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CIVIL ENGINEERING CONSULTANTS

TRANSPORT ASSESSMENT ADDENDUM

GRID REF: 528027E, 193454N

PROPOSED DEVELOPMENT AT THE NORTH LONDON BUSINESS PARK

NEW SOUTHGATE, BARNET, LONDON

prepared for

COMER HOMES GROUP

OCTOBER 2022

REFERENCE: ST3013/TAA-2210 North London Business Park
REVISION: DRAFT

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Revision	Author	Checked by	Issue Date
0	PC	SW	14/10/22

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APPENDICES

Note: Traffic count data files provided separately if requested

1. Introduction

1.1. Background Information

1.1.1. Stomor Ltd. have been commissioned by Comer Homes Group to prepare a Transport Assessment Addendum (TAA) in support of a Hybrid Planning Application for the phased comprehensive redevelopment of the North London Business Park to deliver a residential-led mixed use development.

1.1.2. The detailed element comprises up to 445 residential units in five blocks reaching 9 storeys, the provision of a 5 form entry secondary school, a gymnasium, a multi-use sports pitch and associated changing facilities and improvement to open space and transport infrastructure, including improvements to the access from Brunswick Park Road, and the outline element comprises up to 1,967 additional residential units in buildings ranging from three to twelve storeys, up to 7,148sqm of non-residential floor space (use Class E and F) and public open space. Associated site/preparation/enabling work, transport infrastructure and junction work, landscaping and car parking.

1.1.3. Further details of the development proposals are shown in the plans prepared by Plus Architecture contained in **Appendix A.**

1.1.4. The site benefits from planning permission for redevelopment. The original application was submitted in hybrid form and planning permission was granted at appeal in February 2020 for:

"…the phased comprehensive redevelopment of the North London Business Park to deliver a residential led mixed-use development. The detailed element comprises 360 residential units in five blocks reaching eight storeys, the provision of a 5 Form Entry Secondary School, a gymnasium, a multi-use sports pitch and associated changing facilities, and improvements to open space and transport infrastructure, including improvements to the access from Brunswick Park Road, and; the outline element comprises up to 990 additional residential units in buildings ranging from two to nine storeys, up to 5,177 sqm of non-residential floor space (Use Classes A1-A4, B1 and D1) and 2.54ha of public open space. Associated site preparation/enabling works, transport infrastructure and junction works, landscaping and car parking."

(London Borough of Barnet reference 15/07932/OUT and PINS reference APP/N5090/W/17/3189843).

1.1.5. The consented 2020 application was supported by a TA and was prepared by Awcock Ward Partnership (AWP) in 2015, and a subsequent TAA in 2017.

1.1.6. It is proposed to provide car parking within Phase 1 at a ratio of approximately 0.8 spaces per dwelling resulting in a total of 367 car parking spaces for the 445 total dwellings within Phase 1.

1.1.7. As agreed with LBB and TfL during a highway meeting in September 2022, a ‘Monitor and Manage’ approach will be adopted for the later phases the development (see **Appendix B** for more details). A Monitor and Manage approach is considered to be the most appropriate way to ensure that appropriate levels of car parking are provided during the later phases to reflect the following:

- Actual levels of car ownership observed as part of Phase 1;
- Increase in home working; and
- Results of the Travel Plan monitoring surveys.

1.1.8. Notwithstanding the above, the maximum level of car parking provision provided within the development will be 0.8 and will be detailed as part of the subsequent Reserved Matters for the later phases.

1.1.9. Vehicle and cycle parking provision will be in accordance with London standards with care taken not to over-provide vehicle parking. Cycle parking will be provided to ensure safe and secure storage of bicycles as part of the overall package of sustainable transport improvements.

1.1.10. Electric vehicle charging infrastructure will be accommodated in accordance with London standards.

1.1.11. A Planning Application for the redevelopment of the North London Business Park was submitted in August 2021 (Planning reference 21/4433/OUT) supported by a Transport Assessment (TA) prepared by Stomor Ltd (Document refence ST3013/TA-2108 Rev 0).

1.1.12. Due to time/data constraints associated with the Planning Application submission deadline, it was agreed with the London Borough of Barnet (LBB) and Transport for London (TfL) in July 2021, that a TA Addendum would be prepared after the TA to provide the following (further details of this correspondence are included within **Appendix B):**

- Traffic assessment of the Proposed Development;
- Details of the proposed signalised site access with Brunswick Park Road;
- Details of the proposed footway and bus stop upgrades to Brunswick Park Road; and
- London Underground Station Capacity/Line Loading Assessment.

1.1.13. Following a response with LBB in October 2021, an additional link (A109 Oakleigh Road South in between Brunswick Avenue and North/Waterfall Road/Bowes Road Roundabout) has been included within the Active Travel Zone (ATZ) Assessment.

1.2. Transport Assessment Scoping

1.2.1. Scoping discussions for the proposals set out in the TA were held with both the London Borough of Barnet (LBB) and Transport for London (TfL) in April/May 2021. A summary of the key points raised from these scoping discussions is set out below:

- Given the passage of time since the previous TA, the initial 2015 traffic count data was not considered to be acceptable. Therefore, TfL requested that new traffic count data should be obtained for the junctions within the study area to provide a new baseline;
- Only the development above and beyond the extant 1,350 dwellings and 3,125sq. m of commercial space permitted in 2020 will need to be assessed within the revised TA. Therefore, a total of 1,150 dwellings needs to be assessed within this revised TAA;
- An assessment of the impact of the proposed development on the London Underground network will need to be undertaken; and
- Data for the Future Year assessments would need to be derived using TfL`s model;

1.2.2. Further details pertaining to the scoping exercise are contained in **Appendix B** for reference.

1.2.3. The junctions included within the study area for this assessment, as agreed with LBB/TfL, are summarised in **Table 1** below.

Ref	Junction
1	A109 Oakleigh Road North/Oakleigh Park/Myddelton Park
2	Church Hill Road/Russell Lane/Brunswick Park Road
2a	Brunswick Park Road/Osidge Lane
3	A109 Oakleigh Road North/Pollard Road/B1453 Russell Lane
4	Site Access/Brunswick Park Road/Goldrill Drive
5	A109 Oakleigh Road North/Site Access
5a	A109 Oakleigh Road South/Brunswick Avenue
6	A109 Oakleigh Road South/Coppies Grove
7	Friern Barnet Road/A109 Oakleigh Road North/Waterfall Road/Bowes Road (Betstyle Circus)
8	A109 Oakleigh Road/A1000 High Road/Totteridge Lane

Table 1 – Junctions within Study Area

1.2.4. This TAA has been prepared to assess the travel demand and impact of the proposed development. The development will be taken forward in a series of development phases.

2. Assessing the Impact of the Proposed Development

2.1. Assessment Criteria

2.1.1. As agreed with TfL as part of the scoping exercise, only the development above and beyond the extant 1,350 dwellings and 3,125sq.m of commercial space permitted in 2020 will need to be assessed within the revised TAA. This equates to a total of 1,150 dwellings to be assessed within this TAA (as shown in **Appendix B**).

2.1.2. This appraisal is based on the following three key assessments:

- The suitability of the site accesses to accommodate proposed development access demands;
- The ability to access the site via sustainable modes of transport; and
- The impact of the proposed development on off-site transport infrastructure and services.

2.1.3. It is important to note that the general direction of national and local policy seeks to locate development sites in sustainable locations in order to enable future residents to take advantage of sustainable modes of travel.

2.1.4. Alongside this there is also a general understanding that increasing highway capacity to meet predicted demand is neither desirable nor achievable as it will not promote use of sustainable modes.

2.2. Construction Traffic

2.2.1. A Construction Traffic Management Plan (CTMP) will be conditioned, and will include details of the following:

- Contact details of key site personnel;
- Details on managing materials, site storage, and good housekeeping;
- Details of community liaison and communication, including complaints procedure;
- Details of monitoring and corrective action;
- Details of working hours;

- Details of deliveries and transport of materials, plant, and equipment to site;
- Details including drawings of for the traffic management plan;
- Details on how to mitigate noise, vibration and dust ;
- Details of wheel washing facilities and road sweeping activity;
- Details of waste management;
- Details of artificial lighting; and
- Details on measures to prevent pollution.

2.2.2. The site is located close to the strategic road network (SRN) and adjacent to roads that are used to accommodating significant volumes of industrial traffic. Notwithstanding this, further consideration of traffic routing will be provided in more detail within the CTMP.

2.3. Existing Traffic Conditions

2.3.1. As requested by TfL during the scoping discussions, traffic counts were undertaken at the agreed locations, as shown in **Figure 1** below and summarised in **Table 1**. Manual Classified Count (MCC) surveys were undertaken on Thursday 27th May 2021 at the locations shown on **Figure 1** below.

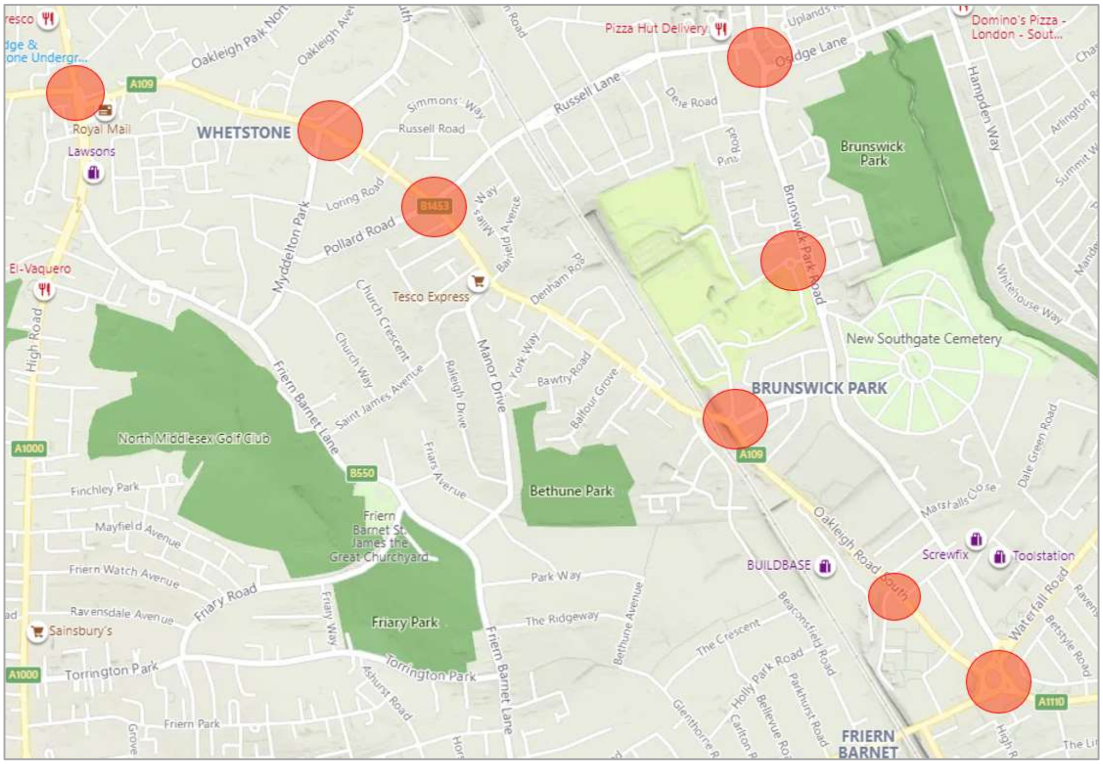

Figure 1 –2021 MCC Survey Locations (base mapping extracted from Bing Maps)

2.3.2. In addition, Automatic Traffic Counts (ATCs) were undertaken within the vicinity of the site access along the A109 Oakleigh Road North and Brunswick Park Road.

2.3.3. These counts have been used to provide the baseline for assessment of traffic flows in the vicinity of the site and likely impact of traffic generated by the proposed development. The Observed 2021 traffic flow information is provided in **Appendix C.**

2.4. <u>Base Year Traffic Flows</u>

2.4.1. The observed traffic counts undertaken in May 2021 have been used to provide the Base Year assessment for the following reasons:

- Subtracting the existing employment development trips at the site accesses (taken from the 2015 TA) from the 2021 observed flows was producing negative values; and
- Similarly, subtracting the school traffic (as taken from School Travel TA prepared by Vectos) from the 2021 observed flows was producing negative values.

2.4.2. Considering the above and given that the amount of existing employment floorspace at the site has declined since the 2015 TA, (and that we have been unable to quantify this reduction of floorspace), it has not been possible to disaggregate the employment and school traffic within the 2021 observed flows.

2.4.3. For the purposes of this assessment, the observed 2021 flows are considered to be the Base Year scenario. It is likely that the bulk of the 2021 trips will be retained as they are associated with the new school.

2.5. <u>Assessment Periods and Assessment Years</u>

2.5.1. The typical weekday peak periods on the highway network will be assessed as they are likely to be the most capacity constrained. Based on data extracted from traffic counts, peak times (the PM peaks in particular) vary so the widely used traditional network peak periods have been used for this assessment as follows:

- 0800 – 0900 (AM network peak); and
- 1700 – 1800 (PM network peak).

2.5.2. The following assessment scenarios have been undertaken as part of this TAA, as agreed with TfL:

- 2021 Base Year;
- 2031 Future Year baseline flows; and
- 2031 Future Year baseline flows + development.

2.5.3. Base Year 2021 traffic diagrams are shown in **Appendix C** and 'Without Development' traffic diagrams are shown in **Appendix D** for 2031.

2.5.4. The 2031 forecast development traffic associated with the new school building has been derived using the information contained in the school TA prepared by Vectos in May 2021. The 2031 School Traffic has been applied to the 2031 Future Year baseline flows to derive the forecast background traffic on the local highway network. Further details are shown on the traffic diagram contained in **Appendix E.**

2.6. <u>Vehicular Trip Generation - Proposed Development</u>

2.6.1. Reference has been made to the TRICS database under the land-use category 'Residential' and the sub-category 'flats privately owned' to specifically identify weekday peak hour person trips generated by the proposed development. For this assessment, sites outside of London have been excluded, as requested by TfL.

2.6.2. The TRICS outputs are summarised in **Table 2** and the original TRICS database information can be found in full in **Appendix F.**

Peak Period	Residential – Total Person Trip Generation					
	Inbound		Outbound		Two-Way	
	Rate	Trips	Rate	Trips	Rate	Trips
AM Peak (0800 to 0900)	0.061	70	0.423	486	0.484	557
PM Peak (1700 to 1800)	0.280	322	0.139	160	0.419	482

Table 2 – Person Trip Rates (TRICS residential – flats privately owned – based on 1,150 units)

2.6.3. Using the person trip generation shown in **Table 2** above, a bespoke trip generation calculation for the proposed development has been derived using the 'Method of Travel to Work' Middle Layer Super Output Area (MSOA) of Barnet 010 data from the NOMIS database.

2.6.4. The mode share from NOMIS demonstrates that 40.1% of the existing resident population travel to work via car. The proposed development will also provide a dedicated mini-bus shuttle service (15 seat capacity) to key local destinations. This has also been factored into the vehicle trip generation assumptions, alongside an allowance for delivery vehicles.

2.6.5. Full details of the vehicular trip generation assumptions for the typical network peak periods are contained in **Appendix G,** with a summary provided in **Table 3** below.

AM Peak Vehicle Trips (0800 – 0900)			PM Peak Vehicle Trips (1700 – 1800)		
In	Out	2-Way	In	Out	2-Way
35	206	241	141	71	212

Table 3 – Proposed Development Vehicular Trip Generation

2.6.6. Based on the vehicle trip rates summarised in **Table 3,** the proposed additional development of up 1,150 dwellings would be expected to generate in the region of 241 two-way vehicle movements during the AM peak and 212 two-way vehicle movements in the PM peak hour.

2.7. Mode Shift

2.7.1. In order derive the baseline mode share for the proposed development, Census data for the Middle Super Output Area (MSOA) of Barnet 010 `Travel to Work' has been used which is a robust measure of travel demand to and from the site.

2.7.2. The baseline mode share is summarised below in **Table 4** below, alongside the respective development trips.

Method	Development Trips (AM Peak 2-way)	%
Works mainly at or from home	57	10.3%
London Underground	126	22.7%
Train	40	7.2%
Bus, minibus or coach	57	10.3%
Taxi	3	0.5%
Motorcycle, scooter of moped	7	1.3%
Driving a car or van	223	40.1%
Passenger in a car or van	11	2.0%
Bicycle	5	1.0%
Foot	23	4.1%
Other	3	0.6%
Total	**557**	**100.0%**

Table 4 – Baseline Mode of Travel to Work – Census 2011

2.7.3. The information in **Table 4** above demonstrates that 40.1% of journeys to work are via single occupancy car vehicle, and 57.6% via sustainable modes (including home working).

2.7.4. Planning policy promotes sustainable modes (walking, cycling and public transport), and the Mayor’s Transport Strategy sets a target of 75% sustainable travel mode share for Outer London by 2040.

2.7.5. A minimum mode shift target of 55% via sustainable modes (inclusive of home working) by year 2026 has been adopted as part of this assessment. Longer term, by 2031 the objective target of 60% is anticipated to progress to the 75% target set out in the London

Plan by 2041. Further details of the proposed modal shift are summarised in **Table 5** below.

Method	Year 1 Development Trips (AM Peak 2-way)	%	Year 5 Development Trips (AM Peak 2-way)	%	Year 10 Development Trips (AM Peak 2-way	%
Works mainly at or from home	57	10.3%	60	12.0%	71	13.0%
London Underground	126	22.7%	130	26.9%	140	26.0%
Train	40	7.2%	40	8.0%	40	7.2%
Bus, minibus or coach	57	10.3%	60	12.6%	75	13.5%
Taxi	3	0.5%	3	0.5%	5	0.9%
Motorcycle, scooter of moped	7	1.3%	7	1.3%	7	1.3%
Driving a car or van	223	40.1%	210	30.2%	153	26.7%
Passenger in a car or van	11	2.0%	11	2.0%	16	2.9%
Bicycle	5	1.0%	8	1.4%	14	2.5%
Foot	23	4.1%	25	4.5%	32	5.5%
Other	3	0.6%	3	0.6%	3	0.6%
Total	**557**	**100.0%**	**557**	**100.0%**	**557**	**100.0%**

Table 5 – Modal Shift Targets (Note – Minor rounding errors occur)

2.7.6. The targets shown in **Table 5** reflect where the main Travel Plan measures are to be applied. Further detail on the proposed targets is set out in the accompanying Travel Plan.

2.7.7. To provide a worst-case assessment in this TAA, the above modal shift targets have not been considered when assessing the likely impact of the development.

2.8. Traffic Distribution

2.8.1. The 2015 TA which was prepared as part of the extant permission considered an approximate 50/50 split if the development traffic between the eastern and western access. This approach is not considered to be robust, and as a result, a more detailed and robust distribution assessment has been carried out as part of this TAA.

2.8.2. Census 2011 data showing usual place of work of residents for the Middle Super Output Area (MSOA) of Barnet 010 has been analysed to identify likely distribution of traffic during peak hours. Online journey planning mapping has been used to identify likely traffic routing at peak times. Some judgement has been made on routing based on highway layout and other matters, (such the inherent congestion associated with the school traffic adjacent to the Brunswick Park access during the AM peak).

2.8.3. **Appendix H** provides full details of the trip assignment used in this assessment, with a summary shown in **Table 6** below.

Assignment	%	AM Peak			PM Peak		
		In	Out	2-Way	In	Out	2-Way
Brunswick Park Rd (N) - Osidge Lane	12.3%	4	25	30	17	9	26
Brunswick Park Rd (N) - Church Hill Rd	10.9%	4	22	26	15	8	23
Brunswick Park (S) - Bowes Rd	0.4%	0	1	1	1	0	1
Oakleigh Rd - York Rd	29.2%	10	61	71	42	21	62
Oakleigh Rd - High Rd (N)	2.9%	1	6	7	4	2	6
Oakleigh Rd - High Rd (S)	0.2%	0	0	0	0	0	0
Oakleigh Rd - Totteridge Ln	5.0%	2	10	12	7	4	11
Oakleigh Rd - Friern Barnet Rd	31.5%	11	65	76	44	22	67
Oakleigh Rd - Bowes Rd	7.6%	3	16	18	11	5	16
Total	**100.0%**	**35**	**206**	**241**	**141**	**71**	**212**

Table 6 – Proposed Development Assignment

2.8.4. The results of the distribution assessment shown in **Table 6** above demonstrates that 76.4% of the proposed development traffic would route to the western access to Oakleigh Road, and 23.6% of development traffic would route to the eastern access to Brunswick Park Road.

2.8.5. It has been assumed that traffic routing to the northwest of the site (towards Whetstone via the A1000 High Road, A5109 Totteridge Lane) would do so via the western access with the A109 Oakleigh Road, as this is the most direct, practical and less congested route.

2.9. <u>Traffic Impact Assessment</u>

2.9.1. This Section provides an assessment of the overall traffic impact of the proposed development on the local highway network.

2.10. <u>Junction Assessments</u>

2.10.1. The first assessment we have undertaken includes an overview of traffic volumes using the study area in the Base Year 2021. This enables an initial baseline appraisal of those junctions likely to be operating under pressure in future years.

2.10.2. Our review of the junctions outlined in **Table 1** indicate that two junctions would operate at or over capacity in normal conditions in the 2021 Base Year scenario. These include:

- J2 Church Hill Road/Russell Lane/Brunswick Park Road; and
- J3 A109 Oakleigh Road North/Pollard Road/B1453 Russell Lane.

2.10.3. Junction 2 is also likely to experience operational issues by virtue of it being a double mini roundabout with southbound exits affected by northbound queues and delays from Junction 2a.

2.10.4. Therefore, the junction assessments in this report must be considered in the context of the existing observed capacity issues.

2.10.5. We have undertaken an initial assessment of the effect of development traffic on the junctions set out in **Table 1**. This identifies the potential scale of impact and whether further, detailed modelling is required.

2.10.6. For simplicity, '*without development'* means 'assessment year plus committed development', and '*with development'* includes 'assessment year plus committed development and proposed development'.

2.10.7. Further details of the 2031 With Development Traffic Flows are shown in **Appendix I**.

2.10.8. The detailed impact of the proposed development has been assessed on all the junctions set out in **Table 1** using Junctions10 or LINSIG modelling software. This is to identify whether the proposed site accesses and immediately adjacent junctions will operate effectively or whether a 'severe' (NB as referred to in the NPPF) traffic impact is likely from the development.

2.10.9. The summary results of this assessment are set out in **Tables 5** to **15**. The detailed Junctions10 and LINSIG assessments are set out in **Appendix J**.

Junction 1 – A109 Oakleigh Road North/Oakleigh Park/Myddelton Park

2.10.10. The results of the J1 modelling assessments are shown in **Table 7** below.

	AM Peak		PM Peak	
	MMQ (PCU)	DoS (%)	MMQ (PCU)	DoS (%)
Stream	2021 Base			
A109 (W) Ahead Left Right	9	51.9%	14	61.2%
Oakleigh Park S Left Ahead	14	74.3%	9	60.7%
A109 (E) Right Ahead Left	16	74.8%	20	83.6%
Myddleton Park Right Ahead	8	73.9%	12	84.3%
	2031 Without Development			
A109 (W) Ahead Left Right	13	53.3%	12	50.7%
Oakleigh Park S Left Ahead	11	79.9%	6	65.9%
A109 (E) Right Ahead Left	22	80.4%	19	70.0%
Myddleton Park Right Ahead	6	47.5%	5	56.7%
	2031 With Development			
A109 (W) Ahead Left Right	14	58.6%	14	56.0%
Oakleigh Park S Left Ahead	12	87.8%	6	76.0%
A109 (E) Right Ahead Left	29	91.1%	22	76.9%
Myddleton Park Right Ahead	6	52.3%	5	65.4%

Table 7 – Junction 1 LINSIG Modelling Results (120 secs cycle time)

2.10.11. J1 is shown to operated marginally above practical capacity in the AM peak period as a result of the proposed development traffic. However, the proposed development only results in an additional 7 vehicles queuing, which is not significant. Furthermore, the junction does not exceed 100% Degree of Saturation (DoS) as a result of the proposed development traffic.

Junction 2 – Church Hill Road/Russell Lane/Brunswick Park Road

2.10.12. The results of the J2 modelling assessments are shown in **Table 8.**

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
Church Hill Rd	9	48.80	0.93	1	11.35	0.59
Brunswick Park Rd	7	33.09	0.89	16	61.62	0.97
Russell Ln	4	23.01	0.79	46	217.51	1.12
	2031 Without Development					
Church Hill Rd	7	42.02	0.89	1	10.29	0.50
Brunswick Park Rd	20	80.90	1.00	46	148.31	1.07
Russell Ln	9	436.7	0.92	142	594.60	1.28
	2031 With Development					
Church Hill Rd	7	43.35	0.90	1	10.80	0.53
Brunswick Park Rd	27	104.22	1.03	50	157.46	1.08
Russell Ln	10	50.27	0.94	145	610.52	1.28

Table 8 – Junction 2 Modelling Results

2.10.13. As shown in **Table 8**, J2 exceeds capacity in the 2021 Base scenario, and is expected to continue to operate above capacity in the 2031 Future Year, even without the addition of the proposed development traffic.

2.10.14. A maximum of 7 additional vehicles queuing along Russell Lane are generated by the proposed development in the PM peak which is not considered to be significant.

Junction 2a – Brunswick Park Road/Osidge Lane

2.10.15. The results of the J2a modelling assessments are summarised in **Table 9** below.

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
Osidge Ln	3	12.94	0.74	2	7.79	0.61
Brunswick Park Rd	1	6.46	0.48	1	8.03	0.57
B1453	2	8.89	0.71	2	6.58	0.61
	2031 Without Development					
Osidge Ln	4	15.84	0.80	2	8.74	0.68
Brunswick Park Rd	1	5.97	0.39	1	7.44	0.49
B1453	2	7.93	0.69	2	7.35	0.67
	2031 With Development					
Osidge Ln	4	16.28	0.81	2	9.39	0.70
Brunswick Park Rd	1	6.53	0.44	1	7.72	0.50
B1453	2	8.30	0.70	2	7.71	0.68

Table 9 – Junction 2a Modelling Results

2.10.16. The information in **Table 9** demonstrates that J2a is predicted to operate within capacity in the Future Year with the addition of the proposed development traffic.

Junction 3 – A109 Oakleigh Road North/Pollard Road/B1453 Russell Lane

2.10.17. The results of the J3 modelling assessments are shown in **Table 10.**

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
Oakleigh Rd (W)	5	34.57	0.85	50	262.21	1.14
Russell Ln	135	754.02	1.38	33	181.42	1.08
Oakleigh Rd (E)	21	120.53	1.02	116	646.88	1.30
Pollard Rd	1	16.96	0.42	2	28.84	0.61
	2031 Without Development					
Oakleigh Rd (W)	62	372.81	1.20	116	791.09	1.34
Russell Ln	239	1746.92	1.59	217	1437.89	1.51
Oakleigh Rd (E)	175	956.07	1.38	241	1376.50	1.49
Pollard Rd	5	65.05	0.85	62	709.98	1.29
	2031 With Development					
Oakleigh Rd (W)	62	368.52	1.20	126	862.12	1.36
Russell Ln	242	1773.82	1.60	220	1462.34	1.52
Oakleigh Rd (E)	193	1062.66	1.41	247	1410.98	1.50
Pollard Rd	5	65.37	0.85	62	710.36	1.29

Table 10 – Junction 3 Modelling Results

2.10.18. As shown in **Table 10**, J3 exceeds capacity in the 2021 Base scenario, and is expected to continue to operate above capacity in the 2031 Future Year, even without the addition of the proposed development traffic.

Junction 4 – Site Access/Brunswick Park Road/Goldrill Drive (existing arrangement)

2.10.19. The results of the J4 modelling assessments are shown in **Table 11.**

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base – Existing Layout					
B-ACD	0	14.05	0.13	0	9.80	0.10
A-D	1	11.59	0.40	0	8.63	0.04
D-AB	0	8.95	0.27	0	8.59	0.17
D-BC	0	20.10	0.25	0	14.45	0.16
C-ABD	0	8.78	0.01	0	6.87	0.03
	2031 Without Development – Existing Layout					
B-ACD	0	20.96	0.19	0	11.54	0.12
A-D	1	18.08	0.58	0	11.21	0.18
D-AB	20	335.78	1.18	1	28.14	0.53
D-BC	23	327.44	1.17	4	62.85	0.81
C-ABD	0	9.35	0.01	0	7.13	0.04
	2031 With Development – Existing Layout					
B-ACD	0	0.22	0.22	1	20.39	0.36
A-D	1	0.60	0.60	0	12.81	0.28
D-AB	30	1.25	1.25	3	84.03	0.83
D-BC	28	1.23	1.23	6	101.99	0.90
C-ABD	0	0.01	0.01	0	7.36	0.03

Table 11 – Junction 4 Modelling Results (Arm A - Brunswick Park Rd (N), Arm B – Benfleet Way, Arm C – Brunswick Park Rd (S), Arm D – Site Access (W))

2.10.20. As shown in **Table 11**, J4 (in its current arrangement) exceeds capacity in the 2031 Future Year, even without the addition of the proposed development traffic. Notwithstanding this, it is proposed to upgrade J4 to a signalised junction arrangement as part of the development proposals. Further details of the proposed junction layout are shown in **Appendix K** for reference and described in more detail in Sections 5.2 and 5.3.

2.10.21. **Table 12** summarises the LINSIG modelling results of the indicative signalised scheme for this junction.

	AM Peak		PM Peak	
	MMQ (PCU)	DoS (%)	MMQ (PCU)	DoS (%)
Stream	2031 With Development – Proposed Layout			
Brunswick Park Rd (N) Ahead Left Right	28	94.2%	9	53.6%
Goldrill Drive Ahead Left Right	1	13.1%	3	26.9%
Brunswick Park Rd (S) Ahead Right Left	17	75.2%	19	74.1%
Site Access Left Ahead Right	22	95.8%	12	72.9%

Table 12 – Junction 4 LINSIG Modelling Results (120 secs cycle time)

2.10.22. The results also indicate that whilst the degree of saturation exceeds 90% in the AM peak, the junction operated below 100% DoS, which LBB has stated would be acceptable.

2.10.23. It is likely that drivers will seek alternative routes or travel times if this junction experiences severe delays (such as during the school AM peak hour). Furthermore, the site access strategy and location are such that use of sustainable modes is a viable alternative for journeys within Barnet.

2.10.24. A signalised junction would enhance pedestrian/cycle safety conditions which is in line with NPPF Guidance which states that development should give priority first to pedestrian and cycle movements.

Junction 5 – A109 Oakleigh Road North/Site Access

2.10.25. The results of the J5 modelling assessments are shown in **Table 13.** This junction has been modelled to include the existing zebra crossing located along the northern arm of Oakleigh Rd (Arm A).

Oakleigh Road Zebra Crossing Pedestrian Flow Assumptions

2.10.26. It is understood from discussions with LBB, that the existing pedestrian flows along this zebra crossing are low. It has therefore been assumed that there are 40 2-way pedestrian movements across this zebra crossing in both the AM and PM peaks in the 2021 observed scenario. This number increases to 75 2-way movements in AM and PM peaks in the 2031 future year without development scenario.

2.10.27. The mode shift assumptions shown earlier in **Table 5** demonstrated that proposed number of people walking, getting the train/London Underground and bus would be 287 in the AM Peak. This is following the package of measures aimed at encouraging sustainable travel behaviour at the proposed development. To provide a worst case, 287 2-way pedestrian flows in the 2031 with development scenario have been tested as part of this junction modelling.

2.10.28. The modelling results of J5 are shown in **Table 13.**

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
B - C	0	6.75	0.11	0	7.08	0.03
B - A	0	11.13	0.16	0	9.55	0.07
C - B	0	8.13	0.12	0	9.46	0.02
A-B-C	0	2.14	0.24	0	2.26	0.28
	2031 With Development					
B - C	0	10.02	0.26	0	9.26	0.16
B - A	1	18.21	0.44	1	14.92	0.32
C - B	0	10.05	0.26	0	11.91	0.18
A-B-C	0	2.40	0.30	0	2.65	0.35
	2031 With Development					
B - C	2	33.72	0.67	0	11.55	0.25
B - A	3	53.42	0.79	1	21.16	0.46
C - B	0	10.57	0.29	1	15.65	0.35
A-B-C	1	3.36	0.38	1	4.10	0.48

Table 13 – Junction 5 Modelling Results (Arm A – A109 Oakleigh Rd (N), Arm B – Southern Site Access, Arm C – A109 Oakleigh Rd (S))

2.10.29. The results in **Table 13** demonstrates that **J5** is predicted to operate within capacity in the Future Year with the addition of the proposed development traffic.

Junction 5a – A109 Oakleigh Road North/ A109 Oakleigh Road South/Brunswick Avenue

2.10.30. The results of the J5a modelling assessments are shown in **Table 14**.

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
B - C	0	7.23	0.03	0	7.22	0.05
B - A	0	12.13	0.27	0	10.71	0.16
C - B	0	7.26	0.03	0	7.67	0.04
	2031 Without Development					
B - C	0	7.79	0.03	0	8.39	0.06
B - A	0	13.31	0.28	0	14.53	0.31
C - B	0	8.10	0.03	0	8.51	0.05
	2031 With Development					
B - C	0	8.23	0.03	0	8.61	0.06
B - A	0	14.76	0.28	1	15.70	0.32
C - B	0	8.49	0.03	0	8.66	0.05

Table 14 – Junction 5a Modelling Results (Arm A – A109 Oakleigh Rd (W), Arm B – Brunswick Ave, Arm C – A109 Oakleigh Rd (E))

2.10.31. The results in **Table 12** demonstrates that J5a is predicted to operate within capacity in the Future Year with the addition of the proposed development traffic.

Junction 6 – A109 Oakleigh Road South/Coppies Grove

2.10.32. The results of the J6 modelling assessments are shown in **Table 15.**

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
B – C	0	6.30	0.02	0	6.25	0.02
B - A	0	11.34	0.08	0	10.37	0.02
C – AB	0	4.40	0.02	0	4.28	0.06
	2031 Without Development					
B – C	0	6.45	0.02	0	6.40	0.02
B - A	0	12.29	0.09	0	11.20	0.02
C – AB	0	4.29	0.02	0	4.17	0.07
	2031 With Development					
B – C	0	6.52	0.02	0	6.60	0.02
B - A	0	13.15	0.09	0	12.01	0.02
C – AB	0	4.12	0.02	0	4.16	0.07

Table 15 – Junction 6 Modelling Results (Arm A – A109 Oakleigh Rd (S), Arm B – Coppies Grove, Arm C – A109 Oakleigh Rd (N))

2.10.33. The information in **Table 15** demonstrates that J6 is predicted to operate within capacity in the Future Year with the addition of the proposed development traffic.

Junction 7 – Friern Barnet Road/A109 Oakleigh Road North/Waterfall Road/Bowes Road (Betstyle Circus)

2.10.34. The results of the J7 modelling assessments are shown in **Table 16**.

	AM Peak			PM Peak		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
Stream	2021 Base					
Waterfall Rd	2	6.46	0.69	1	4.33	0.53
Bowes Rd	1	4.64	0.42	1	4.55	0.48
Friern Barnet Rd	1	4.70	0.51	2	7.04	0.68
A109 Oakleigh Rd	1	5.21	0.41	1	6.88	0.51
	2031 Without Development					
Waterfall Rd	3	7.41	0.73	1	4.69	0.56
Bowes Rd	1	5.05	0.46	1	4.94	0.52
Friern Barnet Rd	1	5.13	0.55	2	8.07	0.71
A109 Oakleigh Rd	1	5.86	0.47	1	8.04	0.57
	2031 With Development					
Waterfall Rd	3	8.13	0.74	1	4.79	0.56
Bowes Rd	1	5.35	0.47	1	5.11	0.53
Friern Barnet Rd	1	5.23	0.55	3	9.25	0.75
A109 Oakleigh Rd	1	6.75	0.54	2	8.64	0.60

Table 16 – Junction 7 Modelling Results 2031. **Note – the was A1003 Waterfall Road arm was not modelled as part of the original TA which supported the consented development so has not been included within this assessment*

2.10.35. The information in **Table 16** demonstrates that J7 is predicted to operate within capacity in the Future Year with the addition of the proposed development traffic.

Junction 8 – A109 Oakleigh Road/A1000 High Road/Totteridge Lane

2.10.36. The results of the J8 LINSIG assessment are shown in **Table 17.**

	AM Peak		PM Peak	
	MMQ (PCU)	DoS (%)	MMQ (PCU)	DoS (%)
Stream	2021 Base			
A1000 (N) Ahead	12	63.9%	9	51.3%
A1000 (N) Ahead Right	12	79.2%	12	84.4%
A1000 SB Internal Left	0	23.2%	0	27.9%
A1000 SB Internal Ahead	2	43.1%	2	28.8%
A1000 SB Internal Ahead	2	46.8%	2	43.1%
Totteridge Ln Right Left	13	75.1%	14	82.7%
A1000 (S) Ahead	11	58.2%	13	66.3%
A1000 (S) Ahead Right	12	63.8%	15	71.8%
A1000 NB Internal Left Ahead	0	35.9%	0	37.7%
A1000 NB Internal Ahead	2	32.1%	2	37.0%
A1000 NB Internal Ahead	2	49.4%	2	52.4%
Oakleigh Rd N Right Left	15	80.0%	16	85.8%
	2031 Without Development			
A1000 (N) Ahead	13	68.1%	11	58.2%
A1000 (N) Ahead Right	17	95.4%	16	102.4%
A1000 SB Internal Left	0	29.5%	0	34.3%
A1000 SB Internal Ahead	2	42.3%	2	30.1%
A1000 SB Internal Ahead	2	54.4%	2	47.4%
Totteridge Ln Right Left	17	86.1%	21	94.0%
A1000 (S) Ahead	12	63.7%	15	72.6%
A1000 (S) Ahead Right	13	69.0%	17	77.1%
A1000 NB Internal Left Ahead	0	41.7%	0	42.9%
A1000 NB Internal Ahead	3	36.5%	3	41.6%
A1000 NB Internal Ahead	3	54.9%	3	57.5%
Oakleigh Rd N Right Left	25	95.6%	33	101.6%
	2031 With Development			
A1000 (N) Ahead	13	68.3%	11	57.3%
A1000 (N) Ahead Right	17	95.4%	16	102.4%
A1000 SB Internal Left	0	29.8%	0	35.0%
A1000 SB Internal Ahead	2	42.3%	2	28.9%
A1000 SB Internal Ahead	2	54.4%	2	48.5%
Totteridge Ln Right Left	17	86.5%	23	95.4%
A1000 (S) Ahead	12	63.7%	15	72.6%
A1000 (S) Ahead Right	13	69.0%	17	77.1%
A1000 NB Internal Left Ahead	0	42.5%	0	42.9%
A1000 NB Internal Ahead	3	36.9%	3	41.7%
A1000 NB Internal Ahead	3	55.3%	3	57.5|%
Oakleigh Rd N Right Left	29	98.4%	35	102.5%

Table 17 – Junction 8 LINSIG Modelling Results (120 secs cycle time)

2.10.37. The results in **Table 17** demonstrates that J8 is predicted to exceed capacity in the Future Year without the inclusion of the development traffic.

2.11. Junction Assessment Interpretation

2.11.1. This section has reviewed the capacity of junctions in the 2031 Future Year scenarios of `Without Development` and `With Development`.

2.11.2. In summary, the following junctions are predicted to exceed capacity (J1, J2, J3, J4 and J8) in the Future Year scenarios:

- Junction 1 – Oakleigh Road (N)/Myddelton Park/Oakleigh Park (S);
- Junction 2 – Church Hill Road/Russell Lane/Brunswick Park Road;
- Junction 3 – A109 Oakleigh Road North/Pollard Road/B1453 Russell Lane;
- Junction 4 – Site Access/Brunswick Park Road/Goldrill Drive; and
- Junction 8 – A109 Oakleigh Road/A1000 High Road/Totteridge Lane.

2.11.3. However, the above junctions are expected to operate above capacity in the Future Year 'Without Development' i.e., without the addition of the proposed development traffic. This demonstrates that the capacity issues at these junctions are inherent and are not a result of the development proposals.

2.11.4. Physical mitigation at Junctions 1, 2, 3, 4 and 8 are not considered to be necessary, due to the immaterial impact of the proposed development. Furthermore, the proposed development will deliver a package of sustainable transport measures which will off-set the impact of the proposed development on the local highway network.

2.11.5. As discussed with LBB and TfL at the highways meeting in September 2022, a review of the signalised junctions (J1, J3 and J8) will be undertaken with the TfL signals team to determine if any appropriate and proportionate mitigation can be delivered at these locations. Any such. any mitigation will be secured as part of a S106 obligation.

2.11.6. Full details of the sustainable transport measures are contained in the TA produced by Stomor in August 2021 (Planning reference 21/4433/OUT) but a summary of these measures is provided below:

- Provision of crossing facilities on all arms of the new signalised Eastern Access providing a connection to the bus stops and the wider footway network along Brunswick Park Road;

- Provision of a comprehensive, permeable on-site footway network based on key desire lines which prioritises pedestrians over vehicular traffic. This will include the delivery of links to off-site pedestrian and cycle connections and will enable access on foot in all directions;

- From the early phases of the development onwards, combined footway/cycleways will be provided along with site access points solely for pedestrians and cyclists and speed control measures (such as speed tables and shared surfaces) to reduce traffic speed and promote safe access on foot/by bicycle;

- Provision of signage to direct pedestrians and cyclists to the key locations on and off-site. This signage will be delivered on a phase-by phase basis dependent upon the facilities delivered within each respective phase; and

- Provision of upgraded bus stops along Brunswick Park Road and the A109 Oakleigh Road.

