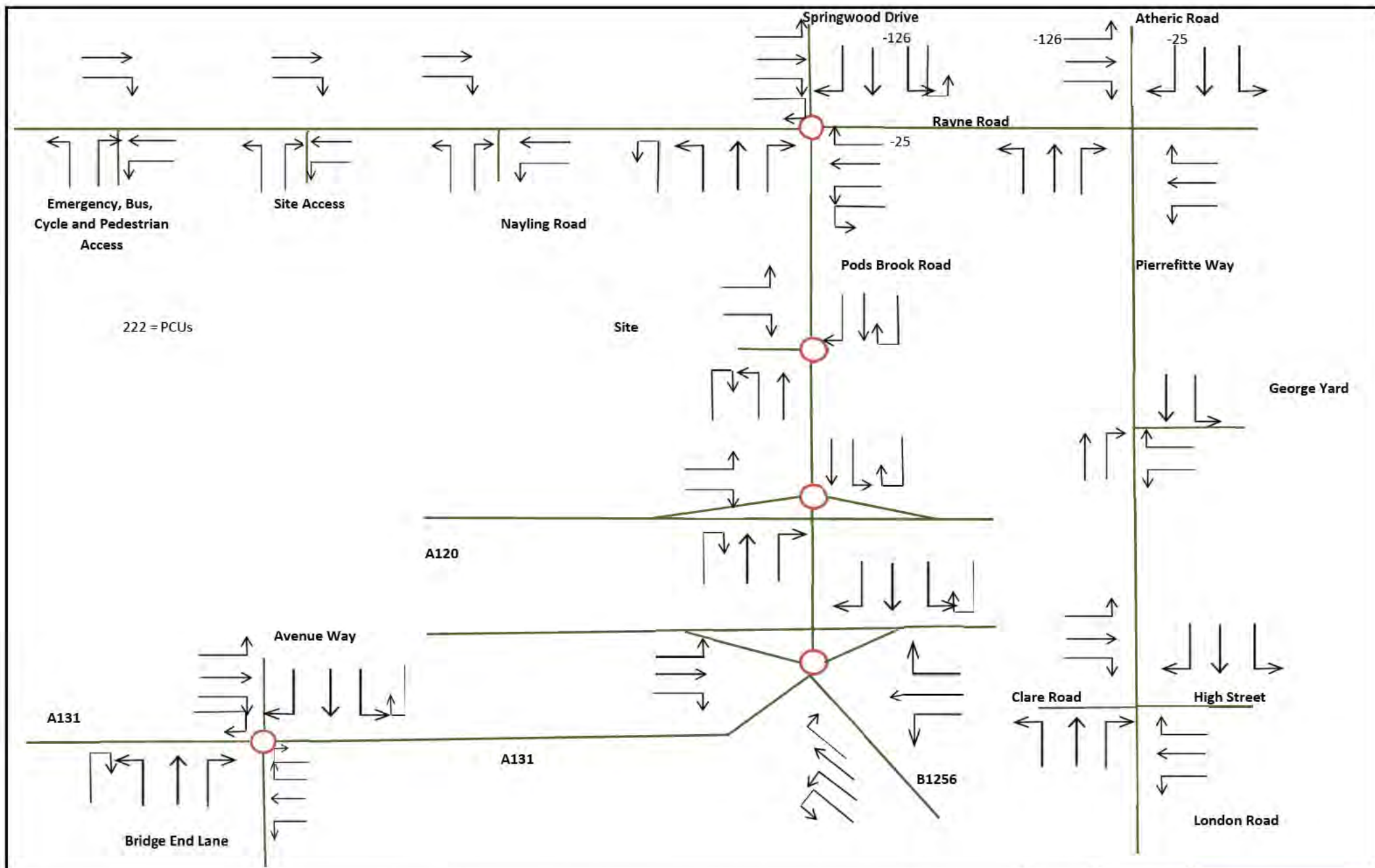


Drawing Title	AM Peak 08:00-09:00 Existing Springwood Drive Employment Re-Assigned Traffic Braintree 200 Units	Drawn	SAA	
	Project Title	Brook Green	Date	
			Ref	

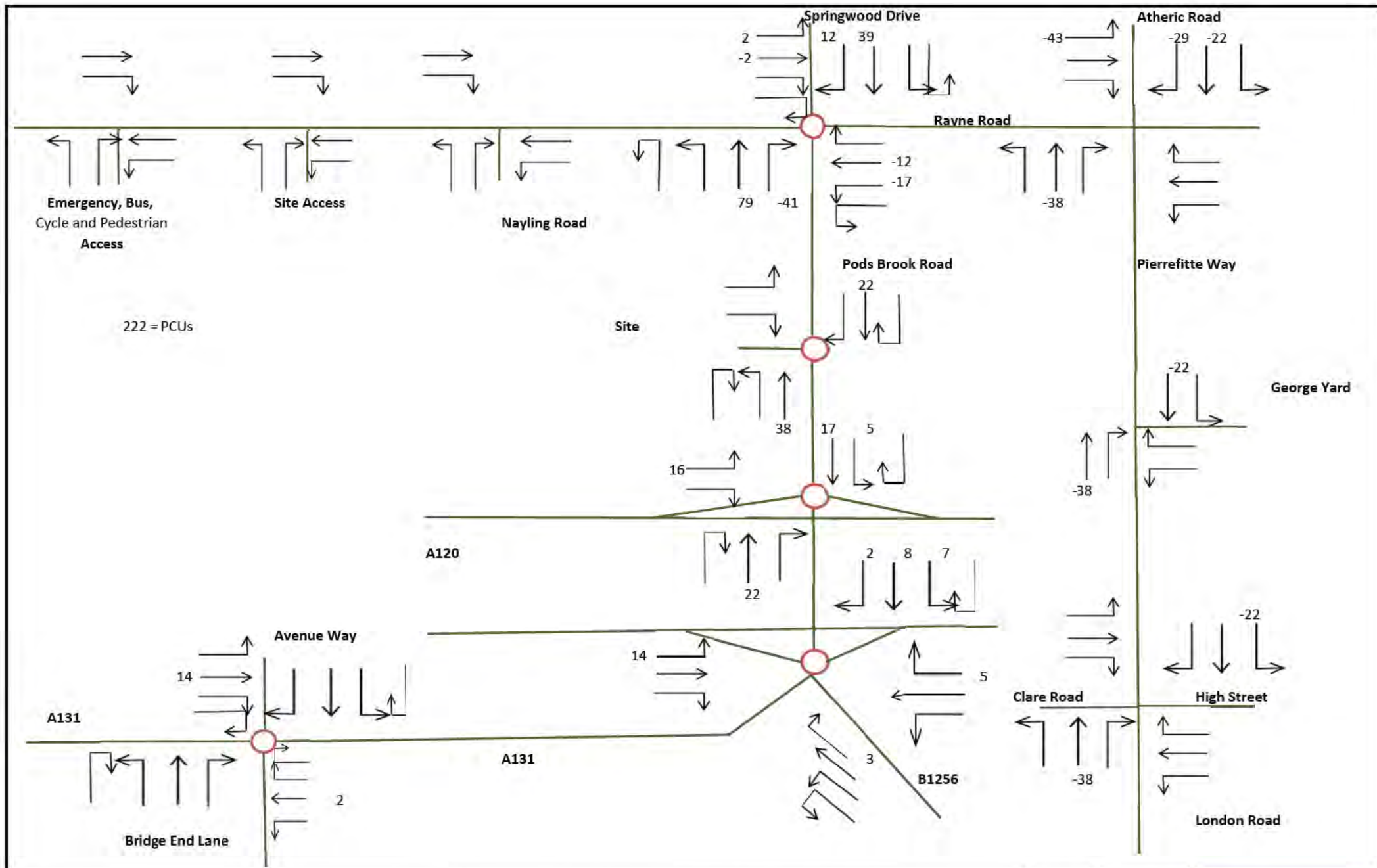


222 = PCUs

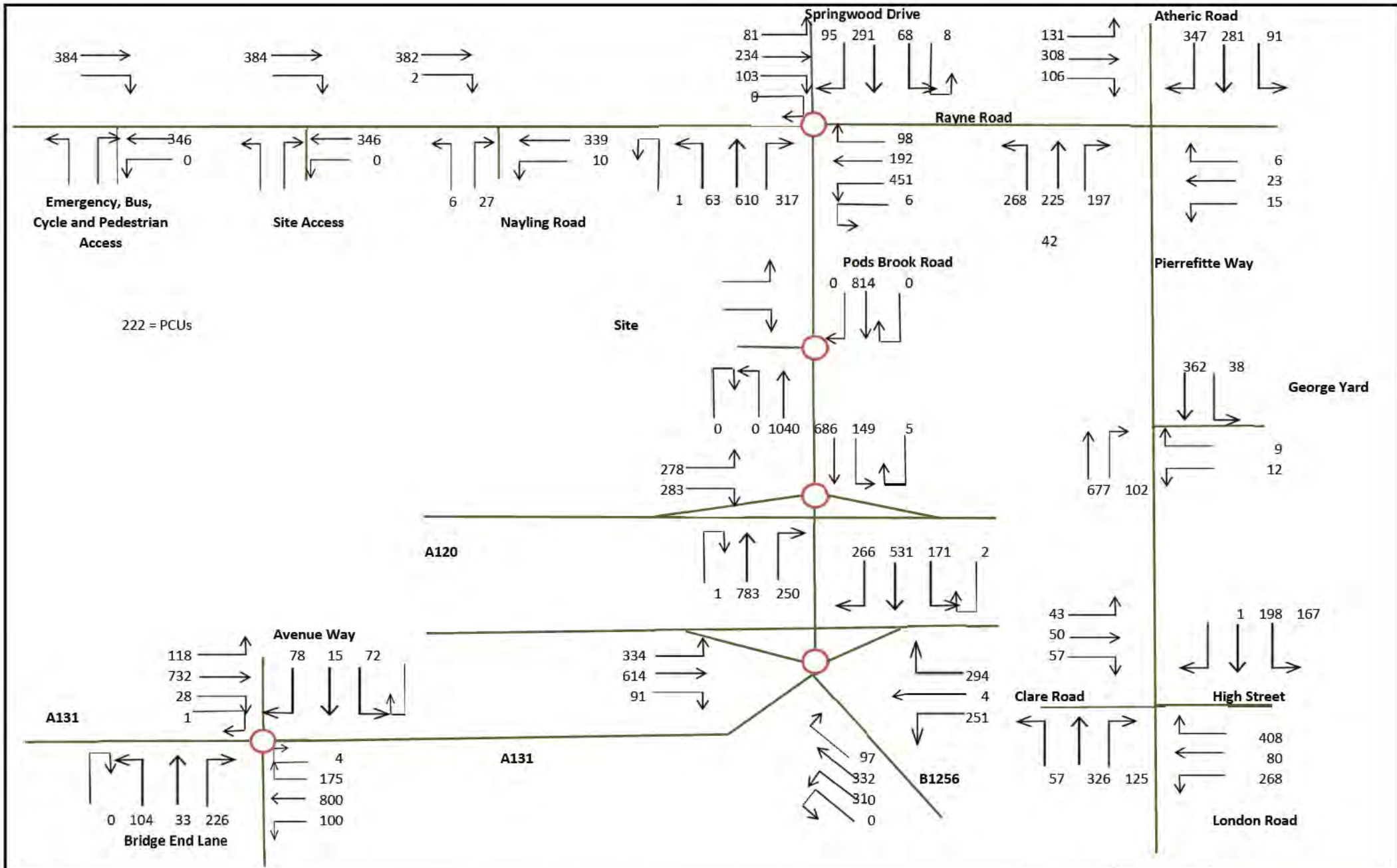
Drawing Title	AM Peak 08:00-09:00 Existing Springwood Drive Residential Re-Assigned Traffic Braintree 200 Units	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 8	
Project Title	Brook Green			



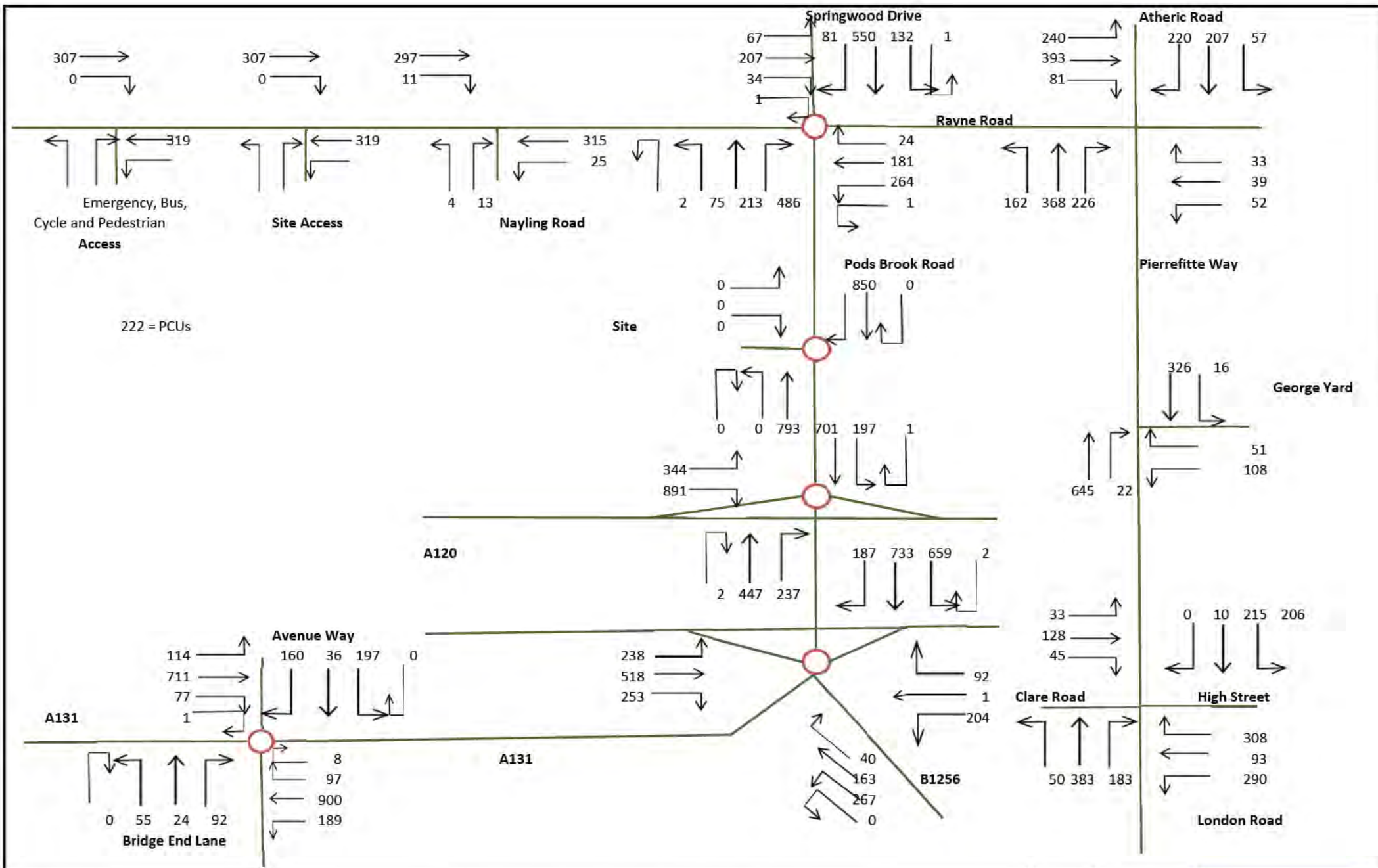
Drawing Title	PM Peak 17:00-18:00 Existing Springwood Drive Employment Re-Assigned Traffic Braintree 200 Units	Drawn	SAA	
Project Title	Brook Green	Date	20/01/2017	
		Ref	Figure 9	