2.11.7. Furthermore, Comer Homes will provide an on-site shuttle bus service which will provide an `on-demand` service to key destinations such as local commercial and health centres and also to key public transport interchange hubs.

2.11.8. In addition to the physical measures set out above, a Travel Plan (TP) has also been produced as part of the application (prepared by Stomor in August 2021) which will be used to promote and manage sustainable travel to and from the site on an ongoing basis. The TP will focus on promoting a range of measures over time to ensure walking, cycling, scooting, bus and car sharing become the preferred mode of travel for the site.

2.11.9. The sustainable transport package set out in the TA and TP will reduce the impact of private vehicle trips. Census mode share data indicates that private car use is currently relatively low in

2.11.10. Achieving this mode share target would have positive effects on the junction modelling results, bringing impacts closer to the ‘Without Development’ scenarios in 2031.

3. Active Travel Zone (ATZ) Assessment

3.1.1. As part of the TA, an Active Travel Zone Assessment was carried out to assist the understanding of the proposed development's potential contribution to promoting sustainable travel. The ATZ is defined as the area within a 20-minute cycle of the proposed development, and 12 key routes were identified within the TA. Full details of the ATZ methodology are contained in the TA.

3.1.2. Following a response from LBB in November 2021, an additional Route (13) has been assessed which encompasses the extend of the A109 Oakleigh Road south from Brunswick Avenue to the Betsyle Circus roundabout (as shown in **Appendix L**).

3.1.3. The ATZ for the proposed development is illustrated in **Appendix L.**

<u>Route 13 – A109 Oakleigh Road South between Brunswick Avenue and the Betsyle Circus Roundabout</u>

3.1.4. The associated images with Route 13 are included at **Appendix M.** The journey is reviewed against each Healthy Streets criteria in **Table 19**.

Healthy Streets Indicator	Observations	Areas for Improvement
Clean air	An extent of this route passes alongside New Southgate Recreational Ground Bethune Park (adjacent to Beaconsfield Road) and allotments (adjacent to The Crescent). Entrances to the side roads and pedestrian crossings along the street section may cause traffic to stop and wait.	There is no area for improvement
People feel safe	The entire route is sufficiently lit, and the footways along both sides are suitably wide.	There is no area for improvement.
Not too noisy	Some levels of background noise associated with levels of traffic in an urban environment.	There is no area for improvement.
Easy to cross	There is a zebra crossing facility with dropped kerbs and tactile paving located along the A109 Oakleigh Road North (just south of this route) adjacent to the Southern Site Access. There is an additional zebra crossing facility with dropped kerbs and tactile paving located at the approach to the Betsyle Circus roundabout.	There is no area for improvement.
Places to stop and rest	There is a bench provided and bus stops with seating are located along the route, providing users the opportunity to stop and rest.	There is no area for improvement.
Shade and shelter	There are stretches of this entire route lined by trees, providing shade from the sun/weather. There are also bus shelters.	There is no area for improvement.
People feel relaxed	The footways along both sides are sufficiently wide, and generally in good condition. This route also extends alongside New Southgate Recreational Ground.	There is no area for improvement.
Things to see and do	This route extends alongside New Southgate Recreational Ground.	There is no area for improvement.

Table 19 – Healthy Streets Analysis of Route 13

3.1.5. The information in **Table 19** demonstrates that Route 13 does not require any improvements and is a safe and attractive route for site users.

4. Proposed Highway Improvements

4.1. Introduction

4.1.1. Current national and local policy clearly seeks to promote less travel and, where necessary, more travel by sustainable modes. As part of the development proposals, a comprehensive package of off-site highway improvements is proposed which will aim to facilitate and encourage more sustainable modes of travel to/from the site.

4.1.2. Further details of the proposed off-site highways improvements are shown in **Appendix N** and described in more detail below.

4.2. Proposed Signalised Site Access

4.2.1. As part of the development proposals for Phase 1, the current site access to the west with Brunswick Park Road will be upgraded.

4.2.2. The proposed works will provide a signal-controlled junction in replace of the existing crossroads arrangement with Brunswick Park Road/Goldrill Drive/Benfleet Way. The junction will incorporate pedestrian phases with dedicated facilities provided across all arms.

4.2.3. The existing Zebra crossing which presides 20m to the north of the junction will be decommissioned. The southbound approach to the junction is to be allocated two lanes (ahead/left and right only). To accommodate this, it will require widening the eastern side of Brunswick Park Road, which in turn will require altering the Goldrill Drive arm of the junction. Additional junction widening is also proposed at the site access.

4.3. Stage 1 Road Safety Audit and Designers Response

4.3.1. As agreed with LBB, a Stage 1 Road Safety Audit (RSA) was carried out in September 2022 and is contained in **Appendix O.** A Designers Response was prepared by Stomor in October 2022. The main points raised within the RSA and the associated responses are shown below, with the full Designers Response contained in **Appendix P.**

- *Bus stop along northern arm – stationary buses may force traffic into oncoming vehicles.* The design was amended to relocate the southbound bus stop further south to allow vehicles to pass a stationary bus without entering the opposing lane.

- *Brunswick Park Road northbound arm - Alignment may result in late breaking and sudden changes in direction.* A bifurcation marking to diagram 1039 of the Traffic Signs Manual has been added to the southbound approach to direct vehicles to the nearside lane.

- *Lack of dedicated cycling provision throughout the junction.* The 3.0m hard surface is a shared use footway/cycleway, this has been extended south of the junction to allow cyclists travelling southbound to exit the carriageway north of the junction, cross the junction in a safe manner at the toucan crossings available on all 4 arms, and continue either southbound and enter the carriageway south of the junction, or enter the site where further shared use surfaces are available. Northbound cyclists can also exit the carriageway south of the junction, use the toucan crossings and then enter the carriageway north of the junction.

- *Development Access - Restrictions to visibility could result in junction pull out type collisions and pedestrian and vehicle collisions at the crossing.* The existing vegetation and building will be removed as part of the works and the area seeded with grass. Any obstructions above 0.6m in height will be removed and the intervisibility line maintained in perpetuity.

- *Benfleet Way junction with Goldrill Drive - Oversailing of footway/central island resulting in damage to vehicles, street furniture and potential for vehicle to pedestrian collisions.* The central kerbed island has been relocated to enable a refuse vehicle to exit the junction with oversailing.

- *Brunswick Park Road south - Trees in new footway restrict width thereby hindering passage for footway users.* A tree will be removed as part of the works.

4.3.2. Further details of the proposed signalised site access with Brunswick Park Road are shown in **Appendix K.** An alternative option has been prepared which shows the inclusion of Advanced Stop Lines (ASL) to incorporate further cycle infrastructure. However, the intervisibility from the site access approach would be compromised, and this would require a departure form standard. It is therefore proposed that ASL are not included within the proposed site access to ensure that the proposed arrangement is compliant.

4.3.3. Swept path analysis of a 9.6m waste vehicle (LBB refuse vehicle specification) has been undertaken for the proposed site access with Brunswick Park Road (see **Appendix Q**) demonstrates that a vehicle of this size can access the site and leave in either direction in forward gear. Swept path analysis of a Fire Tender has also been undertake which shows that the proposed site access can accommodate a vehicle of this size, as shown in **Appendix Q.**

4.4. <u>Proposed Bus Stop Enhancements</u>

4.4.1. The existing bus stops on Brunswick Park Road are accessible via the footways available from the site and along both sides of Brunswick Park Road. Access to the southbound bus stop is currently facilitated via a zebra crossing located on Brunswick Park Road to the north of the site access. These bus stops comprise of a flag and pole supported by timetable information.

4.4.2. **Service 382** is available from the stops located on Brunswick Park Road. Service 382 operates between Millbrook Park and Southgate and runs on a 15 min frequency, increasing to a 30-minute frequency on Sundays. Service 382 also provides a link to Mill Hill East Underground Station, Finchley Central Station, Arnos Grove Underground Station and Southgate Underground Station.

4.4.3. Given that it will not be feasible to divert any existing TfL bus services through the site, and that the 382 route is an excellent service to local destinations, it is proposed that the financial contribution sum is increased to reflect to uplift in the residential development 1,150 units). This has been agreed with TfL and will form part of a Section 106 commitment which will be derived at a later date.

4.4.4. In order to improve connectivity between the site and the bus stops on Brunswick Park Road, it is also proposed to upgrade and widen the footways on Brunswick Park Road (to the south and north bound bus stops) to provide 3m wide footways to each of the respective bus stops. Signal controlled crossings will also be provided as part of the new site access, as described in Section 5.1 above and as shown in **Appendix K.**

4.4.5. Furthermore, it is proposed to upgrade the existing bus stops to provide shelters, seating, Real Time Passenger Information (RTPI) and appropriate kerb height to facilitate the mobility impaired. Further details are shown on plan in **Appendix N.**

4.4.6. The bus stops along the A109 Oakleigh Road North are accessible via the footways available from the site and along both sides of the A109 Oakleigh Road North. Access to the northbound bus stop is facilitated via a zebra crossing located along the A109 Oakleigh Road North adjacent to the southern site access.

4.4.7. The following bus services are available from the stops located along the A109 Oakleigh Road North:

- **Service 34** operates between Barnet Church and Walthamstow Central with one service in both directions every 8-10 minutes during the week, increasing to a 30 min frequency during the weekends. Service 34 also provides a link to Arnos Grove Underground Station, Walthamstow Central Station and neighbourhood centres at Whetstone, Barnet centre, Edmonton and Walthamstow; and

- **Service 251** operates between Edgeware Bus Station and Arnos Grove Underground Station, with one service in each direction every 8-12 minutes during the week, reducing to every 20-30 minutes on Sundays. Service 251 also provides a link to Mill Hill Broadway Station.

4.4.8. The existing bus stops along the A109 Oakleigh Road North are supported by bus shelters and seating. As part of the development proposals, these bus stops will be upgraded to provide RTPI and appropriate kerb height to facilitate the mobility impaired.

4.5. <u>New Pedestrian/Cycle Link to Ashbourne Avenue</u>

4.5.1. A new pedestrian/cycle access will be provided to the north of the site to link with the residential street, Ashbourne Avenue, as shown on the plan in **Appendix N.**

4.5.2. In addition to the bus stops located adjacent to the existing site accesses, there are also bus stops located along the B1453 Russell Lane. The new pedestrian/cycle access will be delivered as part of the proposals, which will link the north of the site to Ashbourne Avenue, which connects to the B1453 Russell Lane. As a result, the development parcels located within the northern area of the site will be within a 400m walking distance of existing stops along the B1453 Russell Lane.

4.5.3. As shown on the Accessibility Plan contained in **Appendix R,** there is a parade of local retail/commercial/leisure facilities along the B1453 Russell Lane. The entire development will be within 800m of these facilities (10-minute walk/4-minute cycle). Access to the key facilities, and local bus stops will be facilities by the new pedestrian/cycle link to the north of the site.

4.5.4. In order to enhance this connection, dropped kerbs and tactile paving will be provided across Weirdale Avenue along the desire line, and any broken paving slaps along Ashbourne Avenue will be repaired to make this a more attractive route. Further details are shown in **Appendix N.**

4.6. Wayfinding Signage

4.6.1. Wayfinding signage will be provided at each of the three site access points, signage to direct pedestrians/cyclists to key local destinations/facilities, as shown on the plan in **Appendix N.**

4.6.2. Walking/cycling distances and durations (in mins) to some of the key local destinations shown in **Appendix R** will be displayed on the Wayfinding signs including the following (but not limited to):

- Oakleigh Road North / Balfour Grove Shopping Parade;
- Russell Lane Shopping Parade;
- Brunswick Park Primary School;
- Brunswick Park Medical Practice;
- Arnos Grove Underground Station;
- New Southgate Rail Station; and
- Totteridge and Whetstone Underground Station.

5. London Underground Station Capacity and Line Loading Assessment

5.1. Introduction

5.1.1. As required by TfL as part of the scoping discussions, a London Underground (LU) Station Capacity and Line Loading Assessment has been undertaken for the Arnos Grove LU Station. The purpose of these assessments is to identify the impact of the London Underground trip generation associated with the proposed development in the Future Year of 2031.

5.1.2. WSP have been commissioned to undertake these assessments, and the full report prepared by WSP in September 2021 (Document reference 70888446) is contained in **Appendix S,** with the associated LU development traffic flows contained in **Appendix T.** The definitions of these respective assessments are as follows:

- **Station Capacity Assessment** – analyses the capacity of the station circulation elements - gates, stairs, escalators, corridors - against the current and future passenger demands, to understand the impacts of new developments in the vicinities of the station and their additional trips into the existing station facilities and identifying which mitigation/modifications the station would require to work within standards.

- **Line Loading Assessment** – considers the current and future passenger demands within the network rather than the station, verifying the impacts of future growth and additional trips of new developments on the line capacity. NUMBAT 2019 data has been used to inform this assessment as agreed with TfL.

5.1.3. Arnos Grove Underground Station is on the Piccadilly line between Bounds Green and Southgate stations and is in Zone 4. Platforms 1 and 2 offer services to Cockfosters while platforms 3 and 4 offer services to Central London and Heathrow Airport. The station is located in the London Borough of Enfield and provides street access to Bowes Road. Arnos Grove Station is located within an approximate 24-minute walk or 8-minute cycle distance from the proposed development.

5.1.4. The results of the assessments will be used to identify the capacity requirements and whether there is a need to upgrade the existing station to accommodate the additional development trips during 2031 AM peak period, according to LU Station Planning guidance requirements. For the LU assessment, the AM peak has been evaluated only, as this is considered to be a worst-case scenario and provides a robust assessment.

5.1.5. As agreed with TfL as part of the scoping exercise, only the development above and beyond the extant 1,350 dwellings and 3,125sq. m of commercial space permitted in 2020 has been assessed as part of the LU assessment (1,150 dwellings).

5.1.6. Data extracted from TfL`s Rail Plan model and Line Loading information for the LU for 2021 and 2031 has been provided by TfL, which has used to inform the assessments.

5.2. Station Capacity Assessment

5.2.1. The results of the Station Capacity Assessment show that the current provisions of staircase and passageway widths are sufficient to cater for the future passenger demands related to the proposed development in 2031.

5.2.2. However, the current gateline provision does not meet the LU Station Planning guidance requirements in 2031 with or without the additional development trips during the AM peak hour. The existing station provides 4 ATGs (Automatic Ticket Gates) + 2 WAGs (Wide Aisle Gates) when the minimum gates required are 5 ATGs + 2 WAGs during 2031 and 2031 + development AM peak periods.

5.3. Station Capacity Assessment

5.3.1. The line loading assessment results identify that both the existing and proposed rolling stock provide sufficient capacity to accommodate the forecast 2031 and development demand. With the new rolling stock, the occupancy level will only be increased by 7.6% between 2019 and 2031 (from 24.6% to 32.2%) during the AM peak 15-minute period. Therefore, the forecast development demand will have minimal impact when the new rolling stock on the Piccadilly Line at Arnos Grove is in use.

5.3.2. The line loading assessment shows that the impact on train occupancy levels between 2019 and 2031 demand scenarios is insignificant with an increase of up to 18.3% between 2019 and 2031 with development, even if using the existing rolling stock.

5.3.3. The line loading assessment results show that the impact in occupancy levels between 2019, 2021 and 2031 demand scenarios are insignificant with an increase of up to 18.3% between 2019 and 2031 + development (from 24.6% to 42.9%) even if using the existing rolling stock. In addition, the existing and proposed rolling stock types can operate well within capacity during 2031 + development AM peak 15-minute period, and no capacity issues were identified.

6. Conclusions

6.1.1. Stomor Ltd. have been commissioned by Comer Homes Group to prepare a Transport Assessment Addendum (TAA) in support of a Hybrid Planning Application for the phased comprehensive redevelopment of the North London Business Park to deliver a residential-led mixed use development.

6.1.2. The detailed element comprises up to 445 residential units in five blocks reaching 9 storeys, the provision of a 5 form entry secondary school, a gymnasium, a multi-use sports pitch and associated changing facilities and improvement to open space and transport infrastructure, including improvements to the access from Brunswick Park Road, and the outline element comprises up to 1,967 additional residential units in buildings ranging from three to twelve storeys, up to 7,148sqm of non-residential floor space (use Class E and F) and public open space. Associated site/preparation/enabling work, transport infrastructure and junction work, landscaping and car parking.

6.1.3. The existing Eastern Access onto Brunswick Park Road will be upgraded from its current crossroads arrangement to a new signalised junction. The junction will incorporate pedestrian/cycle signal phases in the signal timings.

6.1.4. The site layout has been designed to promote low traffic speeds, with a 30mph design speed on the main site access roads and 20mph on all cul-de-sacs and shared surfaces serving parcels of development. The layout will be checked to ensure visibility at internal junctions and around bends complies with the required standard.

6.1.5. Swept path analysis has been undertaken for the site accesses to demonstrate that the site can accommodate the largest vehicle likely to use the site.

6.1.6. The site will be designed to promote access by sustainable modes of transport using the following strategy:

- Providing a mix of land uses on site to encourage people to live, work and use school and leisure facilities thus promoting walking and cycling within the site:
- Locating a significant volume of housing within easy walking and cycling distance of local employment and retail facilities as well as on a bus route to key areas and rail connections;
- Providing additional employment and education services within walking and cycling distance of existing residential development and on an existing bus route;

- Providing pedestrian and cycle links to existing footway and cycleway infrastructure as well as pedestrian and cycle routes and crossings within the site to provide good connectivity to and permeability within the site;
- Providing new bus stop facilities on the A109 Oakleigh Road North and Brunswick Park Road;
- Providing fair and justifiable financial contribution towards off-site improvements to sustainable transport infrastructure;
- Providing a Travel Plan to help promote sustainable travel to, from and within the site, managed and monitored over time with evolving measures as circumstances change; and
- Enabling home working and access to online retail and home deliveries by providing access to broadband services for residents, businesses and pupils.

6.1.7. Vehicle and cycle parking provision will be in accordance with London standards with care taken not to over-provide vehicle parking. Cycle parking will be provided to ensure safe and secure storage of bicycles as part of the overall package of sustainable transport improvements.

6.1.8. Electric vehicle charging infrastructure will be accommodated in accordance with London standards.

6.1.9. The proposals will result in an increase in traffic during peak hours which will have an impact on junctions in the vicinity of the site and wider area.

6.1.10. The access strategy for the proposed development is based on providing safe and convenient access to the site. The over-arching priority is to promote sustainable access, either via retaining trips internally or promoting sustainable modes of travel.

6.1.11. The strategy set out above (including financial contribution) is considered the most policy compliant approach and would mitigate the impact of the proposed development. Capacity improvements to existing junctions are not the preferred approach due to the limitations on physical options in some locations, the limited long-term benefit of capacity improvements and the potential negative impact on sustainable transport infrastructure.

6.1.12. Any contribution would need to be fair, reasonable and justifiable relative to the impact of the proposed development, taking into consideration the proposed infrastructure and services to be provided by the development.

6.1.13. Given the scale of the development and anticipated impact, with reference to paragraph 111 of the of the National Planning Policy Framework (NPPF), the likely residual cumulative impact of the development when taking into account the potential reduction in trips associated with the travel demand management measures is not considered to be ‘severe’.

APPENDIX A

General Notes

1. Development Zones (within which development can occur) and public open spaces are identified on drawing number 211_WS_02_01
2. Access and circulation routes are identified on Drawing number 211_WS_02_02.
3. Landscape treatments are identified on drawing number 211_WS_02_03
4. Allowable uses at ground floor frontages are identified on Drawing number 211_WS_02_04

4. Allowable uses at ground floor frontages are identified on Drawing number 211_WS_02_04

5. Proposed site ground levels, heights, allowable horizontal and vertical deviations are identified on Drawing number 211_WS_02_05

Additional Notes

1. Refer to Section 5 of the Design Principles Document for further guidance on the Development Zone.
2. Refer to section 4 of the Design Principles Document for further guidance on the Public Open Space Zones, access routes typologies , and landscaping treatments of streets and spaces.
3. Refer to section 3 of the Design Principles Document for further guidance on the streets and circulation routes.

NOTES:

REV.	DATE:	DETAILS:	INITIALS:
A	11/02/2022	Adjustment to Phasing lines	JG

NORTH POINT:

KEY PLAN:

PLUS ARCHITECTURE
Chancery Lane, Dublin 8, Ireland. W: www.plusarchitecture.ie T: 353 (0) 1 521 3378

PROJECT: North London Business Park		PROJECT: 211	DATE: 11/02/2022
CLIENT: The Comer Group		DRAWING NO.: 211_WS_02_06	REVISION NO.: A
TITLE: Site Plan		DRAWN BY.: JG	SCALE AT A1 .: 1 : 1000
ISSUE TYPE: Planning		CHECKED BY.: DT	SCALE AT A3 .: 1 : 2000

APPENDIX B

From:	Rentzos, Costi
To:	Paula Cullen
Subject:	RE: North London Business Park - TRICS
Date:	Monday, May 24, 2021 2:28:34 PM
Attachments:	image001.jpg image002.jpg

Hi Paula,

Yes, let’s go with Melvyn’s recommendation.

Kind regards
Costi

From: Paula Cullen <p.cullen@stomor.com>
Sent: 24 May 2021 13:54
To: Rentzos, Costi <Costi.Rentzos@Barnet.gov.uk>
Subject: FW: North London Business Park - TRICS

Hi Costi,

Would you like us to exclude TRICS sites outside of London as part of our assessment also?

Kind regards

Paula Cullen
Transport Planning Consultant
p.cullen@stomor.com
Direct line: 01462 342141
Office: 01462 615433

Suite 2 | First Floor | Portmill House | Portmill Lane | Hitchin | Hertfordshire | SG5 1DJ
www.stomor.com

From: Dresner Melvyn (ST) <Melvyn.Dresner@tfl.gov.uk>
Sent: Monday, May 24, 2021 12:39 PM
To: Paula Cullen <p.cullen@stomor.com>; Rentzos, Costi <Costi.Rentzos@Barnet.gov.uk>
Cc: Simon Young <s.young@stomor.com>; Michael Holloway <MHolloway@danielwatney.co.uk>
Subject: RE: North London Business Park - TRICS [Filed 24 May 2021 12:43]

Thanks Paula,
If you can send me a technical note setting out your base and future trip assumptions then we comment in detail. As well as proposed methodology, this should include the data use (including observed data), how it applies to your site, person trip assumptions by land use and phase, and initial mode assumptions. Mode assumptions include main mode and access mode

On the TRICS outputs you provided, I would exclude sites from outside London and data older than 5 years.

I’m unclear why we forecasting office/ business park use as I thought this is residential scheme? Maybe the note can explain this aspect.

Most large developments in Barnet are residential or residential led. However, my most recent mixed use assessment in Barnet was undertaken for the rephasing application at Brent Cross. You can find the application on Barnet’s website under reference: 19/5493/OUT. It’s the May 2020 Transport Report (page 133 most useful) that sets out the details and set out a first principles approach adopted for employment.

For example of recent residential schemes, the nearest sites seemed to be refused e.g. Victoria Quarter or the Homebase at North Finchley. In both vases, TfL accepted the trip methodology.

For recent approvals, I would reference Silk Park on Hyde Estate Road, Grahame Park, Beaufort Park or Colindale Gardens. Again, we were ok with trip assumptions. I accept the approach to your site maybe different…

Regards
Melvyn

From:	Dresner Melvyn (ST)
To:	Paula Cullen; Hawkins Phil
Cc:	Erin Zhang; Jonathan Mart; Simon Young; Michael Holloway; Jack O"Brien
Subject:	RE: Model Date [Filed 14 Jun 2021 12:28]
Date:	Monday, June 14, 2021 12:13:56 PM

Hi Paula,

My approach would be as follows:

For land uses that relatively small scale they can be excluded. Though assumptions should set out in the TA.

For commercial specifically, as already in the extant it can be excluded, unless there is a transport related change.

For the consented 1350 residential development, doesn't the car parking ratio change for some or all of this development with this application?

So the TA should assess the gross effect on the residential uplift.

For the consented residential, we should assess any marginal change either by looking at any net change from previous assumptions or indirectly, assuming mode shift effect treating consent trips as withing the background growth.

Or you may argue in the TA that you don't expect mode shift effect on the consented residential but expect a strong or stronger mode shift within the uplifted residential.

I trust this makes sense.

Regards
Melvyn

From: Paula Cullen <p.cullen@stomor.com>
Sent: 14 June 2021 10:08
To: Dresner Melvyn (ST) <Melvyn.Dresner@tfl.gov.uk>; Hawkins Phil <PhilHawkins@tfl.gov.uk>
Cc: Erin Zhang <EZhang@rsk.co.uk>; Jonathan Mart <JMart@rsk.co.uk>; Simon Young <s.young@stomor.com>; Michael Holloway <MHolloway@danielwatney.co.uk>; Jack O'Brien <jack@comerhomes.co.uk>
Subject: FW: Model Date

Good morning,

I hope you had a nice weekend in the sun!

Are you able to please provide an update on the below at all?

In addition to the consented 1,350 dwellings, we would also propose to exclude the commercial aspect from our assessment as this will also be included as part of the extant permission covered as part of the London

Growth.

Kind regards

Paula Cullen
Transport Planning Consultant
p.cullen@stomor.com
Direct line: 01462 342141
Office: 01462 615433

stomor
CIVIL ENGINEERING CONSULTANTS

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From: Paula Cullen
Sent: Thursday, June 10, 2021 2:37 PM
To: Dresner Melvyn (ST) <Melvyn.Dresner@tfl.gov.uk>; Hawkins Phil <PhilHawkins@tfl.gov.uk>
Cc: Erin Zhang <EZhang@rsk.co.uk>; Jonathan Mart <JMart@rsk.co.uk>; Simon Young <s.young@stomor.com>; Michael Holloway <MHolloway@danielwatney.co.uk>
Subject: RE: Model Date

Hi Melvyn/Phil,

Please see attached revised development trip generation and assignment for both vehicles and also London Underground. We have amended this to account for the extant trips associated with the 1,350 dwellings in the approved scheme, as these will be included within the London growth.

For the Air Quality and Noise assessments the following scenarios need to be covered off:

2019 Base (for the Air Quality assessment)
2046 (for the Noise assessment)

For the 2019 data we propose to obtain a 2019- 2021 growth factor and reduce the 2021 base by this amount for the Noise assessment calculations

For the 2046 scenario required for the Noise assessment, can we assume the same growth as the 2041 data, or will we need separate 2046 data only for the Noise assessment?

Furthermore, the data we have obtained from TfL for the SRN A406 does not include any HGV information. Can you please advise how we should derive this, or is there any factors that TfL hold that we can apply to this link?

Total = **£5244**

You will then need to add in your development manually and carry out the usual impact analysis.

Please can I ask you to amend the analysis request form to reflect the data will be taken from the above scenarios- 1, 2 and 3 – i.e. replace the below specification:

- *2021 Opening year baseline flows;*
- *2021 Opening year baseline flows + development;*
- *2021 Opening year baseline flows + development + committed developments;*
- *2031 Future year baseline;*
- *2031 Future year baseline + development;*
- *2031 Future year baseline + development + committed developments.*
- *2041 Future year baseline;*
- *2041 Future year baseline + development;*
- *2041 Future year baseline + development + committed developments.*

Thanks

Phil

From: Paula Cullen <p.cullen@stomor.com>
Sent: 09 June 2021 13:46
To: Hawkins Phil <PhilHawkins@tfl.gov.uk>
Subject: RE: Model Date

Hi Phil,

Please see attached and below.

Company Name:Stomor Ltd
Trading Name:Stomor Ltd
Registered address: Suit 2,First Floor,Portmill House, Portmill Lane, Hitchin, Herts, SG5 1DJ
Trading / billing address: Suit 2,First Floor,Portmill House, Portmill Lane, Hitchin, Herts, SG5 1DJ
Company registration no: 06460779
Accounts payable name(s): Stomor
Telephone number(s): 01462 615433

Alternative email address for key contact:

Phil Hawkins
Public Transport Analysis
City Planning
Transport for London

Jack Dudmish

Subject: FW: Model Date

From: Paula Cullen
Sent: Monday, June 14, 2021 12:29 PM
To: 'Dresner Melvyn (ST)' <Melvyn.Dresner@tfl.gov.uk>
Subject: RE: Model Date

Hi Melvyn,

Thanks very much for the below. It's much appreciated.

Kind regards

Paula Cullen
Transport Planning Consultant
p.cullen@stomor.com
Direct line: 01462 342141
Office: 01462 615433

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CIVIL ENGINEERING CONSULTANTS
Suite 2 | First Floor | Portmill House | Portmill Lane | Hitchin | Hertfordshire | SG5 1DJ
www.stomor.com

From: Dresner Melvyn (ST) <Melvyn.Dresner@tfl.gov.uk>
Sent: Monday, June 14, 2021 12:14 PM
To: Paula Cullen <p.cullen@stomor.com>; Hawkins Phil <PhilHawkins@tfl.gov.uk>
Cc: Erin Zhang <EZhang@rsk.co.uk>; Jonathan Mart <JMart@rsk.co.uk>; Simon Young <s.young@stomor.com>; Michael Holloway <MHolloway@danielwatney.co.uk>; Jack O'Brien <jack@comerhomes.co.uk>
Subject: RE: Model Date

Hi Paula,

My approach would be as follows:

For land uses that relatively small scale they can be excluded. Though assumptions should set out in the TA.

For commercial specifically, as already in the extant it can be excluded, unless there is a transport related change.

For the consented 1350 residential development, doesn't the car parking ratio change for some or all of this development with this application?

So the TA should assess the gross effect on the residential uplift.

From:	Paula Cullen
To:	Jack O'Brien; Rentzos, Costi; Hilsdon, Andy; Dillon, Andrew; Charles Mills
Cc:	Michael Holloway; Nadia Shojaie; Nicola Morris; Stuart Wilson; Tom Wilson
Subject:	NLBP LBB/TfL Meeting Summary 28/09/22 3013
Date:	Wednesday, September 28, 2022 6:09:20 PM
Attachments:	image001.jpg

Dear All,

Thank you for joining the meeting this this morning. I think we have made really good progress and are on the right track to deriving an appropriate solution.

Please see below summary of key points/actions from the meeting. Feel free to make any alterations if necessary.

- Latest Site Access layout (Rev 5) is largely acceptable in principle subject to the following:
- Include advanced stop lines to establish how visibility will be restricted
- Widen the footway along the north-east quadrant to reconfigure tactile paving arrangement
- Extend drawing to show full extent of tapers to the north and south
- Confirm storage capacity length tested in Linsig of right turning traffic from the north on BPR
- It is agreed bus stop on the southbound BPR arm is in the optimal location
- It is agreed that refuges on each arm do not need changing
- Signals to include countdown display
- Update the Junction10 modelling of the Oakleigh Road/Site Access junction to include the Zebra crossing on the northern arm of Oakleigh Road. It is acknowledged that whilst ped movements are currently low, the future ped flows will need to be considered from the development
- Issue revised assignment to LBB for check
- ATZ – provide comprehensive details for what is to be proposed within the immediate site vicinity (i.e. BPR, Oakleigh Road, Wierdale Avenue)
- Inclusion of Wayfinding signage for cyclists
- Prepare formal RSA Designers Response
- Parking provision of 0.8 for Phase 1 agreed, with a Monitor and Manage approach to be adopted for future phases
- Review signalised junctions within the study are to see if MOVA could be adopted/cycle times revised to increase capacity at sensitive locations - TBC

I trust that the above is a true reflection of our discussion.

We will aim to have the revised Transport documents/drawings completed by COP Friday 14th October.

Kind regards

Paula Cullen BA (Hons) MCIHT
Transport Planning Consultant
p.cullen@stomor.com
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Office: 01462 615433

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From:	Paula Cullen
To:	Rentzos, Costi
Cc:	Charles Mills; Michael Holloway; Jack O'Brien; Nadia Shojaie; Stuart Wilson; Hilsdon, Andy; Dillon, Andrew
Subject:	NLBP Off-Site Improvements (ATZ) - 3013
Date:	Thursday, September 29, 2022 12:07:30 PM
Attachments:	image001.jpg

Hi Costi,

As discussed, I have provided a summary below of the proposed off-site pedestrian/cycle enhancements to the highway infrastructure within the immediate site vicinity:

Brunswick Park Road

- The relocated SB bus stop and existing NB bus stop will be upgraded to include the following:
  - RTI
  - Shelter
  - Seating
  - Appropriate kerb height to facilitate the mobility impaired
- Wayfinding signage at appropriate locations to direct pedestrians/cyclists to key local destinations/facilities
- Controlled pedestrian crossings across all arms of the Site Access/Brunswick Park Road/Goldrill Drive inclusive of countdown timers
- Shared pedestrian footway/cycleway within the vicinity of the site access along Brunswick Park Road

Oakleigh Road

- Upgrade to the existing sheltered bus stops (with seating) to include:
  - RTI
  - Appropriate kerb height to facilitate the mobility impaired
- Wayfinding signage at appropriate locations to direct pedestrians/cyclists to key local destinations/facilities
- Repainting/refreshment of the existing Zebra Crossing along Oakleigh Road

-
Ashbourne Avenue

- Wayfinding signage at appropriate locations to direct pedestrians/cyclists to key local destinations/facilities
- General maintenance of the footway and vegetation

If you could circulate the above to your respective colleagues for agreement, I would be grateful.

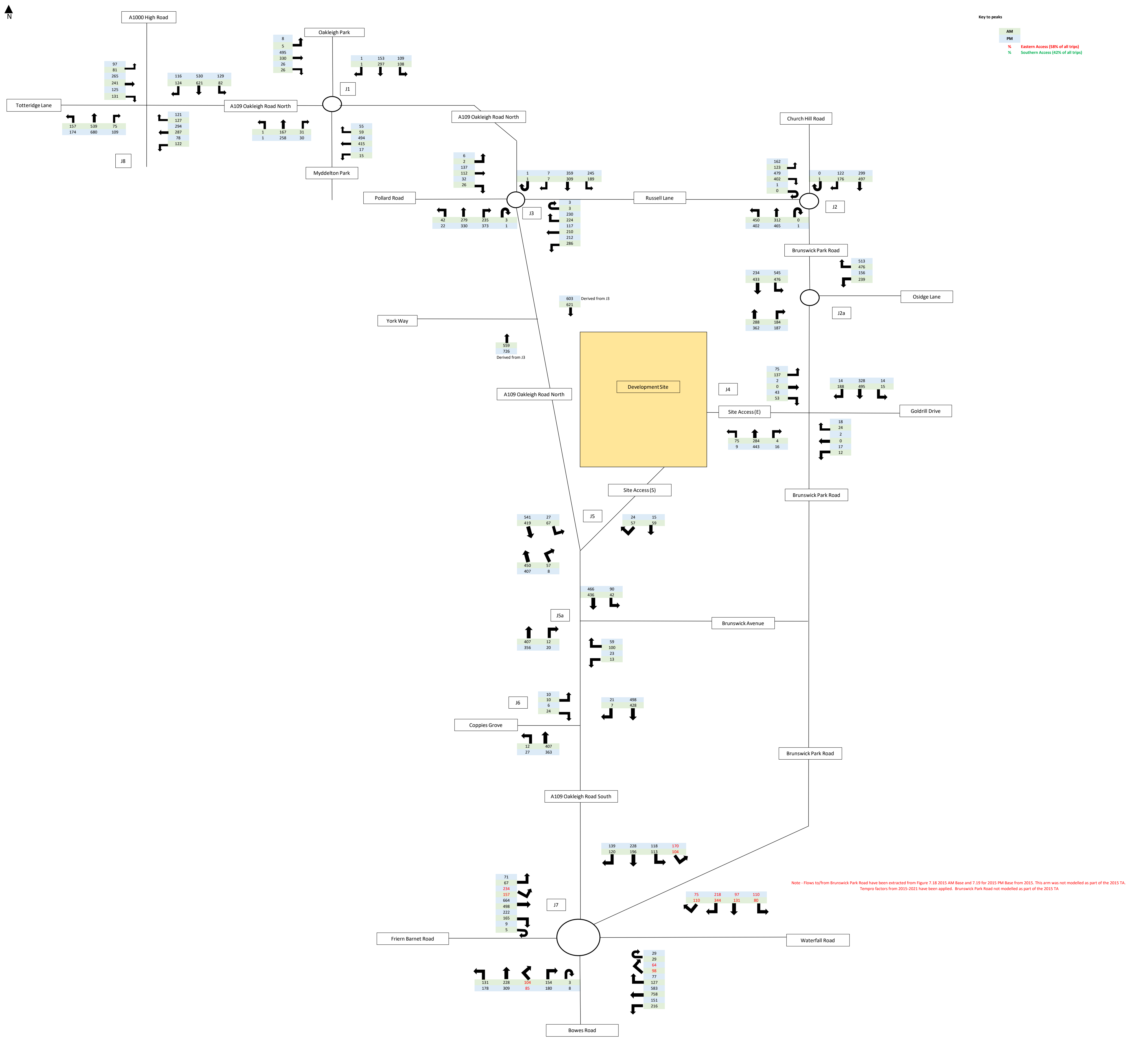
Thank you.

Kind regards

Paula Cullen BA (Hons) MCIHT
Transport Planning Consultant
p.cullen@stomor.com

APPENDIX C

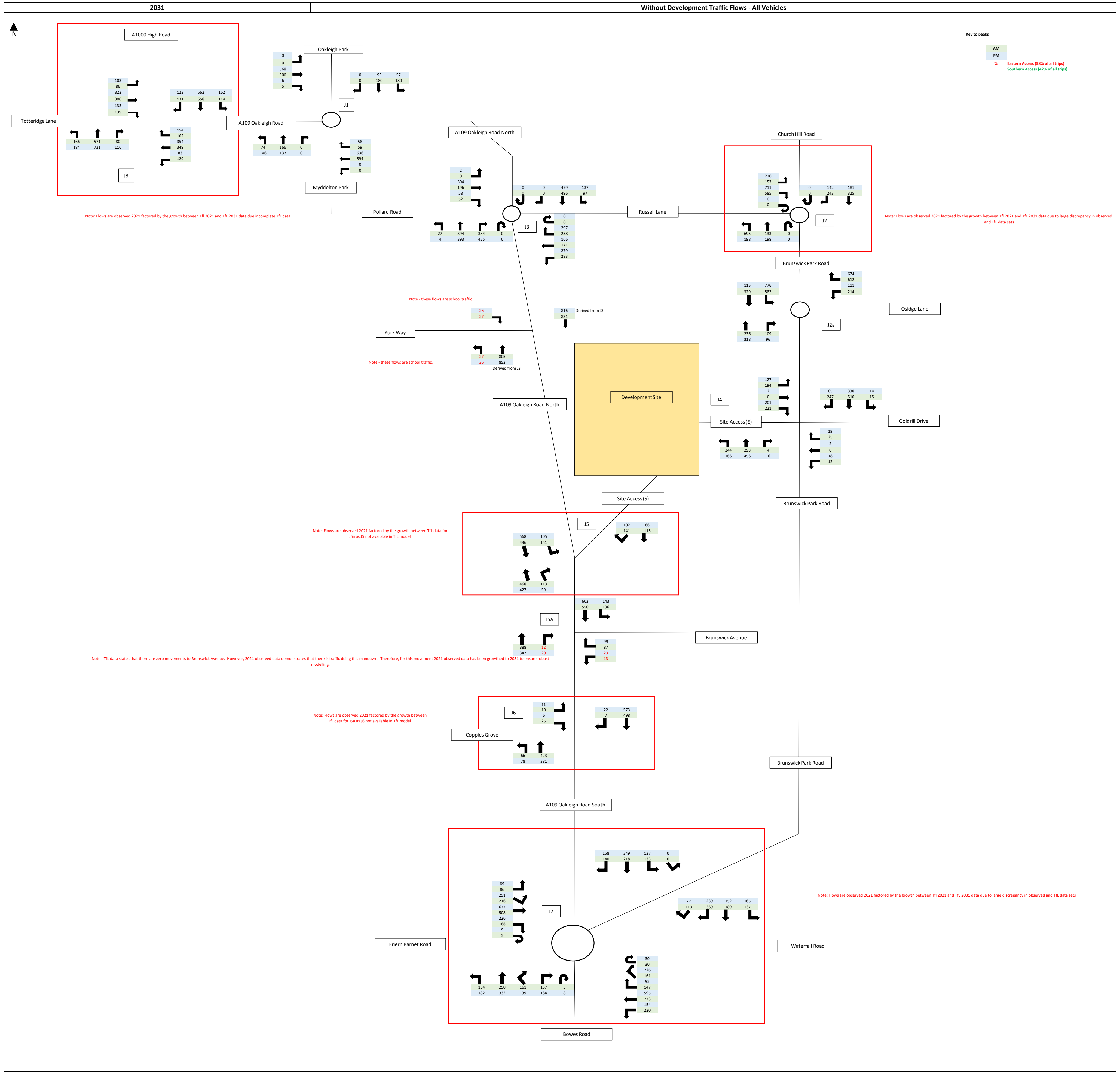
2021	Observed Traffic Flows - All Vehicles



Note - Flows to/from Brunswick Park Road have been extracted from Figure 7.18 2015 AM Base and 7.19 for 2015 PM Base from 2015. This arm was not modelled as part of the 2015 TA. Tempro factors from 2015-2021 have been applied. Brunswick Park Road not modelled as part of the 2015 TA

APPENDIX D

2031	Without Development Traffic Flows - All Vehicles



APPENDIX E

Checked by NJM 03/808/21

Total 2021 AM School Trips as outlined by School TA by Velocity Transport - see para 6.6 in email screen shot

In	Out	2-way
255	255	**510**

Total 2021 PM School Trips as outlined by School TA by Velocity Transport - see para 6.6 in email screen shot

In	Out	2-way
240	240	**480**

15% of 255 trips arrive from Brunswick Park Road North via Eastern Access
47% of 255 trips arrive from Brunswick Park Road South via Eastern Access

15% of 240 trips arrive from Brunswick Park Road North via Eastern Access
47% of 240 trips arrive from Brunswick Park Road South via Eastern Access

Eastern Access Assignment		%	AM In	AM Out	AM 2-Way	PM In	PM Out	PM 2-Way
Brunswick Park N		**15%**						
	Osidge Lane	5.0%	18	18	36	17	17	33
	Churchill Road	5.0%	18	18	36	17	17	33
	Totteridge Lane	5.0%	18	18	36	17	17	33
Brunswick Park S		**47%**						
	Waterfall Road	15.7%	56	56	111	52	52	105
	A110 Bowes Road	15.7%	56	56	111	52	52	105
	A109 Friern Barnet Road	15.7%	56	56	111	52	52	105
Total			**220**	**220**	**440**	**207**	**207**	**414**

2021 Pupils Numbers	754
2031 Pupils Numbers	1050
	296
Increase number of trips by	39.3%

School 2031

Total 2030 AM School Trips as outlined by School TA by Velocity Transport - see para 6.6 in email screen shot

In	Out	2-way
355	355	**710**

School 2031

Total 2030 PM School Trips as outlined by School TA by Velocity Transport - see para 6.6 in email screen shot

In	Out	2-way
334	334	**668**

Southern Access Assignment		%	AM In	AM Out	AM 2-Way	PM In	PM Out	PM 2-Way
Oakleigh Road N		**23%**						
	York Way	7.7%	27	27	54	26	26	51
	Totteridge Lane	7.7%	27	27	54	26	26	51
	High Street	7.7%	27	27	54	26	26	51
Oakleigh Road S		**15%**						
	Waterfall Road	5.0%	18	18	36	17	17	33
	A110 Bowes Road	5.0%	18	18	36	17	17	33
	A109 Friern Barnet Road	5.0%	18	18	36	17	17	33
Total			**135**	**135**	**270**	**127**	**127**	**254**

AM Total Trips Check **710**
PM Total Trips Check **668**

For the 2021/2021 academic year, mode share data provided in Table 4-1 in the TA is relevant.

- Car – 46% * 754 studnets =347 car trips
- Park and Stride - 1%*754 sudents = 8 car trips
- Car share = 5%*754 students = 38 person trips = 19 car trips

TOTAL = 374 CAR TRIP

Note the paragraph 6.3.3 in the TA

6.3.3 It should also be noted that 15% of students will be expected to arrive earlier in the morning to attend breakfast clubs, and 20% will be expected to attend after-school clubs and leave the school later in the afternoon. This will reduce the number of car trips that occur in the peak periods to 255 in the morning and 240 in the afternoon.

- 15% of students arrive earlier for breakfast clubs, as such there **is 318** car trips in the morning peak hour
- 20% of students attend after-school clubs and travel after the school peak hour.As such there is 299 car trips in the morning peak hour

For the future scenario, i.e. when the school reach full occupancy of 1050 students, mode share data in Table 4-3 is relevant. It was assumed that the school will implement a Travel Pand and will achieve a reduction in car travel.

- Determine the proportion of school trips that use each of the accesses during the network peaks

Student trip distribution was based on postcode data received from the school, and the following was calculated:

- 23% will arrive from the north via the access from Oakleigh Road N
- 15% will arrive from the south via the access from Oakleigh Road N
- 15% will arrive from the north via the access from Brunswick Park Road
- 47% will arrive from the south via the access from Brunswick Park Road

- Discount the school trips from the surveyed traffic at the accesses to derive the existing employment trips

Please note that in 2020/2021 academic year, the school was undersubscribed and had 754 studnets .

RE: St Andrews Apostle School, Barnet - vehicle tracking

ML Milena Lipska <mlipska@velocity-tp.com>
To Paula Cullen

Paula

The after-school clubs are between 15:00-16:30. – par 4.4 in the TA.

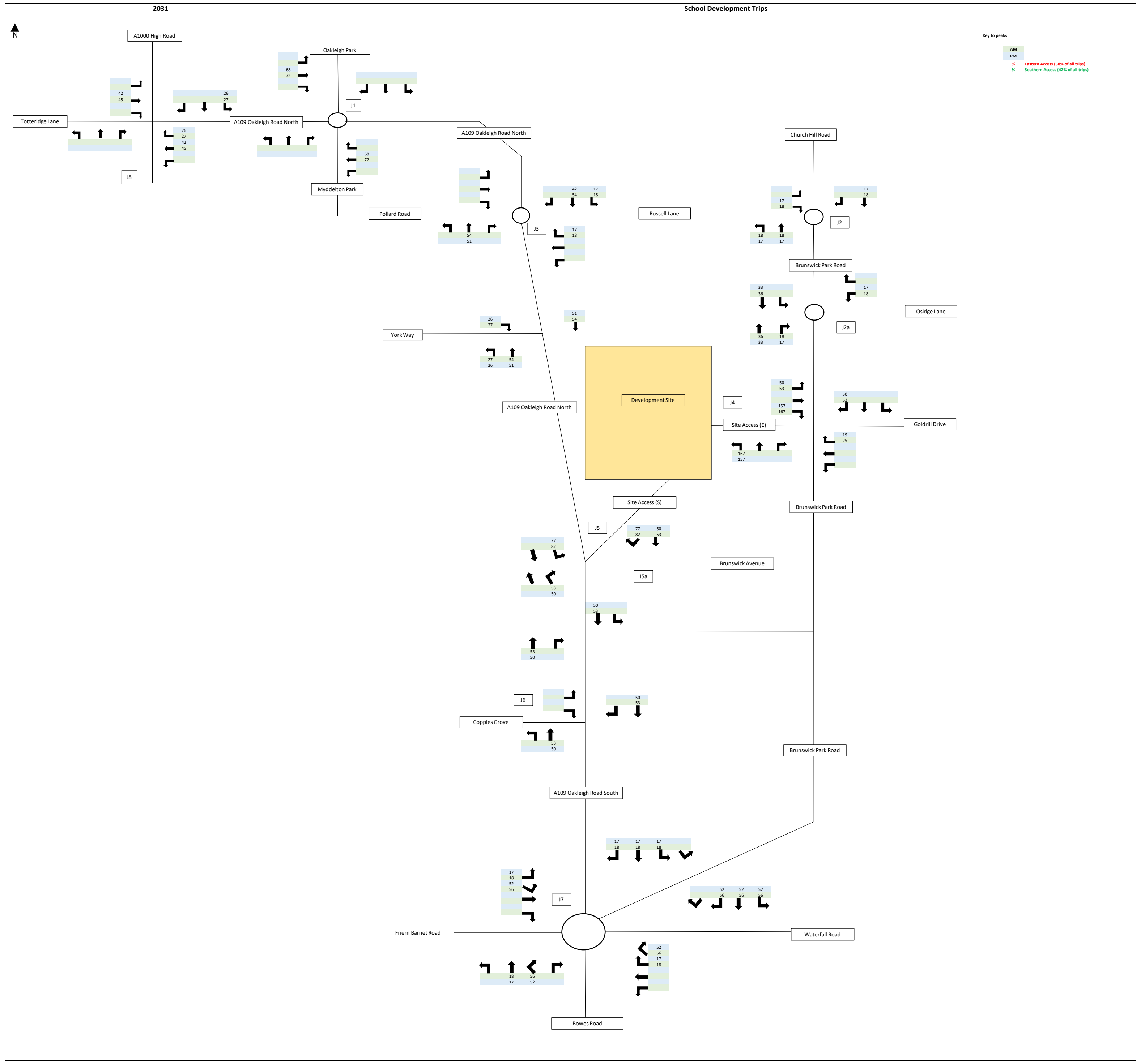
You can assume that staff travel outside of the network peak hours.

Regards
Milena

Milena Lipska MSc CEng MCIHT
Associate
Tel: 07392 287 355

VELOCITY Transport Planning

Unit A, Taper Studios, The Leather Market, 120 Weston Street, London, SE1 4GS



APPENDIX F

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

01	GREATER LONDON		
	BE	BEXLEY	1 days
	BT	BRENT	1 days
	HG	HARINGEY	1 days
	HO	HOUNSLOW	1 days
	HV	HAVERING	1 days
	SK	SOUTHWARK	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 203 to 493 (units:)
Range Selected by User: 200 to 493 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Monday-Friday 0700-1900
Include days where PT not known: Yes
Range: 200 to 2880

Date Range: 01/01/13 to 14/11/19

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

Selected survey days:

Tuesday	3 days
Wednesday	2 days
Thursday	1 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	3

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

Selected Location Sub Categories:

Industrial Zone	1
Development Zone	2
Residential Zone	2
Built-Up Zone	1

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

Secondary Filtering selection:

Use Class:

C3	6 days

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

Population within 500m Range:
All Surveys Included
Population within 1 mile:

10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	3 days
100,001 or More	1 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	1 days
500,001 or More	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	1 days

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

Travel Plan:

Yes	4 days
No	2 days

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

PTAL Rating:

2 Poor	2 days
3 Moderate	1 days
5 Very Good	2 days
6a Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1 BE-03-C-02 BLOCKS OF FLATS BEXLEY
CLYDESDALE WAY
BELVEDERE

Edge of Town
Industrial Zone
Total No of Dwellings: 402
Survey date: WEDNESDAY 19/09/18 Survey Type: MANUAL

2 BT-03-C-02 BLOCKS OF FLATS BRENT
ENGINEERS WAY
WEMBLEY

Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 472
Survey date: WEDNESDAY 30/11/16 Survey Type: MANUAL

3 HG-03-C-01 BLOCKS OF FLATS HARINGEY
BREAM CLOSE
TOTTENHAM HALE

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 255
Survey date: TUESDAY 18/06/19 Survey Type: MANUAL

4 HO-03-C-04 BLOCKS OF FLATS HOUNSLOW
LONDON ROAD
ISLEWORTH

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 203
Survey date: TUESDAY 03/07/18 Survey Type: MANUAL

5 HV-03-C-02 BLOCKS OF FLATS HAVERING
WATERLOO ROAD
ROMFORD

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total No of Dwellings: 493
Survey date: TUESDAY 22/11/16 Survey Type: MANUAL

6 SK-03-C-03 BLOCKS OF FLATS SOUTHWARK
MARITIME STREET
SURREY QUAYS

Neighbourhood Centre (PPS6 Local Centre)
Development Zone
Total No of Dwellings: 233
Survey date: THURSDAY 14/11/19 Survey Type: MANUAL

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

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

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

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

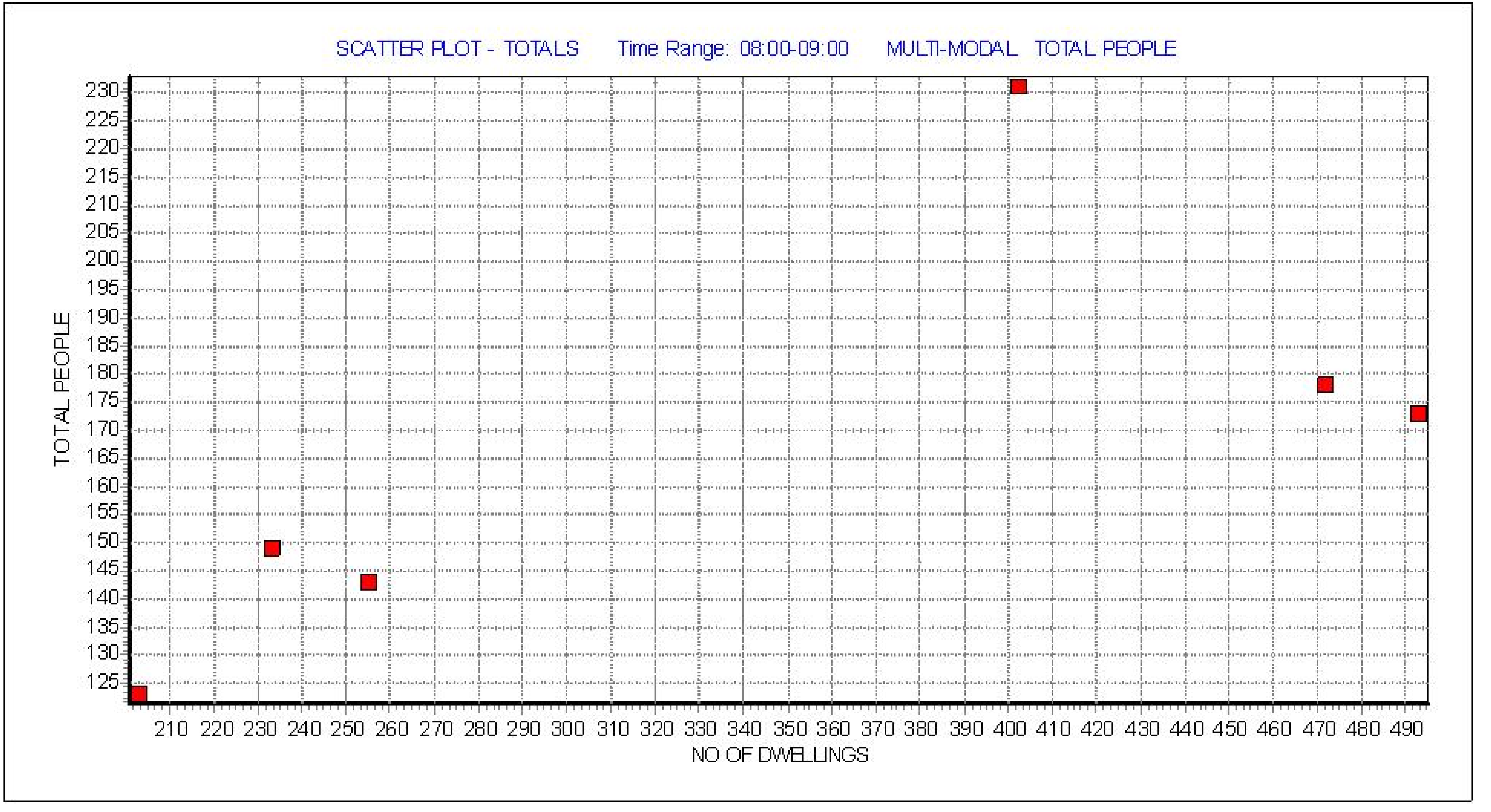
15th Percentile = No. 5 BT-03-C-02 Tot: 0.377
85th Percentile = No. 2 HO-03-C-04 Tot: 0.606

Median Values		Mean Values	
Arrivals:	0.050	Arrivals:	0.065
Departures:	0.518	Departures:	0.453
Totals:	0.568	Totals:	0.518

								Trip Rate (Sorted by Totals)			Park Spaces
Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Arrivals	Departures	Totals	Per Dwelling
1	SK-03-C-03	BLOCKS OF FLAT	SURREY QUAYS	SOUTHWARK	233	Thu	14/11/19	0.133	0.506	0.639	
2	**HO-03-C-04**	**BLOCKS OF FLAT**	**ISLEWORTH**	**HOUNSLOW**	**203**	**Tue**	**03/07/18**	**0.054**	**0.552**	**0.606**	**0.70**
3	BE-03-C-02	BLOCKS OF FLAT	BELVEDERE	BEXLEY	402	Wed	19/09/18	0.065	0.510	0.575	1.37
4	HG-03-C-01	BLOCKS OF FLAT	TOTTENHAM HALE	HARINGEY	255	Tue	18/06/19	0.035	0.525	0.560	0.43
5	**BT-03-C-02**	**BLOCKS OF FLAT**	**WEMBLEY**	**BRENT**	**472**	**Wed**	**30/11/16**	**0.051**	**0.326**	**0.377**	**0.32**
6	HV-03-C-02	BLOCKS OF FLAT	ROMFORD	HAVERING	493	Tue	22/11/16	0.051	0.300	0.351	0.50

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

01	GREATER LONDON		
	BE	BEXLEY	1 days
	BT	BRENT	1 days
	HG	HARINGEY	1 days
	HO	HOUNSLOW	1 days
	HV	HAVERING	1 days
	SK	SOUTHWARK	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 203 to 493 (units:)
Range Selected by User: 200 to 493 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Monday-Friday 0700-1900
Include days where PT not known: Yes
Range: 200 to 2880

Date Range: 01/01/13 to 14/11/19

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

Selected survey days:

Tuesday	3 days
Wednesday	2 days
Thursday	1 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	3

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

Selected Location Sub Categories:

Industrial Zone	1
Development Zone	2
Residential Zone	2
Built-Up Zone	1

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

Secondary Filtering selection:

Use Class:

C3	6 days

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

Population within 500m Range:
All Surveys Included
Population within 1 mile:

10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	3 days
100,001 or More	1 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	1 days
500,001 or More	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	1 days

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

Travel Plan:

Yes	4 days
No	2 days

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

PTAL Rating:

2 Poor	2 days
3 Moderate	1 days
5 Very Good	2 days
6a Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1 BE-03-C-02 BLOCKS OF FLATS BEXLEY
CLYDESDALE WAY
BELVEDERE

Edge of Town
Industrial Zone
Total No of Dwellings: 402
Survey date: WEDNESDAY 19/09/18 Survey Type: MANUAL

2 BT-03-C-02 BLOCKS OF FLATS BRENT
ENGINEERS WAY
WEMBLEY

Suburban Area (PPS6 Out of Centre)
Development Zone
Total No of Dwellings: 472
Survey date: WEDNESDAY 30/11/16 Survey Type: MANUAL

3 HG-03-C-01 BLOCKS OF FLATS HARINGEY
BREAM CLOSE
TOTTENHAM HALE

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 255
Survey date: TUESDAY 18/06/19 Survey Type: MANUAL

4 HO-03-C-04 BLOCKS OF FLATS HOUNSLOW
LONDON ROAD
ISLEWORTH

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 203
Survey date: TUESDAY 03/07/18 Survey Type: MANUAL

5 HV-03-C-02 BLOCKS OF FLATS HAVERING
WATERLOO ROAD
ROMFORD

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total No of Dwellings: 493
Survey date: TUESDAY 22/11/16 Survey Type: MANUAL

6 SK-03-C-03 BLOCKS OF FLATS SOUTHWARK
MARITIME STREET
SURREY QUAYS

Neighbourhood Centre (PPS6 Local Centre)
Development Zone
Total No of Dwellings: 233
Survey date: THURSDAY 14/11/19 Survey Type: MANUAL

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

RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

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

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

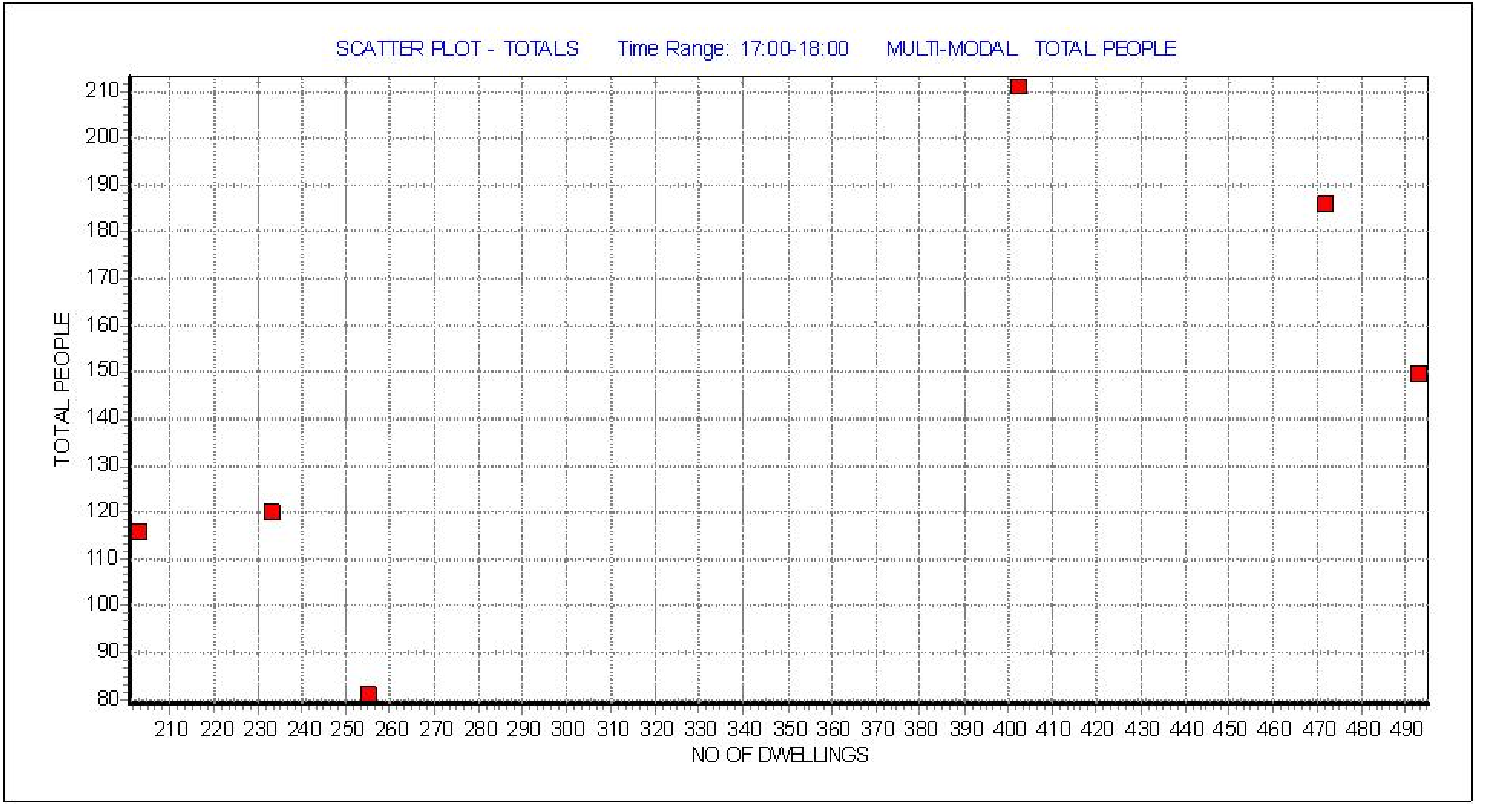
15th Percentile = No. 5 HG-03-C-01 Tot: 0.318
85th Percentile = No. 2 BE-03-C-02 Tot: 0.525

Median Values		Mean Values	
Arrivals:	0.292	Arrivals:	0.294
Departures:	0.162	Departures:	0.144
Totals:	0.455	Totals:	0.438

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals) Arrivals	Departures	Totals	Park Spaces Per Dwelling
1	HO-03-C-04	BLOCKS OF FLAT	ISLEWORTH	HOUNSLOW	203	Tue	03/07/18	0.399	0.172	0.571	0.70
2	BE-03-C-02	BLOCKS OF FLAT	BELVEDERE	BEXLEY	402	Wed	19/09/18	0.326	0.199	0.525	1.37
3	SK-03-C-03	BLOCKS OF FLAT	SURREY QUAYS	SOUTHWARK	233	Thu	14/11/19	0.339	0.176	0.515	
4	BT-03-C-02	BLOCKS OF FLAT	WEMBLEY	BRENT	472	Wed	30/11/16	0.246	0.148	0.394	0.32
5	HG-03-C-01	BLOCKS OF FLAT	TOTTENHAM HALE	HARINGEY	255	Tue	18/06/19	0.220	0.098	0.318	0.43
6	HV-03-C-02	BLOCKS OF FLAT	ROMFORD	HAVERING	493	Tue	22/11/16	0.231	0.073	0.304	0.50

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

01	GREATER LONDON		
	BE	BEXLEY	1 days
	BT	BRENT	1 days
	HG	HARINGEY	1 days
	HO	HOUNSLOW	1 days
	HV	HAVERING	1 days
	SK	SOUTHWARK	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 203 to 493 (units:)
Range Selected by User: 200 to 493 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Monday-Friday 0700-1900
Include days where PT not known: Yes
Range: 200 to 2880

Date Range: 01/01/13 to 14/11/19

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

Selected survey days:

Tuesday	3 days
Wednesday	2 days
Thursday	1 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	3

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

Selected Location Sub Categories:

Industrial Zone	1
Development Zone	2
Residential Zone	2
Built-Up Zone	1

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

Secondary Filtering selection:

Use Class:	
C3	6 days

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

Population within 500m Range:
All Surveys Included

Population within 1 mile:	
10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	3 days
100,001 or More	1 days

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

Population within 5 miles:	
125,001 to 250,000	1 days
250,001 to 500,000	1 days
500,001 or More	4 days

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

Car ownership within 5 miles:	
0.6 to 1.0	5 days
1.1 to 1.5	1 days

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

Travel Plan:	
Yes	4 days
No	2 days

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

PTAL Rating:	
2 Poor	2 days
3 Moderate	1 days
5 Very Good	2 days
6a Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1	BE-03-C-02 CLYDESDALE WAY BELVEDERE	BLOCKS OF FLATS		BEXLEY
	Edge of Town Industrial Zone Total No of Dwellings:		402	
	Survey date: WEDNESDAY		*19/09/18*	*Survey Type: MANUAL*
2	BT-03-C-02 ENGINEERS WAY WEMBLEY	BLOCKS OF FLATS		BRENT
	Suburban Area (PPS6 Out of Centre) Development Zone Total No of Dwellings:		472	
	Survey date: WEDNESDAY		*30/11/16*	*Survey Type: MANUAL*
3	HG-03-C-01 BREAM CLOSE TOTTENHAM HALE	BLOCKS OF FLATS		HARINGEY
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings:		255	
	Survey date: TUESDAY		*18/06/19*	*Survey Type: MANUAL*
4	HO-03-C-04 LONDON ROAD ISLEWORTH	BLOCKS OF FLATS		HOUNSLOW
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings:		203	
	Survey date: TUESDAY		*03/07/18*	*Survey Type: MANUAL*
5	HV-03-C-02 WATERLOO ROAD ROMFORD	BLOCKS OF FLATS		HAVERING
	Suburban Area (PPS6 Out of Centre) Built-Up Zone Total No of Dwellings:		493	
	Survey date: TUESDAY		*22/11/16*	*Survey Type: MANUAL*
6	SK-03-C-03 MARITIME STREET SURREY QUAYS	BLOCKS OF FLATS		SOUTHWARK
	Neighbourhood Centre (PPS6 Local Centre) Development Zone Total No of Dwellings:		233	
	Survey date: THURSDAY		*14/11/19*	*Survey Type: MANUAL*

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

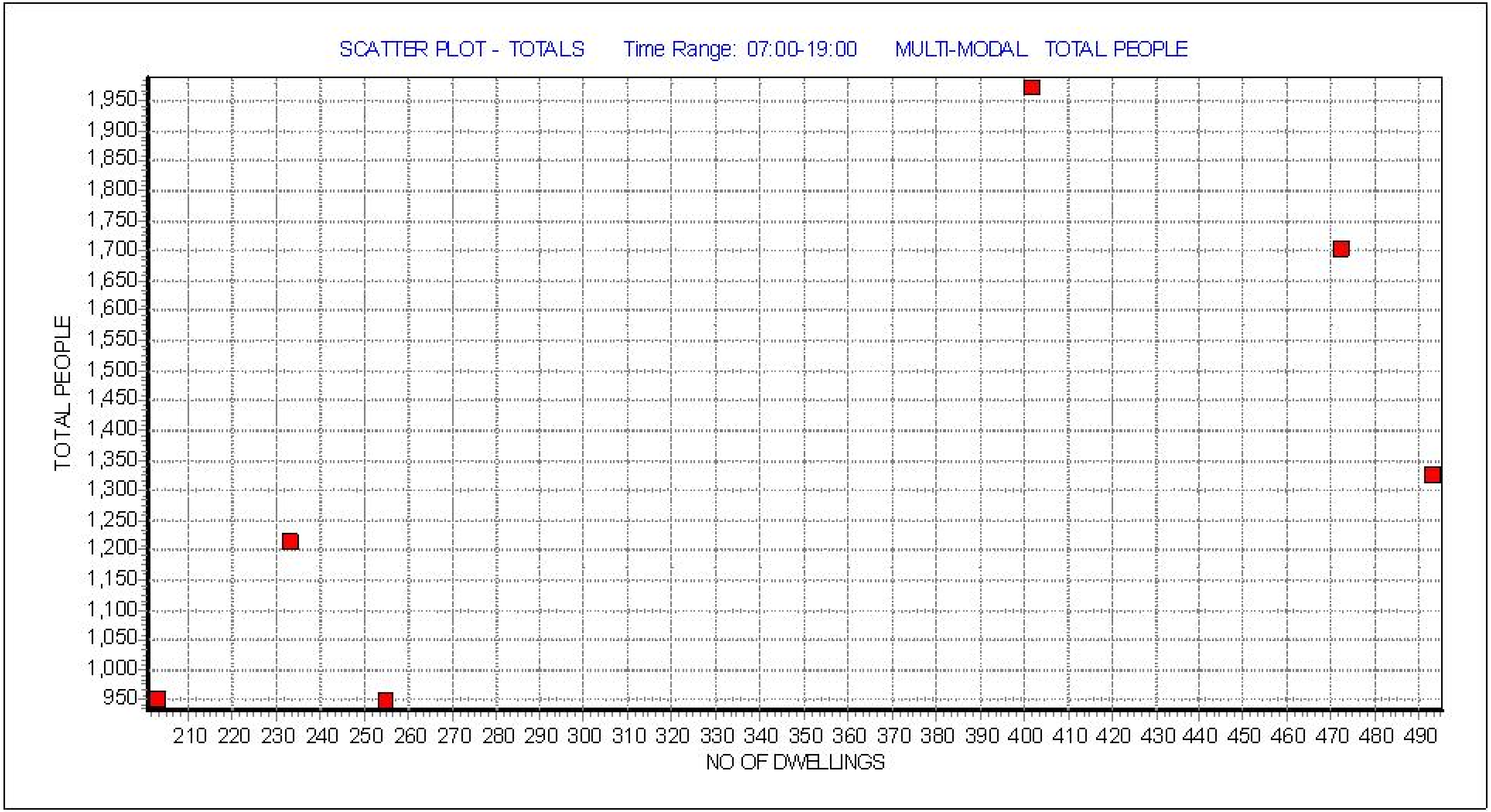
RANK ORDER for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Ranking Type: TOTALS Time Range: 07:00-19:00
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. 5 BT-03-C-02 Tot: 3.610
85th Percentile = No. 2 BE-03-C-02 Tot: 4.908

Median Values		Mean Values	
Arrivals:	1.862	Arrivals:	1.889
Departures:	2.342	Departures:	2.249
Totals:	4.204	Totals:	4.138

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals) Arrivals	Departures	Totals	Park Spaces Per Dwelling
1	SK-03-C-03	BLOCKS OF FLAT	SURREY QUAYS	SOUTHWARK	233	Thu	14/11/19	2.386	2.828	5.214	
2	BE-03-C-02	BLOCKS OF FLAT	BELVEDERE	BEXLEY	402	Wed	19/09/18	2.269	2.639	4.908	1.37
3	HO-03-C-04	BLOCKS OF FLAT	ISLEWORTH	HOUNSLOW	203	Tue	03/07/18	2.163	2.527	4.690	0.70
4	HG-03-C-01	BLOCKS OF FLAT	TOTTENHAM HALE	HARINGEY	255	Tue	18/06/19	1.561	2.157	3.718	0.43
5	BT-03-C-02	BLOCKS OF FLAT	WEMBLEY	BRENT	472	Wed	30/11/16	1.602	2.008	3.610	0.32
6	HV-03-C-02	BLOCKS OF FLAT	ROMFORD	HAVERING	493	Tue	22/11/16	1.355	1.333	2.688	0.50

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

APPENDIX G

QS703EW - Method of Travel to Work (2001 specification) Checked by NJM 3/8/2021

population	All usual residents aged 16 to 74
units	Persons
area type	2011 super output areas - middle layer
area name	E02000033 : Barnet 010

Method of Travel to Work	**2011**		TRICS No. Person Trips at Dev AM 2-WAY	TRICS No. Person Trips at Dev PM 2-WAY	Assumed trips on site (using shuttle bus) Assumed Actual No. Person Trips at Dev AM&PM Peak	Assumed No. Veh Trips at Dev AM IN	Assumed No. Veh Trips at Dev AM OUT	Assumed No. Veh Trips at Dev PM IN	Assumed No. Veh Trips at Dev PM OUT
			Total trips including off-site movements (e.g. taxi or public bus)						
Work mainly at or from home	418	10.3%							
Underground, metro, light rail, tram	923	22.7%							
Train	291	7.2%							
Bus, minibus or coach	419	10.3%	57	50	15	1	1	1	1
Taxi	20	0.5%	3	2	2	3	3	2	2
Motorcycle, scooter or moped	52	1.3%	7	6	6	1	6	5	1
Driving a car or van	1,629	40.1%							
Passenger in a car or van	83	2.0%							
Bicycle	40	1.0%							
On foot	166	4.1%							
Other method of travel to work	25	0.61%							
Total	4,066	99.4%							

* Note - assume shuttle bus has 15 seat capacity

Additional vehicle movements

Assumed No. Delivery Veh Trips at Dev 2WAY AM IN	Assumed No. Delivery Veh Trips at Dev 2WAY AM OUT	Assumed No. Delivery Veh Trips at Dev 2WAY PM IN	Assumed No. Delivery Veh Trips at Dev 2WAY PM OUT
1	1	3	3

Total Person Trip Rate

AM		
IN	OUT	2WAY
0.061	0.423	0.484

PM		
IN	OUT	2WAY
0.280	0.139	0.419

Person Trips

AM		
IN	OUT	2WAY
70	486	557

PM		
IN	OUT	2WAY
322	160	482

No. Dwellings

1150

1,350 dwellings already consented and included within TfL model

Vehicle trips include Census driving a car or van and an allowance for on-site shuttle bus, taxis and motorcycles and delivery vehicles (see above) and OGV's from TRICS

Barnet 10 Vehicle Trips

AM			PM		
IN	OUT	2WAY	IN	OUT	2WAY
35	206	241	141	71	212

Total OGV Trip Rate

AM		
IN	OUT	2WAY
0.001	0	0.001

PM		
IN	OUT	2WAY
0.001	0	0.001

OGV Trips

AM		
IN	OUT	2WAY
1	0	1

PM		
IN	OUT	2WAY
1	0	1

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. DWELLS	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. DWELLS	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. DWELLS	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	343	0.045	6	343	0.270	6	343	0.315
08:00 - 09:00	6	343	0.061	**6**	**343**	**0.423**	**6**	**343**	**0.484**
09:00 - 10:00	6	343	0.097	6	343	0.191	6	343	0.288
10:00 - 11:00	6	343	0.083	6	343	0.136	6	343	0.219
11:00 - 12:00	6	343	0.116	6	343	0.143	6	343	0.259
12:00 - 13:00	6	343	0.125	6	343	0.141	6	343	0.266
13:00 - 14:00	6	343	0.120	6	343	0.151	6	343	0.271
14:00 - 15:00	6	343	0.136	6	343	0.137	6	343	0.273
15:00 - 16:00	6	343	0.183	6	343	0.143	6	343	0.326
16:00 - 17:00	6	343	0.232	6	343	0.135	6	343	0.367
17:00 - 18:00	6	343	0.280	6	343	0.139	6	343	0.419
18:00 - 19:00	**6**	**343**	**0.335**	6	343	0.123	6	343	0.458
19:00 - 20:00	4	328	0.293	4	328	0.124	4	328	0.417
20:00 - 21:00	4	328	0.250	4	328	0.122	4	328	0.372
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.356			2.378			4.734

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
Calculation Factor: 1 DWELLS
Count Type: OGVS

Time Range	ARRIVALS No. Days	ARRIVALS Ave. DWELLS	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. DWELLS	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. DWELLS	TOTALS Trip Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:0	6	343	0.001	6	343	0.001	6	343	0.002
08:00-09:0	6	343	0.001	6	343	0	6	343	0.001
09:00-10:0	6	343	0.002	6	343	0.002	6	343	0.004
10:00-11:0	6	343	0.002	6	343	0.001	6	343	0.003
11:00-12:0	6	343	0.001	6	343	0.002	6	343	0.003
12:00-13:0	6	343	0	6	343	0.001	6	343	0.001
13:00-14:0	6	343	0	6	343	0	6	343	0
14:00-15:0	6	343	0.002	6	343	0.002	6	343	0.004
15:00-16:0	6	343	0	6	343	0	6	343	0
16:00-17:0	6	343	0	6	343	0	6	343	0
17:00-18:0	6	343	0.001	6	343	0	6	343	0.001
18:00-19:0	6	343	0	6	343	0	6	343	0
19:00-20:0	4	328	0	4	328	0	4	328	0
20:00-21:0	4	328	0	4	328	0	4	328	0
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			0.01			0.009			0.019

APPENDIX H

WF01BEW - Location of usual residence and place of work (OA level)

ONS Crown Copyright Reserved [from Nomis on 5 May 2022]

population	All usual residents ages 16 and over in employment the week before the census
units	Persons
date	2011