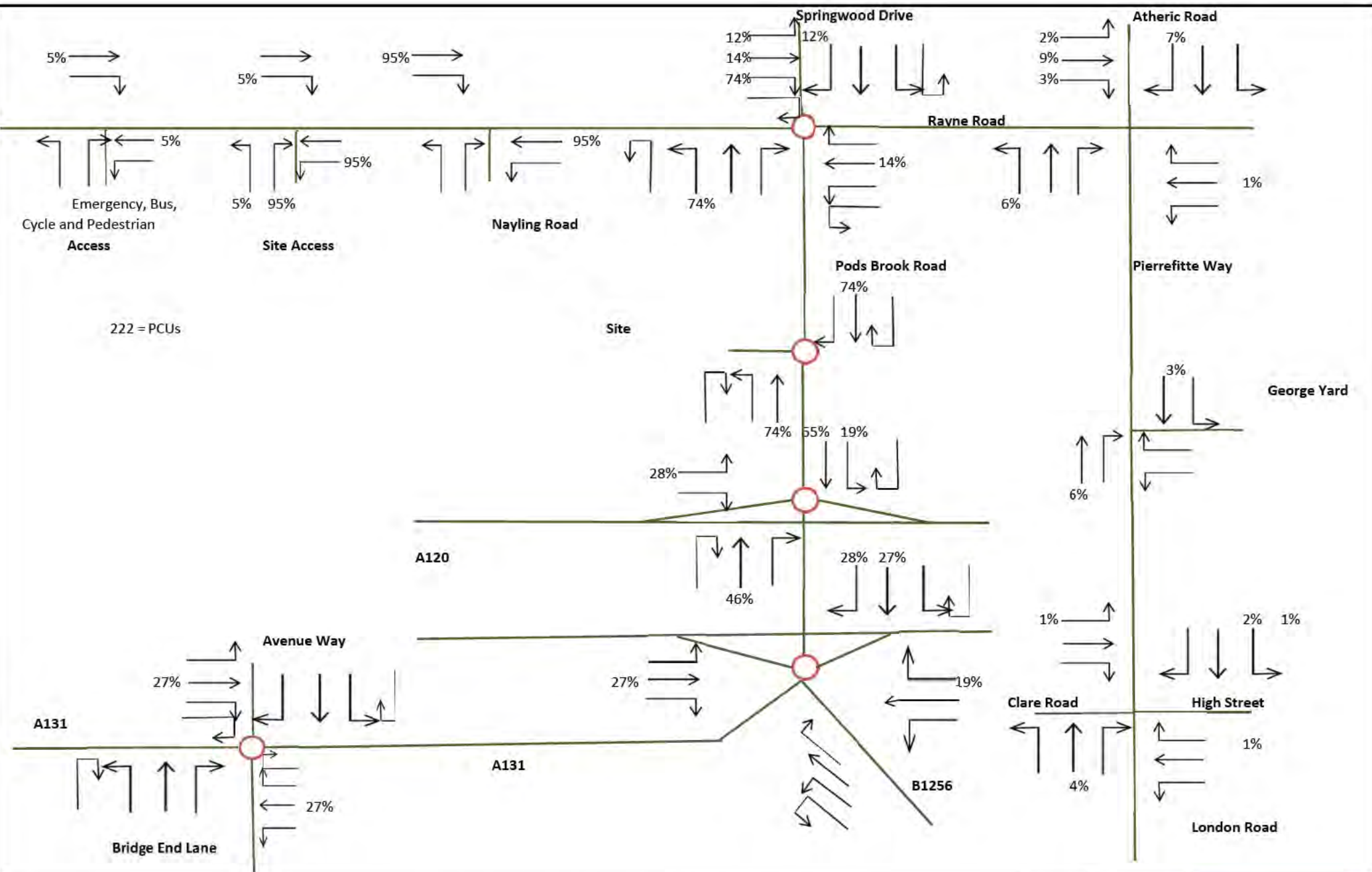
Drawing Title	PM Peak 17:00-18:00 Existing Springwood Drive Residential Re-Assigned Traffic Braintree 200 Units	Drawn	SAA
		Date	20/01/2017
		Ref	Figure 10
Project Title	Brook Green		




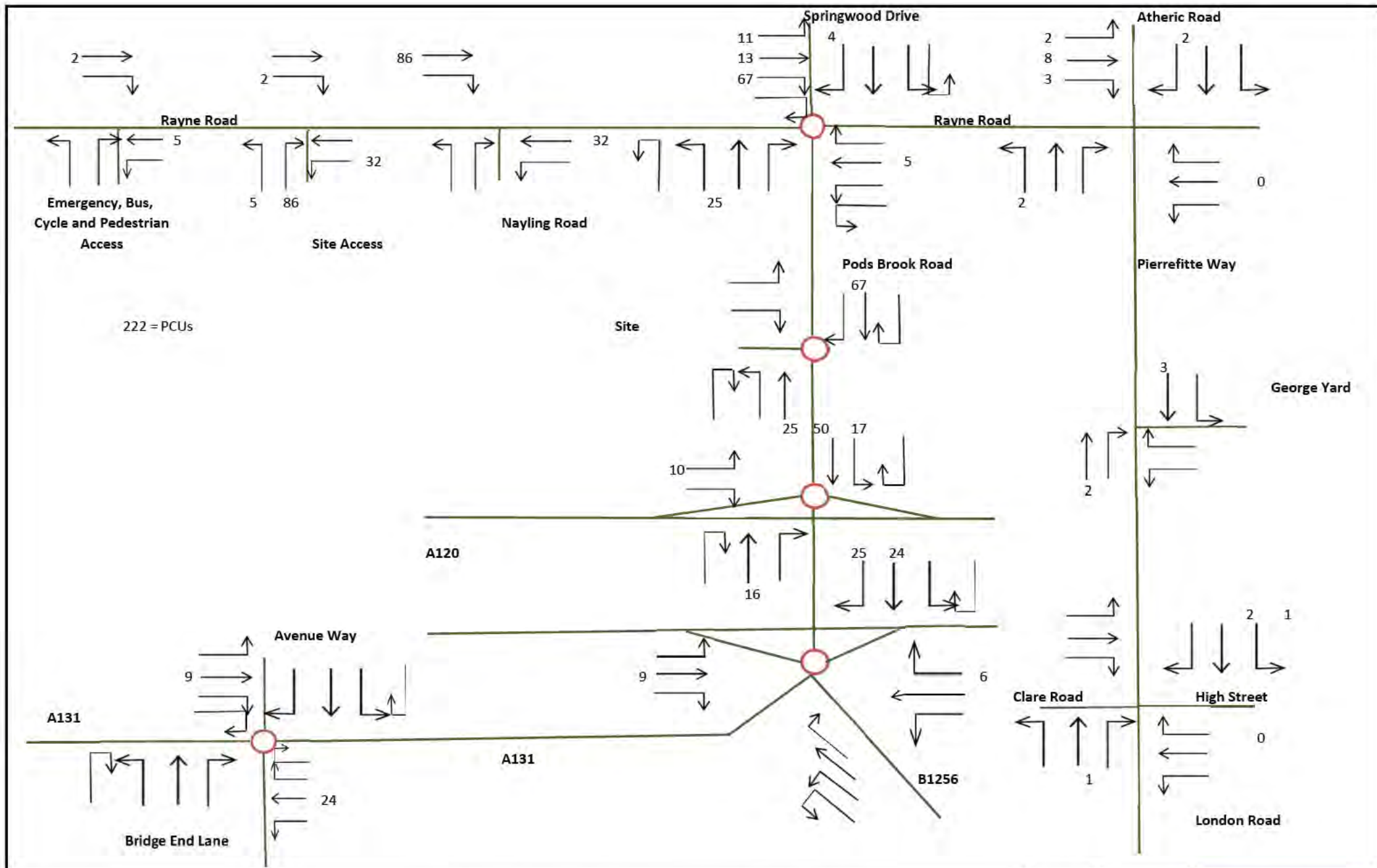
Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 11	



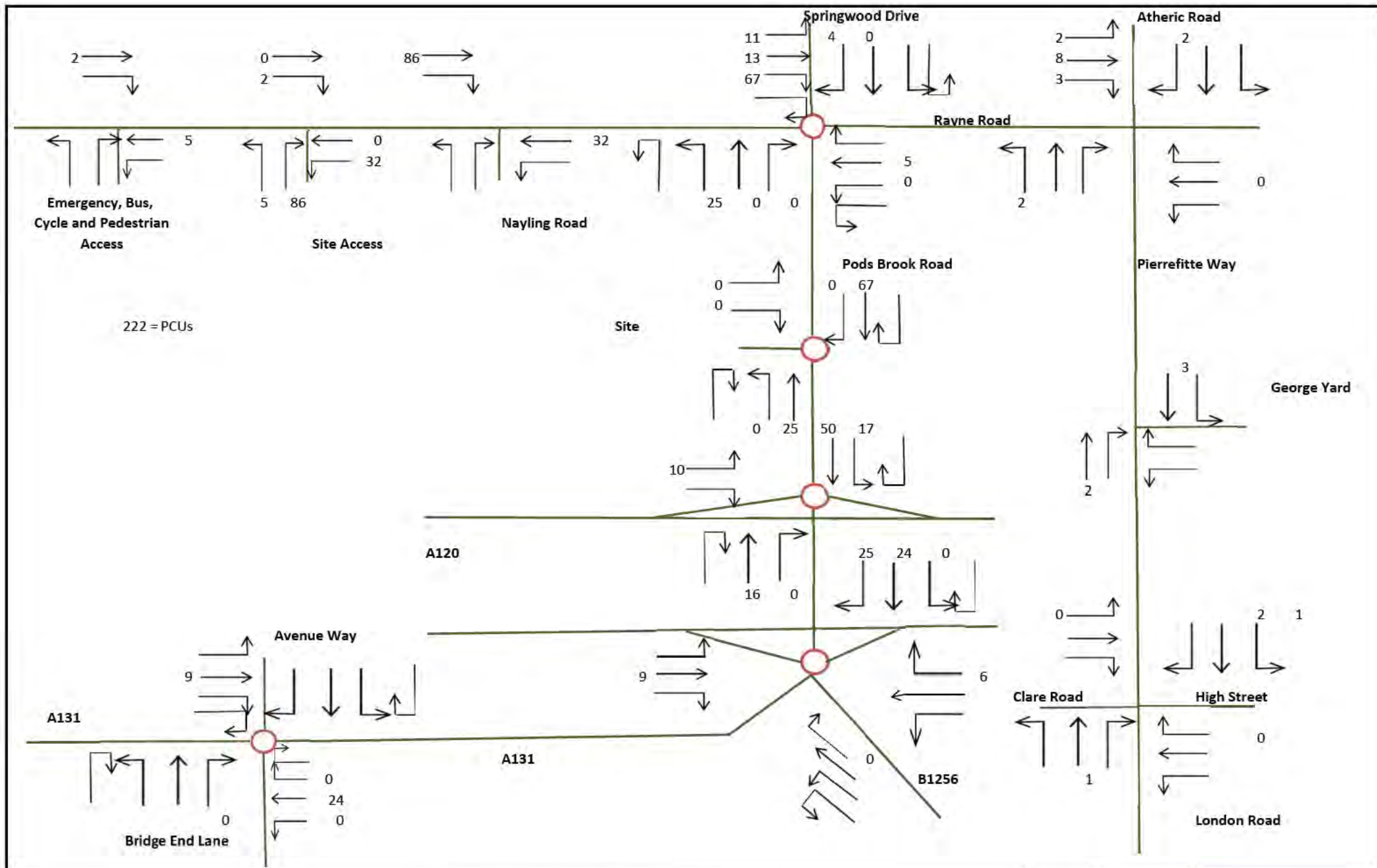
Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 12	



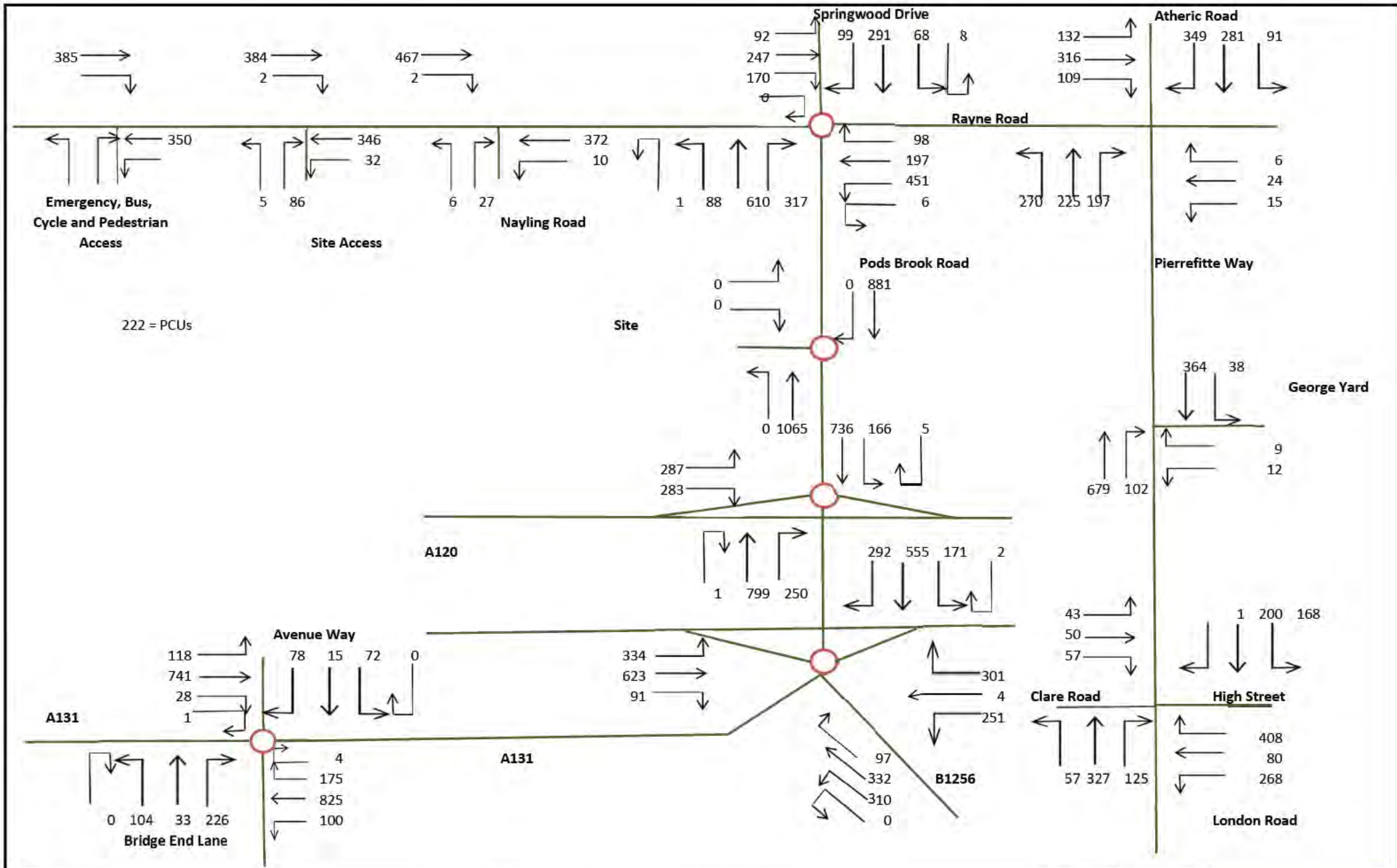
Drawing Title	Rayne Road Access Distribution Highways England Agreed Distribution	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 13	