May route via west access in AM peak

place of work : 2011 super output area - middle layer	currently residing : E02000033 : Barnet 010
E02000010 : Barking and Dagenham 009	2
E02000011 : Barking and Dagenham 010	1
E02000014 : Barking and Dagenham 013	1
E02000016 : Barking and Dagenham 015	2
E02000020 : Barking and Dagenham 019	4
E02006799 : Barking and Dagenham 023	1
E02000024 : Barnet 001	66
E02000025 : Barnet 002	25
E02000026 : Barnet 003	11
E02000027 : Barnet 004	37
E02000028 : Barnet 005	21
E02000029 : Barnet 006	31
E02000030 : Barnet 007	14
E02000031 : Barnet 008	84
E02000032 : Barnet 009	25
E02000033 : Barnet 010	109
E02000034 : Barnet 011	20
E02000035 : Barnet 012	21
E02000036 : Barnet 013	4
E02000037 : Barnet 014	3
E02000038 : Barnet 015	35
E02000039 : Barnet 016	6
E02000040 : Barnet 017	33
E02000041 : Barnet 018	12
E02000042 : Barnet 019	56
E02000043 : Barnet 020	4
E02000044 : Barnet 021	3
E02000045 : Barnet 022	39
E02000046 : Barnet 023	34
E02000047 : Barnet 024	14
E02000048 : Barnet 025	7
E02000049 : Barnet 026	7
E02000050 : Barnet 027	26
E02000051 : Barnet 028	22
E02000052 : Barnet 029	18
E02000053 : Barnet 030	15
E02000054 : Barnet 031	6
E02000055 : Barnet 032	16
E02000056 : Barnet 033	8
E02000057 : Barnet 034	4
E02000058 : Barnet 035	5
E02000059 : Barnet 036	7
E02000060 : Barnet 037	5
E02000061 : Barnet 038	4
E02000062 : Barnet 039	16
E02000063 : Barnet 040	1
E02000079 : Bexley 015	1
E02000093 : Brent 001	1
E02000094 : Brent 002	5
E02000095 : Brent 003	3
E02000096 : Brent 004	1
E02000097 : Brent 005	1
E02000100 : Brent 008	2
E02000101 : Brent 009	6
E02000102 : Brent 010	2
E02000103 : Brent 011	14
E02000106 : Brent 014	1
E02000107 : Brent 015	2
E02000109 : Brent 017	7
E02000112 : Brent 020	5
E02000117 : Brent 025	4
E02000118 : Brent 026	3
E02000119 : Brent 027	12
E02000120 : Brent 028	1
E02000121 : Brent 029	4
E02000123 : Brent 031	2
E02000124 : Brent 032	3
E02000125 : Brent 033	1
E02000126 : Brent 034	1
E02000130 : Bromley 004	1
E02000144 : Bromley 018	2
E02000166 : Camden 001	10
E02000167 : Camden 002	11
E02000168 : Camden 003	9
E02000169 : Camden 004	2
E02000170 : Camden 005	7
E02000171 : Camden 006	1
E02000172 : Camden 007	5
E02000173 : Camden 008	12
E02000174 : Camden 009	2
E02000175 : Camden 010	7
E02000176 : Camden 011	4
E02000177 : Camden 012	4
E02000179 : Camden 014	1
E02000180 : Camden 015	5
E02000182 : Camden 017	4
E02000183 : Camden 018	2
E02000184 : Camden 019	12
E02000185 : Camden 020	1
E02000186 : Camden 021	25
E02000187 : Camden 022	8
E02000188 : Camden 023	6
E02000189 : Camden 024	3
E02000190 : Camden 025	9
E02000191 : Camden 026	34
E02000192 : Camden 027	20
E02000193 : Camden 028	46
E02000241 : Ealing 004	1
E02000243 : Ealing 006	1
E02000244 : Ealing 007	1
E02000248 : Ealing 011	3
E02000252 : Ealing 015	19
E02000256 : Ealing 019	1
E02000257 : Ealing 020	1
E02000259 : Ealing 022	1
E02000262 : Ealing 025	1
E02000264 : Ealing 027	1
E02000266 : Ealing 029	2
E02000271 : Ealing 034	1
E02006791 : Ealing 040	1
E02000278 : Enfield 002	3
E02000279 : Enfield 003	2
E02000280 : Enfield 004	5
E02000281 : Enfield 005	1
E02000282 : Enfield 006	5
E02000284 : Enfield 008	9
E02000285 : Enfield 009	9
E02000286 : Enfield 010	16
E02000287 : Enfield 011	14
E02000288 : Enfield 012	19
E02000289 : Enfield 013	2
E02000290 : Enfield 014	10
E02000291 : Enfield 015	9
E02000292 : Enfield 016	10
E02000293 : Enfield 017	1
E02000294 : Enfield 018	1
E02000295 : Enfield 019	5
E02000296 : Enfield 020	73
E02000297 : Enfield 021	8
E02000298 : Enfield 022	6
E02000299 : Enfield 023	4
E02000301 : Enfield 025	3
E02000302 : Enfield 026	6
E02000303 : Enfield 027	4
E02000304 : Enfield 028	11
E02000305 : Enfield 029	9
E02000306 : Enfield 030	7
E02000307 : Enfield 031	3
E02000308 : Enfield 032	37
E02000309 : Enfield 033	7
E02000311 : Enfield 035	12
E02000312 : Enfield 036	7
E02006793 : Enfield 037	13
E02000316 : Greenwich 004	1
E02000319 : Greenwich 007	1
E02000326 : Greenwich 014	2
E02000344 : Greenwich 032	3
E02006929 : Greenwich 036	7
E02000345 : Hackney 001	5
E02000351 : Hackney 007	1
E02000353 : Hackney 009	4
E02000356 : Hackney 012	1
E02000358 : Hackney 014	2
E02000361 : Hackney 017	8
E02000362 : Hackney 018	1
E02000363 : Hackney 019	2
E02000365 : Hackney 021	4
E02000367 : Hackney 023	4
E02000369 : Hackney 025	3
E02000370 : Hackney 026	5
E02000371 : Hackney 027	24
E02006918 : Hackney 028	2
E02006921 : Hackney 029	1
E02000372 : Hammersmith and Fulham 001	9
E02000375 : Hammersmith and Fulham 004	4
E02000380 : Hammersmith and Fulham 009	1
E02000382 : Hammersmith and Fulham 011	2
E02000383 : Hammersmith and Fulham 012	5
E02000384 : Hammersmith and Fulham 013	10
E02000386 : Hammersmith and Fulham 015	5
E02000387 : Hammersmith and Fulham 016	1
E02000392 : Hammersmith and Fulham 021	3
E02000395 : Hammersmith and Fulham 024	3
E02000397 : Haringey 001	1
E02000398 : Haringey 002	8
E02000400 : Haringey 004	15
E02000401 : Haringey 005	5
E02000402 : Haringey 006	2
E02000403 : Haringey 007	18
E02000404 : Haringey 008	3
E02000405 : Haringey 009	8
E02000406 : Haringey 010	4
E02000407 : Haringey 011	1
E02000408 : Haringey 012	3
E02000409 : Haringey 013	2
E02000410 : Haringey 014	12
E02000411 : Haringey 015	7
E02000412 : Haringey 016	14
E02000413 : Haringey 017	8
E02000415 : Haringey 019	5
E02000416 : Haringey 020	5
E02000417 : Haringey 021	10
E02000418 : Haringey 022	1
E02000419 : Haringey 023	13
E02000420 : Haringey 024	5
E02000421 : Haringey 025	4
E02000422 : Haringey 026	2
E02000423 : Haringey 027	2
E02000424 : Haringey 028	6
E02000426 : Haringey 030	3
E02000427 : Haringey 031	1
E02000428 : Haringey 032	4
E02000429 : Haringey 033	3
E02000430 : Haringey 034	10
E02000431 : Haringey 035	6
E02000433 : Harrow 001	10
E02000434 : Harrow 002	1
E02000437 : Harrow 005	1
E02000438 : Harrow 006	0
E02000439 : Harrow 007	2
E02000440 : Harrow 008	1
E02000442 : Harrow 010	4
E02000443 : Harrow 011	1
E02000445 : Harrow 013	1
E02000449 : Harrow 017	1
E02000452 : Harrow 020	1
E02000455 : Harrow 023	4
E02000459 : Harrow 027	2
E02000461 : Harrow 029	2
E02006795 : Harrow 032	1
E02006882 : Harrow 033	2
E02000473 : Havering 010	1
E02000480 : Havering 017	1
E02000486 : Havering 023	1
E02000491 : Havering 028	2
E02000495 : Hillingdon 002	1
E02000500 : Hillingdon 007	1
E02000508 : Hillingdon 015	2
E02000509 : Hillingdon 016	2
E02000518 : Hillingdon 025	1
E02000519 : Hillingdon 026	1
E02000520 : Hillingdon 027	1
E02000522 : Hillingdon 029	1
E02000523 : Hillingdon 030	1
E02000524 : Hillingdon 031	1
E02000525 : Hillingdon 032	2
E02000526 : Hounslow 001	2
E02000530 : Hounslow 005	1
E02000534 : Hounslow 009	3
E02000538 : Hounslow 013	1
E02000543 : Hounslow 018	1
E02000545 : Hounslow 020	1
E02000546 : Hounslow 021	1
E02000549 : Hounslow 024	3
E02000554 : Islington 001	2
E02000555 : Islington 002	2
E02000556 : Islington 003	11
E02000557 : Islington 004	13
E02000558 : Islington 005	5
E02000559 : Islington 006	17
E02000560 : Islington 007	5
E02000561 : Islington 008	1
E02000562 : Islington 009	1
E02000563 : Islington 010	1
E02000564 : Islington 011	10
E02000565 : Islington 012	1
E02000566 : Islington 013	3
E02000568 : Islington 015	13
E02000569 : Islington 016	8
E02000570 : Islington 017	1
E02000571 : Islington 018	3
E02000572 : Islington 019	1
E02000573 : Islington 020	7
E02000574 : Islington 021	12
E02000575 : Islington 022	21
E02000576 : Islington 023	20
E02000577 : Kensington and Chelsea 001	2
E02000578 : Kensington and Chelsea 002	3
E02000579 : Kensington and Chelsea 003	1
E02000581 : Kensington and Chelsea 005	2
E02000584 : Kensington and Chelsea 008	4
E02000586 : Kensington and Chelsea 010	3
E02000587 : Kensington and Chelsea 011	1
E02000588 : Kensington and Chelsea 012	7
E02000589 : Kensington and Chelsea 013	1
E02000591 : Kensington and Chelsea 015	1
E02000592 : Kensington and Chelsea 016	7
E02000595 : Kensington and Chelsea 019	4
E02000596 : Kensington and Chelsea 020	3
E02000597 : Kensington and Chelsea 021	1
E02000604 : Kingston upon Thames 007	1
E02000606 : Kingston upon Thames 009	2
E02000620 : Lambeth 003	3
E02000621 : Lambeth 004	6
E02000626 : Lambeth 009	1
E02000629 : Lambeth 012	1
E02000630 : Lambeth 013	1
E02000632 : Lambeth 015	1
E02006801 : Lambeth 036	10
E02000653 : Lewisham 001	1
E02000654 : Lewisham 002	1
E02000662 : Lewisham 010	1
E02000685 : Lewisham 033	1
E02000692 : Merton 004	1
E02000694 : Merton 006	1
E02000698 : Merton 010	1
E02000700 : Merton 012	1
E02000708 : Merton 020	1
E02000711 : Merton 023	1
E02000713 : Merton 025	1
E02000725 : Newham 012	3
E02000726 : Newham 013	1
E02000732 : Newham 019	1
E02000735 : Newham 022	1
E02000737 : Newham 024	1
E02000740 : Newham 027	1
E02000746 : Newham 033	1
E02000747 : Newham 034	6
E02000749 : Newham 036	1
E02000750 : Newham 037	1
E02000752 : Redbridge 002	2
E02000754 : Redbridge 004	1
E02000756 : Redbridge 006	1
E02000759 : Redbridge 009	1
E02000760 : Redbridge 010	1
E02000763 : Redbridge 013	1
E02000768 : Redbridge 018	1
E02000773 : Redbridge 023	1
E02000776 : Redbridge 026	1
E02000779 : Redbridge 029	4
E02000780 : Redbridge 030	2
E02000782 : Redbridge 032	1
E02006924 : Redbridge 035	1
E02000786 : Richmond upon Thames 003	1
E02000791 : Richmond upon Thames 008	1
E02000806 : Richmond upon Thames 023	1
E02000808 : Southwark 002	21
E02000809 : Southwark 003	17
E02000812 : Southwark 006	2
E02000817 : Southwark 011	1
E02000821 : Southwark 015	3
E02000822 : Southwark 016	2
E02006802 : Southwark 034	11
E02000860 : Sutton 021	1
E02000864 : Tower Hamlets 001	5
E02000865 : Tower Hamlets 002	1
E02000867 : Tower Hamlets 004	2
E02000869 : Tower Hamlets 006	1
E02000872 : Tower Hamlets 009	1
E02000875 : Tower Hamlets 012	1
E02000876 : Tower Hamlets 013	1
E02000877 : Tower Hamlets 014	1
E02000878 : Tower Hamlets 015	11
E02000880 : Tower Hamlets 017	2
E02000884 : Tower Hamlets 021	8
E02000889 : Tower Hamlets 026	4
E02000890 : Tower Hamlets 027	4
E02000891 : Tower Hamlets 028	2
E02006854 : Tower Hamlets 033	30
E02000895 : Waltham Forest 001	1
E02000896 : Waltham Forest 002	2
E02000897 : Waltham Forest 003	1
E02000898 : Waltham Forest 004	1
E02000899 : Waltham Forest 005	1
E02000900 : Waltham Forest 006	2
E02000901 : Waltham Forest 007	1
E02000904 : Waltham Forest 010	1
E02000905 : Waltham Forest 011	3
E02000908 : Waltham Forest 014	1
E02000909 : Waltham Forest 015	1
E02000910 : Waltham Forest 016	2
E02000911 : Waltham Forest 017	1
E02000914 : Waltham Forest 020	1
E02000915 : Waltham Forest 021	1
E02000916 : Waltham Forest 022	6
E02000918 : Waltham Forest 024	1
E02000924 : Wandsworth 002	1
E02000932 : Wandsworth 010	3
E02000935 : Wandsworth 013	1
E02000936 : Wandsworth 014	1
E02000938 : Wandsworth 016	2
E02000943 : Wandsworth 021	1
E02000946 : Wandsworth 024	2
E02000951 : Wandsworth 029	1
E02000956 : Wandsworth 034	3
E02000960 : Westminster 001	3
E02000962 : Westminster 003	3
E02000964 : Westminster 005	1
E02000965 : Westminster 006	1
E02000967 : Westminster 008	13
E02000968 : Westminster 009	6
E02000969 : Westminster 010	2
E02000970 : Westminster 011	37
E02000971 : Westminster 012	8
E02000972 : Westminster 013	81
E02000973 : Westminster 014	1
E02000974 : Westminster 015	5
E02000975 : Westminster 016	7
E02000976 : Westminster 017	2
E02000977 : Westminster 018	68
E02000978 : Westminster 019	6
E02000979 : Westminster 020	56
E02000980 : Westminster 021	5
E02000981 : Westminster 022	1
E02000982 : Westminster 023	8
E02000001 : City of London 001	164
Total	**2,891**

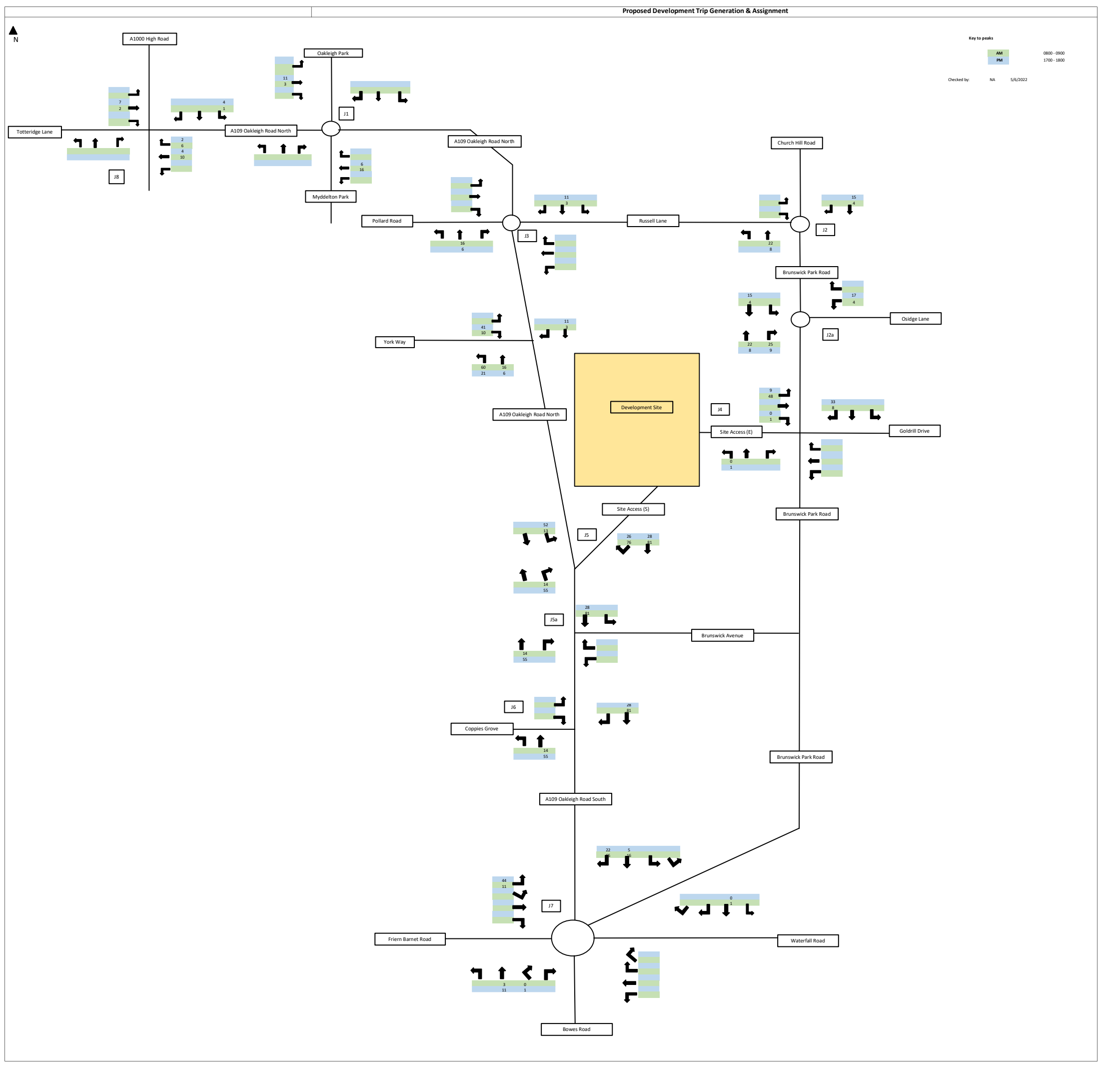
Road 1	Road 2	Road 3	Road 4	Total Trips	%
Brunswick Park Rd (N)	Osidge Lane			357	12.3%
Brunswick Park Rd (N)	Church Hill Rd			314	10.9%
Brunswick Park Rd (N)	Russell Ln	Oakleigh Road (N)	High Rd (N)	0	0.0%
Brunswick Park Rd (N)	Russell Ln	Oakleigh Road (N)	Totteridge Lane	0	0.0%
Brunswick Park Rd (N)	Russell Ln	Oakleigh Road (N)	High Rd (S)	0	0.0%
Brunswick Park Rd (S)	Waterfall Rd			0	0.0%
Brunswick Park Rd (S)	Bowes Rd			11	0.4%
Brunswick Park Rd (S)	Friern Barnet Rd			0	0.0%
Oakleigh Rd	York Way			845	29.2%
Oakleigh Rd	High Rd (N)			84	2.9%
Oakleigh Rd	Totteridge Ln			144	5.0%
Oakleigh Rd	High Rd (S)			5	0.2%
Oakleigh Rd	Friern Barnet Rd			911	31.5%
Oakleigh Rd	Bowes Rd			220	7.6%
			Total	**2,891**	**100.0%**

2,891 Check - this reflects census total - see sum of colum B

Given that these routes are located to the west of the site its is assumed that vehicles would route through the western access as this is more practical and less congested

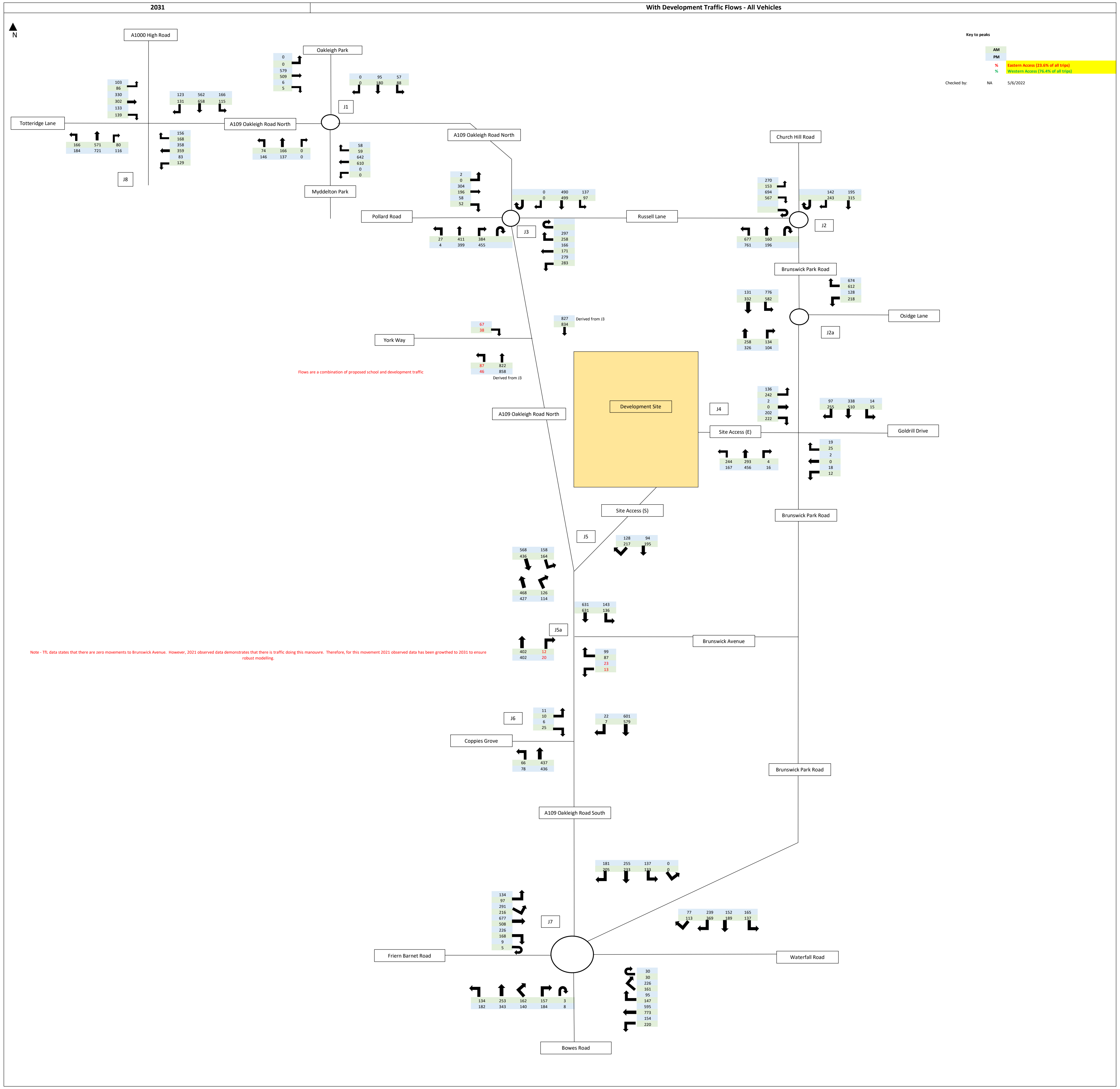
	%	Proposed Dev AM Peak Hour			Proposed Dev PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Brunswick Park Rd (N) - Osidge Lane	12.3%	4	25	30	17	9	26
Brunswick Park Rd (N) - Church Hill Rd	10.9%	4	22	26	15	8	23
Brunswick Park (S) - Bowes Rd	0.4%	0	1	1	1	0	1
Oakleigh Rd - York Rd	29.2%	10	60	70	41	21	62
Oakleigh Rd - High Rd (N)	2.9%	1	6	7	4	2	6
Oakleigh Rd - High Rd (S)	0.2%	0	0	0	0	0	0
Oakleigh Rd - Totteridge Ln	5.0%	2	10	12	7	4	11
Oakleigh Rd - Friern Barnet Rd	31.5%	11	65	76	44	22	67
Oakleigh Rd - Bowes Rd	7.6%	3	16	18	11	5	16
TOTAL	**100.0%**	**35**	**206**	**241**	**141**	**71**	**212**
Check		35	206	241	141	71	212

Proposed Development Trip Generation & Assignment



APPENDIX I

2031	With Development Traffic Flows - All Vehicles



APPENDIX J

Myddelton Park Basic Results Summary

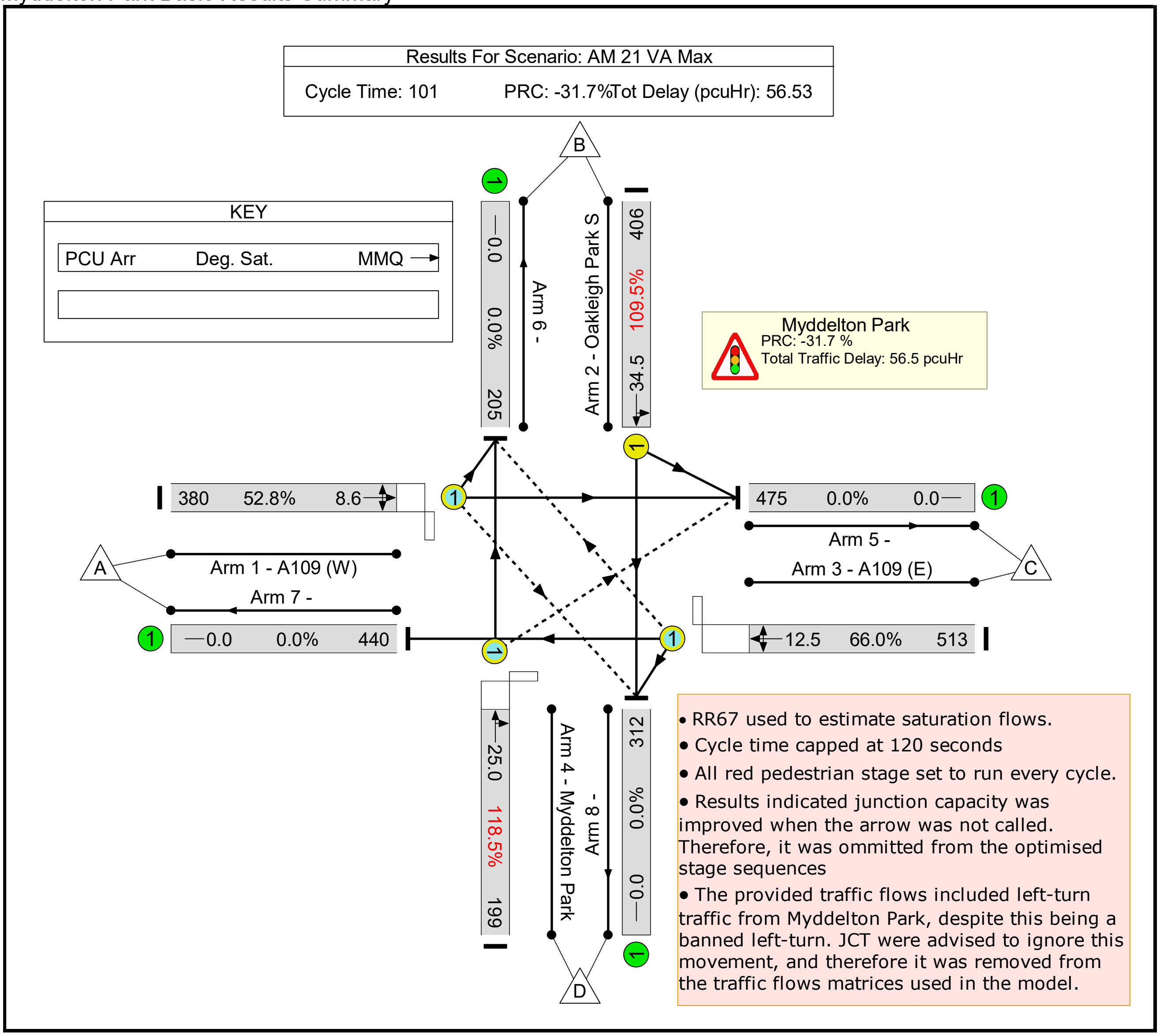
User and Project Details

Project:	**21041 Oakleigh Rd**
Title:	**Myddelton Park / Oakleigh Park South**
Location:	Whetstone
Client:	Stomor
Date Started:	12/07/2022
Flow Details:	Updated 2031+C+D Traffic Flows
Checked By:	Simon Swanston
Additional detail:	
File name:	Myddelton Park Update.lsg3x
Author:	Stuart Hanson
Company:	JCT Consultancy Ltd
Address:	LinSig House, Deepdale Enterprise park, Nettleham, Lincoln LN2 2LL

Scenario 1: 'AM 21 VA Max' (FG1: 'AM 2021 Observed', Plan 1: 'Arrow and Peds')

Network Layout Diagram

Myddelton Park Basic Results Summary



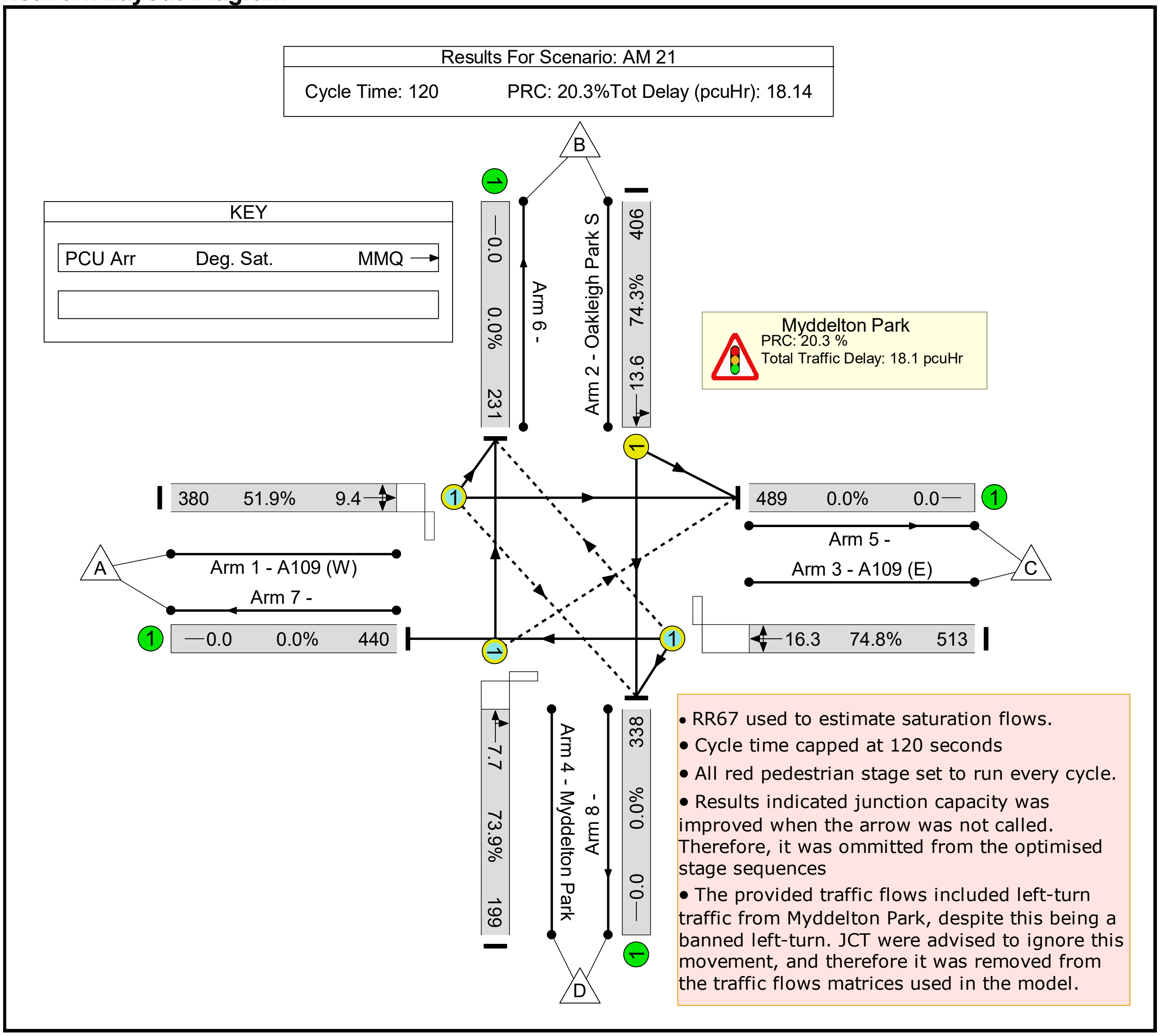
Myddelton Park Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**118.5%**	**78**	**4**	**28**	**56.5**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**118.5%**	**78**	**4**	**28**	**56.5**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	39	-	380	1908	720	52.8%	26	0	0	3.0	28.5	8.6
2/1	Oakleigh Park S Left Ahead	U	D		1	19	-	406	1873	371	109.5%	-	-	-	27.9	247.5	34.5
3/1	A109 (E) Right Ahead Left	O	B	C	1	48	4	513	1894	777	66.0%	52	4	2	3.9	27.4	12.5
4/1	Myddelton Park Right Ahead	O	E		1	18	-	199	1922	168	118.5%	0	0	26	21.7	392.6	25.0

C1 PRC for Signalled Lanes (%): -31.7 Total Delay for Signalled Lanes (pcuHr): 56.53 Cycle Time (s): 101
PRC Over All Lanes (%): -31.7 Total Delay Over All Lanes(pcuHr): 56.53

Myddelton Park Basic Results Summary
Scenario 2: 'AM 21' (FG1: 'AM 2021 Observed', Plan 2: 'No Arrow and Peds')
Network Layout Diagram



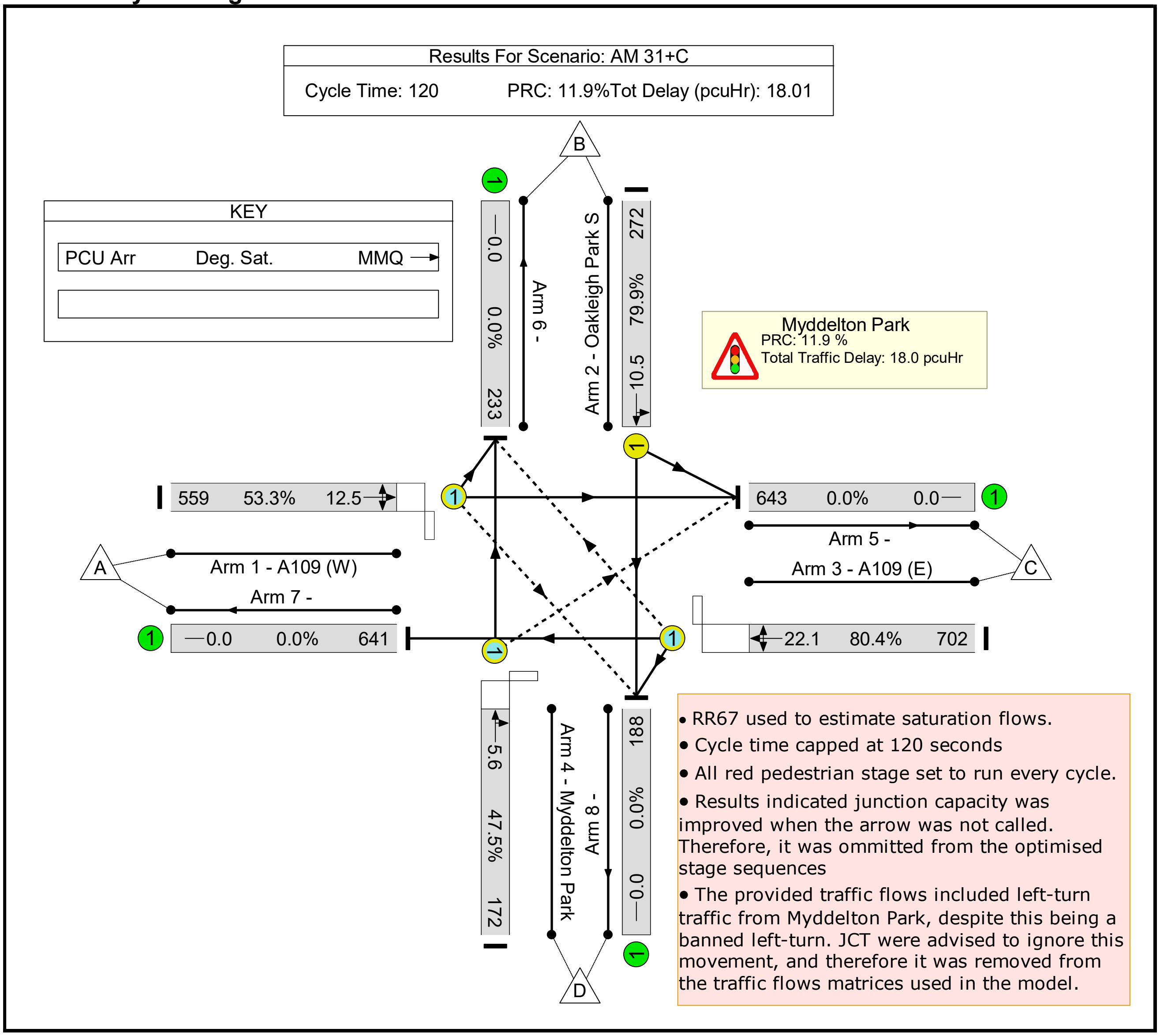
Myddelton Park Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**74.8%**	**114**	**0**	**1**	**18.1**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**74.8%**	**114**	**0**	**1**	**18.1**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	51	-	380	1908	732	51.9%	26	0	0	3.1	29.3	9.4
2/1	Oakleigh Park S Left Ahead	U	D		1	34	-	406	1873	546	74.3%	-	-	-	5.8	51.0	13.6
3/1	A109 (E) Right Ahead Left	O	B	C	1	51	0	513	1894	686	74.8%	57	0	1	5.8	40.5	16.3
4/1	Myddelton Park Right Ahead	O	E		1	34	-	199	1922	269	73.9%	31	0	0	3.5	63.6	7.7

C1 PRC for Signalled Lanes (%): 20.3 Total Delay for Signalled Lanes (pcuHr): 18.14 Cycle Time (s): 120
PRC Over All Lanes (%): 20.3 Total Delay Over All Lanes(pcuHr): 18.14

Myddelton Park Basic Results Summary
Scenario 3: 'AM 31+C' (FG2: 'AM 2031 + School', Plan 2: 'No Arrow and Peds')
Network Layout Diagram



Myddelton Park Basic Results Summary

Network Results

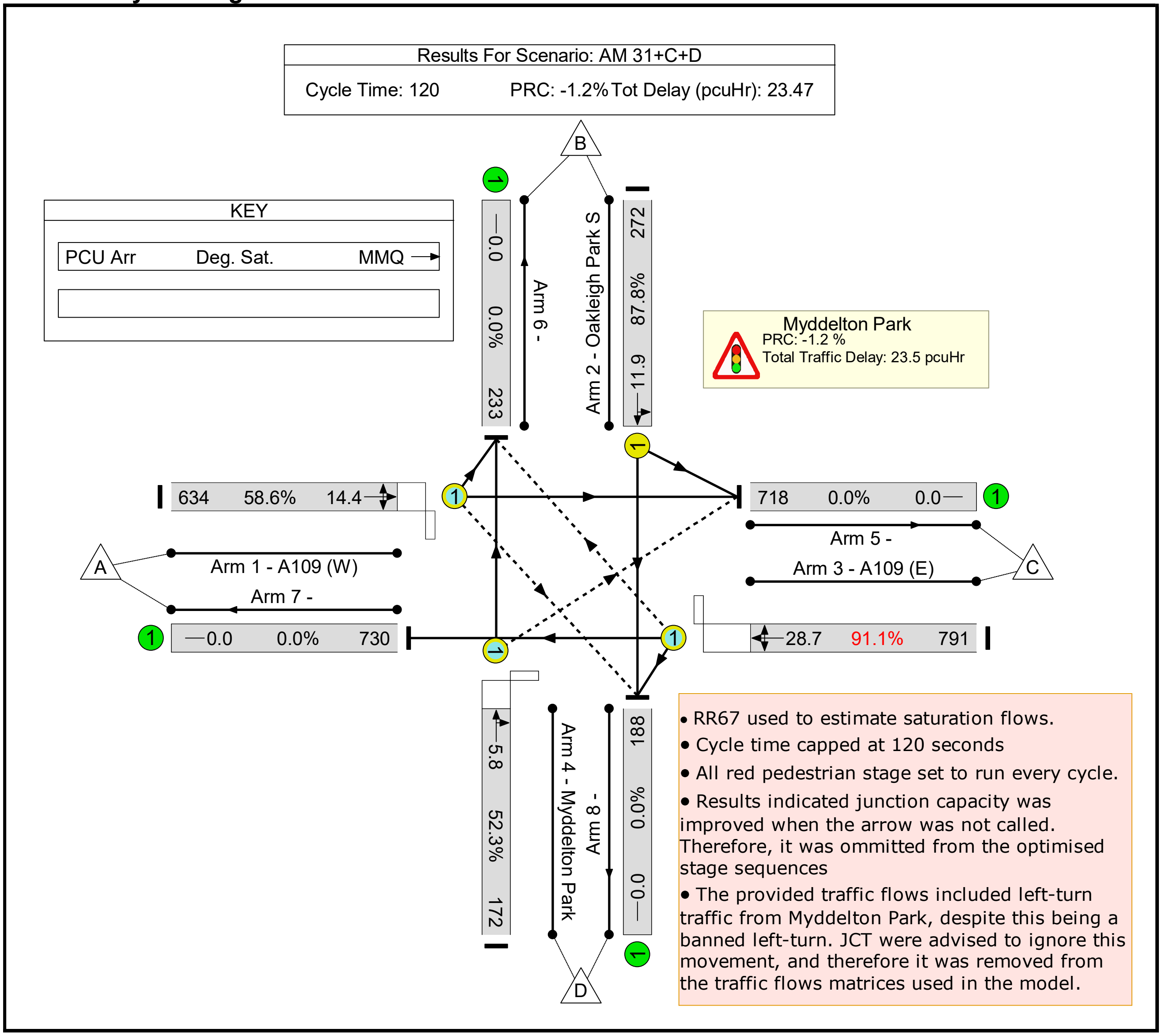
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**80.4%**	**65**	**0**	**1**	**18.0**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**80.4%**	**65**	**0**	**1**	**18.0**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	64	-	559	1936	1049	53.3%	5	0	0	3.3	21.4	12.5
2/1	Oakleigh Park S Left Ahead	U	D		1	21	-	272	1858	341	79.9%	-	-	-	5.4	71.7	10.5
3/1	A109 (E) Right Ahead Left	O	B	C	1	64	0	702	1914	873	80.4%	60	0	1	6.7	34.4	22.1
4/1	Myddelton Park Right Ahead	O	E		1	21	-	172	1975	362	47.5%	0	0	0	2.5	53.3	5.6

C1 PRC for Signalled Lanes (%): 11.9 Total Delay for Signalled Lanes (pcuHr): 18.01 Cycle Time (s): 120
PRC Over All Lanes (%): 11.9 Total Delay Over All Lanes(pcuHr): 18.01

Myddelton Park Basic Results Summary

Scenario 4: 'AM 31+C+D' (FG3: 'AM 2031 + School + Development', Plan 2: 'No Arrow and Peds')

Network Layout Diagram



- RR67 used to estimate saturation flows.
- Cycle time capped at 120 seconds
- All red pedestrian stage set to run every cycle.
- Results indicated junction capacity was improved when the arrow was not called. Therefore, it was ommitted from the optimised stage sequences
- The provided traffic flows included left-turn traffic from Myddelton Park, despite this being a banned left-turn. JCT were advised to ignore this movement, and therefore it was removed from the traffic flows matrices used in the model.

Myddelton Park Basic Results Summary

Network Results

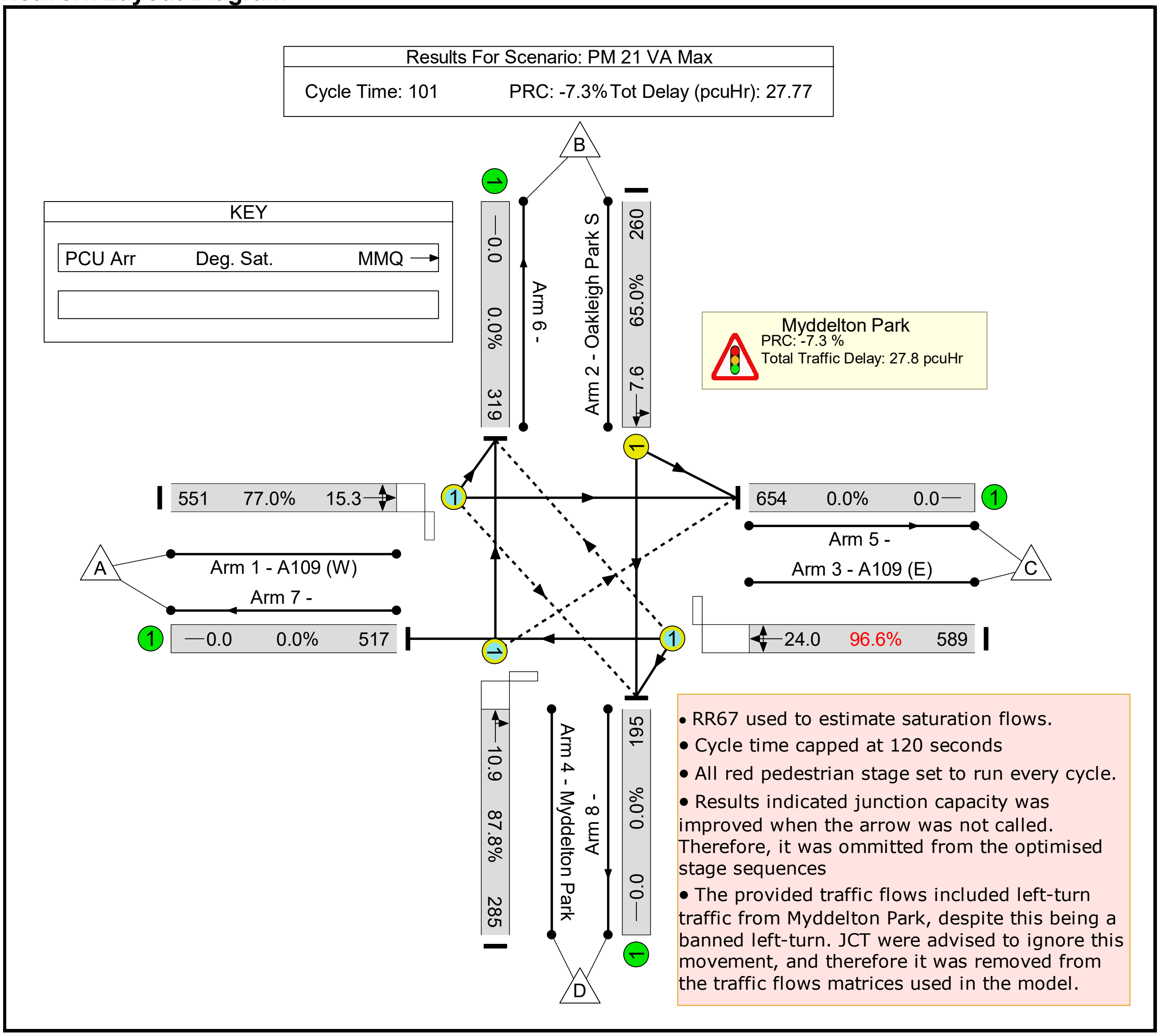
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**91.1%**	**65**	**0**	**1**	**23.5**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**91.1%**	**65**	**0**	**1**	**23.5**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	66	-	634	1937	1081	58.6%	5	0	0	3.8	21.5	14.4
2/1	Oakleigh Park S Left Ahead	U	D		1	19	-	272	1858	310	87.8%	-	-	-	6.8	89.8	11.9
3/1	A109 (E) Right Ahead Left	O	B	C	1	66	0	791	1917	868	91.1%	60	0	1	10.2	46.3	28.7
4/1	Myddelton Park Right Ahead	O	E		1	19	-	172	1975	329	52.3%	0	0	0	2.7	57.0	5.8

C1 PRC for Signalled Lanes (%): -1.2 Total Delay for Signalled Lanes (pcuHr): 23.47 Cycle Time (s): 120
PRC Over All Lanes (%): -1.2 Total Delay Over All Lanes(pcuHr): 23.47

Myddelton Park Basic Results Summary

Scenario 5: 'PM 21 VA Max' (FG4: 'PM 2021 Observed', Plan 1: 'Arrow and Peds')

Network Layout Diagram



Myddelton Park Basic Results Summary

Network Results

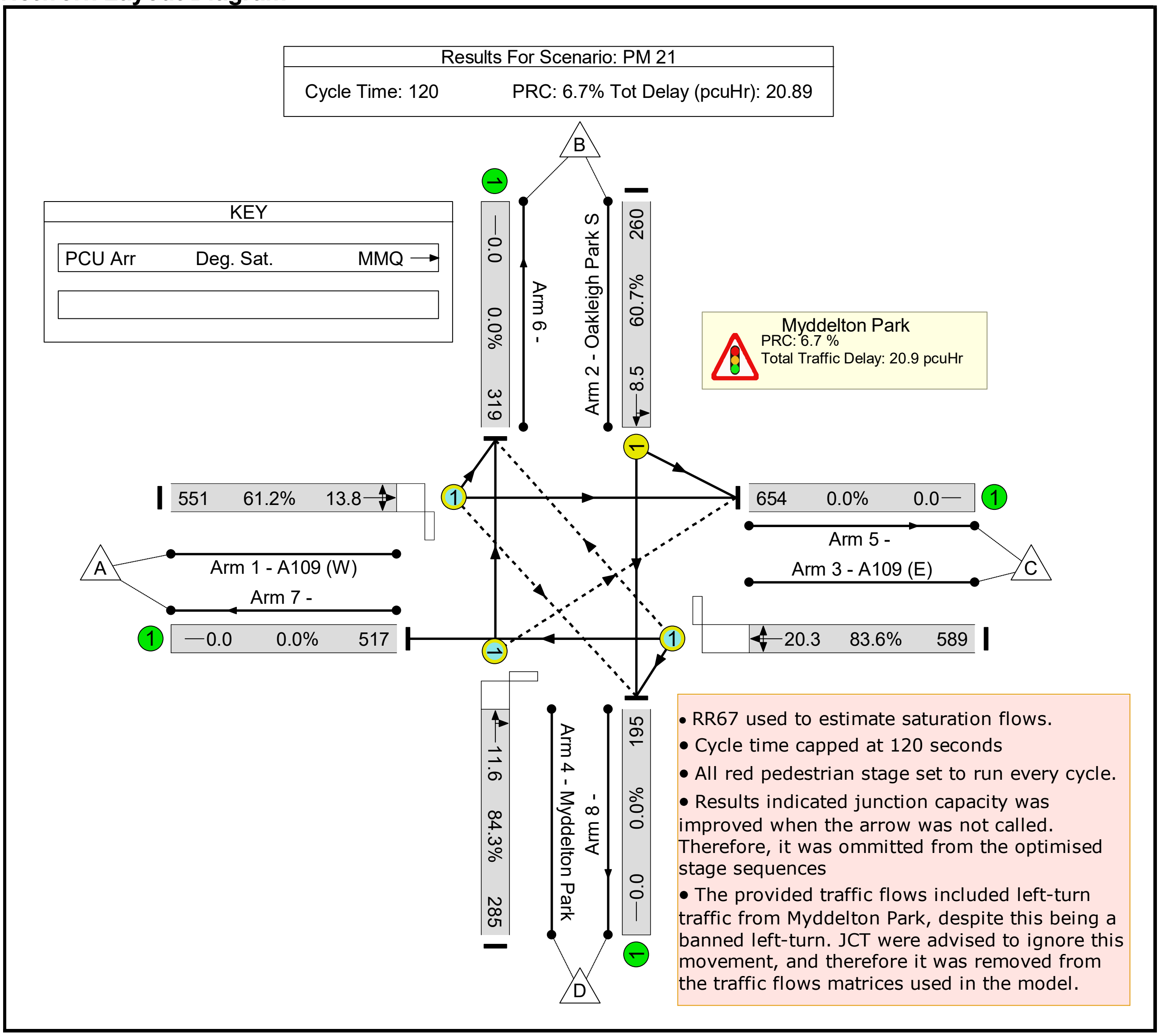
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**96.6%**	**92**	**12**	**5**	**27.8**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**96.6%**	**92**	**12**	**5**	**27.8**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	37	-	551	1916	716	77.0%	24	0	2	5.9	38.6	15.3
2/1	Oakleigh Park S Left Ahead	U	D		1	21	-	260	1836	400	65.0%	-	-	-	3.5	48.7	7.6
3/1	A109 (E) Right Ahead Left	O	B	C	1	46	4	589	1901	610	96.6%	40	12	3	12.2	74.5	24.0
4/1	Myddelton Park Right Ahead	O	E		1	20	-	285	1940	325	87.8%	29	0	0	6.2	77.8	10.9

C1 PRC for Signalled Lanes (%): -7.3 Total Delay for Signalled Lanes (pcuHr): 27.77 Cycle Time (s): 101
PRC Over All Lanes (%): -7.3 Total Delay Over All Lanes(pcuHr): 27.77

Myddelton Park Basic Results Summary

Scenario 6: 'PM 21' (FG4: 'PM 2021 Observed', Plan 2: 'No Arrow and Peds')

Network Layout Diagram



Myddelton Park Basic Results Summary

Network Results

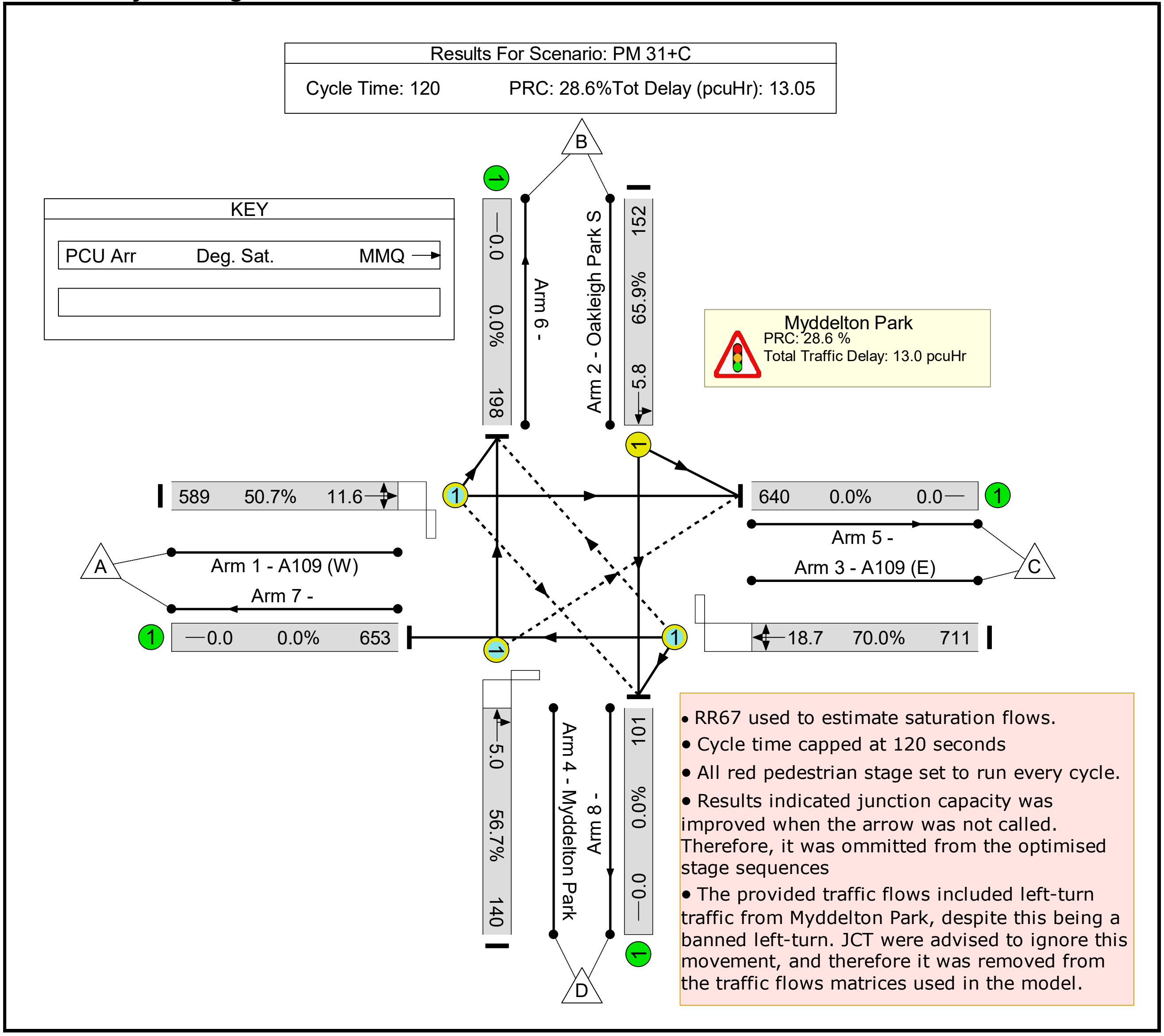
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**84.3%**	**109**	**0**	**1**	**20.9**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**84.3%**	**109**	**0**	**1**	**20.9**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	58	-	551	1916	901	61.2%	26	0	0	4.1	27.1	13.8
2/1	Oakleigh Park S Left Ahead	U	D		1	27	-	260	1836	428	60.7%	-	-	-	3.7	51.7	8.5
3/1	A109 (E) Right Ahead Left	O	B	C	1	58	0	589	1901	705	83.6%	54	0	1	7.1	43.2	20.3
4/1	Myddelton Park Right Ahead	O	E		1	27	-	285	1940	338	84.3%	29	0	0	5.9	75.1	11.6

C1 PRC for Signalled Lanes (%): 6.7 Total Delay for Signalled Lanes (pcuHr): 20.89 Cycle Time (s): 120
PRC Over All Lanes (%): 6.7 Total Delay Over All Lanes(pcuHr): 20.89

Myddelton Park Basic Results Summary

Scenario 7: 'PM 31+C' (FG5: 'PM 2031 + School', Plan 2: 'No Arrow and Peds')

Network Layout Diagram



- RR67 used to estimate saturation flows.
- Cycle time capped at 120 seconds
- All red pedestrian stage set to run every cycle.
- Results indicated junction capacity was improved when the arrow was not called. Therefore, it was ommitted from the optimised stage sequences
- The provided traffic flows included left-turn traffic from Myddelton Park, despite this being a banned left-turn. JCT were advised to ignore this movement, and therefore it was removed from the traffic flows matrices used in the model.

Myddelton Park Basic Results Summary

Network Results

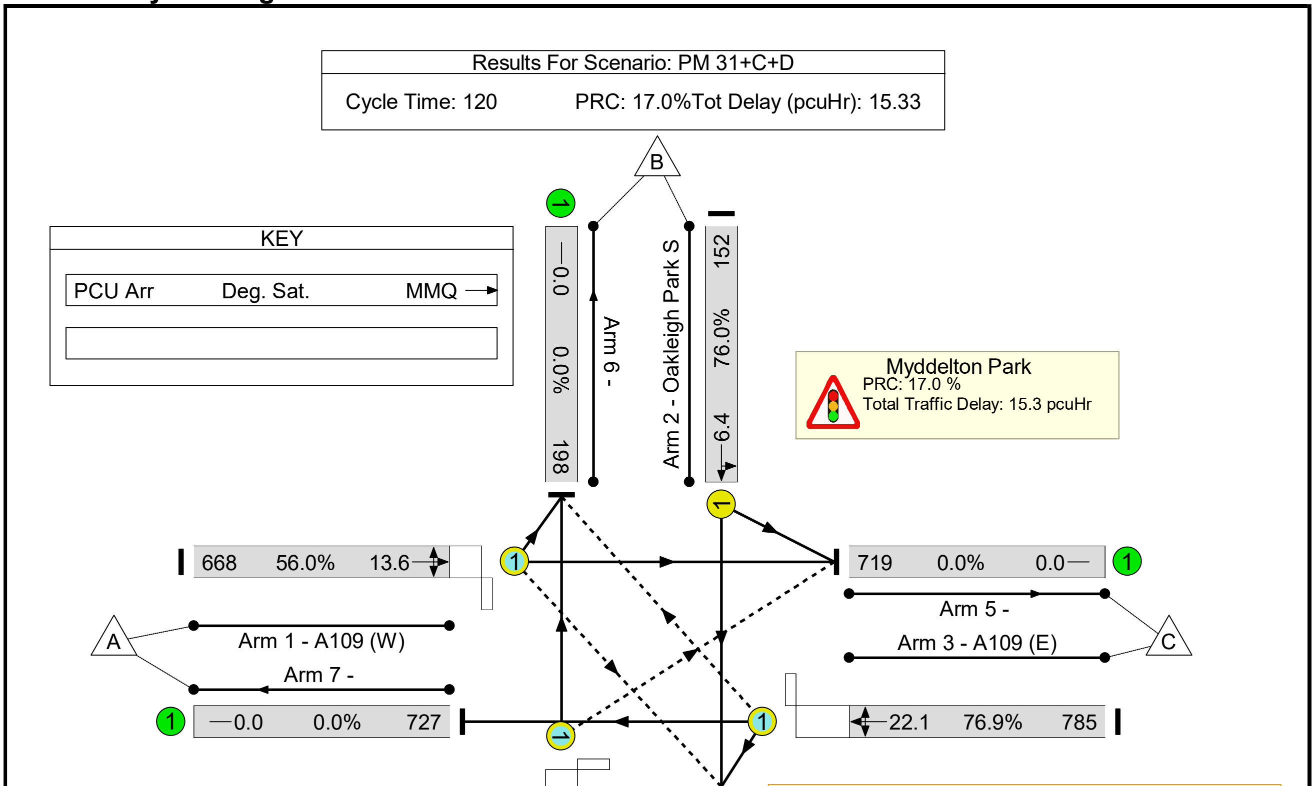
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**70.0%**	**63**	**0**	**1**	**13.0**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**70.0%**	**63**	**0**	**1**	**13.0**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	71	-	589	1936	1162	50.7%	6	0	0	2.8	17.0	11.6
2/1	Oakleigh Park S Left Ahead	U	D		1	14	-	152	1846	231	65.9%	-	-	-	3.1	72.4	5.8
3/1	A109 (E) Right Ahead Left	O	B	C	1	71	0	711	1916	1016	70.0%	57	0	1	4.6	23.5	18.7
4/1	Myddelton Park Right Ahead	O	E		1	14	-	140	1975	247	56.7%	0	0	0	2.6	66.1	5.0

C1 PRC for Signalled Lanes (%): 28.6 Total Delay for Signalled Lanes (pcuHr): 13.05 Cycle Time (s): 120
PRC Over All Lanes (%): 28.6 Total Delay Over All Lanes(pcuHr): 13.05

Myddelton Park Basic Results Summary

Scenario 8: 'PM 31+C+D' (FG6: 'PM 2031 + School + Development', Plan 2: 'No Arrow and Peds')

Network Layout Diagram



• RR67 used to estimate saturation flows.
• Cycle time capped at 120 seconds
• All red pedestrian stage set to run every cycle.
• Results indicated junction capacity was improved when the arrow was not called. Therefore, it was ommitted from the optimised stage sequences
• The provided traffic flows included left-turn traffic from Myddelton Park, despite this being a banned left-turn. JCT were advised to ignore this movement, and therefore it was removed from the traffic flows matrices used in the model.

Myddelton Park Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Myddelton Park / Oakleigh Park South	-	-	-		-	-	-	-	-	-	**76.9%**	**63**	**0**	**1**	**15.3**	-	-
Myddelton Park	-	-	-		-	-	-	-	-	-	**76.9%**	**63**	**0**	**1**	**15.3**	-	-
1/1	A109 (W) Ahead Left Right	O	A		1	73	-	668	1936	1194	56.0%	6	0	0	3.1	16.9	13.6
2/1	Oakleigh Park S Left Ahead	U	D		1	12	-	152	1846	200	76.0%	-	-	-	3.7	87.3	6.4
3/1	A109 (E) Right Ahead Left	O	B	C	1	73	0	785	1918	1020	76.9%	57	0	1	5.6	25.6	22.1
4/1	Myddelton Park Right Ahead	O	E		1	12	-	140	1975	214	65.4%	0	0	0	2.9	75.1	5.4

C1 PRC for Signalled Lanes (%): 17.0 Total Delay for Signalled Lanes (pcuHr): 15.33 Cycle Time (s): 120
PRC Over All Lanes (%): 17.0 Total Delay Over All Lanes(pcuHr): 15.33

Junctions 10

ARCADY 10 - Roundabout Module

For sales and distribution information, program advice and maintenance, contact TRL Software:
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

Filename: Import of J2 Brunswick Park Rd_Church Hill Rd_Russell Ln.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J2 Brunswick Park Rd_Church Hill Rd_Russell Ln
Report generation date: 7/12/2022 2:21:08 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Arm 1	D1	9.4	48.80	0.93	E	D2	1.4	11.35	0.59	B
Arm 2		7.2	33.09	0.89	D		15.6	61.62	0.97	F
Arm 3		3.5	23.01	0.79	C		45.8	217.51	1.12	F
	2031 Without Dev									
Arm 1	D3	6.6	42.02	0.89	E	D4	1.0	10.29	0.50	B
Arm 2		19.9	80.90	1.00	F		46.4	148.31	1.07	F
Arm 3		9.0	43.67	0.92	E		141.6	594.60	1.28	F
	2031 With Dev									
Arm 1	D5	6.9	43.35	0.90	E	D6	1.1	10.80	0.53	B
Arm 2		27.4	104.22	1.03	F		49.8	157.46	1.08	F
Arm 3		10.4	50.27	0.94	F		145.1	610.52	1.28	F

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	35.89	E

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		35.89	E

Arms

Arms

Arm	Name	Description
1	Church Hill Rd	
2	Brunswick Park Rd	
3	Russell Ln	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	3.71	3.71	5.00	6.0	13.50	12.30	0.0	
2	3.39	3.39	5.00	6.0	9.74	6.68	0.0	
3	3.60	3.60	7.25	2.0	9.45	5.24	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.652	1128
2	0.638	1102
3	0.633	973

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	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	674	100.000
2		ONE HOUR	✓	762	100.000
3		ONE HOUR	✓	525	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	1	497	176
	2	312	0	450
	3	123	402	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	4	5
	2	6	0	2
	3	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.93	48.80	9.4	E	618	928
2	0.89	33.09	7.2	D	699	1049
3	0.79	23.01	3.5	C	482	723

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	507	127	300	891	0.570	502	325	0.0	1.3	9.152	A
2	574	143	132	978	0.587	568	670	0.0	1.4	8.672	A
3	395	99	233	804	0.491	391	467	0.0	0.9	8.642	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	606	151	360	852	0.711	602	390	1.3	2.3	14.122	B
2	685	171	158	961	0.713	681	803	1.4	2.4	12.675	B
3	472	118	280	774	0.610	470	559	0.9	1.5	11.751	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	742	186	437	803	0.924	720	472	2.3	7.8	36.333	E
2	839	210	189	941	0.892	823	968	2.4	6.4	27.261	D
3	578	145	338	735	0.786	571	674	1.5	3.3	21.022	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	742	186	442	800	0.928	736	479	7.8	9.4	48.796	E
2	839	210	193	938	0.894	836	985	6.4	7.2	33.089	D
3	578	145	343	732	0.790	577	686	3.3	3.5	23.013	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	606	151	367	848	0.715	633	401	9.4	2.7	18.596	C
2	685	171	166	956	0.717	703	834	7.2	2.7	15.179	C
3	472	118	289	768	0.615	480	581	3.5	1.6	12.803	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	507	127	305	888	0.572	513	331	2.7	1.4	9.727	A
2	574	143	135	976	0.588	578	683	2.7	1.5	9.158	A
3	395	99	238	802	0.493	398	475	1.6	1.0	8.975	A

2021 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	101.71	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		101.71	F

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	421	100.000
2		ONE HOUR	✓	868	100.000
3		ONE HOUR	✓	642	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	299	122
	2	465	1	402
	3	162	479	1

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	6	1
	2	4	0	2
	3	1	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.59	11.35	1.4	B	386	579
2	0.97	61.62	15.6	F	796	1195
3	1.12	217.51	45.8	F	589	884

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	317	79	357	852	0.372	315	466	0.0	0.6	6.672	A
2	653	163	92	1012	0.646	646	579	0.0	1.8	9.680	A
3	483	121	347	732	0.660	476	391	0.0	1.9	13.693	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	378	95	425	809	0.468	377	558	0.6	0.9	8.326	A
2	780	195	110	1000	0.780	774	692	1.8	3.3	15.508	C
3	577	144	416	688	0.839	567	469	1.9	4.4	27.710	D

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	464	116	466	782	0.592	461	650	0.9	1.4	11.134	B
2	956	239	135	985	0.970	920	793	3.3	12.2	41.768	E
3	707	177	494	637	1.110	622	561	4.4	25.7	104.570	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	464	116	469	780	0.594	463	663	1.4	1.4	11.351	B
2	956	239	135	985	0.971	942	797	12.2	15.6	61.617	F
3	707	177	506	629	1.123	626	571	25.7	45.8	217.513	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	378	95	491	767	0.494	380	608	1.4	1.0	9.357	A
2	780	195	111	1000	0.781	827	760	15.6	3.9	25.288	D
3	577	144	444	669	0.863	655	494	45.8	26.4	201.053	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	317	79	435	802	0.395	318	501	1.0	0.7	7.461	A
2	653	163	93	1011	0.646	661	660	3.9	1.9	10.526	B
3	483	121	355	727	0.665	580	399	26.4	2.1	40.345	E

2031 Without Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	57.73	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		57.73	F

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	554	100.000
2		ONE HOUR	✓	814	100.000
3		ONE HOUR	✓	720	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	311	243
	2	137	0	677
	3	153	567	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	4	5
	2	6	0	2
	3	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.89	42.02	6.6	E	508	763
2	1.00	80.90	19.9	F	747	1120
3	0.92	43.67	9.0	E	661	991

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	417	104	422	811	0.514	413	216	0.0	1.0	8.951	A
2	613	153	181	955	0.642	606	654	0.0	1.7	10.121	B
3	542	136	102	891	0.609	536	685	0.0	1.5	9.985	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	498	125	506	758	0.657	495	259	1.0	1.8	13.532	B
2	732	183	217	932	0.786	725	784	1.7	3.4	16.909	C
3	647	162	122	878	0.738	643	820	1.5	2.7	15.031	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	610	152	608	692	0.881	595	308	1.8	5.7	32.712	D
2	896	224	261	903	0.993	853	942	3.4	14.1	49.999	E
3	793	198	144	863	0.918	773	970	2.7	7.7	33.860	D

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	610	152	620	685	0.891	606	314	5.7	6.6	42.022	E
2	896	224	266	900	0.996	873	960	14.1	19.9	80.895	F
3	793	198	147	861	0.921	788	992	7.7	9.0	43.671	E

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	498	125	528	744	0.670	516	276	6.6	2.1	16.950	C
2	732	183	226	925	0.791	794	818	19.9	4.2	35.865	E
3	647	162	134	870	0.744	671	887	9.0	3.1	19.870	C

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	417	104	432	805	0.518	421	221	2.1	1.1	9.476	A
2	613	153	185	953	0.643	622	668	4.2	1.9	11.191	B
3	542	136	105	889	0.610	548	702	3.1	1.6	10.738	B

2031 Without Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 85% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	319.59	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		319.59	F

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	321	100.000
2		ONE HOUR	✓	950	100.000
3		ONE HOUR	✓	964	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	179	142
	2	189	0	761
	3	270	694	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	6	1
	2	4	0	2
	3	1	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.50	10.29	1.0	B	295	442
2	1.07	148.31	46.4	F	872	1308
3	1.28	594.60	141.6	F	885	1327

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	242	60	510	760	0.318	240	339	0.0	0.5	6.896	A
2	715	179	106	1009	0.709	706	643	0.0	2.3	11.539	B
3	726	181	140	866	0.838	708	672	0.0	4.5	20.888	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	289	72	586	711	0.406	288	396	0.5	0.7	8.486	A
2	854	214	127	996	0.857	843	746	2.3	5.2	21.960	C
3	867	217	168	848	1.022	814	802	4.5	17.6	63.256	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	353	88	599	703	0.503	352	423	0.7	1.0	10.222	B
2	1046	261	156	978	1.069	955	795	5.2	27.8	75.813	F
3	1061	265	190	834	1.273	832	921	17.6	75.1	212.529	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	353	88	598	703	0.503	353	426	1.0	1.0	10.290	B
2	1046	261	156	978	1.070	972	796	27.8	46.4	148.308	F
3	1061	265	193	832	1.276	831	935	75.1	132.6	457.919	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	289	72	598	704	0.410	290	426	1.0	0.7	8.725	A
2	854	214	128	995	0.858	974	759	46.4	16.3	120.931	F
3	867	217	194	831	1.042	831	909	132.6	141.6	594.597	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	242	60	613	694	0.348	242	392	0.7	0.5	7.987	A
2	715	179	107	1009	0.709	770	748	16.3	2.6	18.358	C
3	726	181	153	858	0.846	852	724	141.6	110.2	532.999	F

2031 With Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	69.76	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		69.76	F

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	558	100.000
2		ONE HOUR	✓	837	100.000
3		ONE HOUR	✓	720	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	315	243
	2	160	0	677
	3	153	567	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	4	5
	2	6	0	2
	3	0	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.90	43.35	6.9	E	512	768
2	1.03	104.22	27.4	F	768	1152
3	0.94	50.27	10.4	F	661	991

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	420	105	422	811	0.518	416	233	0.0	1.1	9.013	A
2	630	158	181	954	0.660	623	657	0.0	1.9	10.637	B
3	542	136	119	880	0.616	536	685	0.0	1.6	10.297	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	502	125	506	758	0.662	498	279	1.1	1.9	13.696	B
2	752	188	217	931	0.808	745	787	1.9	3.8	18.584	C
3	647	162	142	864	0.749	642	819	1.6	2.8	15.868	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	614	154	606	694	0.885	599	329	1.9	5.8	33.334	D
2	922	230	261	902	1.021	865	944	3.8	18.0	59.212	F
3	793	198	165	849	0.934	770	960	2.8	8.6	37.378	E

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	614	154	619	686	0.896	610	336	5.8	6.9	43.350	E
2	922	230	266	899	1.025	884	963	18.0	27.4	104.221	F
3	793	198	169	847	0.936	786	980	8.6	10.4	50.273	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	502	125	532	741	0.677	520	304	6.9	2.2	17.521	C
2	752	188	227	924	0.814	841	825	27.4	5.2	57.476	F
3	647	162	161	852	0.760	675	907	10.4	3.4	22.908	C

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	420	105	432	805	0.522	424	240	2.2	1.1	9.572	A
2	630	158	185	952	0.662	643	672	5.2	2.0	12.092	B
3	542	136	123	877	0.618	549	705	3.4	1.7	11.201	B

2031 With Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 84% of the total flow for the roundabout for one or more time segments]

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	327.50	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		327.50	F

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	337	100.000
2		ONE HOUR	✓	957	100.000
3		ONE HOUR	✓	964	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	195	142
	2	196	0	761
	3	270	694	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	6	1
	2	4	0	2
	3	1	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.53	10.80	1.1	B	309	464
2	1.08	157.46	49.8	F	878	1317
3	1.28	610.52	145.1	F	885	1327

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	254	63	509	760	0.334	252	344	0.0	0.5	7.063	A
2	720	180	106	1009	0.714	711	655	0.0	2.4	11.724	B
3	726	181	146	863	0.841	707	671	0.0	4.6	21.238	C

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	303	76	584	711	0.426	302	401	0.5	0.7	8.773	A
2	860	215	127	996	0.864	848	759	2.4	5.4	22.687	C
3	867	217	174	844	1.026	812	802	4.6	18.3	65.142	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	371	93	596	704	0.527	370	428	0.7	1.1	10.717	B
2	1054	263	156	978	1.077	957	810	5.4	29.5	79.264	F
3	1061	265	196	830	1.279	828	917	18.3	76.7	218.150	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	371	93	596	704	0.527	371	431	1.1	1.1	10.800	B
2	1054	263	156	978	1.078	972	810	29.5	49.8	157.457	F
3	1061	265	199	828	1.282	828	930	76.7	135.1	468.819	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	303	76	595	705	0.430	304	431	1.1	0.8	9.024	A
2	860	215	128	995	0.864	976	771	49.8	21.0	134.828	F
3	867	217	200	827	1.047	827	904	135.1	145.1	610.523	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	254	63	609	696	0.365	254	399	0.8	0.6	8.171	A
2	720	180	107	1008	0.714	794	756	21.0	2.7	22.227	C
3	726	181	163	852	0.852	846	738	145.1	115.1	554.465	F

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.1.1519

Filename: Import of J2a Brunswick Park Rd_Osidge Lane.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J2a Brunswick Park Rd_Osidge Lane
Report generation date: 7/12/2022 2:25:00 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Arm 1	D1	2.8	12.94	0.74	B	D2	1.6	7.79	0.61	A
Arm 2		0.9	6.46	0.48	A		1.3	8.03	0.57	A
Arm 3		2.4	8.89	0.71	A		1.6	6.58	0.61	A
	2031 Without Dev									
Arm 1	D3	3.9	15.84	0.80	C	D4	2.1	8.74	0.68	A
Arm 2		0.6	5.97	0.39	A		0.9	7.44	0.49	A
Arm 3		2.2	7.93	0.69	A		2.0	7.35	0.67	A
	2031 With Dev									
Arm 1	D5	4.0	16.28	0.81	C	D6	2.3	9.39	0.70	A
Arm 2		0.8	6.53	0.44	A		1.0	7.72	0.50	A
Arm 3		2.3	8.30	0.70	A		2.1	7.71	0.68	A

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	9.74	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.74	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Osidge Ln		
2	Brunswick Park Rd		
3	B1453		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1	3.50	5.90	6.0	20.0	15.5	26.0		
2	3.60	4.75	25.0	15.0	15.5	15.5		
3	4.20	6.50	4.5	30.0	15.5	26.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.608	1399
2	0.623	1442
3	0.651	1583

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	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	718	100.000
2		ONE HOUR	✓	472	100.000
3		ONE HOUR	✓	909	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	3	239	476
	2	184	0	288
	3	476	433	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	2	4
	2	1	0	3
	3	4	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.74	12.94	2.8	B	659	988
2	0.48	6.46	0.9	A	433	650
3	0.71	8.89	2.4	A	834	1251

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	541	135	324	1159	0.466	537	497	0.0	0.9	5.758	A
2	355	89	358	1184	0.300	354	503	0.0	0.4	4.329	A
3	684	171	140	1447	0.473	681	572	0.0	0.9	4.676	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	645	161	388	1121	0.576	644	595	0.9	1.3	7.516	A
2	424	106	429	1139	0.373	424	603	0.4	0.6	5.032	A
3	817	204	168	1429	0.572	815	685	0.9	1.3	5.846	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	791	198	475	1069	0.740	785	727	1.3	2.7	12.449	B
2	520	130	524	1079	0.482	518	736	0.6	0.9	6.408	A
3	1001	250	205	1406	0.712	997	837	1.3	2.4	8.709	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	791	198	477	1068	0.740	790	730	2.7	2.8	12.939	B
2	520	130	527	1077	0.483	520	740	0.9	0.9	6.464	A
3	1001	250	206	1405	0.712	1001	841	2.4	2.4	8.890	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	645	161	391	1119	0.577	651	599	2.8	1.4	7.784	A
2	424	106	434	1135	0.374	426	608	0.9	0.6	5.080	A
3	817	204	169	1429	0.572	821	691	2.4	1.4	5.969	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	541	135	327	1158	0.467	543	500	1.4	0.9	5.874	A
2	355	89	362	1181	0.301	356	507	0.6	0.4	4.367	A
3	684	171	141	1447	0.473	686	577	1.4	0.9	4.746	A

2021 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	7.38	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.38	A

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	669	100.000
2		ONE HOUR	✓	550	100.000
3		ONE HOUR	✓	781	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	156	513
	2	187	1	362
	3	545	234	2

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	4
	2	0	0	3
	3	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.61	7.79	1.6	A	614	921
2	0.57	8.03	1.3	A	505	757
3	0.61	6.58	1.6	A	717	1075

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	504	126	178	1249	0.403	501	548	0.0	0.7	4.794	A
2	414	104	386	1169	0.354	412	293	0.0	0.5	4.742	A
3	588	147	141	1448	0.406	585	657	0.0	0.7	4.159	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	601	150	213	1228	0.490	600	657	0.7	0.9	5.726	A
2	494	124	462	1120	0.441	493	351	0.5	0.8	5.734	A
3	702	176	169	1431	0.491	701	787	0.7	1.0	4.926	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	737	184	260	1199	0.614	734	804	0.9	1.6	7.703	A
2	606	151	565	1055	0.574	603	429	0.8	1.3	7.933	A
3	860	215	206	1407	0.611	858	962	1.0	1.5	6.522	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	737	184	261	1199	0.615	737	806	1.6	1.6	7.789	A
2	606	151	567	1054	0.575	605	430	1.3	1.3	8.028	A
3	860	215	207	1407	0.611	860	966	1.5	1.6	6.582	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	601	150	214	1227	0.490	604	660	1.6	1.0	5.796	A
2	494	124	465	1119	0.442	497	353	1.3	0.8	5.808	A
3	702	176	170	1430	0.491	704	792	1.6	1.0	4.976	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	504	126	179	1248	0.403	505	552	1.0	0.7	4.850	A
2	414	104	389	1167	0.355	415	295	0.8	0.6	4.794	A
3	588	147	142	1448	0.406	589	662	1.0	0.7	4.198	A

2031 Without Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	10.75	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.75	B

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	826	100.000
2		ONE HOUR	✓	345	100.000
3		ONE HOUR	✓	911	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	214	612
	2	109	0	236
	3	582	329	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	2	4
	2	1	0	3
	3	4	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.80	15.84	3.9	C	758	1137
2	0.39	5.97	0.6	A	317	475
3	0.69	7.93	2.2	A	836	1254

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	622	155	246	1204	0.517	618	518	0.0	1.1	6.097	A
2	260	65	458	1119	0.232	259	406	0.0	0.3	4.178	A
3	686	171	82	1481	0.463	682	634	0.0	0.9	4.489	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	743	186	295	1175	0.632	740	620	1.1	1.7	8.234	A
2	310	78	548	1061	0.292	310	487	0.3	0.4	4.785	A
3	819	205	98	1471	0.557	817	760	0.9	1.2	5.496	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	909	227	361	1135	0.801	901	758	1.7	3.7	14.878	B
2	380	95	668	986	0.385	379	594	0.4	0.6	5.923	A
3	1003	251	120	1457	0.688	999	927	1.2	2.2	7.806	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	909	227	362	1135	0.802	909	761	3.7	3.9	15.842	C
2	380	95	673	982	0.387	380	598	0.6	0.6	5.974	A
3	1003	251	120	1457	0.689	1003	933	2.2	2.2	7.926	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	743	186	297	1174	0.633	751	624	3.9	1.8	8.683	A
2	310	78	556	1056	0.294	311	492	0.6	0.4	4.836	A
3	819	205	98	1471	0.557	823	769	2.2	1.3	5.585	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	622	155	248	1203	0.517	625	521	1.8	1.1	6.254	A
2	260	65	463	1116	0.233	260	410	0.4	0.3	4.211	A
3	686	171	82	1481	0.463	687	641	1.3	0.9	4.548	A

2031 Without Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	7.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.89	A

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	785	100.000
2		ONE HOUR	✓	414	100.000
3		ONE HOUR	✓	891	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	111	674
	2	96	0	318
	3	776	115	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	4
	2	0	0	3
	3	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.68	8.74	2.1	A	720	1080
2	0.49	7.44	0.9	A	380	570
3	0.67	7.35	2.0	A	818	1226

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	591	148	86	1300	0.455	588	653	0.0	0.8	5.031	A
2	312	78	505	1090	0.286	310	169	0.0	0.4	4.607	A
3	671	168	72	1492	0.450	668	743	0.0	0.8	4.351	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	706	176	103	1290	0.547	704	783	0.8	1.2	6.134	A
2	372	93	605	1026	0.363	372	203	0.4	0.6	5.490	A
3	801	200	86	1483	0.540	800	890	0.8	1.2	5.258	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	864	216	126	1276	0.677	861	957	1.2	2.0	8.605	A
2	456	114	739	941	0.484	454	248	0.6	0.9	7.371	A
3	981	245	105	1471	0.667	978	1088	1.2	2.0	7.256	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	864	216	127	1276	0.678	864	960	2.0	2.1	8.745	A
2	456	114	742	939	0.485	456	249	0.9	0.9	7.442	A
3	981	245	106	1470	0.667	981	1092	2.0	2.0	7.351	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	706	176	104	1289	0.547	709	787	2.1	1.2	6.241	A
2	372	93	609	1024	0.364	374	204	0.9	0.6	5.550	A
3	801	200	87	1483	0.540	804	896	2.0	1.2	5.330	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	591	148	87	1300	0.455	593	658	1.2	0.8	5.103	A
2	312	78	509	1087	0.287	312	171	0.6	0.4	4.649	A
3	671	168	72	1491	0.450	672	749	1.2	0.8	4.403	A

2031 With Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	11.09	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.09	B

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	830	100.000
2		ONE HOUR	✓	392	100.000
3		ONE HOUR	✓	914	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	218	612
	2	134	0	258
	3	582	332	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	2	4
	2	1	0	3
	3	4	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.81	16.28	4.0	C	762	1142
2	0.44	6.53	0.8	A	360	540
3	0.70	8.30	2.3	A	839	1258

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	625	156	249	1203	0.520	621	536	0.0	1.1	6.142	A
2	295	74	458	1120	0.264	294	412	0.0	0.4	4.352	A
3	688	172	100	1469	0.468	685	651	0.0	0.9	4.568	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	746	187	298	1173	0.636	744	642	1.1	1.7	8.330	A
2	352	88	548	1062	0.332	352	493	0.4	0.5	5.069	A
3	822	205	120	1457	0.564	820	780	0.9	1.3	5.640	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	914	228	364	1133	0.806	905	785	1.7	3.8	15.232	C
2	432	108	668	987	0.438	430	602	0.5	0.8	6.461	A
3	1006	252	147	1439	0.699	1002	951	1.3	2.3	8.162	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	914	228	365	1133	0.807	913	788	3.8	4.0	16.283	C
2	432	108	673	983	0.439	432	605	0.8	0.8	6.529	A
3	1006	252	148	1439	0.699	1006	957	2.3	2.3	8.304	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	746	187	300	1172	0.637	755	647	4.0	1.8	8.806	A
2	352	88	557	1057	0.333	353	498	0.8	0.5	5.128	A
3	822	205	121	1456	0.564	826	789	2.3	1.3	5.744	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	625	156	251	1201	0.520	628	540	1.8	1.1	6.305	A
2	295	74	463	1116	0.264	296	415	0.5	0.4	4.391	A
3	688	172	101	1469	0.468	690	657	1.3	0.9	4.632	A