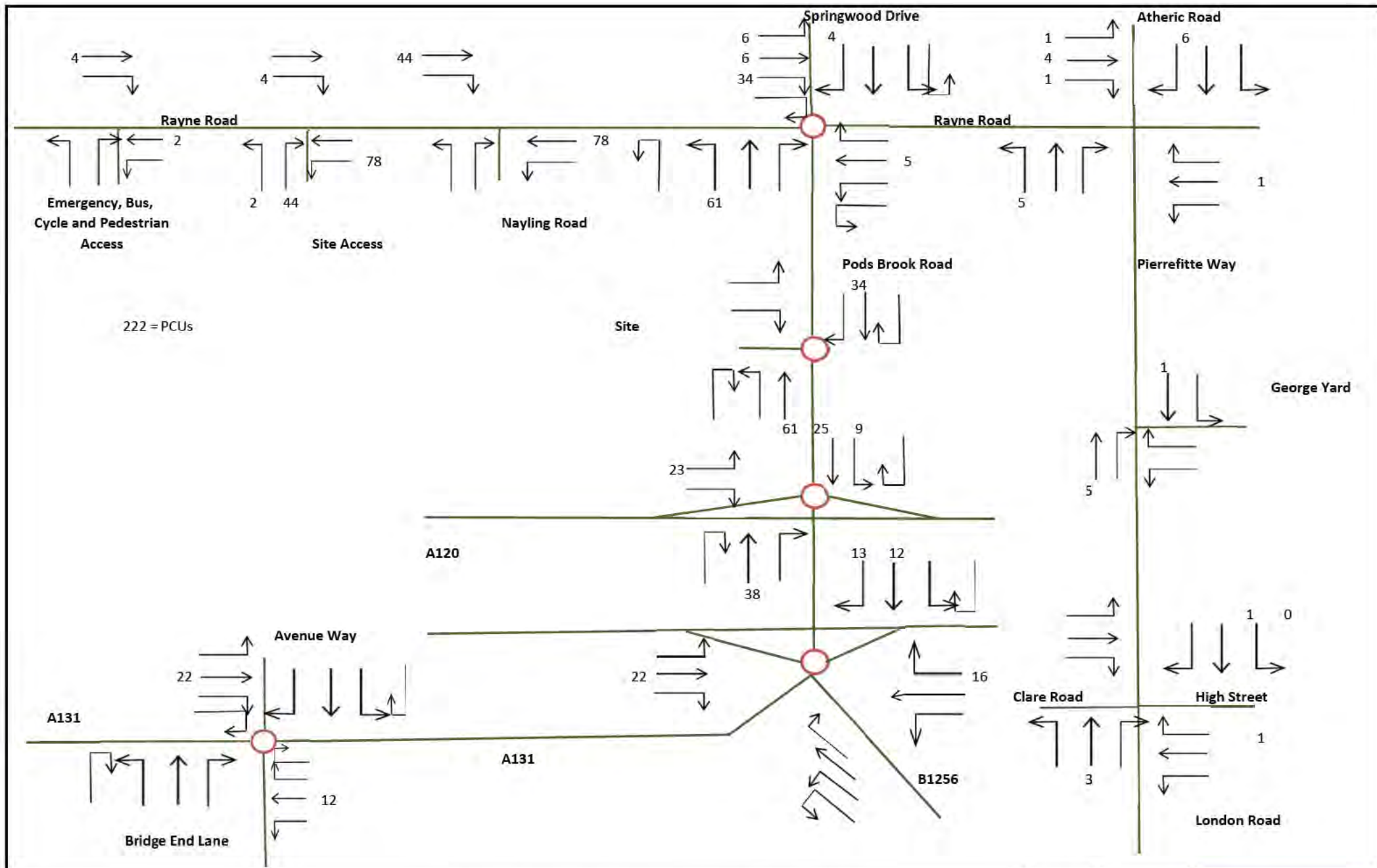
Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
	Project Title	Brook Green	Ref	



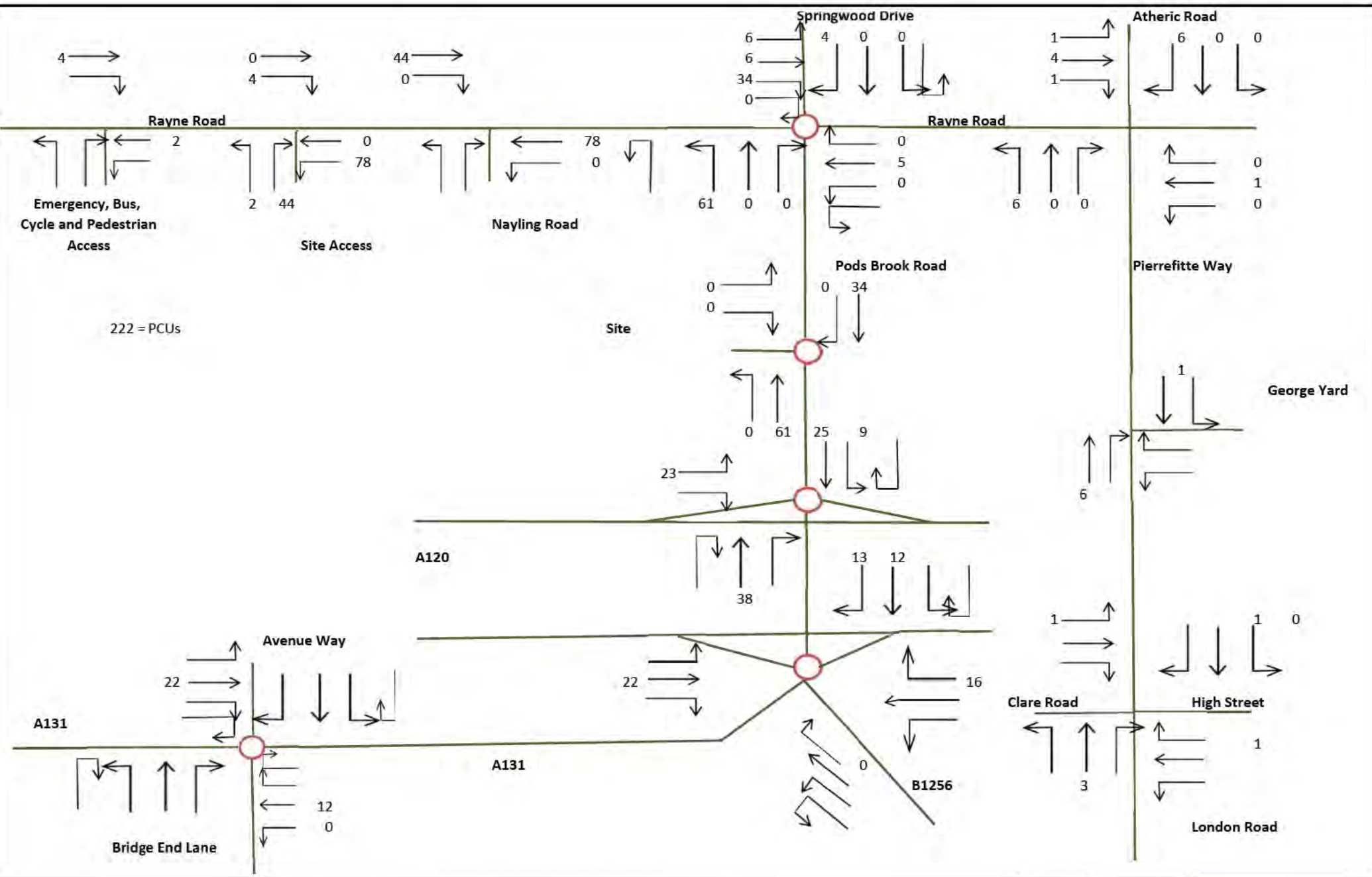
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	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 15	



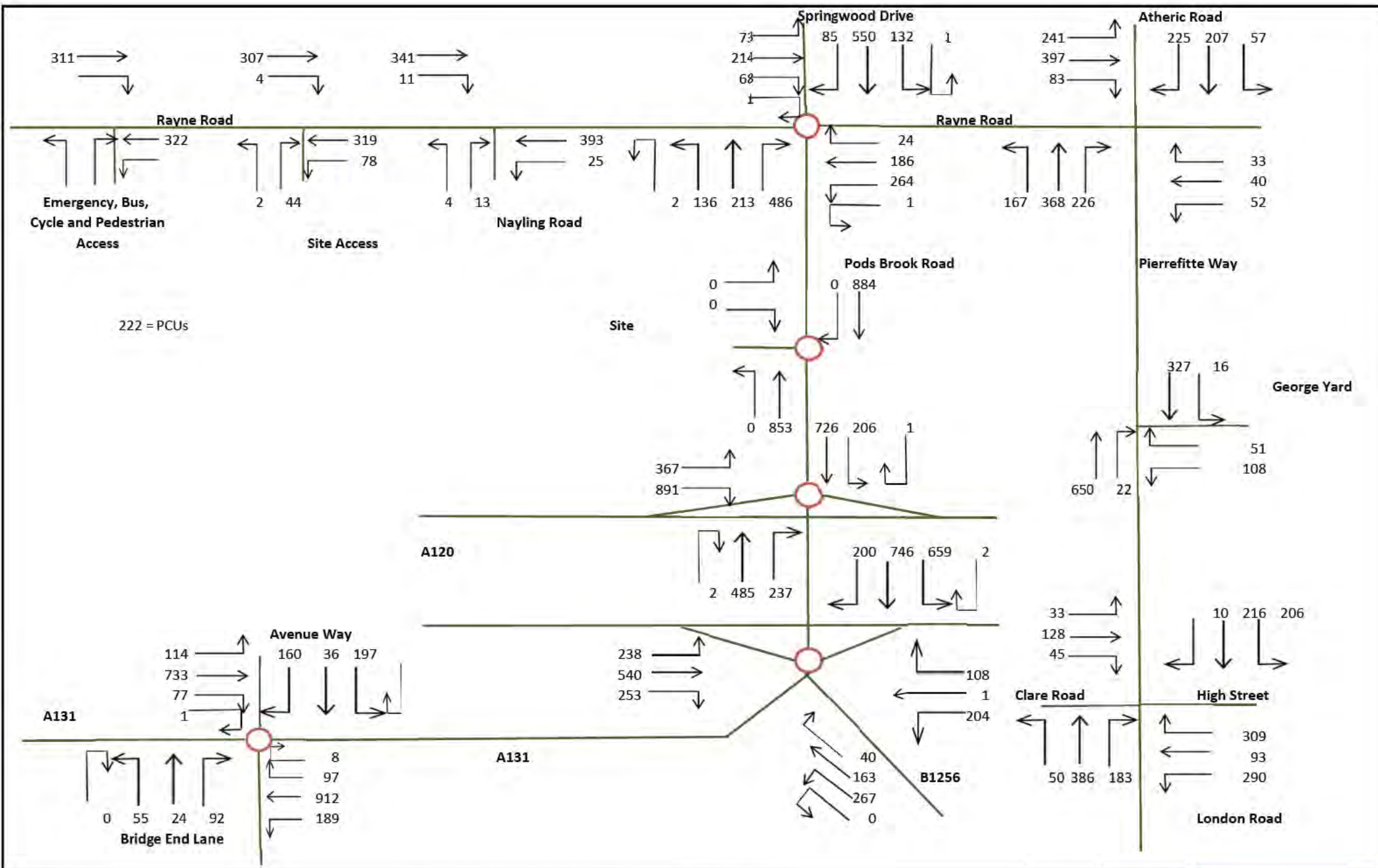
Drawing Title	AM Peak 2020 Total With Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 16	



Drawing Title	PM Peak 2020 Total With Mitigated Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 17	