2031 With Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	8.35	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.35	A

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	802	100.000
2		ONE HOUR	✓	430	100.000
3		ONE HOUR	✓	907	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	128	674
	2	104	0	326
	3	776	131	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	4
	2	0	0	3
	3	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.70	9.39	2.3	A	736	1104
2	0.50	7.72	1.0	A	395	592
3	0.68	7.71	2.1	A	832	1248

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	604	151	98	1294	0.467	600	659	0.0	0.9	5.166	A
2	324	81	505	1090	0.297	322	194	0.0	0.4	4.676	A
3	683	171	78	1488	0.459	679	749	0.0	0.8	4.433	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	721	180	118	1282	0.562	719	790	0.9	1.3	6.382	A
2	387	97	605	1027	0.376	386	232	0.4	0.6	5.611	A
3	815	204	93	1478	0.552	814	897	0.8	1.2	5.406	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	883	221	144	1266	0.697	879	966	1.3	2.2	9.211	A
2	473	118	739	942	0.503	472	284	0.6	1.0	7.635	A
3	999	250	114	1465	0.682	995	1097	1.2	2.1	7.602	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	883	221	144	1266	0.698	883	969	2.2	2.3	9.392	A
2	473	118	742	940	0.504	473	285	1.0	1.0	7.718	A
3	999	250	114	1465	0.682	999	1101	2.1	2.1	7.714	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	721	180	118	1281	0.563	725	794	2.3	1.3	6.513	A
2	387	97	609	1024	0.378	388	234	1.0	0.6	5.675	A
3	815	204	94	1478	0.552	819	903	2.1	1.2	5.491	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	604	151	99	1293	0.467	605	664	1.3	0.9	5.248	A
2	324	81	509	1087	0.298	324	195	0.6	0.4	4.722	A
3	683	171	78	1488	0.459	684	755	1.2	0.9	4.490	A

Junctions 10

ARCADY 10 - Roundabout Module

Filename: Import of J3 Oakleigh Rd_Russell Ln_Pollard Rd.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J3 Oakleigh Rd_Russell Ln_Pollard Rd
Report generation date: 7/12/2022 2:32:28 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Arm 1	D1	5.0	34.57	0.85	D	D2	49.5	262.21	1.14	F
Arm 2		134.9	754.02	1.38	F		32.5	181.42	1.08	F
Arm 3		20.5	120.53	1.02	F		115.5	646.88	1.30	F
Arm 4		0.7	16.96	0.42	C		1.5	28.84	0.61	D
	2031 Without Dev									
Arm 1	D3	61.8	372.81	1.20	F	D4	116.0	791.09	1.34	F
Arm 2		238.9	1746.92	1.59	F		216.9	1437.89	1.51	F
Arm 3		175.2	956.07	1.38	F		240.7	1376.50	1.49	F
Arm 4		4.6	65.05	0.85	F		61.9	709.98	1.29	F
	2031 With Dev									
Arm 1	D5	61.6	368.52	1.20	F	D6	125.5	862.12	1.36	F
Arm 2		241.6	1773.82	1.60	F		220.0	1462.34	1.52	F
Arm 3		192.8	1062.66	1.41	F		247.4	1410.98	1.50	F
Arm 4		4.6	65.37	0.85	F		62.0	710.36	1.29	F

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	324.62	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		324.62	F

Arms

Arms

Arm	Name	Description
1	Oakleigh Rd (W)	
2	Russell Ln	
3	Oakleigh Rd (E)	
4	Pollard Rd	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	4.67	3.37	4.73	2.0	16.00	14.40	0.0	
2	4.50	3.27	5.28	2.2	10.30	8.22	0.0	
3	4.88	3.00	5.20	2.0	14.10	9.90	0.0	
4	3.89	3.89	3.89	0.0	9.74	6.67	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.639	948
2	0.621	839
3	0.610	859
4	0.624	852

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	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	506	100.000
2		ONE HOUR	✓	723	100.000
3		ONE HOUR	✓	559	100.000
4		ONE HOUR	✓	140	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	1	189	309	7
	2	224	3	286	210
	3	279	235	3	42
	4	2	112	26	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	3	6	0
	2	4	0	2	1
	3	10	0	0	0
	4	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.85	34.57	5.0	D	464	696
2	1.38	754.02	134.9	F	663	995
3	1.02	120.53	20.5	F	513	769
4	0.42	16.96	0.7	C	128	193

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	381	95	281	732	0.520	377	372	0.0	1.1	10.020	B
2	544	136	258	655	0.831	528	400	0.0	4.1	25.712	D
3	421	105	325	625	0.673	413	460	0.0	1.9	16.437	C
4	105	26	548	482	0.219	104	190	0.0	0.3	9.515	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	455	114	336	698	0.652	452	434	1.1	1.8	14.456	B
2	650	162	309	622	1.045	598	479	4.1	17.2	82.300	F
3	503	126	368	599	0.839	493	538	1.9	4.3	31.359	D
4	126	31	645	420	0.300	125	217	0.3	0.4	12.188	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	557	139	398	660	0.845	546	470	1.8	4.5	29.273	D
2	796	199	374	581	1.371	579	571	17.2	71.4	290.136	F
3	615	154	359	605	1.018	576	594	4.3	14.3	75.151	F
4	154	39	715	375	0.412	153	219	0.4	0.7	16.181	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	557	139	406	655	0.851	555	477	4.5	5.0	34.574	D
2	796	199	380	577	1.380	577	581	71.4	126.2	611.057	F
3	615	154	357	606	1.016	591	599	14.3	20.5	120.535	F
4	154	39	729	366	0.421	154	220	0.7	0.7	16.960	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	455	114	364	681	0.668	467	470	5.0	2.1	17.586	C
2	650	162	319	616	1.055	615	511	126.2	134.9	754.022	F
3	503	126	379	593	0.848	555	555	20.5	7.5	91.782	F
4	126	31	707	380	0.331	127	227	0.7	0.5	14.260	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	381	95	294	724	0.526	385	422	2.1	1.1	10.746	B
2	544	136	263	651	0.836	647	416	134.9	109.4	680.915	F
3	421	105	397	582	0.723	439	513	7.5	2.8	27.799	D
4	105	26	610	442	0.238	106	226	0.5	0.3	10.735	B

2021 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	356.25	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		356.25	F

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	612	100.000
2		ONE HOUR	✓	562	100.000
3		ONE HOUR	✓	726	100.000
4		ONE HOUR	✓	175	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	1	245	359	7
	2	230	3	212	117
	3	330	373	1	22
	4	6	137	32	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	6	0
	2	3	0	1	1
	3	6	1	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	1.14	262.21	49.5	F	562	842
2	1.08	181.42	32.5	F	516	774
3	1.30	646.88	115.5	F	666	999
4	0.61	28.84	1.5	D	161	241

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	461	115	401	656	0.702	452	417	0.0	2.2	16.971	C
2	423	106	295	634	0.668	415	558	0.0	1.9	15.989	C
3	547	137	265	672	0.813	531	446	0.0	3.8	23.517	C
4	132	33	688	409	0.322	130	108	0.0	0.5	12.825	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	550	138	467	616	0.893	535	486	2.2	6.0	38.729	E
2	505	126	350	599	0.844	495	652	1.9	4.4	31.944	D
3	653	163	315	642	1.017	610	530	3.8	14.4	70.413	F
4	157	39	798	338	0.465	156	128	0.5	0.8	19.556	C

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	674	168	504	594	1.135	583	516	6.0	28.7	125.072	F
2	619	155	385	576	1.074	558	702	4.4	19.7	96.417	F
3	799	200	355	618	1.294	616	588	14.4	60.4	233.711	F
4	193	48	829	318	0.606	190	141	0.8	1.4	27.628	D

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	674	168	505	593	1.137	591	519	28.7	49.5	251.079	F
2	619	155	390	573	1.080	567	705	19.7	32.5	181.424	F
3	799	200	361	614	1.301	614	596	60.4	106.8	499.503	F
4	193	48	831	317	0.608	192	143	1.4	1.5	28.836	D

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	550	138	475	611	0.900	599	515	49.5	37.3	262.205	F
2	505	126	389	573	0.881	556	685	32.5	19.8	173.200	F
3	653	163	354	618	1.056	618	591	106.8	115.5	646.876	F
4	157	39	831	317	0.496	159	141	1.5	1.0	23.039	C

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	461	115	460	620	0.743	594	496	37.3	3.9	126.857	F
2	423	106	381	578	0.732	490	672	19.8	3.1	57.279	F
3	547	137	313	643	0.849	638	558	115.5	92.7	588.485	F
4	132	33	823	322	0.409	133	128	1.0	0.7	19.144	C

2031 Without Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	950.34	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		950.34	F

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	593	100.000
2		ONE HOUR	✓	712	100.000
3		ONE HOUR	✓	805	100.000
4		ONE HOUR	✓	248	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	97	496	0
	2	258	0	283	171
	3	394	384	0	27
	4	0	196	52	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	3	6	0
	2	4	0	2	1
	3	10	0	0	0
	4	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	1.20	372.81	61.8	F	544	816
2	1.59	1746.92	238.9	F	653	980
3	1.38	956.07	175.2	F	739	1108
4	0.85	65.05	4.6	F	228	341

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	446	112	455	620	0.720	437	462	0.0	2.4	18.795	C
2	536	134	404	560	0.956	502	489	0.0	8.6	47.578	E
3	606	152	302	639	0.949	572	603	0.0	8.6	42.485	E
4	187	47	734	363	0.514	183	140	0.0	1.0	19.520	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	533	133	519	581	0.917	515	492	2.4	6.9	45.232	E
2	640	160	477	514	1.246	510	557	8.6	41.2	195.524	F
3	724	181	307	636	1.138	627	679	8.6	32.6	135.109	F
4	223	56	791	327	0.681	219	143	1.0	1.9	32.251	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	653	163	570	549	1.189	542	492	6.9	34.5	155.693	F
2	784	196	509	493	1.589	493	604	41.2	113.9	579.331	F
3	886	222	297	642	1.381	641	705	32.6	94.0	367.166	F
4	273	68	798	323	0.847	265	140	1.9	4.1	55.019	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	653	163	577	545	1.198	544	492	34.5	61.8	328.928	F
2	784	196	512	492	1.594	492	609	113.9	186.9	1117.640	F
3	886	222	296	642	1.380	642	707	94.0	155.1	706.560	F
4	273	68	799	322	0.847	271	140	4.1	4.6	65.054	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	533	133	538	569	0.936	560	492	61.8	55.0	372.808	F
2	640	160	517	488	1.311	488	581	186.9	225.0	1538.477	F
3	724	181	294	643	1.125	643	711	155.1	175.2	929.903	F
4	223	56	799	322	0.692	231	139	4.6	2.5	42.318	E

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	446	112	497	595	0.751	584	489	55.0	20.6	238.351	F
2	536	134	528	480	1.116	480	553	225.0	238.9	1746.922	F
3	606	152	289	646	0.938	643	719	175.2	166.0	956.065	F
4	187	47	795	324	0.575	191	137	2.5	1.4	27.722	D

2031 Without Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	1158.78	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		1158.78	F

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	616	100.000
2		ONE HOUR	✓	742	100.000
3		ONE HOUR	✓	852	100.000
4		ONE HOUR	✓	364	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	137	479	0
	2	297	0	279	166
	3	393	455	0	4
	4	2	304	58	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	6	0
	2	3	0	1	1
	3	6	1	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	1.34	791.09	116.0	F	565	848
2	1.51	1437.89	216.9	F	681	1021
3	1.49	1376.50	240.7	F	782	1173
4	1.29	709.98	61.9	F	334	501

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	464	116	574	548	0.846	446	482	0.0	4.4	31.337	D
2	559	140	389	574	0.973	520	632	0.0	9.6	50.265	F
3	641	160	325	636	1.009	590	584	0.0	12.9	55.538	F
4	274	69	795	340	0.806	261	119	0.0	3.3	40.652	E

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	554	138	627	517	1.072	499	506	4.4	18.1	100.891	F
2	667	167	435	544	1.225	540	691	9.6	41.4	187.848	F
3	766	191	337	628	1.219	625	638	12.9	48.2	191.406	F
4	327	82	838	312	1.047	295	124	3.3	11.5	115.714	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	678	170	642	507	1.336	506	507	18.1	61.1	297.810	F
2	817	204	443	539	1.514	539	705	41.4	110.8	520.042	F
3	938	235	336	629	1.492	628	645	48.2	125.6	508.077	F
4	401	100	841	310	1.291	308	124	11.5	34.6	293.534	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	678	170	644	506	1.339	506	507	61.1	104.2	599.509	F
2	817	204	443	539	1.515	539	707	110.8	180.3	981.197	F
3	938	235	336	629	1.492	629	646	125.6	203.0	949.084	F
4	401	100	841	310	1.292	310	124	34.6	57.4	554.443	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	554	138	643	507	1.093	506	507	104.2	116.0	791.091	F
2	667	167	443	539	1.237	539	707	180.3	212.2	1318.169	F
3	766	191	336	629	1.218	629	646	203.0	237.3	1268.395	F
4	327	82	841	310	1.055	309	124	57.4	61.9	709.982	F

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	464	116	639	509	0.911	505	508	116.0	105.7	791.093	F
2	559	140	441	540	1.034	540	703	212.2	216.9	1437.889	F
3	641	160	337	628	1.021	628	644	237.3	240.7	1376.501	F
4	274	69	841	310	0.883	305	124	61.9	54.1	684.949	F

2031 With Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	993.67	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		993.67	F

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	596	100.000
2		ONE HOUR	✓	712	100.000
3		ONE HOUR	✓	822	100.000
4		ONE HOUR	✓	248	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	97	499	0
	2	258	0	283	171
	3	411	384	0	27
	4	0	196	52	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	3	6	0
	2	4	0	2	1
	3	10	0	0	0
	4	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	1.20	368.52	61.6	F	547	820
2	1.60	1773.82	241.6	F	653	980
3	1.41	1062.66	192.8	F	754	1131
4	0.85	65.37	4.6	F	228	341

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	449	112	453	621	0.722	439	471	0.0	2.4	18.872	C
2	536	134	406	559	0.959	501	486	0.0	8.7	48.120	E
3	619	155	302	638	0.970	579	605	0.0	9.9	46.597	E
4	187	47	742	358	0.521	183	139	0.0	1.0	20.063	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	536	134	513	585	0.917	518	499	2.4	6.9	45.030	E
2	640	160	480	512	1.250	508	552	8.7	41.7	198.487	F
3	739	185	306	636	1.163	629	681	9.9	37.3	151.286	F
4	223	56	793	326	0.685	219	143	1.0	2.0	32.696	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	656	164	564	553	1.187	546	499	6.9	34.4	154.428	F
2	784	196	513	491	1.596	491	598	41.7	115.0	587.903	F
3	905	226	296	642	1.410	641	708	37.3	103.2	405.482	F
4	273	68	798	322	0.848	265	139	2.0	4.1	55.337	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	656	164	571	549	1.196	548	498	34.4	61.6	325.886	F
2	784	196	515	490	1.601	489	603	115.0	188.6	1133.134	F
3	905	226	295	642	1.409	642	710	103.2	168.9	770.788	F
4	273	68	798	322	0.848	271	139	4.1	4.6	65.369	F

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	536	134	532	573	0.935	564	498	61.6	54.6	368.516	F
2	640	160	521	486	1.318	486	575	188.6	227.2	1560.318	F
3	739	185	293	644	1.148	643	714	168.9	192.8	1019.149	F
4	223	56	798	322	0.692	231	138	4.6	2.5	42.506	E

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	449	112	491	598	0.750	587	495	54.6	19.9	233.451	F
2	536	134	532	478	1.121	478	547	227.2	241.6	1773.824	F
3	619	155	288	646	0.957	643	722	192.8	186.8	1062.658	F
4	187	47	795	324	0.576	191	136	2.5	1.4	27.829	D

2031 With Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	1193.75	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		1193.75	F

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	627	100.000
2		ONE HOUR	✓	742	100.000
3		ONE HOUR	✓	858	100.000
4		ONE HOUR	✓	364	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	137	490	0
	2	297	0	279	166
	3	399	455	0	4
	4	2	304	58	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	6	0
	2	3	0	1	1
	3	6	1	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	1.36	862.12	125.5	F	575	863
2	1.52	1462.34	220.0	F	681	1021
3	1.50	1410.98	247.4	F	787	1181
4	1.29	710.36	62.0	F	334	501

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	472	118	573	549	0.860	453	484	0.0	4.7	32.949	D
2	559	140	396	570	0.981	518	631	0.0	10.1	52.194	F
3	646	161	323	636	1.015	592	591	0.0	13.4	57.048	F
4	274	69	797	339	0.809	261	119	0.0	3.3	41.058	E

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	564	141	625	518	1.089	502	508	4.7	20.1	108.681	F
2	667	167	440	541	1.232	537	688	10.1	42.5	193.978	F
3	771	193	335	629	1.226	626	642	13.4	49.8	197.124	F
4	327	82	838	312	1.048	295	123	3.3	11.5	116.210	F

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	690	173	640	509	1.357	507	509	20.1	65.8	319.850	F
2	817	204	446	537	1.520	537	702	42.5	112.5	531.172	F
3	945	236	335	629	1.501	629	648	49.8	128.7	520.923	F
4	401	100	841	310	1.291	308	123	11.5	34.7	293.960	F

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	690	173	642	508	1.360	507	509	65.8	111.5	640.185	F
2	817	204	446	537	1.520	537	703	112.5	182.4	997.242	F
3	945	236	335	629	1.501	629	648	128.7	207.6	970.122	F
4	401	100	841	310	1.292	310	123	34.7	57.5	554.821	F

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	564	141	641	508	1.110	508	509	111.5	125.5	848.438	F
2	667	167	446	537	1.241	537	703	182.4	214.8	1338.699	F
3	771	193	335	629	1.226	629	648	207.6	243.1	1296.836	F
4	327	82	841	310	1.055	309	123	57.5	62.0	710.358	F

18:00 - 18:15

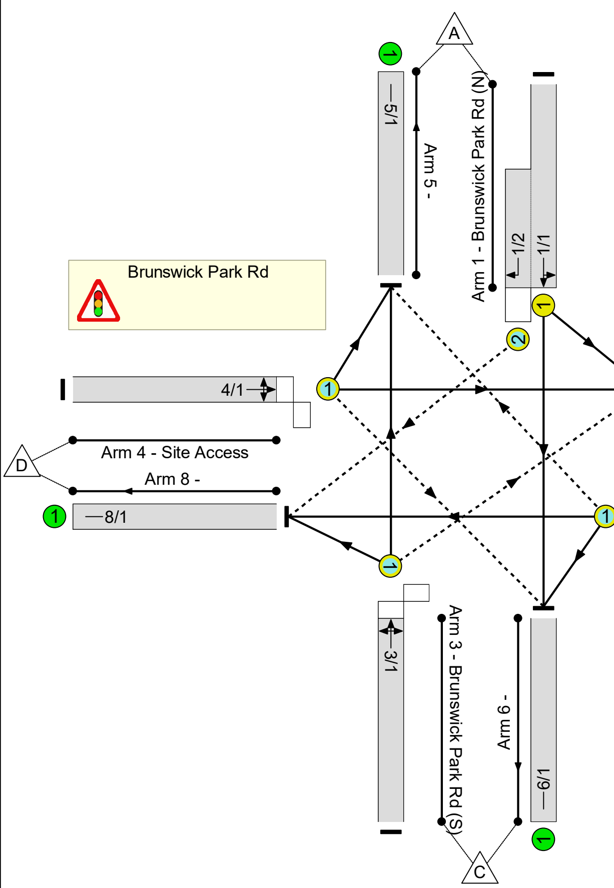
Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	472	118	637	510	0.925	506	509	125.5	116.9	862.124	F
2	559	140	444	538	1.038	538	699	214.8	220.0	1462.338	F
3	646	161	336	629	1.027	629	647	243.1	247.4	1410.982	F
4	274	69	841	310	0.883	305	123	62.0	54.1	685.413	F

Brunswick Park Rd Proposed RT Lane Full LinSig Report

User and Project Details

Project:	**22009 Brunswick Park Rd Proposed**
Title:	**Proposed Design with RT Lane from the North**
Location:	Barnet
Client:	Stomor
Design Layout Ref:	Drawing Number 711
Date Started:	24/08/22
Date Completed:	24/08/22
Flow Details:	Traffic Flows Rev1
Checked By:	Simon Swanston
Checked By Date:	24/08/22
Additional detail:	
File name:	Brunswick Park Rd Proposed RT Lane.lsg3x
Author:	Stuart Hanson
Company:	JCT Consultancy
Address:	LinSig House, Deepdale Enterprise Park, Nettleham, LN22LL

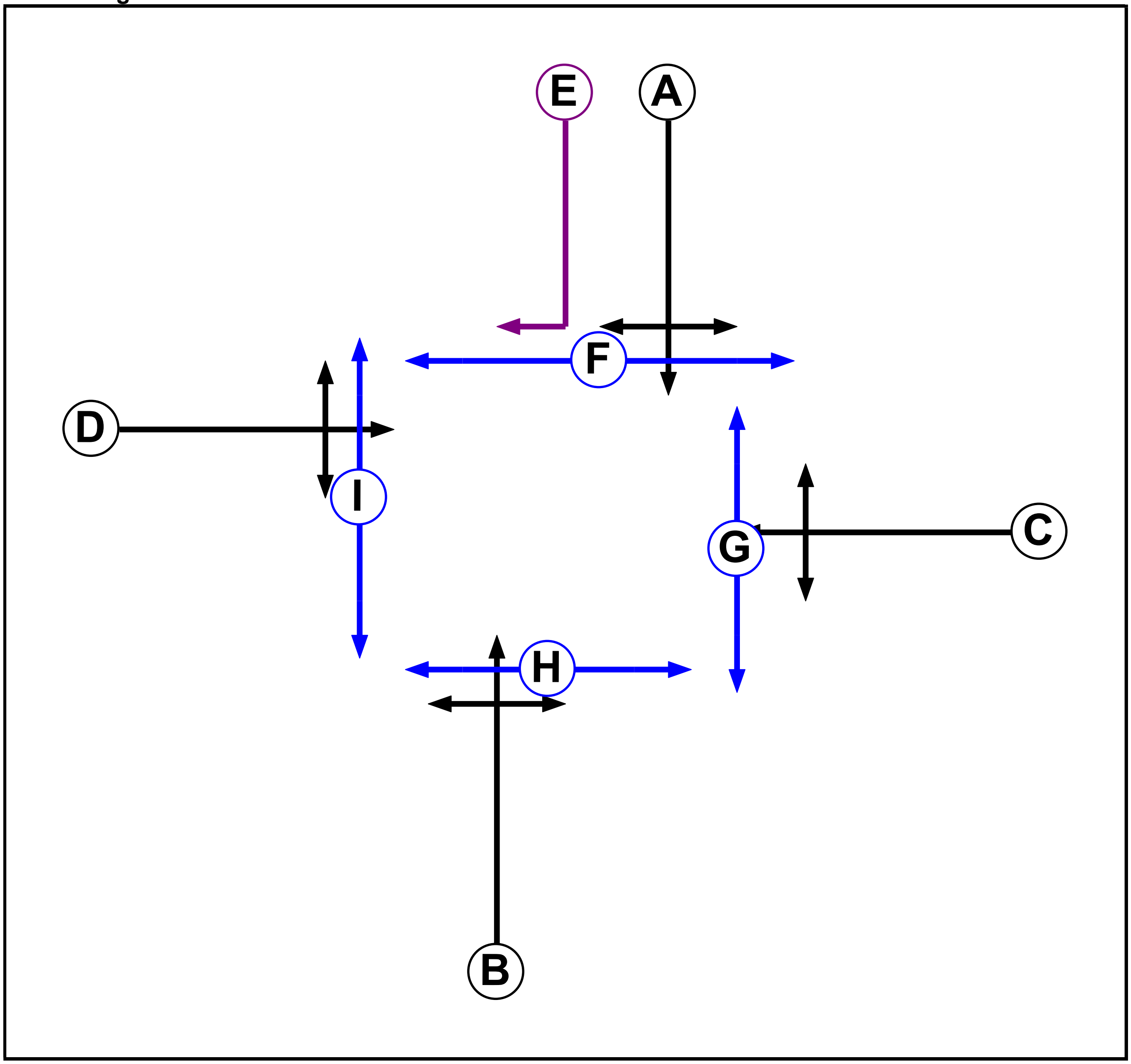
Network Layout Diagram



Model Assumptions

- Design includes additional Right Turn Lane on Brunswick Park Rd (N)
- RT lane width set at 3m and 7 pcu length.
- RR67 used to estimate saturation flows.
- Indicative arrow from Brunswick Park Rd (N) to cater for high RT demand.
- Pedestrian facilities on all arms and run as an all red pedestrian stage (Stage 4).
- Stopline position and Intergeens estimated using quickGreen software.
- 120" Cycle time used. Higher will improve capacity but will result in greater ped delay.
- Scenarios set up to assess the capacity assuming the ped stage is called every cycle
- 2 pcus set to store in front of stoplines for RT traffic with a non blocking value of 1 pcu set in the model.
- Indicative arrow not required in the PM peak. Stage sequence 1>3>4 used to improve capacity.

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Ind. Arrow	A	4	4
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Pedestrian		5	5
I	Pedestrian		5	5

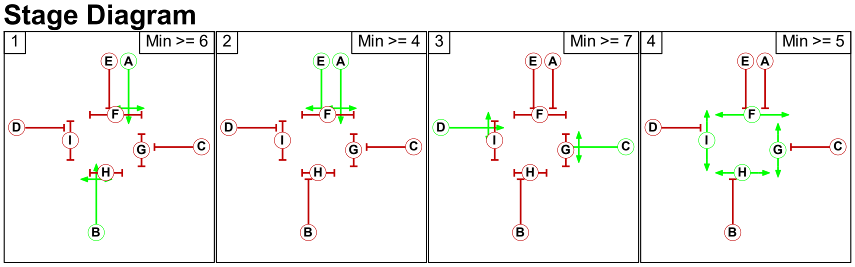
Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		-	6	5	-	5	6	8	8
	B	-		6	6	5	8	8	5	7
	C	5	5		-	5	7	5	7	8
	D	6	5	-		5	7	8	9	5
	E	-	5	5	5		5	-	-	8
	F	13	13	13	13	13		-	-	-
	G	14	14	14	14	-	-		-	-
	H	11	11	11	11	-	-	-		-
	I	13	13	13	13	13	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	A E
3	C D
4	F G H I

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
2	3	D	Gaining absolute	6	6

Prohibited Stage Change

	To Stage				
From Stage		1	2	3	4
	1		5	6	8
	2	X		6	8
	3	6	X		9
	4	14	X	14	

Give-Way Lane Input Data

Junction: Brunswick Park Rd											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/2 (Brunswick Park Rd (N))	8/1 (Right)	1439	0	3/1	1.09	To 5/1 (Ahead) To 8/1 (Left)	2.00	-	0.50	2	2.00
2/1 (Goldrilll Dr)	5/1 (Right)	1439	0	4/1	1.09	To 5/1 (Left) To 7/1 (Ahead)	2.00	1.00	0.50	2	2.00
3/1 (Brunswick Park Rd (S))	7/1 (Right)	1439	0	1/1	1.09	To 6/1 (Ahead) To 7/1 (Left)	2.00	1.00	0.50	2	2.00
4/1 (Site Access)	6/1 (Right)	1439	0	2/1	1.09	To 6/1 (Left) To 8/1 (Ahead)	2.00	1.00	0.50	2	2.00

Lane Input Data

Junction: Brunswick Park Rd												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Brunswick Park Rd (N))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	5.50
1/2 (Brunswick Park Rd (N))	O	A E	2	3	7.0	Geom	-	3.00	0.00	Y	Arm 8 Right	8.00
2/1 (Goldrilll Dr)	O	C	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Right	9.00
											Arm 6 Left	9.00
											Arm 8 Ahead	Inf
3/1 (Brunswick Park Rd (S))	O	B	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 5 Ahead	Inf
											Arm 7 Right	8.00
											Arm 8 Left	11.00
4/1 (Site Access)	O	D	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 5 Left	12.00
											Arm 6 Right	8.00
											Arm 7 Ahead	Inf
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2031 + Committed + Development'	08:00	09:00	01:00	
2: 'PM 2031 + Committed + Development'	17:00	18:00	01:00	

Scenario 1: 'AM 31+C+D' (FG1: 'AM 2031 + Committed + Development', Plan 1: 'Peds Always')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	15	546	255	816
	B	25	0	12	0	37
	C	300	4	0	244	548
	D	242	0	222	0	464

	Tot.	567	19	780	499	1865

Traffic Lane Flows

Lane	Scenario 1: AM 31+C+D
Junction: Brunswick Park Rd	
1/1 (with short)	816(In) 561(Out)
1/2 (short)	255
2/1	37
3/1	548
4/1	464
5/1	567
6/1	780
7/1	19
8/1	499

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Brunswick Park Rd								
1/1 (Brunswick Park Rd (N))	3.00	0.00	Y	Arm 6 Ahead	Inf	97.3 %	1901	1901
				Arm 7 Left	5.50	2.7 %		
1/2 (Brunswick Park Rd (N))	3.00	0.00	Y	Arm 8 Right	8.00	100.0 %	1613	1613
2/1 (Goldrilll Dr)	3.80	0.00	Y	Arm 5 Right	9.00	67.6 %	1710	1710
				Arm 6 Left	9.00	32.4 %		
				Arm 8 Ahead	Inf	0.0 %		
3/1 (Brunswick Park Rd (S))	3.60	0.00	Y	Arm 5 Ahead	Inf	54.7 %	1860	1860
				Arm 7 Right	8.00	0.7 %		
				Arm 8 Left	11.00	44.5 %		
4/1 (Site Access)	3.60	0.00	Y	Arm 5 Left	12.00	52.2 %	1710	1710
				Arm 6 Right	8.00	47.8 %		
				Arm 7 Ahead	Inf	0.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM 31+C+D' (FG2: 'PM 2031 + Committed + Development', Plan 3: 'No RT Arrow')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	14	341	100	455
	B	74	0	16	0	90
	C	463	15	0	167	645
	D	138	2	201	0	341
	Tot.	675	31	558	267	1531

Traffic Lane Flows

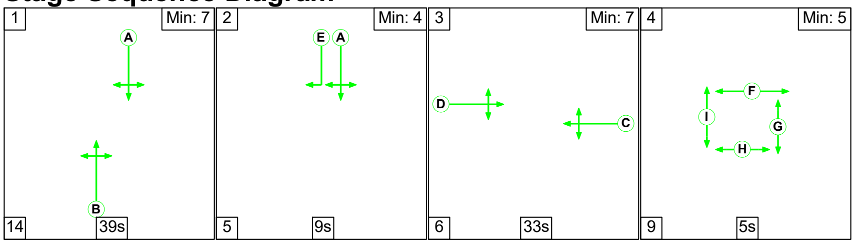
Lane	Scenario 2: PM 31+C+D
Junction: Brunswick Park Rd	
1/1 (with short)	455(In) 355(Out)
1/2 (short)	100
2/1	90
3/1	645
4/1	341
5/1	675
6/1	558
7/1	31
8/1	267

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Brunswick Park Rd								
1/1 (Brunswick Park Rd (N))	3.00	0.00	Y	Arm 6 Ahead	Inf	96.1 %	1895	1895
				Arm 7 Left	5.50	3.9 %		
1/2 (Brunswick Park Rd (N))	3.00	0.00	Y	Arm 8 Right	8.00	100.0 %	1613	1613
2/1 (Goldrilll Dr)	3.80	0.00	Y	Arm 5 Right	9.00	82.2 %	1710	1710
				Arm 6 Left	9.00	17.8 %		
				Arm 8 Ahead	Inf	0.0 %		
3/1 (Brunswick Park Rd (S))	3.60	0.00	Y	Arm 5 Ahead	Inf	71.8 %	1900	1900
				Arm 7 Right	8.00	2.3 %		
				Arm 8 Left	11.00	25.9 %		
4/1 (Site Access)	3.60	0.00	Y	Arm 5 Left	12.00	40.5 %	1701	1701
				Arm 6 Right	8.00	58.9 %		
				Arm 7 Ahead	Inf	0.6 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM 31+C+D' (FG1: 'AM 2031 + Committed + Development', Plan 1: 'Peds Always')

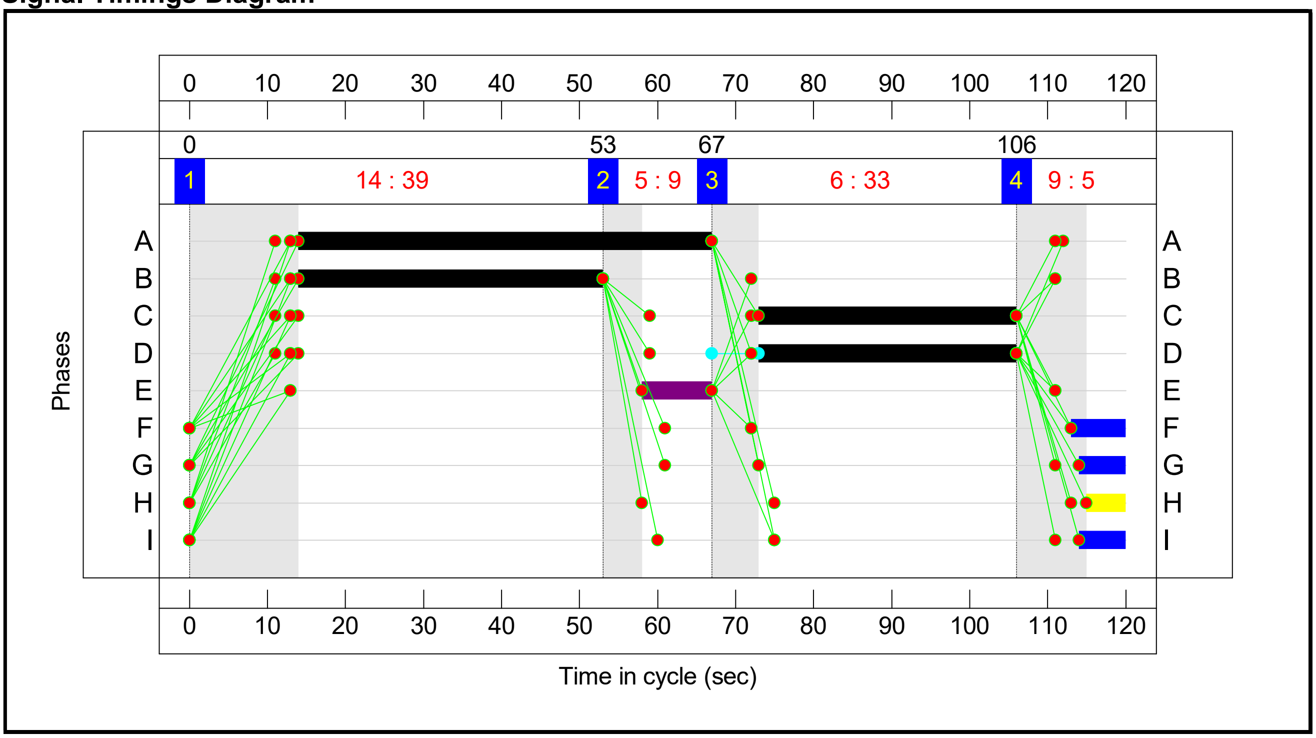
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	39	9	33	5
Change Point	0	53	67	106

Signal Timings Diagram



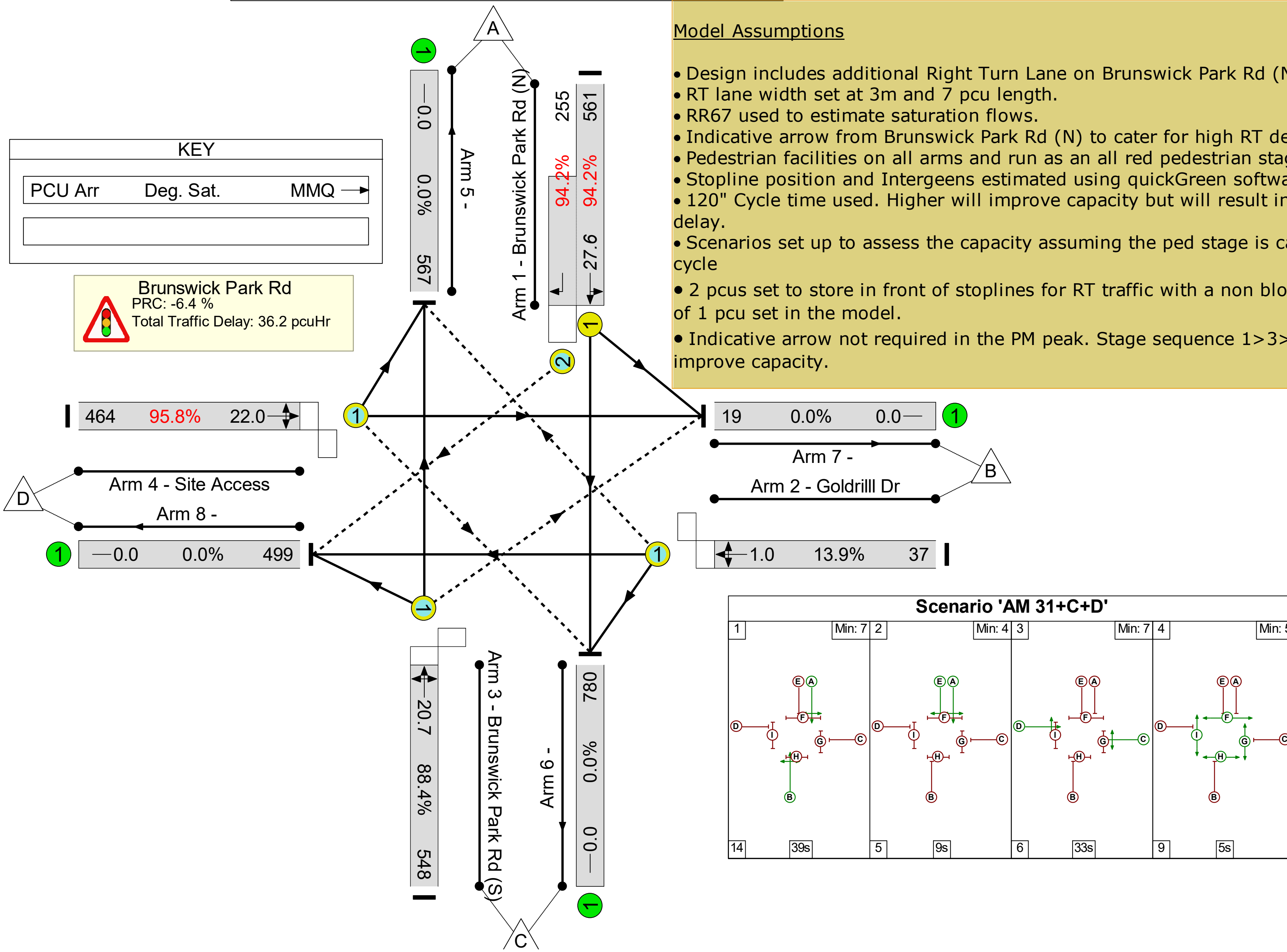
Network Layout Diagram

Brunswick Park Rd Proposed RT Lane Full LinSig Report

Results For Scenario: AM 31+C+D	
Cycle Time: 120	PRC: -6.4% Tot Delay (pcuHr): 36.20

<u>Model Assumptions</u>

- Design includes additional Right Turn Lane on Brunswick Park Rd (N)
- RT lane width set at 3m and 7 pcu length.
- RR67 used to estimate saturation flows.
- Indicative arrow from Brunswick Park Rd (N) to cater for high RT demand.
- Pedestrian facilities on all arms and run as an all red pedestrian stage (Stage 4).
- Stopline position and Intergeens estimated using quickGreen software.
- 120" Cycle time used. Higher will improve capacity but will result in greater ped delay.
- Scenarios set up to assess the capacity assuming the ped stage is called every cycle
- 2 pcus set to store in front of stoplines for RT traffic with a non blocking value of 1 pcu set in the model.
- Indicative arrow not required in the PM peak. Stage sequence 1>3>4 used to improve capacity.



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Proposed Design with RT Lane from the North	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.8%**
Brunswick Park Rd	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.8%**
1/1+1/2	Brunswick Park Rd (N) Ahead Left Right	U+O	N/A	N/A	A	E	1	53	9	816	1901:1613	595+271	94.2 : 94.2%
2/1	Goldrilll Dr Right Left Ahead	O	N/A	N/A	C		1	33	-	37	1710	267	13.9%
3/1	Brunswick Park Rd (S) Ahead Right Left	O	N/A	N/A	B		1	39	-	548	1860	620	88.4%
4/1	Site Access Left Right Ahead	O	N/A	N/A	D		1	33	-	464	1710	484	95.8%
5/1		U	N/A	N/A	-		-	-	-	567	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	19	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	499	Inf	Inf	0.0%

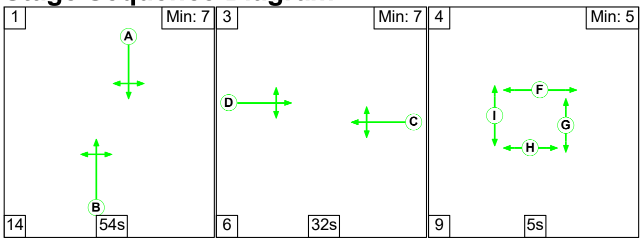
Brunswick Park Rd Proposed RT Lane Full LinSig Report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Proposed Design with RT Lane from the North	**-**	**-**	**298**	**161**	**46**	**18.6**	**16.8**	**0.7**	**36.2**	**-**	**-**	**-**	**-**
Brunswick Park Rd	**-**	**-**	**298**	**161**	**46**	**18.6**	**16.8**	**0.7**	**36.2**	**-**	**-**	**-**	**-**
1/1+1/2	816	816	49	161	44	7.1	6.5	0.7	14.3	63.1	21.1	6.5	27.6
2/1	37	37	25	0	0	0.3	0.1	0.0	0.4	39.5	0.9	0.1	1.0
3/1	548	548	4	0	0	5.8	3.5	0.0	9.2	60.6	17.2	3.5	20.7
4/1	464	464	220	0	2	5.5	6.8	0.0	12.3	95.1	15.2	6.8	22.0
5/1	567	567	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	780	780	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	19	19	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	499	499	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -6.4 Total Delay for Signalled Lanes (pcuHr): 36.20 Cycle Time (s): 120
PRC Over All Lanes (%): -6.4 Total Delay Over All Lanes(pcuHr): 36.20

Brunswick Park Rd Proposed RT Lane Full LinSig Report
Scenario 2: 'PM 31+C+D' (FG2: 'PM 2031 + Committed + Development', Plan 3: 'No RT Arrow')

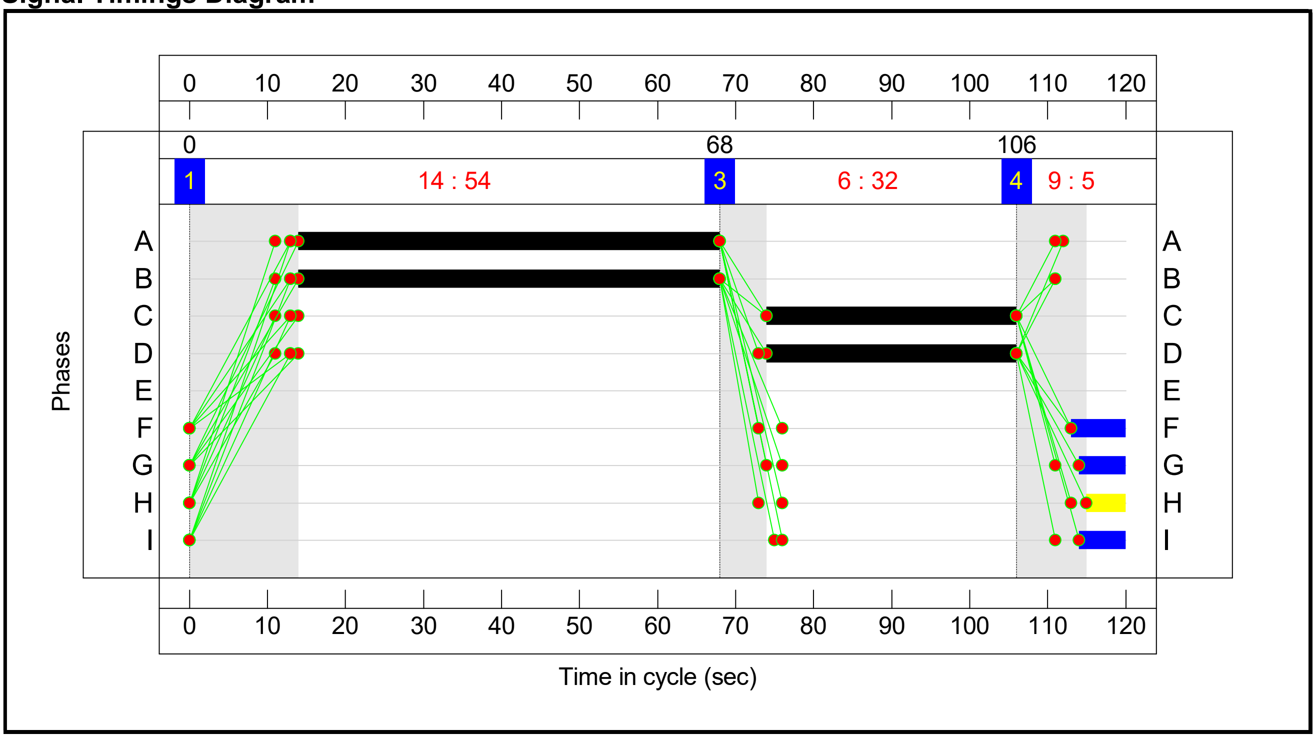
Stage Sequence Diagram



Stage Timings

Stage	1	3	4
Duration	54	32	5
Change Point	0	68	106

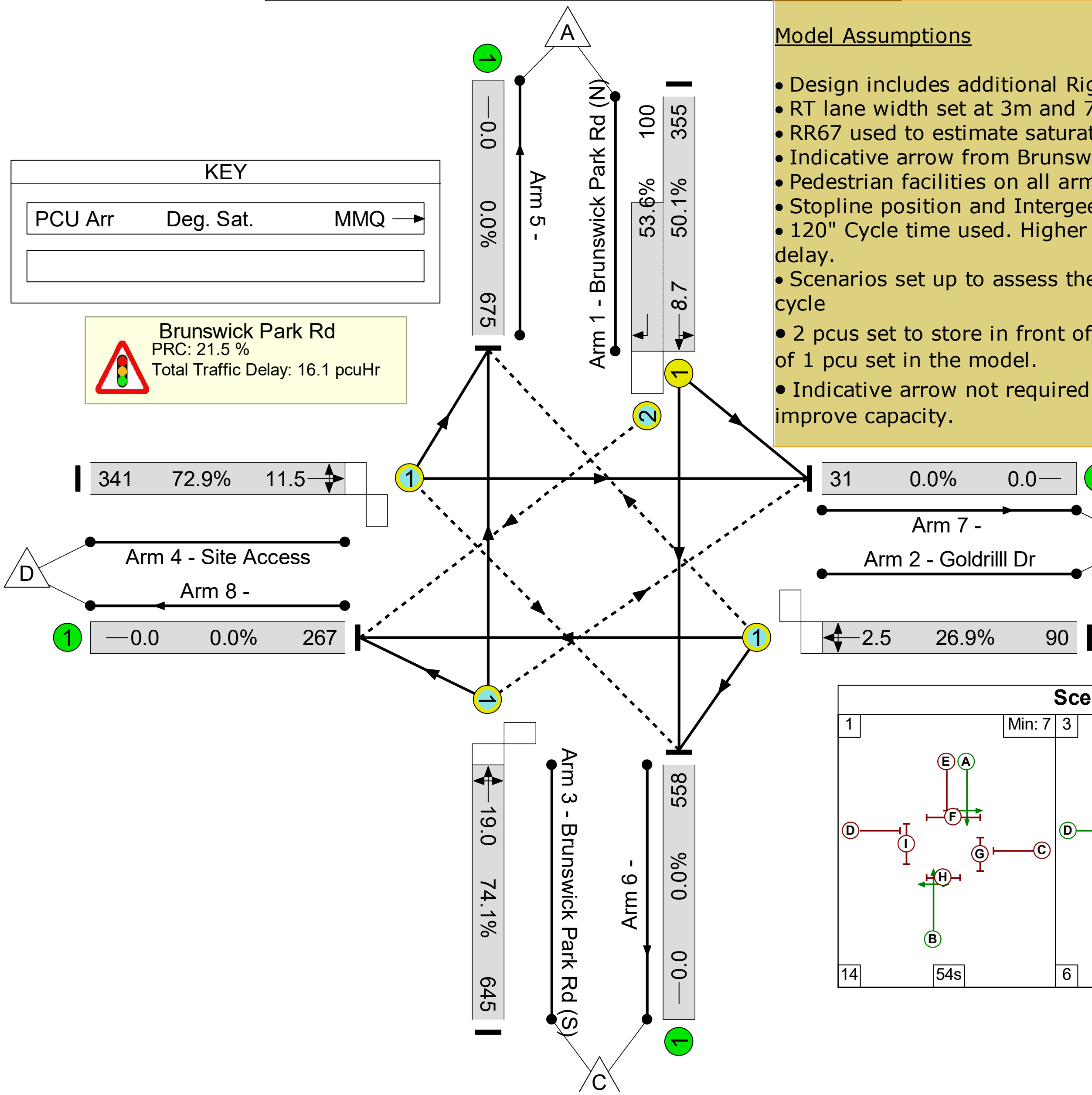
Signal Timings Diagram



Brunswick Park Rd Proposed RT Lane Full LinSig Report

Network Layout Diagram

Results For Scenario: PM 31+C+D	
Cycle Time: 120	PRC: 21.5% Tot Delay (pcuHr): 16.11



Model Assumptions

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- RR67 used to estimate saturation flows.
- Indicative arrow from Brunswick Park Rd (N) to cater for high RT demand.
- Pedestrian facilities on all arms and run as an all red pedestrian stage (Stage 4).
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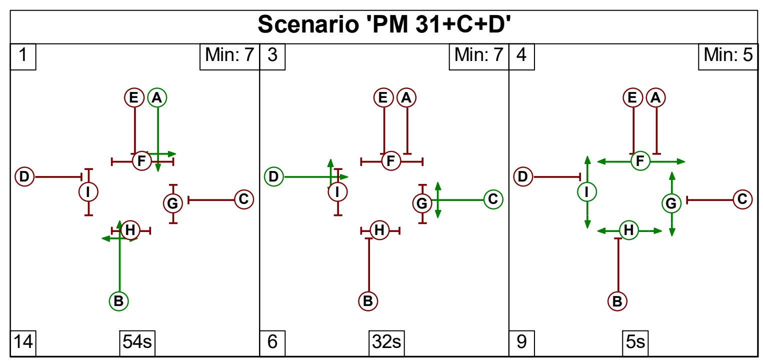


Brunswick Park Rd Proposed RT Lane Full LinSig Report

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Proposed Design with RT Lane from the North	-	-	**N/A**	-	-		-	-	-	-	-	-	**74.1%**
Brunswick Park Rd	-	-	**N/A**	-	-		-	-	-	-	-	-	**74.1%**
1/1+1/2	Brunswick Park Rd (N) Ahead Left Right	U+O	N/A	N/A	A	E	1	54	0	455	1895:1613	708+187	50.1 : 53.6%
2/1	Goldrilll Dr Right Left Ahead	O	N/A	N/A	C		1	32	-	90	1710	335	26.9%
3/1	Brunswick Park Rd (S) Ahead Right Left	O	N/A	N/A	B		1	54	-	645	1900	871	74.1%
4/1	Site Access Left Right Ahead	O	N/A	N/A	D		1	32	-	341	1701	468	72.9%
5/1		U	N/A	N/A	-		-	-	-	675	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	558	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	31	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%

Brunswick Park Rd Proposed RT Lane Full LinSig Report

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Proposed Design with RT Lane from the North	**-**	**-**	**388**	**0**	**2**	**12.0**	**3.4**	**0.7**	**16.1**	**-**	**-**	**-**	**-**
Brunswick Park Rd	**-**	**-**	**388**	**0**	**2**	**12.0**	**3.4**	**0.7**	**16.1**	**-**	**-**	**-**	**-**
1/1+1/2	455	455	100	0	0	2.7	0.5	0.6	3.8	29.9	8.1	0.5	8.7
2/1	90	90	73	0	1	0.8	0.2	0.0	1.0	41.5	2.3	0.2	2.5
3/1	645	645	15	0	0	4.8	1.4	0.0	6.2	34.6	17.6	1.4	19.0
4/1	341	341	199	0	2	3.7	1.3	0.0	5.1	53.8	10.2	1.3	11.5
5/1	675	675	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	31	31	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 21.5 Total Delay for Signalled Lanes (pcuHr): 16.11 Cycle Time (s): 120
PRC Over All Lanes (%): 21.5 Total Delay Over All Lanes(pcuHr): 16.11

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.0.1.1519

For sales and distribution information, program advice and maintenance, contact TRL Software:
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

Filename: Import of J4 Eastern Site Access_Brunswick Park Rd.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J4 Eastern Site Access_Brunswick Park Rd
Report generation date: 7/12/2022 2:36:29 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Stream B-ACD	D1	0.2	14.05	0.13	B	D2	0.1	9.80	0.10	A
Stream A-D		0.7	11.59	0.40	B		0.0	8.63	0.04	A
Stream D-AB		0.4	8.95	0.27	A		0.2	8.59	0.17	A
Stream D-BC		0.3	20.10	0.25	C		0.2	14.45	0.16	B
Stream C-ABD		0.0	8.78	0.01	A		0.0	6.87	0.03	A
	2031 Without Dev									
Stream B-ACD	D3	0.2	20.96	0.19	C	D4	0.1	11.54	0.12	B
Stream A-D		1.3	18.08	0.58	C		0.2	11.21	0.18	B
Stream D-AB		20.0	335.78	1.18	F		1.1	28.14	0.53	D
Stream D-BC		22.5	327.44	1.17	F		3.6	62.85	0.81	F
Stream C-ABD		0.0	9.35	0.01	A		0.0	7.13	0.04	A
	2031 With Dev									
Stream B-ACD	D5	0.3	24.37	0.22	C	D6	0.6	20.39	0.36	C
Stream A-D		1.4	18.91	0.60	C		0.4	12.81	0.28	B
Stream D-AB		30.1	403.16	1.25	F		3.4	84.03	0.83	F
Stream D-BC		27.7	406.72	1.23	F		5.8	101.99	0.90	F
Stream C-ABD		0.0	9.43	0.01	A		0.0	7.36	0.03	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way	Two-way	Two-way	Two-way		3.83	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.83	A

Arms

Arms

Arm	Name	Description	Arm type
A	Brunswick Park Rd (N)		Major
B	Benfleet Way		Minor
C	Brunswick Park Rd (S)		Major
D	Site Access		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.00			84.0		-
C	6.00			84.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.40								42	34
D	One lane plus flare		10.00	4.50	4.50	4.50	4.30		3.00	18	29

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
A-D	623	-	-	-	-	-	-	0.241	0.345	0.241	-	-	-
B-A	528	0.096	0.243	0.243	-	-	-	0.153	0.347	-	0.243	0.243	0.122
B-C	671	0.103	0.260	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	528	0.096	0.243	0.243	-	-	-	0.153	0.347	0.153	-	-	-
B-D, offside lane	528	0.096	0.243	0.243	-	-	-	0.153	0.347	0.153	-	-	-
C-B	623	0.241	0.241	0.345	-	-	-	-	-	-	-	-	-
D-A	686	-	-	-	-	-	-	0.266	-	0.105	-	-	-
D-B, nearside lane	532	0.154	0.154	0.350	-	-	-	0.245	0.245	0.097	-	-	-
D-B, offside lane	457	0.132	0.132	0.301	-	-	-	0.211	0.211	0.083	-	-	-
D-C	457	-	0.132	0.301	0.105	0.211	0.211	0.211	0.211	0.083	-	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	698	100.000
B		ONE HOUR	✓	36	100.000
C		ONE HOUR	✓	363	100.000
D		ONE HOUR	✓	190	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	15	495	188
	B	24	0	12	0
	C	284	4	0	75
	D	137	0	53	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	1
	B	0	0	0	0
	C	4	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.13	14.05	0.2	B	33	50
A-B					14	21
A-C					454	681
A-D	0.40	11.59	0.7	B	173	259
D-AB	0.27	8.95	0.4	A	126	189
D-BC	0.25	20.10	0.3	C	49	73
C-ABD	0.01	8.78	0.0	A	4	6
C-D					69	103
C-A					261	391

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	27	7	388	0.070	27	0.0	0.1	9.971	A
A-B	11	3			11				
A-C	373	93			373				
A-D	142	35	549	0.258	140	0.0	0.3	8.781	A
D-AB	103	26	601	0.172	102	0.0	0.2	7.208	A
D-BC	40	10	308	0.130	39	0.0	0.1	13.396	B
C-ABD	3	0.76	480	0.006	3	0.0	0.0	7.550	A
C-D	56	14			56				
C-A	214	53			214				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	32	8	350	0.093	32	0.1	0.1	11.336	B
A-B	13	3			13				
A-C	445	111			445				
A-D	169	42	536	0.316	169	0.3	0.5	9.794	A
D-AB	123	31	582	0.212	123	0.2	0.3	7.841	A
D-BC	48	12	278	0.171	47	0.1	0.2	15.592	C
C-ABD	4	0.90	452	0.008	4	0.0	0.0	8.027	A
C-D	67	17			67				
C-A	255	64			255				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	40	10	296	0.134	39	0.1	0.2	14.005	B
A-B	17	4			17				
A-C	545	136			545				
A-D	207	52	518	0.400	206	0.5	0.7	11.533	B
D-AB	151	38	554	0.272	150	0.3	0.4	8.919	A
D-BC	58	15	238	0.246	58	0.2	0.3	19.984	C
C-ABD	4	1	415	0.011	4	0.0	0.0	8.773	A
C-D	83	21			83				
C-A	313	78			313				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	40	10	296	0.134	40	0.2	0.2	14.046	B
A-B	17	4			17				
A-C	545	136			545				
A-D	207	52	518	0.400	207	0.7	0.7	11.589	B
D-AB	151	38	553	0.273	151	0.4	0.4	8.947	A
D-BC	58	15	237	0.246	58	0.3	0.3	20.104	C
C-ABD	4	1	414	0.011	4	0.0	0.0	8.779	A
C-D	83	21			83				
C-A	313	78			313				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	32	8	349	0.093	33	0.2	0.1	11.378	B
A-B	13	3			13				
A-C	445	111			445				
A-D	169	42	536	0.316	170	0.7	0.5	9.860	A
D-AB	123	31	581	0.212	124	0.4	0.3	7.875	A
D-BC	48	12	278	0.172	48	0.3	0.2	15.701	C
C-ABD	4	0.90	452	0.008	4	0.0	0.0	8.037	A
C-D	67	17			67				
C-A	255	64			255				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	27	7	387	0.070	27	0.1	0.1	10.015	B
A-B	11	3			11				
A-C	373	93			373				
A-D	142	35	549	0.258	142	0.5	0.4	8.861	A
D-AB	103	26	600	0.172	103	0.3	0.2	7.250	A
D-BC	40	10	307	0.130	40	0.2	0.2	13.496	B
C-ABD	3	0.76	479	0.006	3	0.0	0.0	7.561	A
C-D	56	14			56				
C-A	214	53			214				

2021 Observed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way	Two-way	Two-way	Two-way		1.91	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.91	A

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	356	100.000
B		ONE HOUR	✓	37	100.000
C		ONE HOUR	✓	468	100.000
D		ONE HOUR	✓	120	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	14	328	14
	B	18	0	17	2
	C	443	16	0	9
	D	75	2	43	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	0	14
	B	0	0	0	0
	C	3	0	0	0
	D	1	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.10	9.80	0.1	A	34	51
A-B					13	19
A-C					301	451
A-D	0.04	8.63	0.0	A	13	19
D-AB	0.17	8.59	0.2	A	70	105
D-BC	0.16	14.45	0.2	B	40	60
C-ABD	0.03	6.87	0.0	A	15	23
C-D					8	12
C-A					406	609

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28	7	467	0.060	28	0.0	0.1	8.187	A
A-B	11	3			11				
A-C	247	62			247				
A-D	11	3	468	0.023	10	0.0	0.0	7.858	A
D-AB	57	14	554	0.103	57	0.0	0.1	7.239	A
D-BC	33	8	353	0.094	33	0.0	0.1	11.224	B
C-ABD	12	3	564	0.022	12	0.0	0.0	6.527	A
C-D	7	2			7				
C-A	333	83			333				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33	8	443	0.075	33	0.1	0.1	8.791	A
A-B	13	3			13				
A-C	295	74			295				
A-D	13	3	453	0.028	13	0.0	0.0	8.168	A
D-AB	68	17	533	0.128	68	0.1	0.1	7.751	A
D-BC	39	10	330	0.120	39	0.1	0.1	12.393	B
C-ABD	15	4	554	0.026	15	0.0	0.0	6.672	A
C-D	8	2			8				
C-A	398	99			398				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	10	408	0.100	41	0.1	0.1	9.792	A
A-B	15	4			15				
A-C	361	90			361				
A-D	15	4	432	0.036	15	0.0	0.0	8.633	A
D-AB	84	21	503	0.167	84	0.1	0.2	8.574	A
D-BC	48	12	297	0.162	48	0.1	0.2	14.424	B
C-ABD	18	5	542	0.034	18	0.0	0.0	6.868	A
C-D	10	2			10				
C-A	487	122			487				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	10	408	0.100	41	0.1	0.1	9.800	A
A-B	15	4			15				
A-C	361	90			361				
A-D	15	4	432	0.036	15	0.0	0.0	8.633	A
D-AB	84	21	503	0.167	84	0.2	0.2	8.586	A
D-BC	48	12	297	0.162	48	0.2	0.2	14.448	B
C-ABD	18	5	542	0.034	18	0.0	0.0	6.868	A
C-D	10	2			10				
C-A	487	122			487				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33	8	443	0.075	33	0.1	0.1	8.800	A
A-B	13	3			13				
A-C	295	74			295				
A-D	13	3	453	0.028	13	0.0	0.0	8.172	A
D-AB	68	17	532	0.129	69	0.2	0.1	7.768	A
D-BC	39	10	330	0.120	40	0.2	0.1	12.422	B
C-ABD	15	4	554	0.026	15	0.0	0.0	6.673	A
C-D	8	2			8				
C-A	398	99			398				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28	7	467	0.060	28	0.1	0.1	8.203	A
A-B	11	3			11				
A-C	247	62			247				
A-D	11	3	468	0.023	11	0.0	0.0	7.864	A
D-AB	57	14	553	0.104	57	0.1	0.1	7.262	A
D-BC	33	8	353	0.094	33	0.1	0.1	11.260	B
C-ABD	12	3	564	0.022	12	0.0	0.0	6.530	A
C-D	7	2			7				
C-A	333	83			333				

2031 Without Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way	Two-way	Two-way	Two-way		79.59	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	79.59	F

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	772	100.000
B		ONE HOUR	✓	37	100.000
C		ONE HOUR	✓	541	100.000
D		ONE HOUR	✓	415	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	15	510	247
	B	25	0	12	0
	C	293	4	0	244
	D	194	0	221	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	1
	B	0	0	0	0
	C	4	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.19	20.96	0.2	C	34	51
A-B					14	21
A-C					468	702
A-D	0.58	18.08	1.3	C	227	340
D-AB	1.18	335.78	20.0	F	178	267
D-BC	1.17	327.44	22.5	F	203	304
C-ABD	0.01	9.35	0.0	A	4	6
C-D					224	336
C-A					269	403

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28	7	348	0.080	28	0.0	0.1	11.226	B
A-B	11	3			11				
A-C	384	96			384				
A-D	186	46	517	0.360	184	0.0	0.6	10.742	B
D-AB	146	37	468	0.312	144	0.0	0.4	11.052	B
D-BC	166	42	306	0.544	162	0.0	1.1	24.350	C
C-ABD	3	0.76	462	0.007	3	0.0	0.0	7.836	A
C-D	184	46			184				
C-A	221	55			221				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33	8	300	0.111	33	0.1	0.1	13.494	B
A-B	13	3			13				
A-C	458	115			458				
A-D	222	56	497	0.446	221	0.6	0.8	12.984	B
D-AB	174	44	374	0.466	173	0.4	0.8	17.716	C
D-BC	199	50	265	0.749	193	1.1	2.5	46.671	E
C-ABD	4	0.91	431	0.008	4	0.0	0.0	8.414	A
C-D	219	55			219				
C-A	263	66			263				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	10	231	0.177	40	0.1	0.2	18.895	C
A-B	17	4			17				
A-C	562	140			562				
A-D	272	68	471	0.578	270	0.8	1.3	17.740	C
D-AB	214	53	180	1.185	169	0.8	12.1	171.415	F
D-BC	243	61	210	1.156	201	2.5	13.2	174.446	F
C-ABD	4	1	390	0.011	4	0.0	0.0	9.334	A
C-D	269	67			269				
C-A	323	81			323				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	10	212	0.192	41	0.2	0.2	20.962	C
A-B	17	4			17				
A-C	562	140			562				
A-D	272	68	471	0.578	272	1.3	1.3	18.082	C
D-AB	214	53	185	1.157	182	12.1	20.0	335.777	F
D-BC	243	61	209	1.166	206	13.2	22.5	327.440	F
C-ABD	4	1	389	0.012	4	0.0	0.0	9.353	A
C-D	269	67			269				
C-A	323	81			323				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33	8	269	0.124	34	0.2	0.1	15.326	C
A-B	13	3			13				
A-C	458	115			458				
A-D	222	56	497	0.446	224	1.3	0.8	13.268	B
D-AB	174	44	223	0.780	213	20.0	10.4	256.202	F
D-BC	199	50	254	0.784	243	22.5	11.5	257.504	F
C-ABD	4	0.91	430	0.008	4	0.0	0.0	8.436	A
C-D	219	55			219				
C-A	263	66			263				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28	7	332	0.084	28	0.1	0.1	11.851	B
A-B	11	3			11				
A-C	384	96			384				
A-D	186	46	517	0.360	187	0.8	0.6	10.952	B
D-AB	146	37	417	0.350	185	10.4	0.6	18.327	C
D-BC	166	42	302	0.551	207	11.5	1.3	51.483	F
C-ABD	3	0.76	461	0.007	3	0.0	0.0	7.856	A
C-D	184	46			184				
C-A	221	55			221				

2031 Without Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way	Two-way	Two-way	Two-way		12.17	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.17	B

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	417	100.000
B		ONE HOUR	✓	39	100.000
C		ONE HOUR	✓	638	100.000
D		ONE HOUR	✓	330	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	14	338	65
	B	19	0	18	2
	C	456	16	0	166
	D	127	2	201	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	14
	B	0	0	0	0
	C	3	0	0	0
	D	1	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.12	11.54	0.1	B	36	54
A-B					13	19
A-C					310	465
A-D	0.18	11.21	0.2	B	60	89
D-AB	0.53	28.14	1.1	D	118	177
D-BC	0.81	62.85	3.6	F	185	277
C-ABD	0.04	7.13	0.0	A	15	23
C-D					152	228
C-A					418	627

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	29	7	436	0.067	29	0.0	0.1	8.847	A
A-B	11	3			11				
A-C	254	64			254				
A-D	49	12	441	0.111	48	0.0	0.1	9.154	A
D-AB	97	24	451	0.214	96	0.0	0.3	10.089	B
D-BC	152	38	352	0.431	149	0.0	0.7	17.498	C
C-ABD	12	3	549	0.022	12	0.0	0.0	6.710	A
C-D	125	31			125				
C-A	343	86			343				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	35	9	403	0.087	35	0.1	0.1	9.778	A
A-B	13	3			13				
A-C	304	76			304				
A-D	58	15	421	0.139	58	0.1	0.2	9.925	A
D-AB	116	29	404	0.286	115	0.3	0.4	12.421	B
D-BC	181	45	320	0.566	179	0.7	1.2	25.169	D
C-ABD	15	4	537	0.028	15	0.0	0.0	6.892	A
C-D	149	37			149				
C-A	410	102			410				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	43	11	356	0.121	43	0.1	0.1	11.480	B
A-B	15	4			15				
A-C	372	93			372				
A-D	72	18	393	0.182	71	0.2	0.2	11.194	B
D-AB	142	35	287	0.495	140	0.4	0.9	24.164	C
D-BC	222	55	274	0.807	214	1.2	3.2	53.288	F
C-ABD	18	5	523	0.035	18	0.0	0.0	7.132	A
C-D	183	46			183				
C-A	501	125			501				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	43	11	355	0.121	43	0.1	0.1	11.542	B
A-B	15	4			15				
A-C	372	93			372				
A-D	72	18	393	0.182	72	0.2	0.2	11.210	B
D-AB	142	35	268	0.528	141	0.9	1.1	28.143	D
D-BC	221	55	274	0.808	220	3.2	3.6	62.852	F
C-ABD	18	5	523	0.035	18	0.0	0.0	7.133	A
C-D	183	46			183				
C-A	501	125			501				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	35	9	401	0.087	35	0.1	0.1	9.840	A
A-B	13	3			13				
A-C	304	76			304				
A-D	58	15	421	0.139	59	0.2	0.2	9.948	A
D-AB	116	29	394	0.294	118	1.1	0.4	13.189	B
D-BC	181	45	321	0.565	190	3.6	1.4	29.153	D
C-ABD	15	4	537	0.028	15	0.0	0.0	6.895	A
C-D	149	37			149				
C-A	410	102			410				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	29	7	435	0.068	29	0.1	0.1	8.887	A
A-B	11	3			11				
A-C	254	64			254				
A-D	49	12	441	0.111	49	0.2	0.1	9.185	A
D-AB	97	24	448	0.216	97	0.4	0.3	10.284	B
D-BC	152	38	352	0.431	154	1.4	0.8	18.408	C
C-ABD	12	3	549	0.022	12	0.0	0.0	6.716	A
C-D	125	31			125				
C-A	343	86			343				

2031 With Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way	Two-way	Two-way	Two-way		104.60	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	104.60	F

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	780	100.000
B		ONE HOUR	✓	37	100.000
C		ONE HOUR	✓	541	100.000
D		ONE HOUR	✓	464	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	15	510	255
	B	25	0	12	0
	C	293	4	0	244
	D	242	0	222	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	1
	B	0	0	0	0
	C	4	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.22	24.37	0.3	C	34	51
A-B					14	21
A-C					468	702
A-D	0.60	18.91	1.4	C	234	351
D-AB	1.25	403.16	30.1	F	222	333
D-BC	1.23	406.72	27.7	F	204	306
C-ABD	0.01	9.43	0.0	A	4	6
C-D					224	336
C-A					269	403

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28	7	338	0.082	28	0.0	0.1	11.582	B
A-B	11	3			11				
A-C	384	96			384				
A-D	192	48	517	0.372	190	0.0	0.6	10.932	B
D-AB	182	46	473	0.385	180	0.0	0.6	12.173	B
D-BC	167	42	297	0.562	162	0.0	1.2	25.882	D
C-ABD	3	0.76	460	0.007	3	0.0	0.0	7.872	A
C-D	184	46			184				
C-A	221	55			221				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33	8	287	0.116	33	0.1	0.1	14.168	B
A-B	13	3			13				
A-C	458	115			458				
A-D	229	57	497	0.461	228	0.6	0.8	13.322	B
D-AB	218	54	370	0.589	215	0.6	1.4	22.809	C
D-BC	200	50	254	0.785	193	1.2	2.9	53.578	F
C-ABD	4	0.91	429	0.008	4	0.0	0.0	8.464	A
C-D	219	55			219				
C-A	263	66			263				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	10	213	0.191	40	0.1	0.2	20.769	C
A-B	17	4			17				
A-C	562	140			562				
A-D	281	70	471	0.597	278	0.8	1.4	18.504	C
D-AB	266	67	212	1.255	204	1.4	17.1	193.066	F
D-BC	244	61	200	1.222	193	2.9	15.8	209.159	F
C-ABD	4	1	387	0.012	4	0.0	0.0	9.409	A
C-D	269	67			269				
C-A	323	81			323				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	10	188	0.217	41	0.2	0.3	24.368	C
A-B	17	4			17				
A-C	562	140			562				
A-D	281	70	471	0.597	281	1.4	1.4	18.911	C
D-AB	266	67	216	1.234	214	17.1	30.1	403.157	F
D-BC	244	61	198	1.232	197	15.8	27.7	406.725	F
C-ABD	4	1	386	0.012	4	0.0	0.0	9.428	A
C-D	269	67			269				
C-A	323	81			323				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33	8	242	0.137	34	0.3	0.2	17.280	C
A-B	13	3			13				
A-C	458	115			458				
A-D	229	57	497	0.461	231	1.4	0.9	13.651	B
D-AB	218	54	260	0.837	252	30.1	21.6	358.076	F
D-BC	200	50	239	0.836	230	27.7	20.0	367.666	F
C-ABD	4	0.91	428	0.008	4	0.0	0.0	8.490	A
C-D	219	55			219				
C-A	263	66			263				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28	7	307	0.091	28	0.2	0.1	12.923	B
A-B	11	3			11				
A-C	384	96			384				
A-D	192	48	517	0.372	193	0.9	0.6	11.162	B
D-AB	182	46	350	0.521	264	21.6	1.2	77.128	F
D-BC	167	42	280	0.597	240	20.0	1.8	132.148	F
C-ABD	3	0.76	459	0.007	3	0.0	0.0	7.893	A
C-D	184	46			184				
C-A	221	55			221				

2031 With Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm D - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way	Two-way	Two-way	Two-way		22.84	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	22.84	C

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	455	100.000
B		ONE HOUR	✓	90	100.000
C		ONE HOUR	✓	645	100.000
D		ONE HOUR	✓	341	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	14	341	100
	B	74	0	16	0
	C	463	15	0	167
	D	138	2	201	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	14
	B	0	0	0	0
	C	3	0	0	0
	D	1	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-ACD	0.36	20.39	0.6	C	83	124
A-B					13	19
A-C					313	469
A-D	0.28	12.81	0.4	B	92	138
D-AB	0.83	84.03	3.4	F	128	192
D-BC	0.90	101.99	5.8	F	185	277
C-ABD	0.03	7.36	0.0	A	14	21
C-D					153	230
C-A					425	637

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	68	17	368	0.184	67	0.0	0.2	11.918	B
A-B	11	3			11				
A-C	257	64			257				
A-D	75	19	440	0.171	74	0.0	0.2	9.823	A
D-AB	105	26	449	0.234	104	0.0	0.3	10.388	B
D-BC	152	38	334	0.455	149	0.0	0.8	19.127	C
C-ABD	12	3	537	0.021	11	0.0	0.0	6.843	A
C-D	126	31			126				
C-A	348	87			348				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	81	20	331	0.245	81	0.2	0.3	14.350	B
A-B	13	3			13				
A-C	307	77			307				
A-D	90	22	420	0.214	90	0.2	0.3	10.902	B
D-AB	126	31	394	0.318	125	0.3	0.5	13.325	B
D-BC	181	45	299	0.606	179	0.8	1.4	29.320	D
C-ABD	14	3	523	0.027	14	0.0	0.0	7.062	A
C-D	150	38			150				
C-A	416	104			416				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	99	25	279	0.356	98	0.3	0.5	19.867	C
A-B	15	4			15				
A-C	375	94			375				
A-D	110	28	391	0.282	110	0.3	0.4	12.767	B
D-AB	154	39	229	0.671	149	0.5	1.8	42.226	E
D-BC	221	55	248	0.894	208	1.4	4.7	74.932	F
C-ABD	17	4	506	0.034	17	0.0	0.0	7.357	A
C-D	184	46			184				
C-A	509	127			509				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	99	25	275	0.360	99	0.5	0.6	20.388	C
A-B	15	4			15				
A-C	375	94			375				
A-D	110	28	391	0.282	110	0.4	0.4	12.808	B
D-AB	154	39	185	0.834	148	1.8	3.4	84.034	F
D-BC	221	55	246	0.899	217	4.7	5.8	101.993	F
C-ABD	17	4	506	0.034	17	0.0	0.0	7.363	A
C-D	184	46			184				
C-A	509	127			509				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	81	20	325	0.249	82	0.6	0.3	14.850	B
A-B	13	3			13				
A-C	307	77			307				
A-D	90	22	420	0.214	90	0.4	0.3	10.952	B
D-AB	126	31	371	0.338	137	3.4	0.5	16.082	C
D-BC	181	45	298	0.608	197	5.8	1.7	40.311	E
C-ABD	14	3	523	0.027	14	0.0	0.0	7.070	A
C-D	150	38			150				
C-A	416	104			416				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	68	17	366	0.185	68	0.3	0.2	12.086	B
A-B	11	3			11				
A-C	257	64			257				
A-D	75	19	440	0.171	76	0.3	0.2	9.883	A
D-AB	105	26	444	0.236	106	0.5	0.3	10.662	B
D-BC	152	38	334	0.455	155	1.7	0.9	20.491	C
C-ABD	12	3	537	0.021	12	0.0	0.0	6.849	A
C-D	126	31			126				
C-A	348	87			348				

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.0.1.1519

Filename: Import of J5 Oakleigh Rd_Site Access.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J5 Oakleigh Rd_Site Access
Report generation date: 10/5/2022 2:13:16 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Stream B-C	D1	0.1	6.75	0.11	A	D2	0.0	7.08	0.03	A
Stream B-A		0.2	11.13	0.16	B		0.1	9.55	0.07	A
Stream C-B		0.1	8.13	0.12	A		0.0	9.46	0.02	A
Stream A-BC		0.3	2.14	0.24	A		0.4	2.26	0.28	A
	2031 Without Dev									
Stream B-C	D3	0.3	10.02	0.26	B	D4	0.2	9.26	0.16	A
Stream B-A		0.8	18.21	0.44	C		0.5	14.92	0.32	B
Stream C-B		0.3	10.05	0.26	B		0.2	11.91	0.18	B
Stream A-BC		0.4	2.40	0.30	A		0.5	2.65	0.35	A
	2031 With Dev									
Stream B-C	D5	1.9	33.72	0.67	D	D6	0.3	11.55	0.25	B
Stream B-A		3.3	53.42	0.79	F		0.8	21.16	0.46	C
Stream C-B		0.4	10.57	0.29	B		0.5	15.65	0.35	C
Stream A-BC		0.6	3.36	0.38	A		0.9	4.10	0.48	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

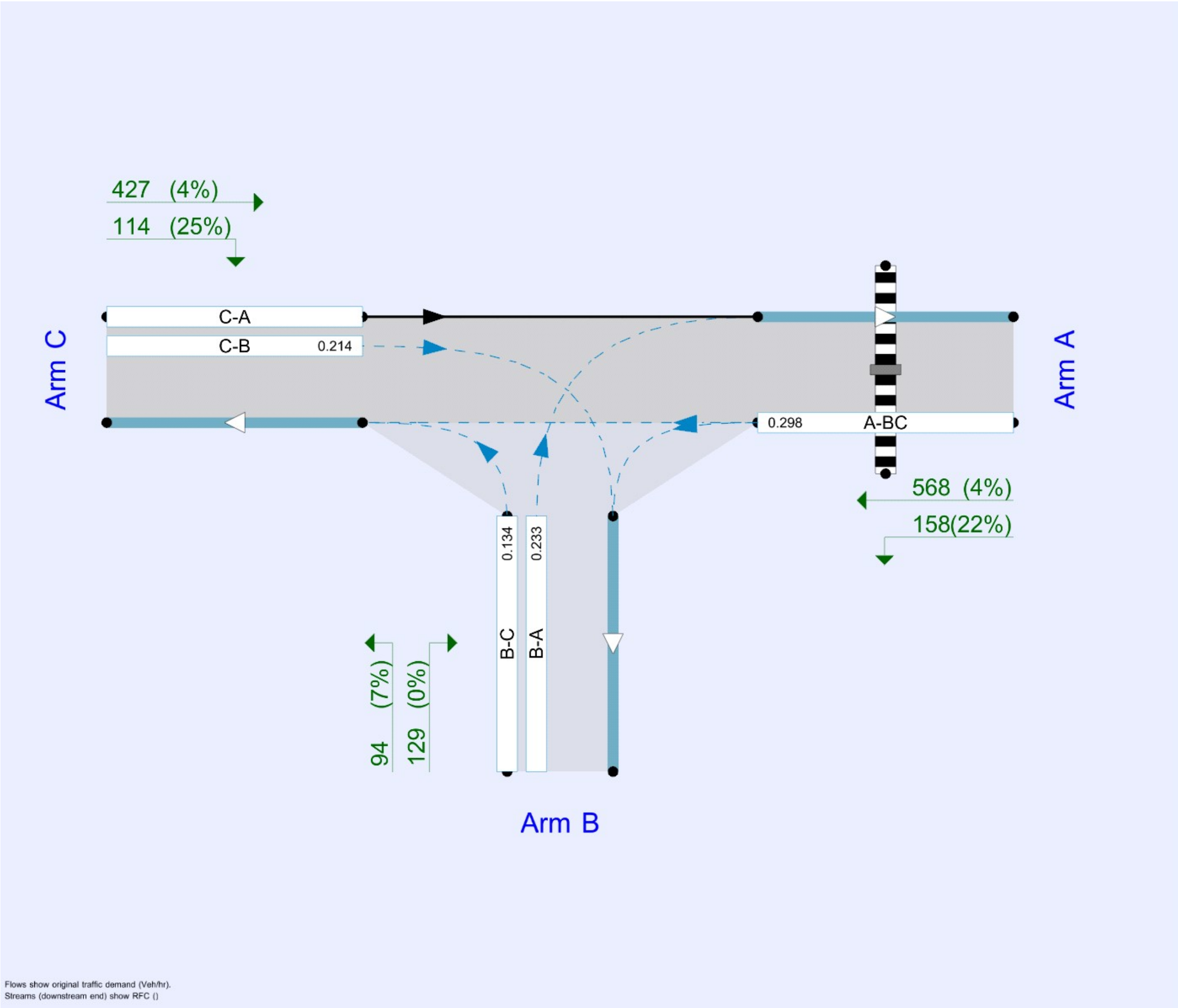
File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Last Run	Last Run	Stream A-BC	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.23	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.23	A