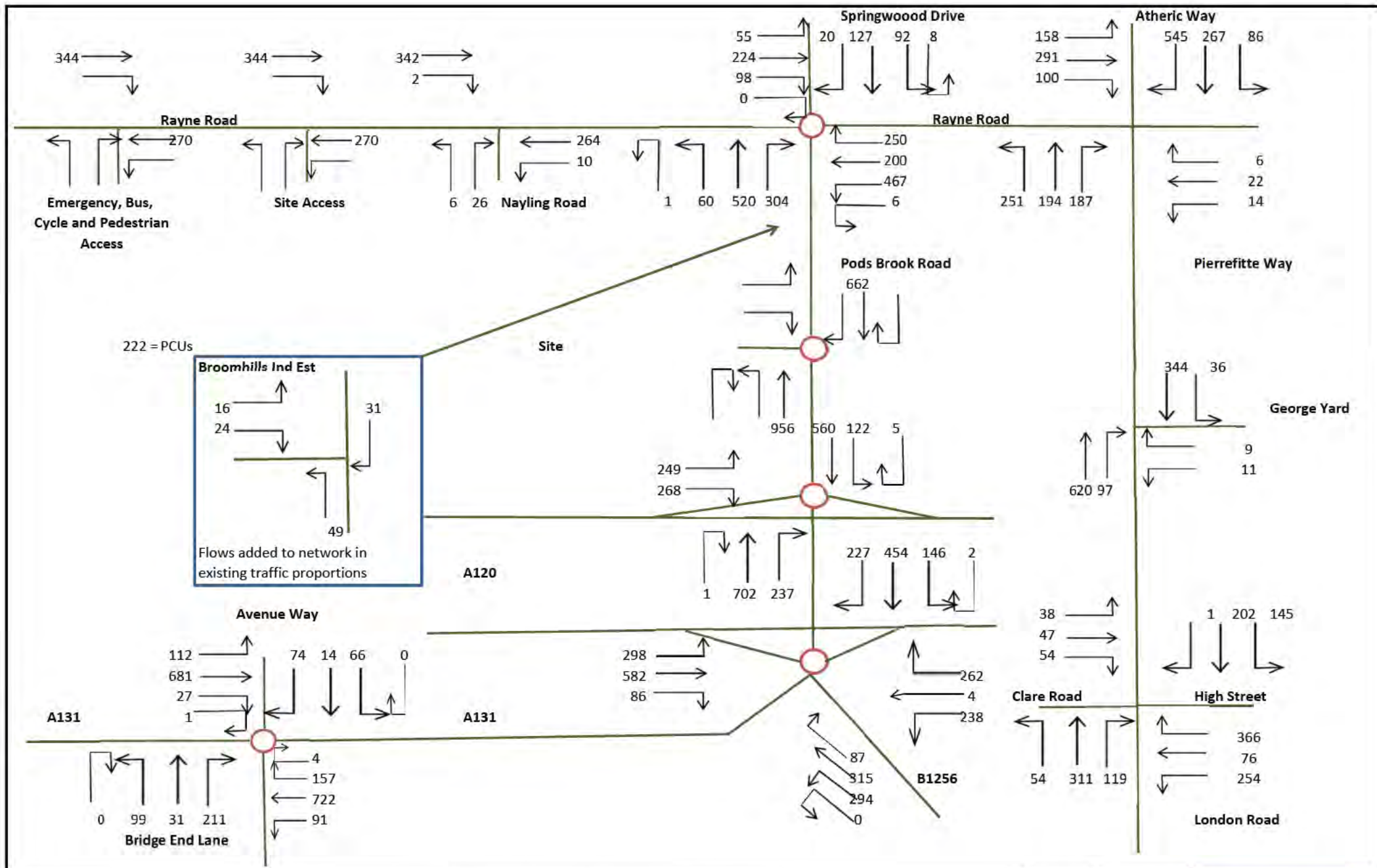
Drawing Title	PM Peak 2020 Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 18	



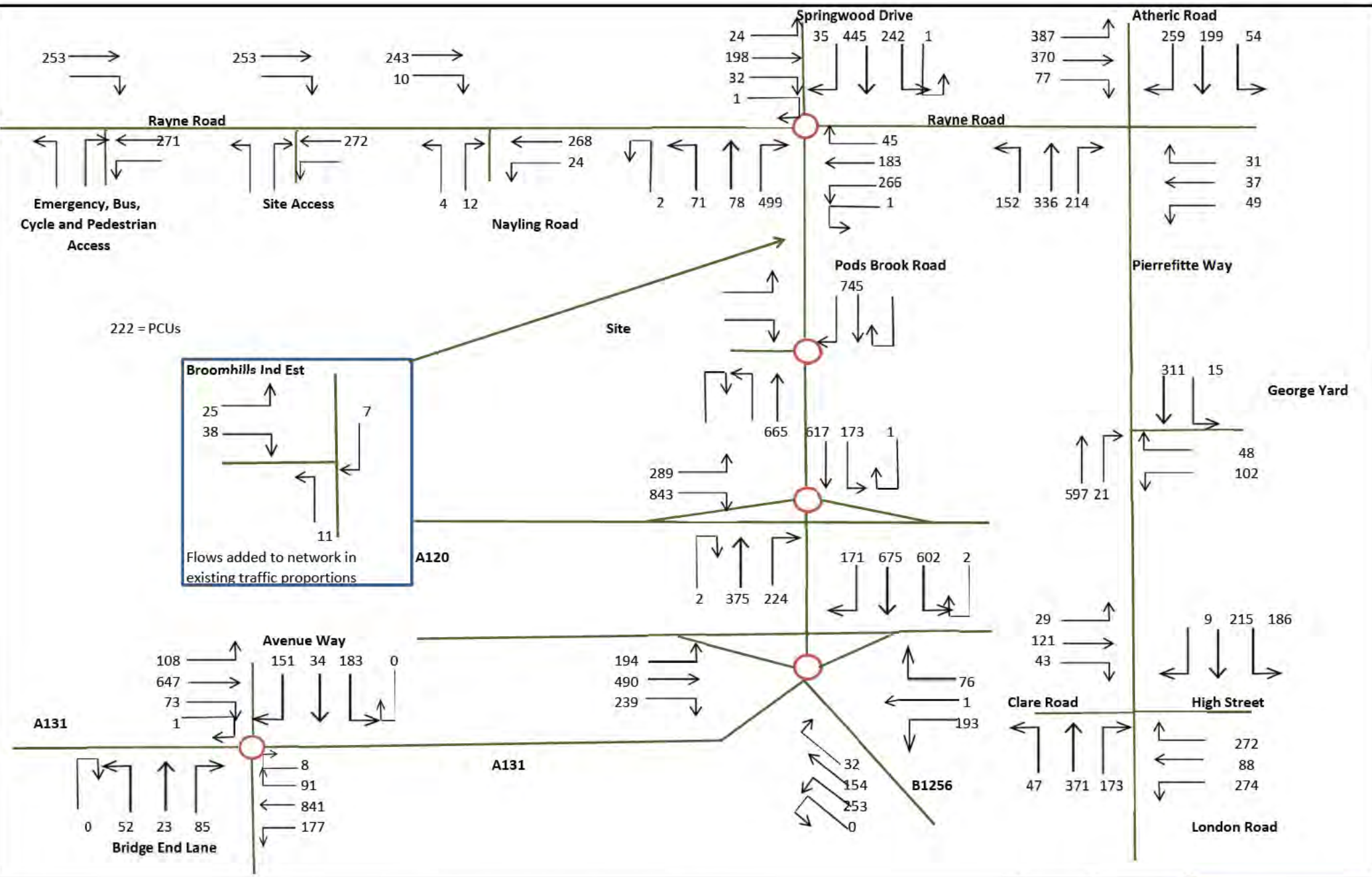
Drawing Title	PM Peak 2020 Total With Development Flows 200 units	Drawn	SAA	
	200 Units	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 19	



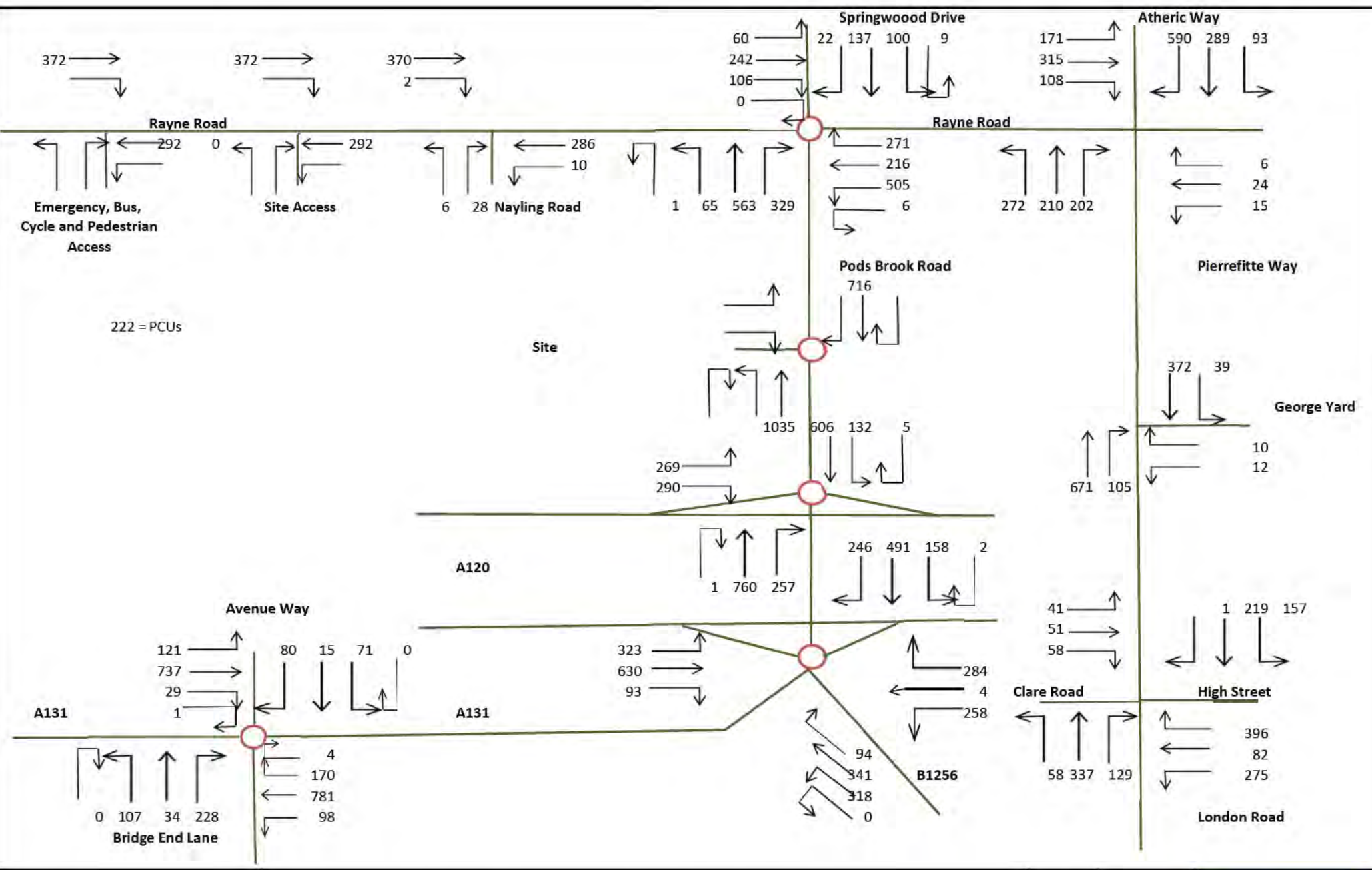
Appendix 12
Network Flows 400 Units



Drawing Title	AM Peak 08:00-09:00 Base Network Traffic Flows 2015	Drawn	SAA		
	Braintree		Date		20/01/2017
	400 Unit Flows		Ref		Figure 1
Project Title	Brook Green				



Drawing Title	PM Peak 17:00-18:00 Base Network Traffic Flows 2015 Braintree 400 Unit Flows	Drawn	SAA
		Date	20/01/2017
		Ref	Figure 2
Project Title	Brook Green		



Drawing Title

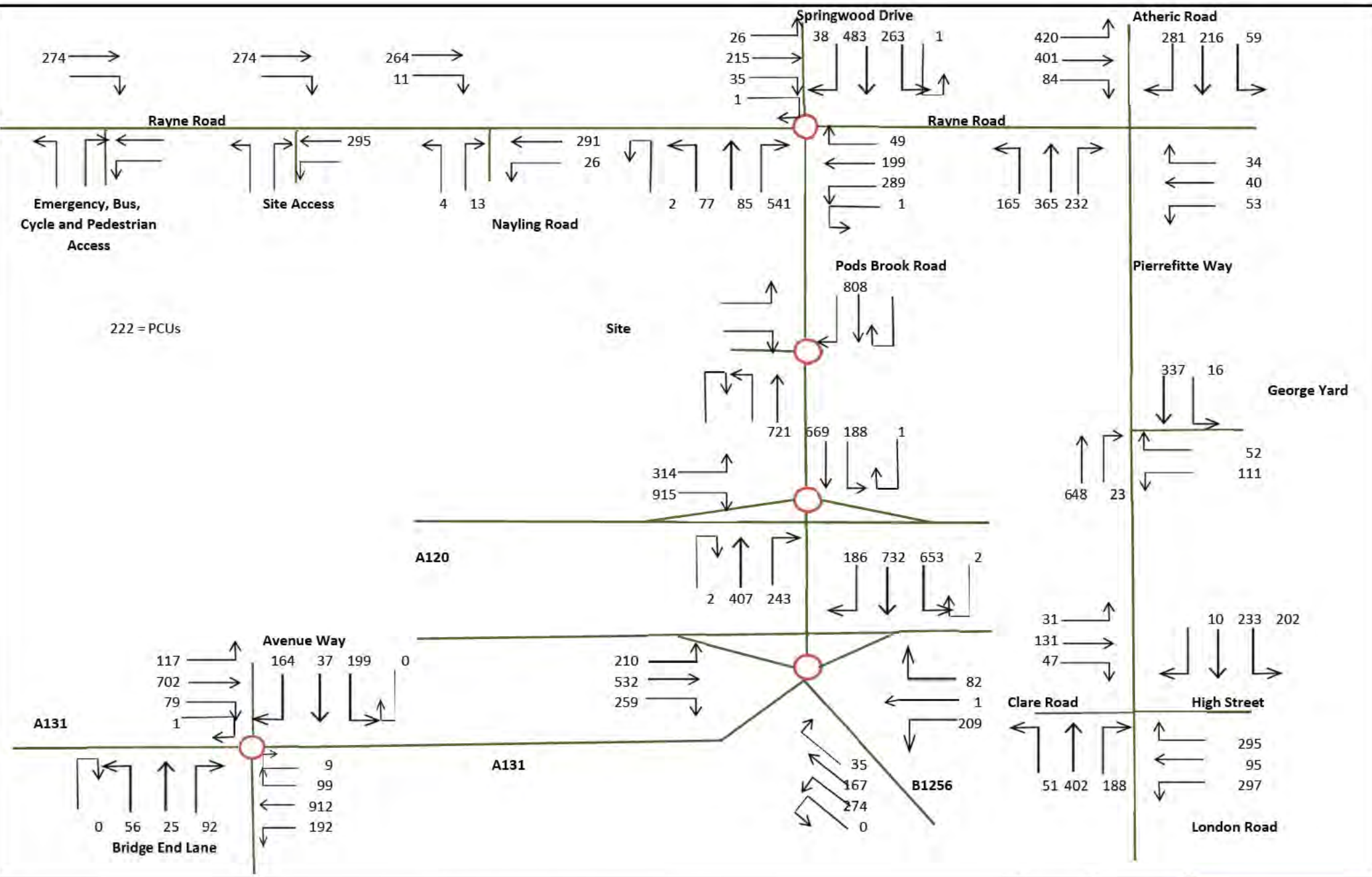
Project Title


AM Peak 08:00-09:00 2022 Forecast Flows
 Braintree Local Adjusted Growth Factor 1.0823 2015-2022
 400 Unit Flows

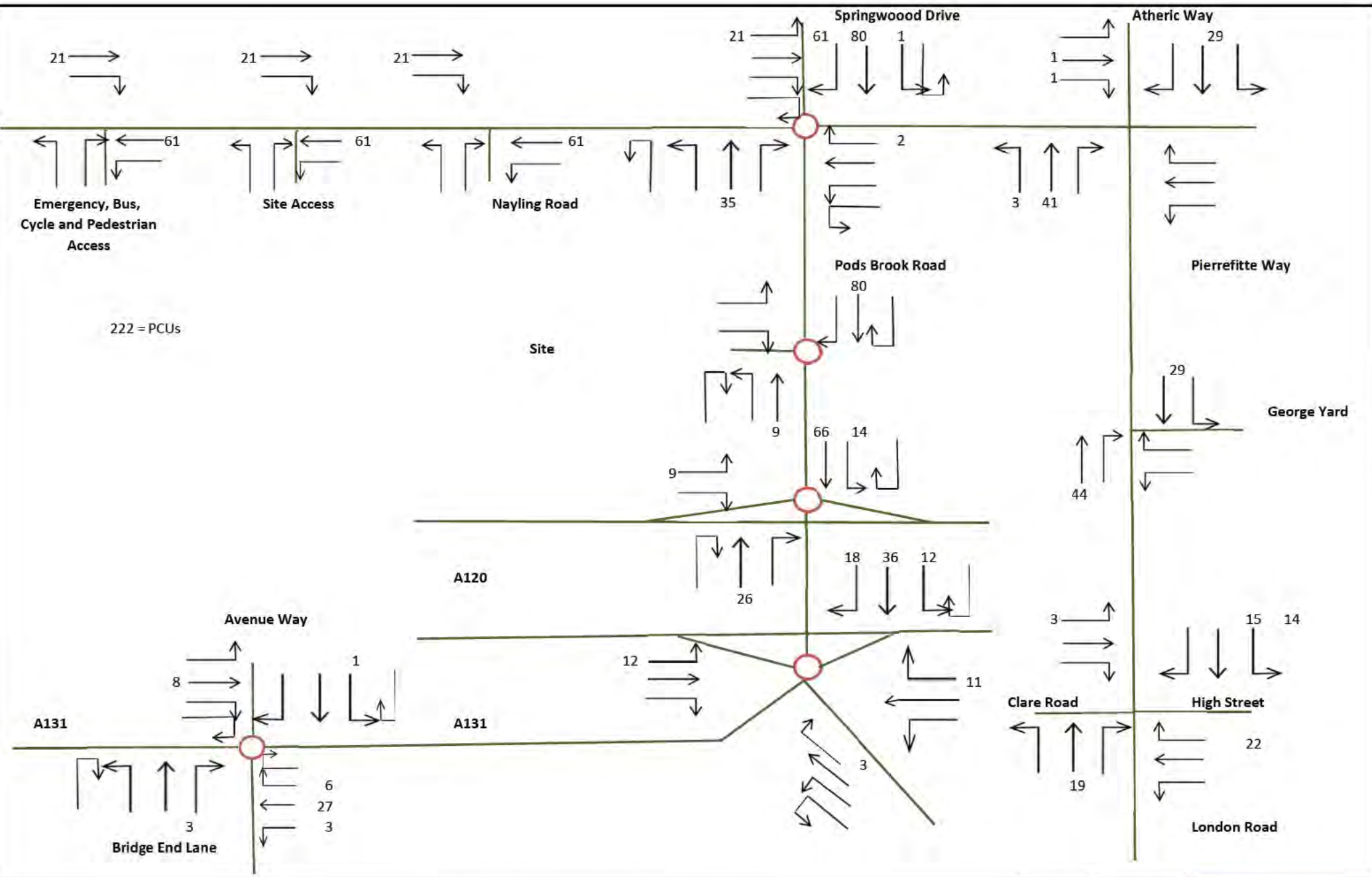
Brook Green


Drawn	SAA
Date	20/01/2017
Ref	Figure 3

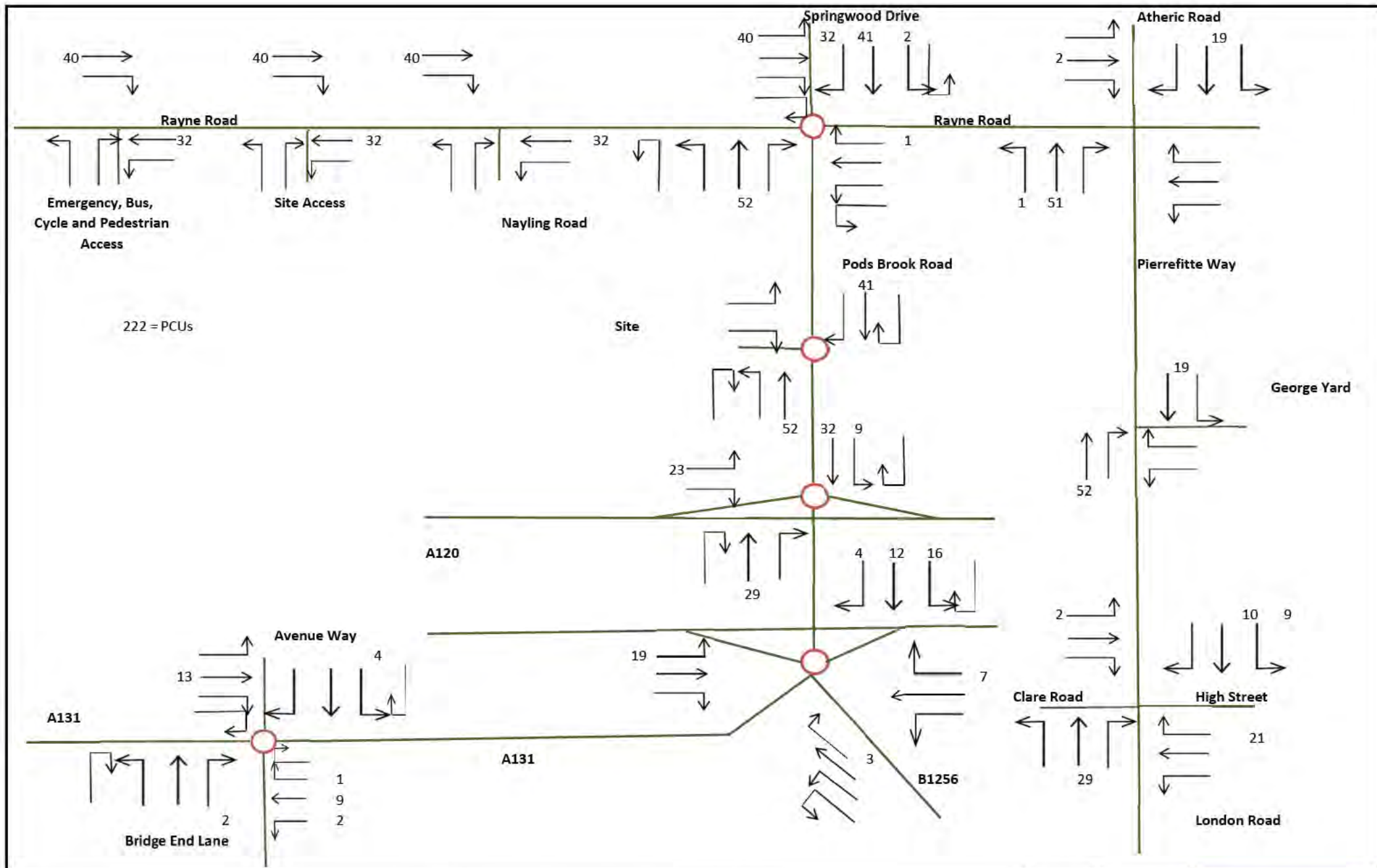




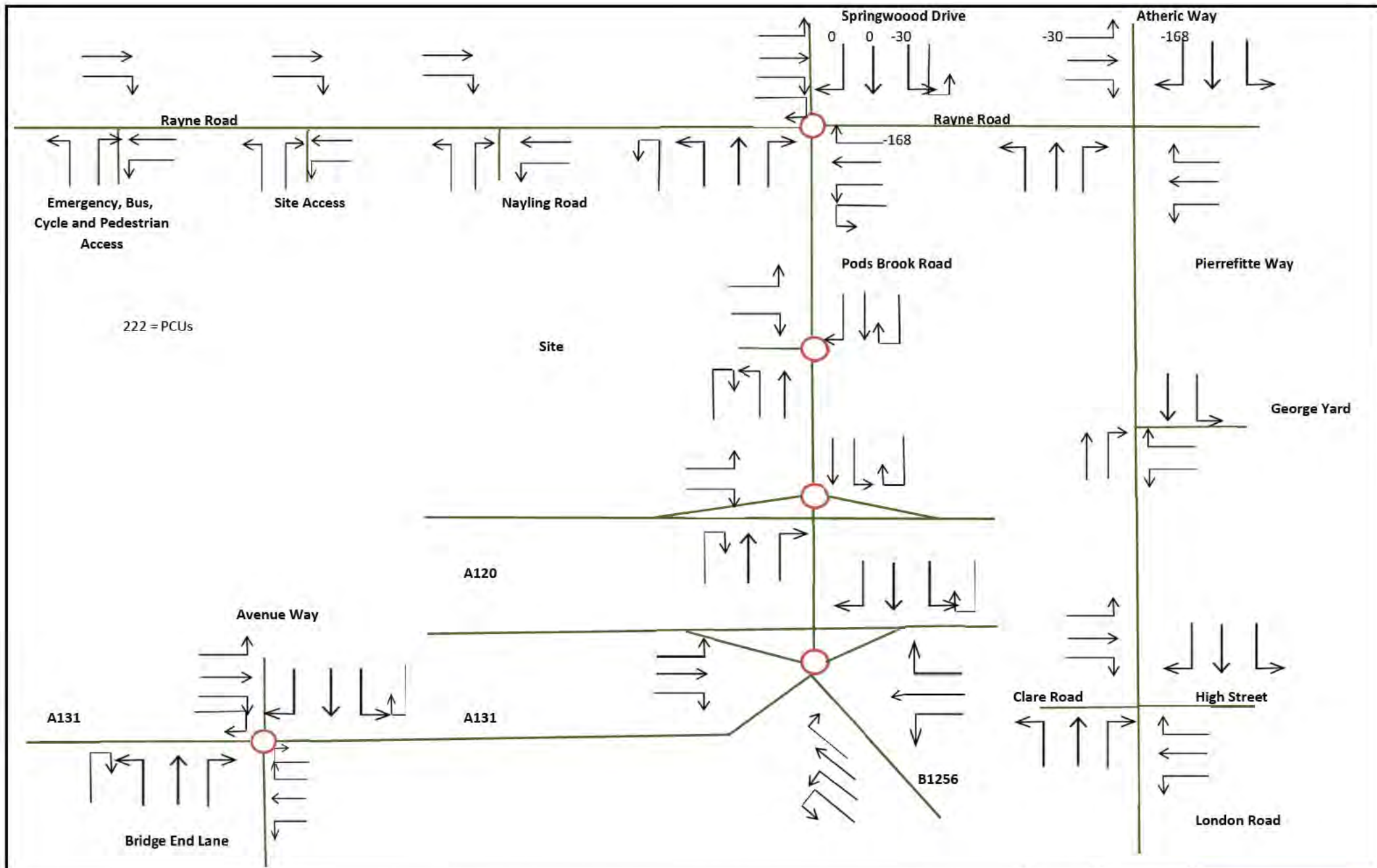
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		Date	20/01/2017	
		Ref	Figure 4	
Project Title	Brook Green			



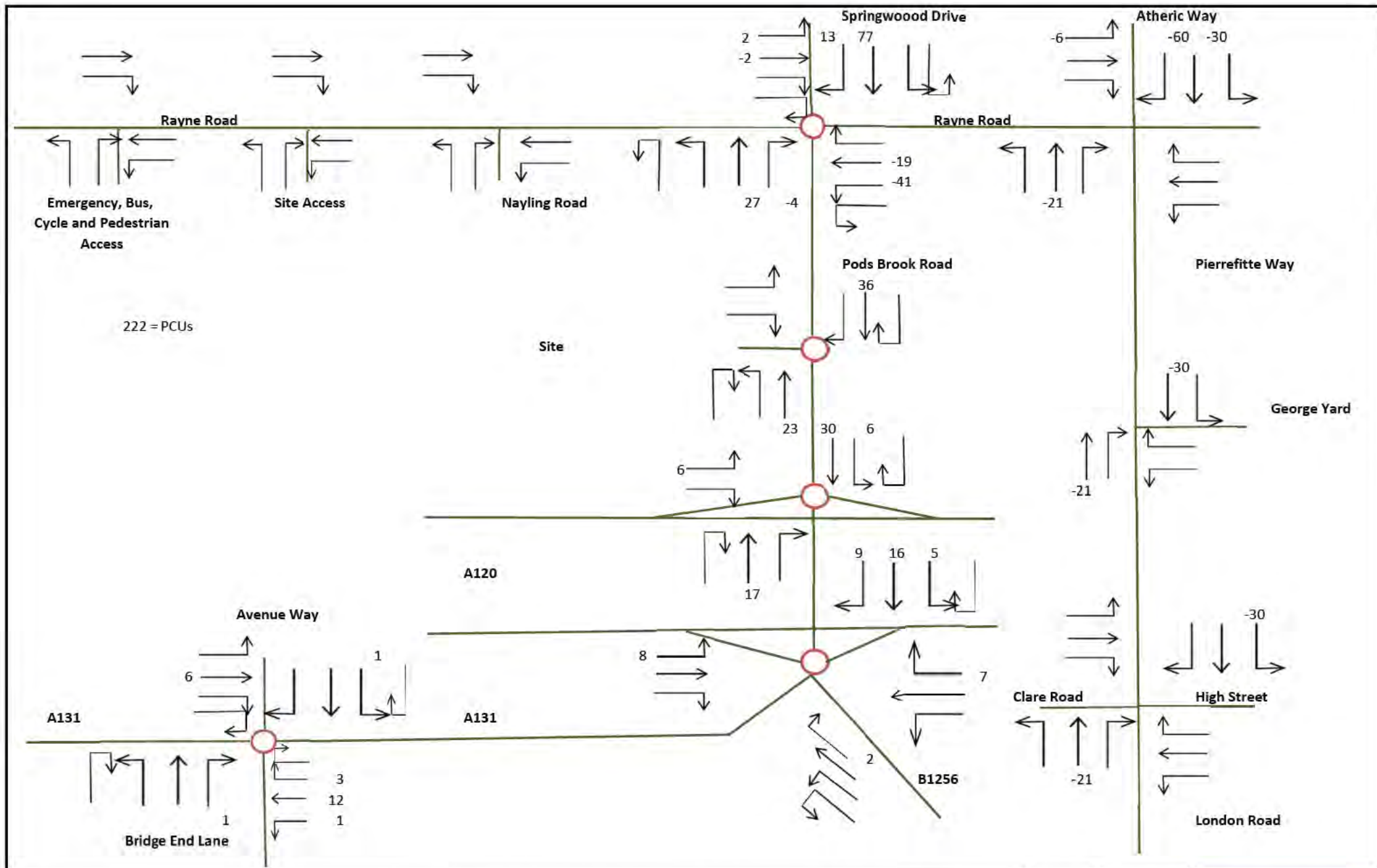
Drawing Title	AM Peak 08:00-09:00 Committed Development Flows Braintree 400 Unit Flows	Drawn	SAA	
	Project Title	Brook Green	Date	
			Ref	



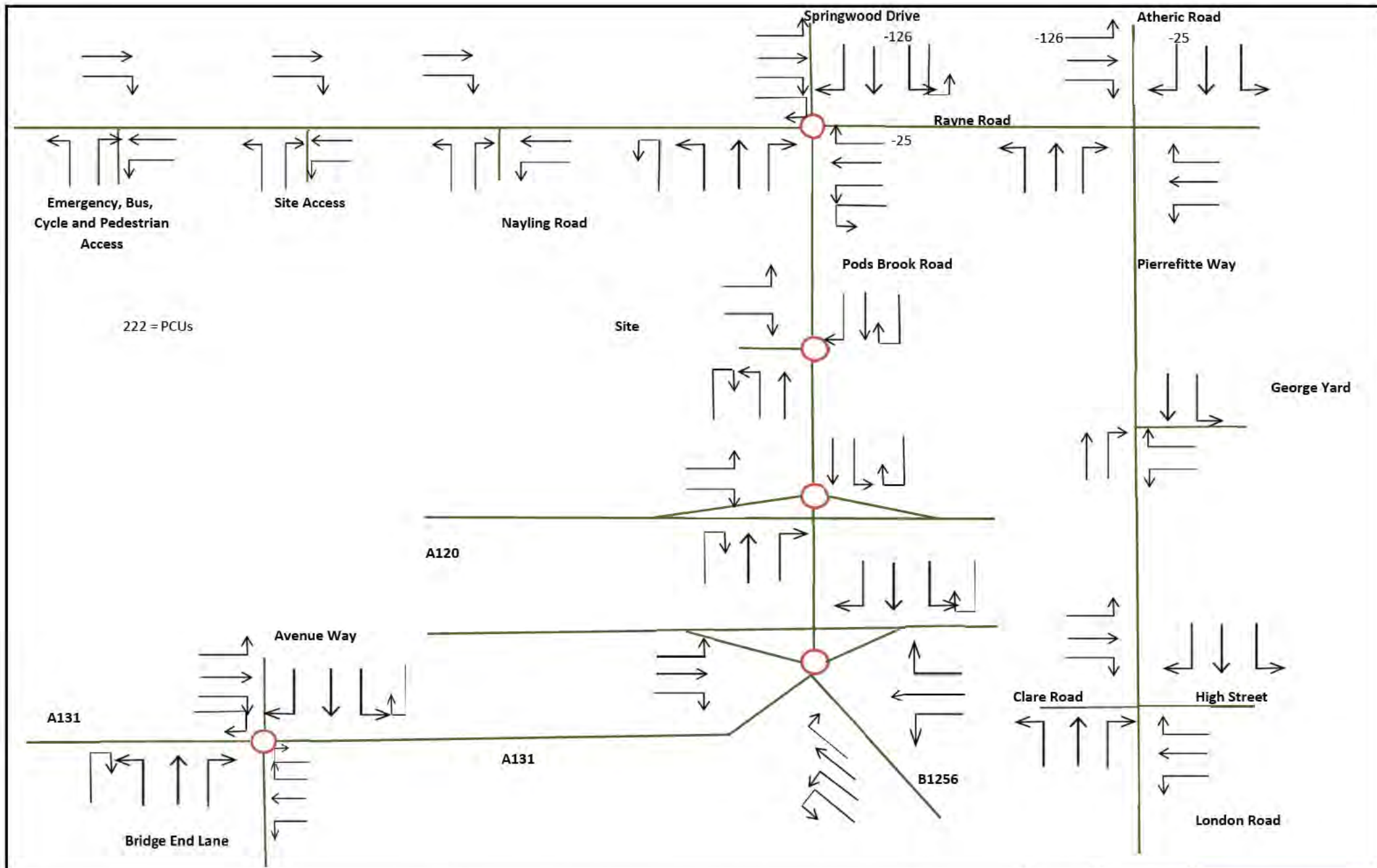
Drawing Title	PM Peak 17:00-18:00 Committed Development Flows Braintree 400 Unit Flows	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 6	
Project Title	Brook Green			



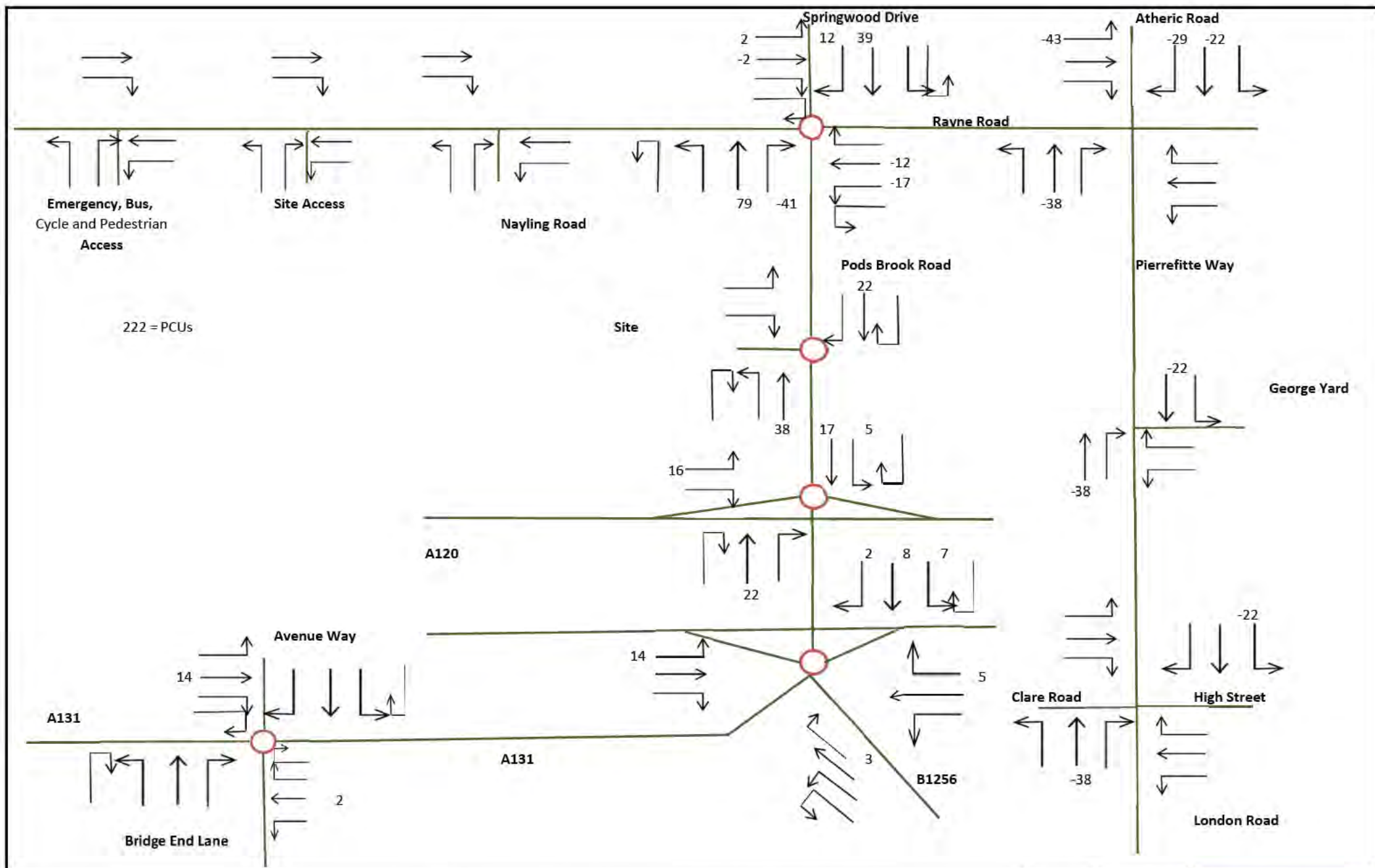
Drawing Title	AM Peak 08:00-09:00 Existing Springwood Drive Employment Re-Assigned Traffic	Drawn	SAA	
	Braintree	Date	20/01/2017	
Project Title	400 Unit Flows	Ref	Figure 7	
	Brook Green			



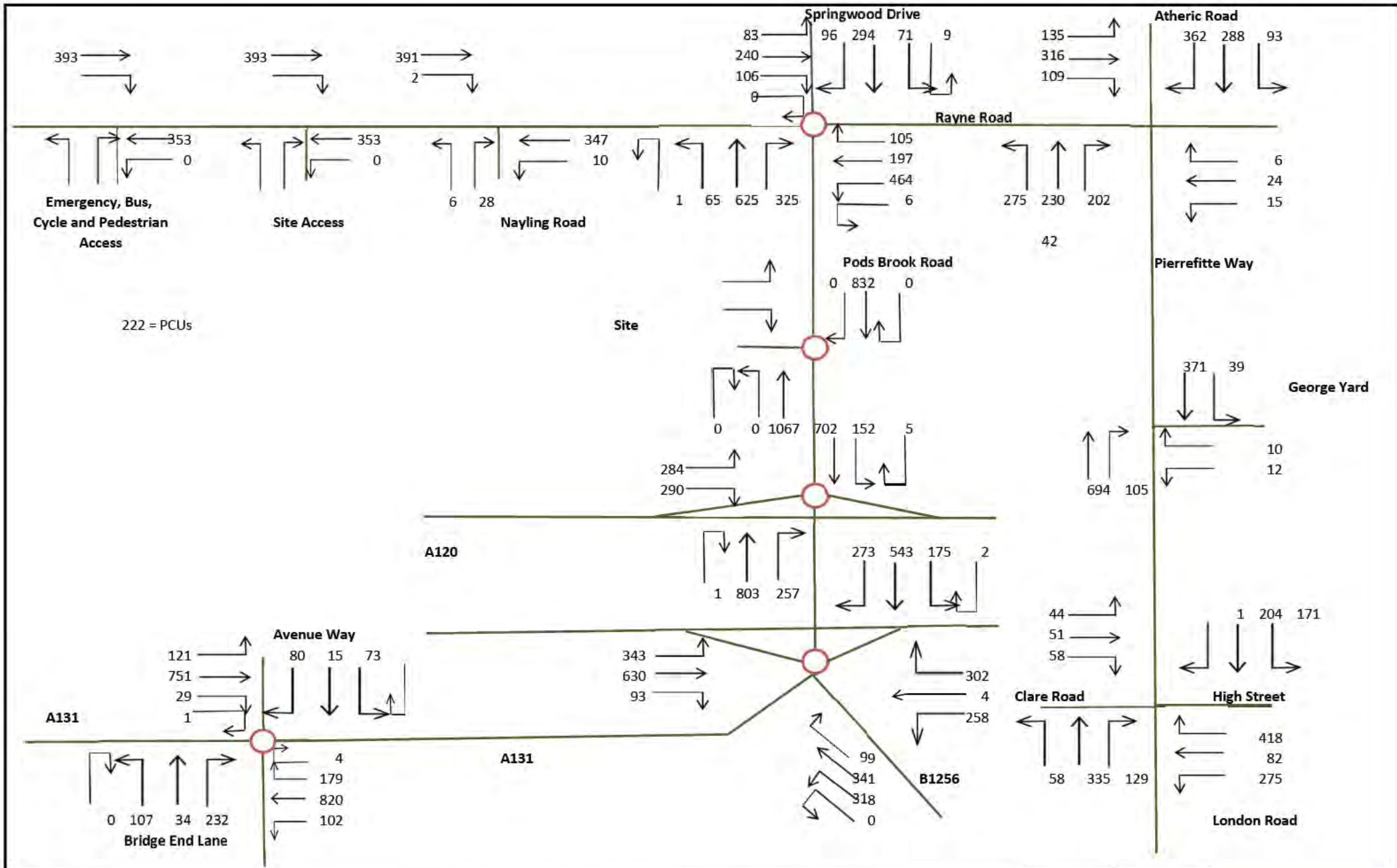
Drawing Title	AM Peak 08:00-09:00 Existing Springwood Drive Residential Re-Assigned Traffic	Drawn	SAA	
	Braintree	Date	20/01/2017	
	400 Unit Flows	Ref	Figure 8	
Project Title	Brook Green			




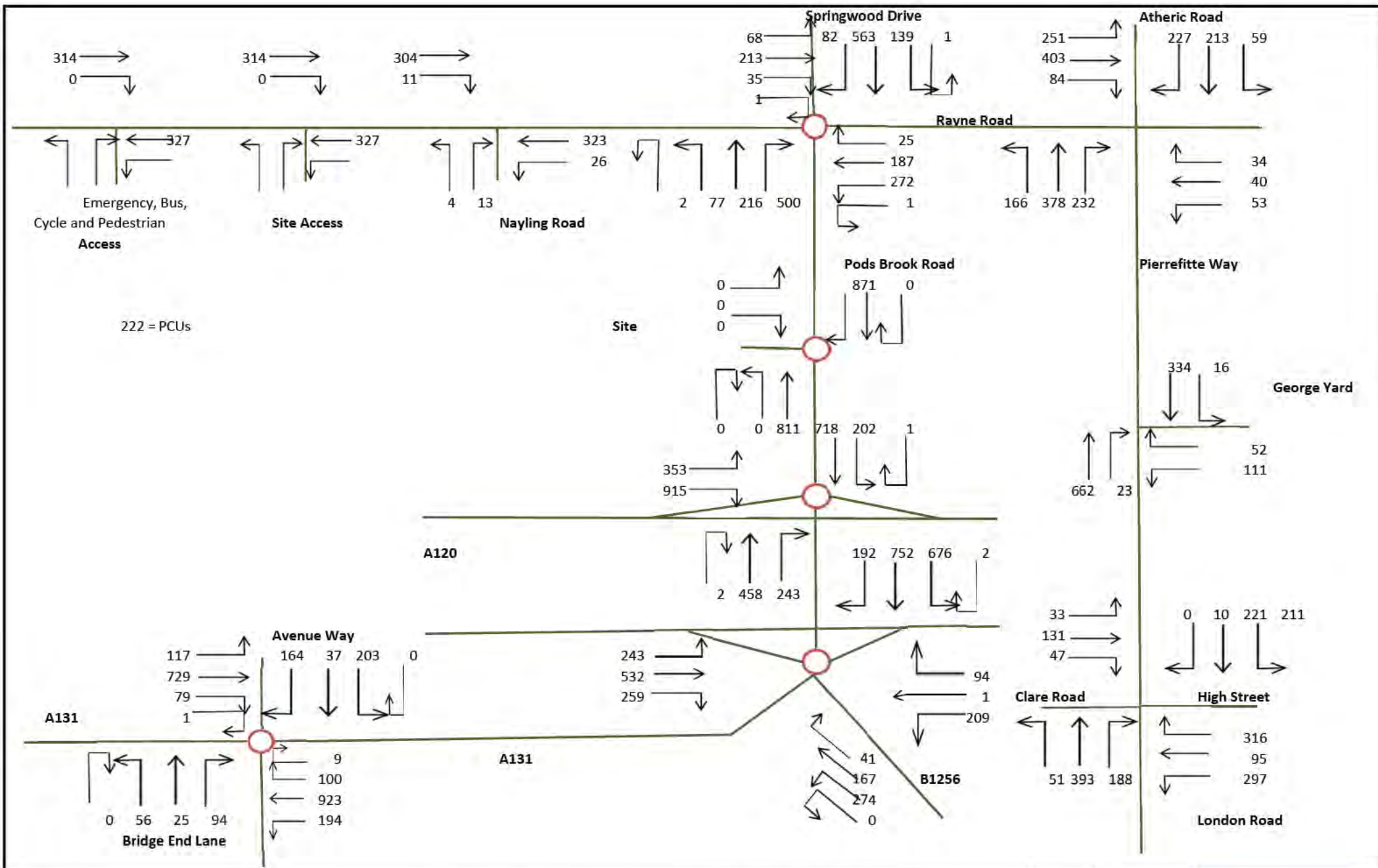
Drawing Title	PM Peak 17:00-18:00 Existing Springwood Drive Employment Re-Assigned Traffic Braintree 400 Unit Flows	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 9	
Project Title	Brook Green			




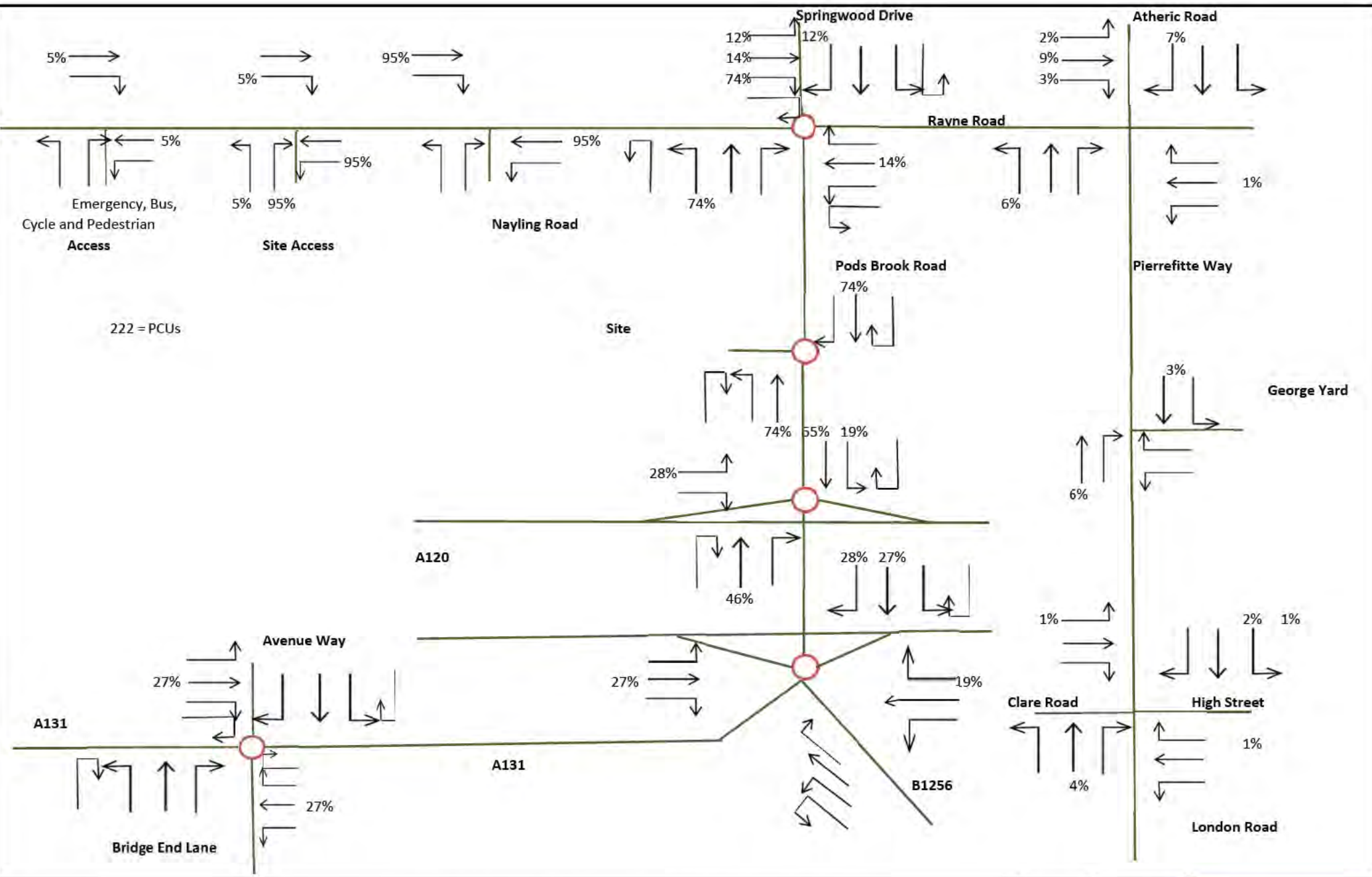
Drawing Title	PM Peak 17:00-18:00 Existing Springwood Drive Residential Re-Assigned Traffic Braintree 400 Unit Flows	Drawn	SAA	
		Date	20/01/2017	
		Ref	Figure 10	
Project Title	Brook Green			




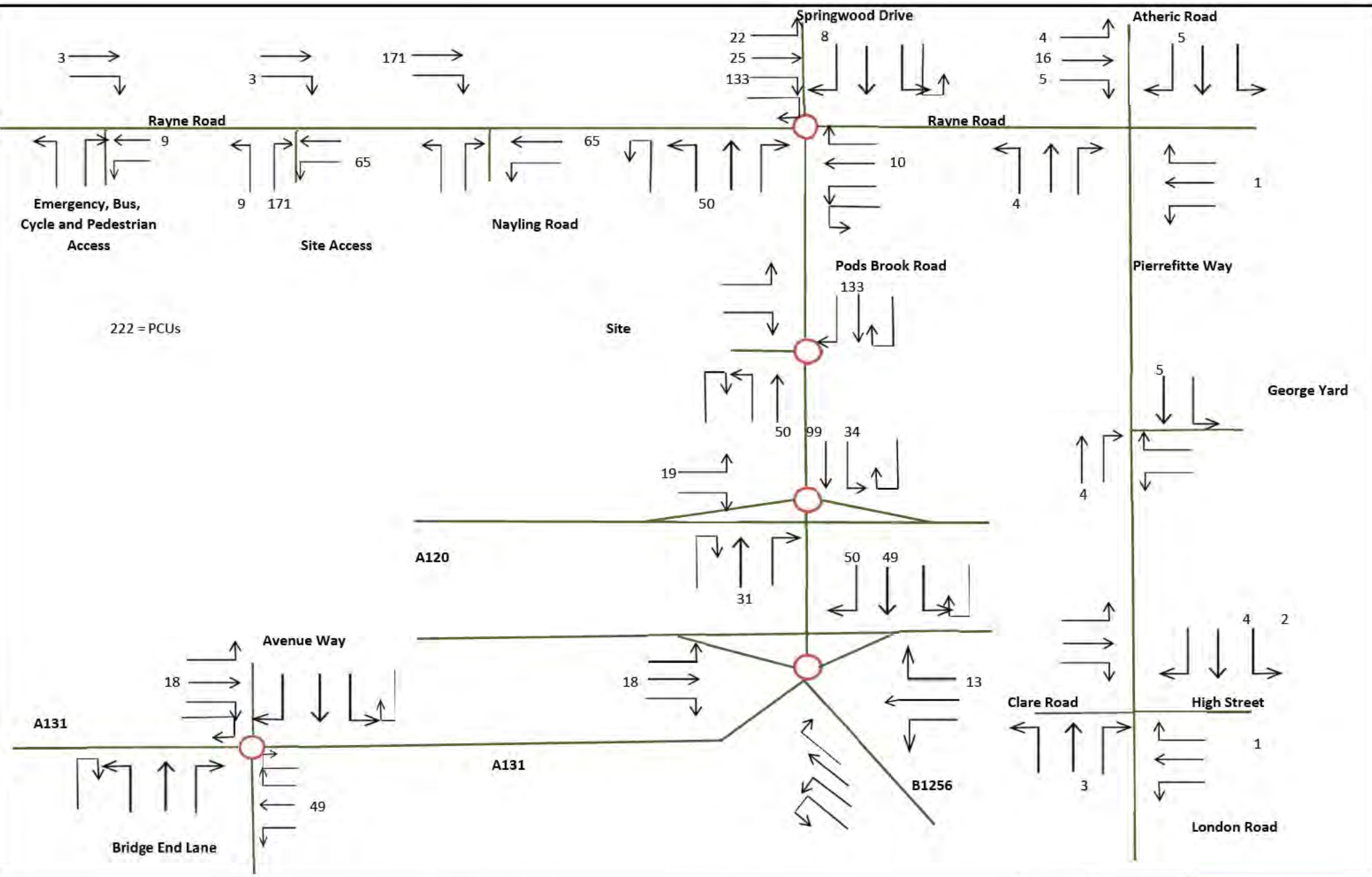
Drawing Title	AM Peak 08:00-09:00 2022 Reassigned Base Flows With Panfield Lane	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 11	




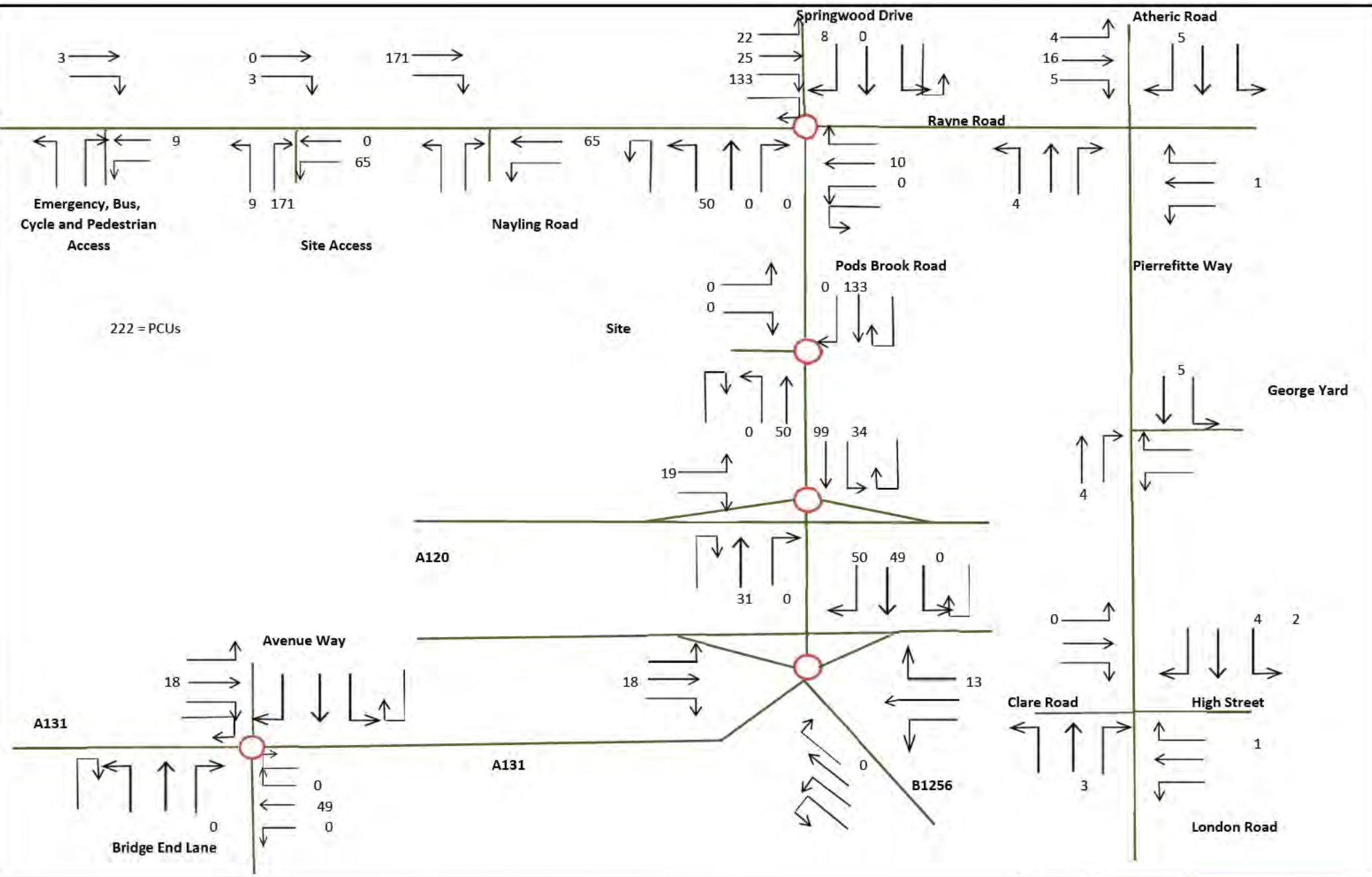
Drawing Title	PM Peak 17:00-18:00 Total 2022 Re-assigned Base Flows with Panfield Lane	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 12	




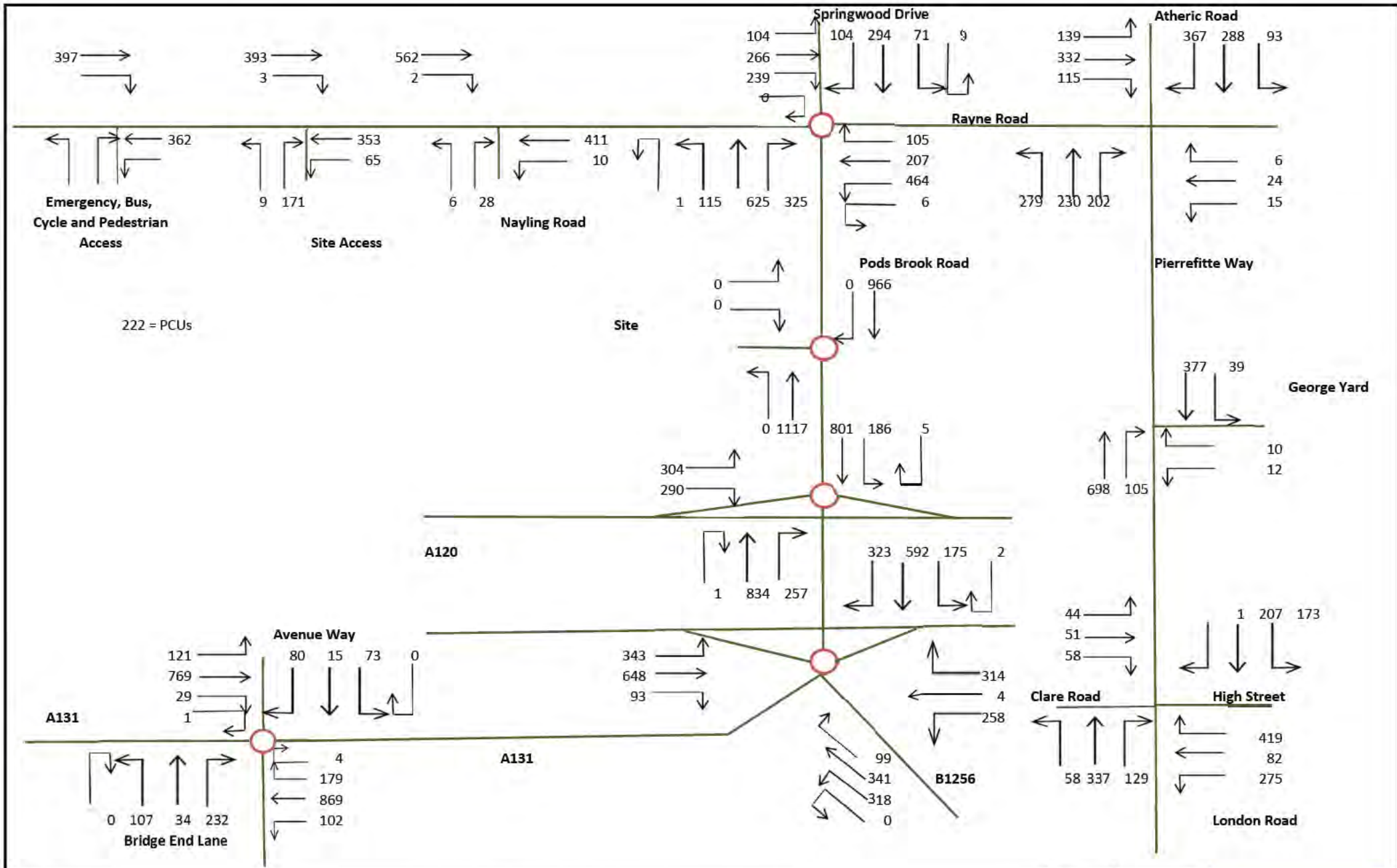
Drawing Title	Rayne Road Access Distribution Highways England Agreed Distribution	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 13	




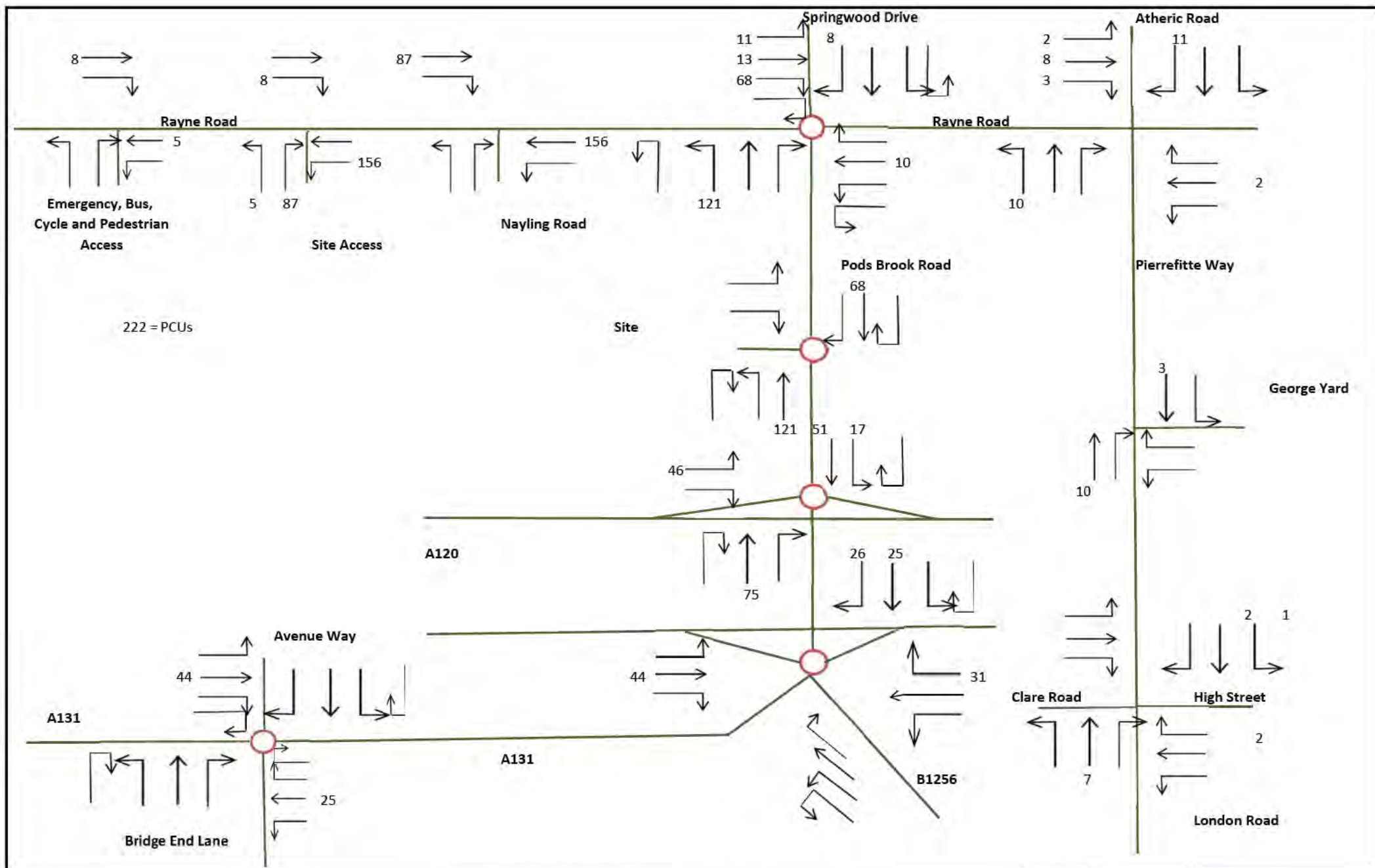
Drawing Title	AM Peak Rayne Road Residential Development Flows 400 Units	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
	Project Title	Brook Green	Ref	



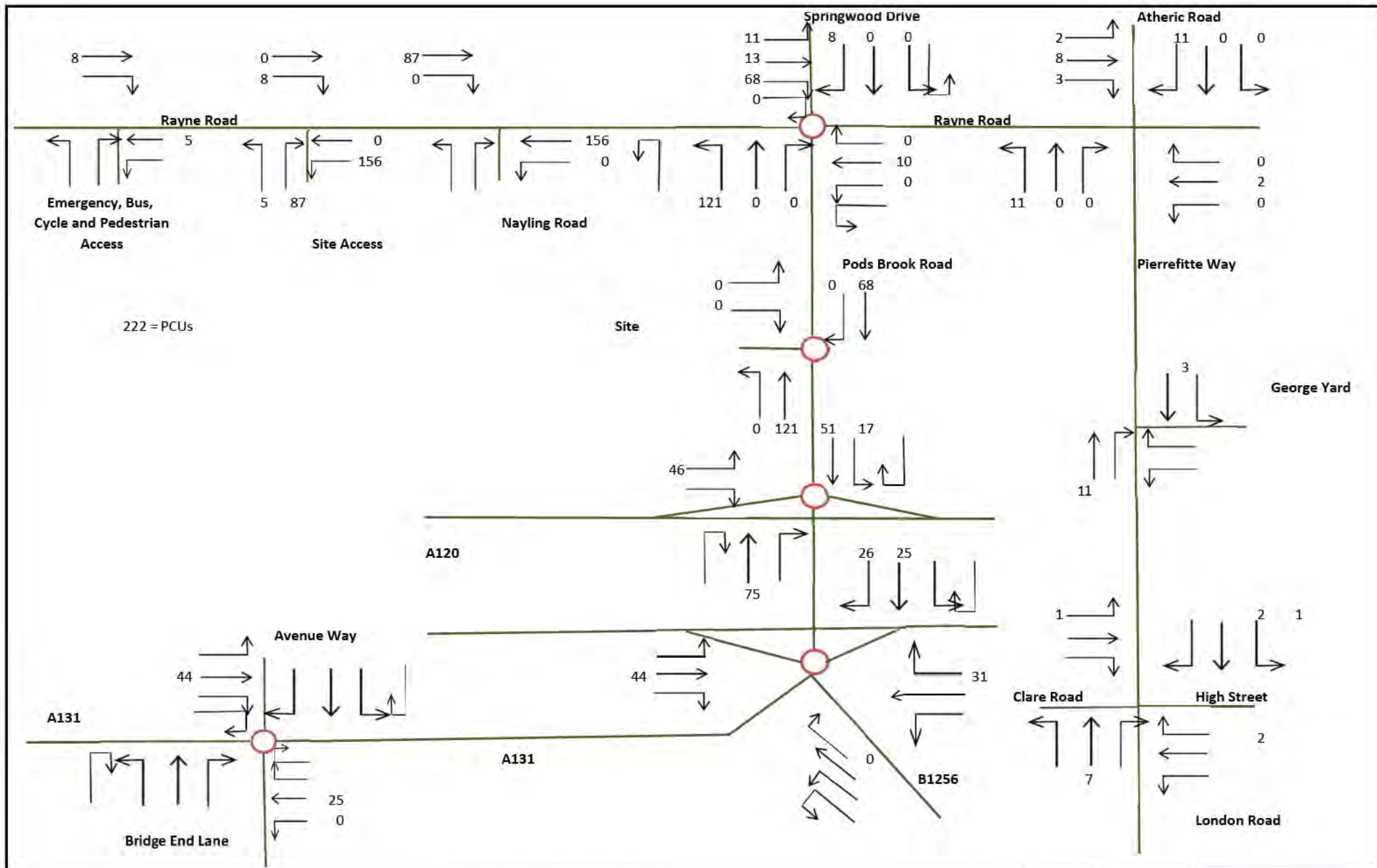
Drawing Title	AM Peak Total Development Flows 400 Units	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 15	



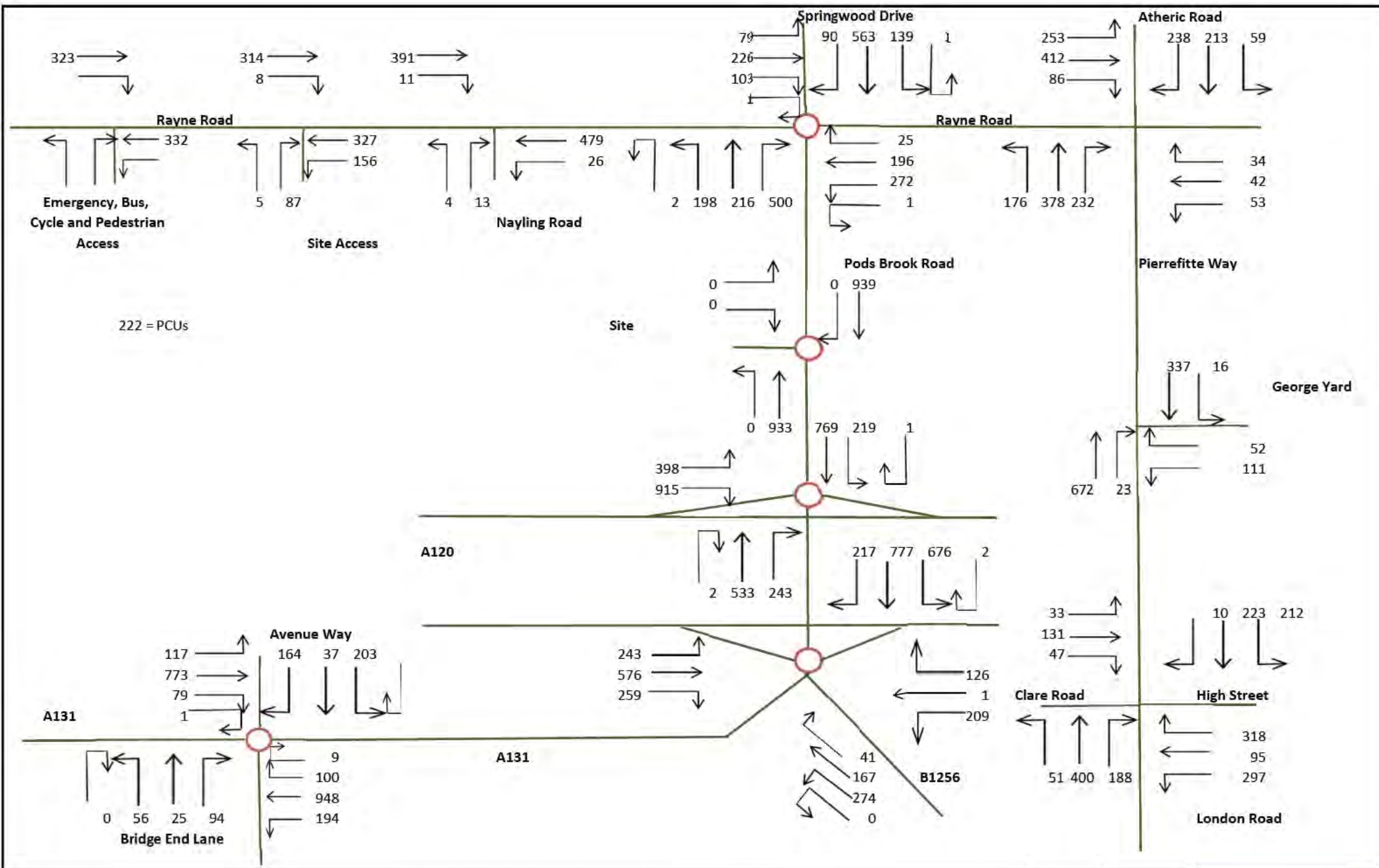
Drawing Title	AM Peak 2022 Total With Development Flows 400 Units	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 16	



Drawing Title	PM Peak Rayne Road Residential Development Flows 400 Units	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
	Project Title	Brook Green	Ref	



Drawing Title	PM Peak Pods Brook Road Total Development Generated Flows 400 Units	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 18	



Drawing Title	PM Peak Total with Development Trips 2022 400 Units	Drawn	SAA	
	400 Unit Flows	Date	20/01/2017	
Project Title	Brook Green	Ref	Figure 19	