Arms

Arms

Arm	Name	Description	Arm type
A	Oakleigh Rd (N)		Major
B	Site Access		Minor
C	Oakleigh Rd (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.63			78.4		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	9.29	5.03	3.70	3.70	3.40	✓	1.00	97	136

Zebra Crossings

Arm	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
A	1.00	✓	Distance	5.00	3.57	5.00	3.57

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	608	0.093	0.236	0.148	0.337
B-C	755	0.097	0.246	-	-
C-B	619	0.202	0.202	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	486	100.000
B		ONE HOUR	✓	116	100.000
C		ONE HOUR	✓	507	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	40.00
B		
C		

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	67	419
	B	57	0	59
	C	450	57	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.11	6.75	0.1	A	54	81
B-A	0.16	11.13	0.2	B	52	78
C-A					413	619
C-B	0.12	8.13	0.1	A	52	78
A-BC	0.24	2.14	0.3	A	446	669

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	44	11		652	0.068	44	0.0	0.1	5.923	A
B-A	43	11		457	0.094	43	0.0	0.1	8.681	A
C-A	339	85				339				
C-B	43	11		542	0.079	43	0.0	0.1	7.209	A
A-BC	366	91	30.11	2243	0.163	365	0.0	0.2	1.916	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	53	13		630	0.084	53	0.1	0.1	6.242	A
B-A	51	13		427	0.120	51	0.1	0.1	9.572	A
C-A	405	101				405				
C-B	51	13		526	0.097	51	0.1	0.1	7.576	A
A-BC	437	109	35.96	2230	0.196	437	0.2	0.2	2.006	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	65	16		599	0.108	65	0.1	0.1	6.740	A
B-A	63	16		386	0.163	63	0.1	0.2	11.118	B
C-A	495	124				495				
C-B	63	16		505	0.124	63	0.1	0.1	8.127	A
A-BC	535	134	44.04	2213	0.242	535	0.2	0.3	2.145	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	65	16		598	0.109	65	0.1	0.1	6.748	A
B-A	63	16		386	0.163	63	0.2	0.2	11.134	B
C-A	495	124				495				
C-B	63	16		505	0.124	63	0.1	0.1	8.133	A
A-BC	535	134	44.04	2213	0.242	535	0.3	0.3	2.145	A

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	53	13		629	0.084	53	0.1	0.1	6.253	A
B-A	51	13		427	0.120	51	0.2	0.1	9.589	A
C-A	405	101				405				
C-B	51	13		526	0.097	51	0.1	0.1	7.582	A
A-BC	437	109	35.96	2230	0.196	437	0.3	0.2	2.007	A

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	44	11		651	0.068	44	0.1	0.1	5.938	A
B-A	43	11		457	0.094	43	0.1	0.1	8.707	A
C-A	339	85				339				
C-B	43	11		541	0.079	43	0.1	0.1	7.226	A
A-BC	366	91	30.11	2243	0.163	366	0.2	0.2	1.916	A

2021 Observed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.67	A

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	568	100.000
B		ONE HOUR	✓	39	100.000
C		ONE HOUR	✓	415	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	40.00
B		
C		

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	27	541
	B	24	0	15
	C	407	8	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	22	4
	B	0	0	7
	C	4	25	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.03	7.08	0.0	A	14	21
B-A	0.07	9.55	0.1	A	22	33
C-A					373	560
C-B	0.02	9.46	0.0	A	7	11
A-BC	0.28	2.26	0.4	A	521	782

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3		573	0.020	11	0.0	0.0	6.413	A
B-A	18	5		477	0.038	18	0.0	0.0	7.832	A
C-A	306	77				306				
C-B	6	2		423	0.014	6	0.0	0.0	8.631	A
A-BC	428	107	30.11	2250	0.190	427	0.0	0.2	1.973	A

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	13	3		552	0.024	13	0.0	0.0	6.678	A
B-A	22	5		446	0.048	22	0.0	0.1	8.474	A
C-A	366	91				366				
C-B	7	2		409	0.018	7	0.0	0.0	8.963	A
A-BC	511	128	35.96	2237	0.228	510	0.2	0.3	2.084	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4		525	0.031	16	0.0	0.0	7.082	A
B-A	26	7		404	0.065	26	0.1	0.1	9.541	A
C-A	448	112				448				
C-B	9	2		389	0.023	9	0.0	0.0	9.461	A
A-BC	625	156	44.04	2220	0.282	625	0.3	0.4	2.257	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4		525	0.031	17	0.0	0.0	7.084	A
B-A	26	7		403	0.066	26	0.1	0.1	9.547	A
C-A	448	112				448				
C-B	9	2		389	0.023	9	0.0	0.0	9.462	A
A-BC	625	156	44.04	2220	0.282	625	0.4	0.4	2.257	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	13	3		552	0.024	14	0.0	0.0	6.682	A
B-A	22	5		446	0.048	22	0.1	0.1	8.482	A
C-A	366	91				366				
C-B	7	2		409	0.018	7	0.0	0.0	8.969	A
A-BC	511	128	35.96	2237	0.228	511	0.4	0.3	2.087	A

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3		572	0.020	11	0.0	0.0	6.420	A
B-A	18	5		477	0.038	18	0.1	0.0	7.843	A
C-A	306	77				306				
C-B	6	2		423	0.014	6	0.0	0.0	8.639	A
A-BC	428	107	30.11	2250	0.190	428	0.3	0.2	1.977	A

2031 Without Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Last Run	Last Run	Stream A-BC	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 4 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		4.28	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.28	A

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	587	100.000
B		ONE HOUR	✓	256	100.000
C		ONE HOUR	✓	581	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	75.00
B		
C		

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	151	436
	B	141	0	115
	C	468	113	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.26	10.02	0.3	B	106	158
B-A	0.44	18.21	0.8	C	129	194
C-A					429	644
C-B	0.26	10.05	0.3	B	104	156
A-BC	0.30	2.40	0.4	A	539	808

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	87	22		590	0.147	86	0.0	0.2	7.129	A
B-A	106	27		444	0.239	105	0.0	0.3	10.565	B
C-A	352	88				352				
C-B	85	21		526	0.162	84	0.0	0.2	8.135	A
A-BC	442	110	56.46	2201	0.201	441	0.0	0.3	2.044	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	103	26		553	0.187	103	0.2	0.2	7.999	A
B-A	127	32		407	0.312	126	0.3	0.4	12.810	B
C-A	421	105				421				
C-B	102	25		508	0.200	101	0.2	0.2	8.853	A
A-BC	528	132	67.42	2178	0.242	527	0.3	0.3	2.180	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	127	32		488	0.260	126	0.2	0.3	9.943	A
B-A	155	39		353	0.440	154	0.4	0.8	17.973	C
C-A	515	129				515				
C-B	124	31		483	0.258	124	0.2	0.3	10.026	B
A-BC	646	162	82.58	2147	0.301	646	0.3	0.4	2.398	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	127	32		486	0.261	127	0.3	0.3	10.015	B
B-A	155	39		353	0.440	155	0.8	0.8	18.213	C
C-A	515	129				515				
C-B	124	31		483	0.258	124	0.3	0.3	10.050	B
A-BC	646	162	82.58	2147	0.301	646	0.4	0.4	2.398	A

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	103	26		551	0.188	104	0.3	0.2	8.055	A
B-A	127	32		406	0.312	128	0.8	0.5	12.989	B
C-A	421	105				421				
C-B	102	25		508	0.200	102	0.3	0.3	8.883	A
A-BC	528	132	67.42	2178	0.242	528	0.4	0.3	2.183	A

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	87	22		589	0.147	87	0.2	0.2	7.175	A
B-A	106	27		444	0.239	107	0.5	0.3	10.696	B
C-A	352	88				352				
C-B	85	21		526	0.162	85	0.3	0.2	8.178	A
A-BC	442	110	56.46	2201	0.201	442	0.3	0.3	2.048	A

2031 Without Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Last Run	Last Run	Stream A-BC	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 2 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		3.52	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.52	A

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	673	100.000
B		ONE HOUR	✓	168	100.000
C		ONE HOUR	✓	486	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	75.00
B		
C		

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	105	568
	B	102	0	66
	C	427	59	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	22	4
	B	0	0	7
	C	4	25	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.16	9.26	0.2	A	61	91
B-A	0.32	14.92	0.5	B	94	140
C-A					392	588
C-B	0.18	11.91	0.2	B	54	81
A-BC	0.35	2.65	0.5	A	618	926

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	50	12		541	0.092	49	0.0	0.1	7.316	A
B-A	77	19		444	0.173	76	0.0	0.2	9.752	A
C-A	321	80				321				
C-B	44	11		408	0.109	44	0.0	0.1	9.875	A
A-BC	507	127	56.46	2153	0.235	505	0.0	0.3	2.184	A

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	59	15		510	0.116	59	0.1	0.1	7.981	A
B-A	92	23		406	0.226	91	0.2	0.3	11.419	B
C-A	384	96				384				
C-B	53	13		391	0.136	53	0.1	0.2	10.649	B
A-BC	605	151	67.42	2130	0.284	605	0.3	0.4	2.359	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	73	18		462	0.157	72	0.1	0.2	9.232	A
B-A	112	28		354	0.318	112	0.3	0.5	14.833	B
C-A	470	118				470				
C-B	65	16		367	0.177	65	0.2	0.2	11.891	B
A-BC	741	185	82.58	2099	0.353	740	0.4	0.5	2.647	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	73	18		461	0.157	73	0.2	0.2	9.258	A
B-A	112	28		353	0.318	112	0.5	0.5	14.925	B
C-A	470	118				470				
C-B	65	16		367	0.177	65	0.2	0.2	11.911	B
A-BC	741	185	82.58	2099	0.353	741	0.5	0.5	2.649	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	59	15		509	0.117	60	0.2	0.1	8.008	A
B-A	92	23		406	0.226	92	0.5	0.3	11.500	B
C-A	384	96				384				
C-B	53	13		391	0.136	53	0.2	0.2	10.676	B
A-BC	605	151	67.42	2130	0.284	606	0.5	0.4	2.363	A

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	50	12		540	0.092	50	0.1	0.1	7.349	A
B-A	77	19		444	0.173	77	0.3	0.2	9.828	A
C-A	321	80				321				
C-B	44	11		408	0.109	45	0.2	0.1	9.916	A
A-BC	507	127	56.46	2153	0.235	507	0.4	0.3	2.189	A

2031 With Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Last Run	Last Run	Stream A-BC	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 6 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		13.03	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	13.03	B

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	601	100.000
B		ONE HOUR	✓	413	100.000
C		ONE HOUR	✓	594	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	287.00
B		
C		

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	165	436
	B	218	0	195
	C	468	126	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.67	33.72	1.9	D	179	268
B-A	0.79	53.42	3.3	F	200	300
C-A					429	644
C-B	0.29	10.57	0.4	B	116	173
A-BC	0.38	3.36	0.6	A	551	827

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	147	37		552	0.266	145	0.0	0.4	8.833	A
B-A	164	41		428	0.384	162	0.0	0.6	13.416	B
C-A	352	88				352				
C-B	95	24		524	0.181	94	0.0	0.2	8.356	A
A-BC	452	113	216.07	1896	0.239	451	0.0	0.3	2.489	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	175	44		482	0.364	174	0.4	0.6	11.672	B
B-A	196	49		382	0.514	194	0.6	1.0	19.061	C
C-A	421	105				421				
C-B	113	28		505	0.224	113	0.2	0.3	9.172	A
A-BC	540	135	258.01	1825	0.296	540	0.3	0.4	2.801	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	215	54		336	0.639	210	0.6	1.6	27.766	D
B-A	240	60		307	0.783	232	1.0	2.9	44.503	E
C-A	515	129				515				
C-B	139	35		479	0.289	138	0.3	0.4	10.535	B
A-BC	662	165	315.99	1733	0.382	661	0.4	0.6	3.358	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	215	54		319	0.674	214	1.6	1.9	33.717	D
B-A	240	60		303	0.792	238	2.9	3.3	53.423	F
C-A	515	129				515				
C-B	139	35		479	0.289	139	0.4	0.4	10.569	B
A-BC	662	165	315.99	1733	0.382	662	0.6	0.6	3.361	A

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	175	44		466	0.376	180	1.9	0.6	12.806	B
B-A	196	49		379	0.517	205	3.3	1.1	21.574	C
C-A	421	105				421				
C-B	113	28		505	0.224	114	0.4	0.3	9.212	A
A-BC	540	135	258.01	1825	0.296	541	0.6	0.4	2.804	A

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	147	37		546	0.269	148	0.6	0.4	9.055	A
B-A	164	41		427	0.384	166	1.1	0.6	13.893	B
C-A	352	88				352				
C-B	95	24		524	0.181	95	0.3	0.2	8.407	A
A-BC	452	113	216.07	1896	0.239	453	0.4	0.3	2.494	A

2031 With Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Last Run	Last Run	Stream A-BC	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 6 timesegment(s).

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		5.84	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.84	A

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	726	100.000
B		ONE HOUR	✓	223	100.000
C		ONE HOUR	✓	541	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	287.00
B		
C		

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	158	568
	B	129	0	94
	C	427	114	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	22	4
	B	0	0	7
	C	4	25	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.25	11.55	0.3	B	86	129
B-A	0.46	21.16	0.8	C	118	178
C-A					392	588
C-B	0.35	15.65	0.5	C	105	157
A-BC	0.48	4.10	0.9	A	666	999

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	71	18		528	0.134	70	0.0	0.2	7.847	A
B-A	97	24		417	0.233	96	0.0	0.3	11.157	B
C-A	321	80				321				
C-B	86	21		400	0.214	85	0.0	0.3	11.376	B
A-BC	547	137	216.07	1834	0.298	545	0.0	0.4	2.789	A

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	85	21		488	0.173	84	0.2	0.2	8.903	A
B-A	116	29		374	0.310	115	0.3	0.4	13.900	B
C-A	384	96				384				
C-B	102	26		381	0.269	102	0.3	0.4	12.877	B
A-BC	653	163	258.01	1766	0.370	652	0.4	0.6	3.231	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	103	26		417	0.248	103	0.2	0.3	11.430	B
B-A	142	36		313	0.454	141	0.4	0.8	20.755	C
C-A	470	118				470				
C-B	126	31		356	0.353	125	0.4	0.5	15.548	C
A-BC	799	200	315.99	1676	0.477	798	0.6	0.9	4.093	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	103	26		415	0.249	103	0.3	0.3	11.549	B
B-A	142	36		312	0.455	142	0.8	0.8	21.157	C
C-A	470	118				470				
C-B	126	31		355	0.353	125	0.5	0.5	15.652	C
A-BC	799	200	315.99	1676	0.477	799	0.9	0.9	4.104	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	85	21		486	0.174	85	0.3	0.2	8.986	A
B-A	116	29		373	0.311	117	0.8	0.5	14.163	B
C-A	384	96				384				
C-B	102	26		381	0.269	103	0.5	0.4	12.986	B
A-BC	653	163	258.01	1766	0.370	654	0.9	0.6	3.241	A

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	71	18		527	0.134	71	0.2	0.2	7.906	A
B-A	97	24		416	0.233	98	0.5	0.3	11.321	B
C-A	321	80				321				
C-B	86	21		400	0.215	86	0.4	0.3	11.496	B
A-BC	547	137	216.07	1834	0.298	547	0.6	0.4	2.800	A

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.0.1.1519

For sales and distribution information, program advice and maintenance, contact TRL Software:
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

Filename: Import of J5a Oakleigh Rd_Brunswick Ave.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J5a Oakleigh Rd_Brunswick Ave
Report generation date: 7/14/2022 10:01:34 AM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Stream B-C	D1	0.0	7.23	0.03	A	D2	0.1	7.22	0.05	A
Stream B-A		0.4	12.13	0.27	B		0.2	10.71	0.16	B
Stream C-B		0.0	7.26	0.03	A		0.0	7.67	0.04	A
	2031 Without Dev									
Stream B-C	D3	0.0	7.79	0.03	A	D4	0.1	8.39	0.06	A
Stream B-A		0.4	13.31	0.26	B		0.4	14.53	0.31	B
Stream C-B		0.0	8.10	0.03	A		0.1	8.51	0.05	A
	2031 With Dev									
Stream B-C	D5	0.0	8.23	0.03	A					
Stream B-A		0.4	14.76	0.28	B					
Stream C-B		0.0	8.49	0.03	A					
	2031 With Dev									
Stream B-C						D6	0.1	8.61	0.06	A
Stream B-A							0.5	15.70	0.32	C
Stream C-B							0.1	8.66	0.05	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.31	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.31	A

Arms

Arms

Arm	Name	Description	Arm type
A	Oakleigh Rd (W)		Major
B	Brunswick Ave		Minor
C	Oakleigh Rd (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.68			94.6		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	7.42	3.96	3.70	3.70	3.70		1.00	22	162

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	621	0.100	0.253	0.159	0.361
B-C	684	0.093	0.234	-	-
C-B	629	0.215	0.215	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	478	100.000
B		ONE HOUR	✓	113	100.000
C		ONE HOUR	✓	419	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	42	436
	B	100	0	13
	C	407	12	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	6
	B	0	0	0
	C	7	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.03	7.23	0.0	A	12	18
B-A	0.27	12.13	0.4	B	92	138
C-A					373	560
C-B	0.03	7.26	0.0	A	11	17
A-B					39	58
A-C					400	600

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	573	0.017	10	0.0	0.0	6.385	A
B-A	75	19	475	0.159	75	0.0	0.2	8.982	A
C-A	306	77			306				
C-B	9	2	547	0.017	9	0.0	0.0	6.691	A
A-B	32	8			32				
A-C	328	82			328				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	549	0.021	12	0.0	0.0	6.698	A
B-A	90	22	446	0.201	90	0.2	0.2	10.089	B
C-A	366	91			366				
C-B	11	3	531	0.020	11	0.0	0.0	6.918	A
A-B	38	9			38				
A-C	392	98			392				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14	4	512	0.028	14	0.0	0.0	7.229	A
B-A	110	28	407	0.271	110	0.2	0.4	12.093	B
C-A	448	112			448				
C-B	13	3	509	0.026	13	0.0	0.0	7.258	A
A-B	46	12			46				
A-C	480	120			480				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14	4	512	0.028	14	0.0	0.0	7.233	A
B-A	110	28	407	0.271	110	0.4	0.4	12.132	B
C-A	448	112			448				
C-B	13	3	509	0.026	13	0.0	0.0	7.258	A
A-B	46	12			46				
A-C	480	120			480				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	549	0.021	12	0.0	0.0	6.703	A
B-A	90	22	446	0.201	90	0.4	0.3	10.131	B
C-A	366	91			366				
C-B	11	3	531	0.020	11	0.0	0.0	6.919	A
A-B	38	9			38				
A-C	392	98			392				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	573	0.017	10	0.0	0.0	6.393	A
B-A	75	19	475	0.159	76	0.3	0.2	9.028	A
C-A	306	77			306				
C-B	9	2	547	0.017	9	0.0	0.0	6.694	A
A-B	32	8			32				
A-C	328	82			328				

2021 Observed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.90	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.90	A

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	556	100.000
B		ONE HOUR	✓	82	100.000
C		ONE HOUR	✓	376	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	90	466
	B	59	0	23
	C	356	20	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.05	7.22	0.1	A	21	32
B-A	0.16	10.71	0.2	B	54	81
C-A					327	490
C-B	0.04	7.67	0.0	A	18	28
A-B					83	124
A-C					428	641

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4	577	0.030	17	0.0	0.0	6.429	A
B-A	44	11	471	0.094	44	0.0	0.1	8.429	A
C-A	268	67			268				
C-B	15	4	535	0.028	15	0.0	0.0	6.921	A
A-B	68	17			68				
A-C	351	88			351				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	21	5	555	0.037	21	0.0	0.0	6.735	A
B-A	53	13	441	0.120	53	0.1	0.1	9.262	A
C-A	320	80			320				
C-B	18	4	517	0.035	18	0.0	0.0	7.217	A
A-B	81	20			81				
A-C	419	105			419				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	524	0.048	25	0.0	0.1	7.216	A
B-A	65	16	401	0.162	65	0.1	0.2	10.699	B
C-A	392	98			392				
C-B	22	6	491	0.045	22	0.0	0.0	7.667	A
A-B	99	25			99				
A-C	513	128			513				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	524	0.048	25	0.1	0.1	7.218	A
B-A	65	16	401	0.162	65	0.2	0.2	10.712	B
C-A	392	98			392				
C-B	22	6	491	0.045	22	0.0	0.0	7.667	A
A-B	99	25			99				
A-C	513	128			513				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	21	5	555	0.037	21	0.1	0.0	6.738	A
B-A	53	13	441	0.120	53	0.2	0.1	9.279	A
C-A	320	80			320				
C-B	18	4	517	0.035	18	0.0	0.0	7.222	A
A-B	81	20			81				
A-C	419	105			419				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4	577	0.030	17	0.0	0.0	6.435	A
B-A	44	11	471	0.094	45	0.1	0.1	8.452	A
C-A	268	67			268				
C-B	15	4	535	0.028	15	0.0	0.0	6.925	A
A-B	68	17			68				
A-C	351	88			351				

2031 Without Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.09	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.09	A

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	686	100.000
B		ONE HOUR	✓	100	100.000
C		ONE HOUR	✓	400	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	136	550
	B	87	0	13
	C	388	12	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	6
	B	0	0	0
	C	7	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.03	7.79	0.0	A	12	18
B-A	0.26	13.31	0.4	B	80	120
C-A					356	534
C-B	0.03	8.10	0.0	A	11	17
A-B					125	187
A-C					505	757

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	549	0.018	10	0.0	0.0	6.677	A
B-A	65	16	447	0.147	65	0.0	0.2	9.408	A
C-A	292	73			292				
C-B	9	2	512	0.018	9	0.0	0.0	7.159	A
A-B	102	26			102				
A-C	414	104			414				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	520	0.022	12	0.0	0.0	7.081	A
B-A	78	20	413	0.189	78	0.2	0.2	10.736	B
C-A	349	87			349				
C-B	11	3	489	0.022	11	0.0	0.0	7.525	A
A-B	122	31			122				
A-C	494	124			494				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14	4	477	0.030	14	0.0	0.0	7.781	A
B-A	96	24	366	0.262	95	0.2	0.3	13.268	B
C-A	427	107			427				
C-B	13	3	458	0.029	13	0.0	0.0	8.098	A
A-B	150	37			150				
A-C	606	151			606				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14	4	477	0.030	14	0.0	0.0	7.786	A
B-A	96	24	366	0.262	96	0.3	0.4	13.311	B
C-A	427	107			427				
C-B	13	3	458	0.029	13	0.0	0.0	8.098	A
A-B	150	37			150				
A-C	606	151			606				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	520	0.022	12	0.0	0.0	7.089	A
B-A	78	20	413	0.189	79	0.4	0.2	10.781	B
C-A	349	87			349				
C-B	11	3	489	0.022	11	0.0	0.0	7.526	A
A-B	122	31			122				
A-C	494	124			494				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	548	0.018	10	0.0	0.0	6.685	A
B-A	65	16	447	0.147	66	0.2	0.2	9.453	A
C-A	292	73			292				
C-B	9	2	512	0.018	9	0.0	0.0	7.162	A
A-B	102	26			102				
A-C	414	104			414				

2031 Without Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.40	A

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	746	100.000
B		ONE HOUR	✓	122	100.000
C		ONE HOUR	✓	367	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	143	603
	B	99	0	23
	C	347	20	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.06	8.39	0.1	A	21	32
B-A	0.31	14.53	0.4	B	91	136
C-A					318	478
C-B	0.05	8.51	0.1	A	18	28
A-B					131	197
A-C					553	830

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4	536	0.032	17	0.0	0.0	6.935	A
B-A	75	19	440	0.169	74	0.0	0.2	9.794	A
C-A	261	65			261				
C-B	15	4	503	0.030	15	0.0	0.0	7.374	A
A-B	108	27			108				
A-C	454	113			454				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	21	5	504	0.041	21	0.0	0.0	7.449	A
B-A	89	22	405	0.220	89	0.2	0.3	11.357	B
C-A	312	78			312				
C-B	18	4	479	0.038	18	0.0	0.0	7.815	A
A-B	129	32			129				
A-C	542	136			542				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	455	0.056	25	0.0	0.1	8.381	A
B-A	109	27	357	0.306	108	0.3	0.4	14.463	B
C-A	382	96			382				
C-B	22	6	445	0.050	22	0.0	0.1	8.512	A
A-B	157	39			157				
A-C	664	166			664				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	454	0.056	25	0.1	0.1	8.391	A
B-A	109	27	357	0.306	109	0.4	0.4	14.533	B
C-A	382	96			382				
C-B	22	6	445	0.050	22	0.1	0.1	8.513	A
A-B	157	39			157				
A-C	664	166			664				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	21	5	503	0.041	21	0.1	0.0	7.458	A
B-A	89	22	405	0.220	90	0.4	0.3	11.427	B
C-A	312	78			312				
C-B	18	4	479	0.038	18	0.1	0.0	7.818	A
A-B	129	32			129				
A-C	542	136			542				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4	536	0.032	17	0.0	0.0	6.948	A
B-A	75	19	440	0.169	75	0.3	0.2	9.855	A
C-A	261	65			261				
C-B	15	4	503	0.030	15	0.0	0.0	7.378	A
A-B	108	27			108				
A-C	454	113			454				

2031 With Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.11	A

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	767	100.000
B		ONE HOUR	✓	100	100.000
C		ONE HOUR	✓	414	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	136	631
	B	87	0	13
	C	402	12	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	2	6
	B	0	0	0
	C	7	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.03	8.23	0.0	A	12	18
B-A	0.28	14.76	0.4	B	80	120
C-A					369	553
C-B	0.03	8.49	0.0	A	11	17
A-B					125	187
A-C					579	869

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	533	0.018	10	0.0	0.0	6.876	A
B-A	65	16	429	0.153	65	0.0	0.2	9.872	A
C-A	303	76			303				
C-B	9	2	498	0.018	9	0.0	0.0	7.362	A
A-B	102	26			102				
A-C	475	119			475				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	501	0.023	12	0.0	0.0	7.357	A
B-A	78	20	391	0.200	78	0.2	0.2	11.474	B
C-A	361	90			361				
C-B	11	3	473	0.023	11	0.0	0.0	7.796	A
A-B	122	31			122				
A-C	567	142			567				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14	4	452	0.032	14	0.0	0.0	8.223	A
B-A	96	24	340	0.282	95	0.2	0.4	14.691	B
C-A	443	111			443				
C-B	13	3	437	0.030	13	0.0	0.0	8.486	A
A-B	150	37			150				
A-C	695	174			695				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	14	4	452	0.032	14	0.0	0.0	8.230	A
B-A	96	24	340	0.282	96	0.4	0.4	14.755	B
C-A	443	111			443				
C-B	13	3	437	0.030	13	0.0	0.0	8.486	A
A-B	150	37			150				
A-C	695	174			695				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	500	0.023	12	0.0	0.0	7.367	A
B-A	78	20	391	0.200	79	0.4	0.3	11.534	B
C-A	361	90			361				
C-B	11	3	473	0.023	11	0.0	0.0	7.797	A
A-B	122	31			122				
A-C	567	142			567				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	533	0.018	10	0.0	0.0	6.884	A
B-A	65	16	429	0.153	66	0.3	0.2	9.925	A
C-A	303	76			303				
C-B	9	2	498	0.018	9	0.0	0.0	7.366	A
A-B	102	26			102				
A-C	475	119			475				

2031 With Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.40	A

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	774	100.000
B		ONE HOUR	✓	122	100.000
C		ONE HOUR	✓	422	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	143	631
	B	99	0	23
	C	402	20	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.06	8.61	0.1	A	21	32
B-A	0.32	15.70	0.5	C	91	136
C-A					369	553
C-B	0.05	8.66	0.1	A	18	28
A-B					131	197
A-C					579	869

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4	530	0.033	17	0.0	0.0	7.014	A
B-A	75	19	428	0.174	74	0.0	0.2	10.141	B
C-A	303	76			303				
C-B	15	4	498	0.030	15	0.0	0.0	7.446	A
A-B	108	27			108				
A-C	475	119			475				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	21	5	496	0.042	21	0.0	0.0	7.566	A
B-A	89	22	390	0.228	89	0.2	0.3	11.921	B
C-A	361	90			361				
C-B	18	4	473	0.038	18	0.0	0.0	7.913	A
A-B	129	32			129				
A-C	567	142			567				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	444	0.057	25	0.0	0.1	8.601	A
B-A	109	27	338	0.322	108	0.3	0.5	15.606	C
C-A	443	111			443				
C-B	22	6	438	0.050	22	0.0	0.1	8.654	A
A-B	157	39			157				
A-C	695	174			695				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	443	0.057	25	0.1	0.1	8.613	A
B-A	109	27	338	0.322	109	0.5	0.5	15.700	C
C-A	443	111			443				
C-B	22	6	438	0.050	22	0.1	0.1	8.656	A
A-B	157	39			157				
A-C	695	174			695				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	21	5	496	0.042	21	0.1	0.0	7.580	A
B-A	89	22	390	0.228	90	0.5	0.3	12.004	B
C-A	361	90			361				
C-B	18	4	473	0.038	18	0.1	0.0	7.916	A
A-B	129	32			129				
A-C	567	142			567				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	17	4	530	0.033	17	0.0	0.0	7.027	A
B-A	75	19	428	0.174	75	0.3	0.2	10.210	B
C-A	303	76			303				
C-B	15	4	498	0.030	15	0.0	0.0	7.450	A
A-B	108	27			108				
A-C	475	119			475				

Junctions 10

PICADY 10 - Priority Intersection Module

Filename: Import of J6 Oakleigh Rd_Coppies Grove.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J6 Oakleigh Rd_Coppies Grove
Report generation date: 7/12/2022 3:05:26 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Stream B-C	D1	0.0	6.30	0.02	A	D2	0.0	6.25	0.02	A
Stream B-A		0.1	11.34	0.08	B		0.0	10.37	0.02	B
Stream C-AB		0.0	4.40	0.02	A		0.1	4.28	0.06	A
	2031 Without Dev									
Stream B-C	D3	0.0	6.45	0.02	A	D4	0.0	6.40	0.02	A
Stream B-A		0.1	12.29	0.09	B		0.0	11.20	0.02	B
Stream C-AB		0.0	4.29	0.02	A		0.1	4.17	0.07	A
	2031 With Dev									
Stream B-C	D5	0.0	6.52	0.02	A	D6	0.0	6.60	0.02	A
Stream B-A		0.1	13.15	0.09	B		0.0	12.01	0.02	B
Stream C-AB		0.0	4.12	0.02	A		0.1	4.16	0.07	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.42	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.42	A

Arms

Arms

Arm	Name	Description	Arm type
A	Oakleigh Rd (S)		Major
B	Coppies Grove		Minor
C	Oakleigh Rd (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.17			250.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	9.50	3.97	3.91	3.86	3.80		1.00	19	19

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	548	0.099	0.250	0.157	0.358
B-C	731	0.111	0.281	-	-
C-B	719	0.276	0.276	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	419	100.000
B		ONE HOUR	✓	34	100.000
C		ONE HOUR	✓	435	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	12	407
	B	24	0	10
	C	428	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	8
	B	0	0	0
	C	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.02	6.30	0.0	A	9	14
B-A	0.08	11.34	0.1	B	22	33
C-AB	0.02	4.40	0.0	A	12	18
C-A					387	580
A-B					11	17
A-C					373	560

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	630	0.012	7	0.0	0.0	5.780	A
B-A	18	5	408	0.044	18	0.0	0.0	9.215	A
C-AB	9	2	828	0.010	9	0.0	0.0	4.390	A
C-A	319	80			319				
A-B	9	2			9				
A-C	306	77			306				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	610	0.015	9	0.0	0.0	5.988	A
B-A	22	5	381	0.057	22	0.0	0.1	10.004	B
C-AB	11	3	854	0.013	11	0.0	0.0	4.266	A
C-A	380	95			380				
A-B	11	3			11				
A-C	366	91			366				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	582	0.019	11	0.0	0.0	6.303	A
B-A	26	7	344	0.077	26	0.1	0.1	11.332	B
C-AB	16	4	891	0.018	16	0.0	0.0	4.107	A
C-A	463	116			463				
A-B	13	3			13				
A-C	448	112			448				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	582	0.019	11	0.0	0.0	6.304	A
B-A	26	7	344	0.077	26	0.1	0.1	11.338	B
C-AB	16	4	891	0.018	16	0.0	0.0	4.115	A
C-A	463	116			463				
A-B	13	3			13				
A-C	448	112			448				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	610	0.015	9	0.0	0.0	5.989	A
B-A	22	5	381	0.057	22	0.1	0.1	10.011	B
C-AB	11	3	854	0.013	12	0.0	0.0	4.285	A
C-A	380	95			380				
A-B	11	3			11				
A-C	366	91			366				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	630	0.012	8	0.0	0.0	5.784	A
B-A	18	5	408	0.044	18	0.1	0.0	9.227	A
C-AB	9	2	828	0.010	9	0.0	0.0	4.402	A
C-A	319	80			319				
A-B	9	2			9				
A-C	306	77			306				

2021 Observed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.33	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.33	A

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	390	100.000
B		ONE HOUR	✓	16	100.000
C		ONE HOUR	✓	519	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	27	363
	B	6	0	10
	C	498	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.02	6.25	0.0	A	9	14
B-A	0.02	10.37	0.0	B	6	8
C-AB	0.06	4.28	0.1	A	40	60
C-A					436	654
A-B					25	37
A-C					333	500

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	625	0.012	7	0.0	0.0	5.833	A
B-A	5	1	421	0.011	4	0.0	0.0	8.635	A
C-AB	28	7	871	0.032	28	0.0	0.0	4.266	A
C-A	363	91			363				
A-B	20	5			20				
A-C	273	68			273				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	609	0.015	9	0.0	0.0	6.003	A
B-A	5	1	393	0.014	5	0.0	0.0	9.289	A
C-AB	37	9	905	0.041	37	0.0	0.1	4.142	A
C-A	429	107			429				
A-B	24	6			24				
A-C	326	82			326				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	586	0.019	11	0.0	0.0	6.255	A
B-A	7	2	354	0.019	7	0.0	0.0	10.369	B
C-AB	54	14	955	0.057	54	0.1	0.1	3.994	A
C-A	517	129			517				
A-B	30	7			30				
A-C	400	100			400				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	586	0.019	11	0.0	0.0	6.255	A
B-A	7	2	354	0.019	7	0.0	0.0	10.370	B
C-AB	55	14	955	0.057	55	0.1	0.1	4.002	A
C-A	517	129			517				
A-B	30	7			30				
A-C	400	100			400				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	609	0.015	9	0.0	0.0	6.003	A
B-A	5	1	393	0.014	5	0.0	0.0	9.291	A
C-AB	38	9	905	0.041	38	0.1	0.1	4.159	A
C-A	429	107			429				
A-B	24	6			24				
A-C	326	82			326				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	625	0.012	8	0.0	0.0	5.833	A
B-A	5	1	421	0.011	5	0.0	0.0	8.639	A
C-AB	28	7	871	0.032	28	0.1	0.0	4.276	A
C-A	363	91			363				
A-B	20	5			20				
A-C	273	68			273				

2031 Without Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.40	A

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	489	100.000
B		ONE HOUR	✓	35	100.000
C		ONE HOUR	✓	505	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	66	423
	B	25	0	10
	C	498	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	8
	B	0	0	0
	C	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.02	6.45	0.0	A	9	14
B-A	0.09	12.29	0.1	B	23	34
C-AB	0.02	4.29	0.0	A	14	21
C-A					450	675
A-B					61	91
A-C					388	582

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	622	0.012	7	0.0	0.0	5.862	A
B-A	19	5	392	0.048	19	0.0	0.0	9.628	A
C-AB	9	2	850	0.011	9	0.0	0.0	4.281	A
C-A	371	93			371				
A-B	50	12			50				
A-C	318	80			318				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	600	0.015	9	0.0	0.0	6.094	A
B-A	22	6	362	0.062	22	0.0	0.1	10.597	B
C-AB	13	3	881	0.015	13	0.0	0.0	4.138	A
C-A	441	110			441				
A-B	59	15			59				
A-C	380	95			380				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	569	0.019	11	0.0	0.0	6.452	A
B-A	28	7	320	0.086	27	0.1	0.1	12.284	B
C-AB	19	5	927	0.020	19	0.0	0.0	3.955	A
C-A	537	134			537				
A-B	73	18			73				
A-C	466	116			466				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	569	0.019	11	0.0	0.0	6.452	A
B-A	28	7	320	0.086	28	0.1	0.1	12.292	B
C-AB	19	5	927	0.020	19	0.0	0.0	3.964	A
C-A	537	134			537				
A-B	73	18			73				
A-C	466	116			466				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	600	0.015	9	0.0	0.0	6.095	A
B-A	22	6	362	0.062	23	0.1	0.1	10.605	B
C-AB	13	3	881	0.015	13	0.0	0.0	4.159	A
C-A	441	110			441				
A-B	59	15			59				
A-C	380	95			380				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	621	0.012	8	0.0	0.0	5.863	A
B-A	19	5	392	0.048	19	0.1	0.1	9.641	A
C-AB	9	2	850	0.011	9	0.0	0.0	4.291	A
C-A	371	93			371				
A-B	50	12			50				
A-C	318	80			318				

2031 Without Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.32	A

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	459	100.000
B		ONE HOUR	✓	17	100.000
C		ONE HOUR	✓	595	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	78	381
	B	6	0	11
	C	573	22	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.02	6.40	0.0	A	10	15
B-A	0.02	11.20	0.0	B	6	8
C-AB	0.07	4.17	0.1	A	48	71
C-A					498	748
A-B					72	107
A-C					350	524

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	617	0.013	8	0.0	0.0	5.917	A
B-A	5	1	404	0.011	4	0.0	0.0	9.013	A
C-AB	32	8	896	0.036	32	0.0	0.0	4.164	A
C-A	416	104			416				
A-B	59	15			59				
A-C	287	72			287				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	599	0.017	10	0.0	0.0	6.110	A
B-A	5	1	372	0.015	5	0.0	0.0	9.818	A
C-AB	44	11	937	0.047	44	0.0	0.1	4.028	A
C-A	491	123			491				
A-B	70	18			70				
A-C	343	86			343				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	575	0.021	12	0.0	0.0	6.399	A
B-A	7	2	328	0.020	7	0.0	0.0	11.194	B
C-AB	66	17	995	0.067	66	0.1	0.1	3.870	A
C-A	589	147			589				
A-B	86	21			86				
A-C	419	105			419				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	575	0.021	12	0.0	0.0	6.399	A
B-A	7	2	328	0.020	7	0.0	0.0	11.195	B
C-AB	66	17	995	0.067	66	0.1	0.1	3.876	A
C-A	589	147			589				
A-B	86	21			86				
A-C	419	105			419				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	599	0.017	10	0.0	0.0	6.113	A
B-A	5	1	372	0.015	5	0.0	0.0	9.821	A
C-AB	44	11	937	0.047	44	0.1	0.1	4.044	A
C-A	491	123			491				
A-B	70	18			70				
A-C	343	86			343				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	617	0.013	8	0.0	0.0	5.920	A
B-A	5	1	404	0.011	5	0.0	0.0	9.018	A
C-AB	32	8	896	0.036	32	0.1	0.0	4.174	A
C-A	416	104			416				
A-B	59	15			59				
A-C	287	72			287				

2031 With Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.39	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.39	A

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	503	100.000
B		ONE HOUR	✓	35	100.000
C		ONE HOUR	✓	586	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	66	437
	B	25	0	10
	C	579	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	8
	B	0	0	0
	C	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.02	6.52	0.0	A	9	14
B-A	0.09	13.15	0.1	B	23	34
C-AB	0.02	4.12	0.0	A	16	23
C-A					522	783
A-B					61	91
A-C					401	601

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	618	0.012	7	0.0	0.0	5.895	A
B-A	19	5	379	0.050	19	0.0	0.1	9.976	A
C-AB	10	3	887	0.012	10	0.0	0.0	4.106	A
C-A	431	108			431				
A-B	50	12			50				
A-C	329	82			329				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	595	0.015	9	0.0	0.0	6.138	A
B-A	22	6	347	0.065	22	0.1	0.1	11.103	B
C-AB	14	4	926	0.016	14	0.0	0.0	3.941	A
C-A	512	128			512				
A-B	59	15			59				
A-C	393	98			393				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	563	0.020	11	0.0	0.0	6.515	A
B-A	28	7	301	0.091	27	0.1	0.1	13.136	B
C-AB	22	5	984	0.022	22	0.0	0.0	3.733	A
C-A	623	156			623				
A-B	73	18			73				
A-C	481	120			481				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	11	3	563	0.020	11	0.0	0.0	6.516	A
B-A	28	7	301	0.091	28	0.1	0.1	13.147	B
C-AB	22	5	984	0.022	22	0.0	0.0	3.740	A
C-A	623	156			623				
A-B	73	18			73				
A-C	481	120			481				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	9	2	595	0.015	9	0.0	0.0	6.139	A
B-A	22	6	347	0.065	23	0.1	0.1	11.118	B
C-AB	14	4	926	0.016	14	0.0	0.0	3.960	A
C-A	512	128			512				
A-B	59	15			59				
A-C	393	98			393				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	618	0.012	8	0.0	0.0	5.899	A
B-A	19	5	379	0.050	19	0.1	0.1	9.990	A
C-AB	10	3	887	0.012	10	0.0	0.0	4.117	A
C-A	431	108			431				
A-B	50	12			50				
A-C	329	82			329				

2031 With Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.32	A

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	514	100.000
B		ONE HOUR	✓	17	100.000
C		ONE HOUR	✓	623	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	78	436
	B	6	0	11
	C	601	22	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.02	6.60	0.0	A	10	15
B-A	0.02	12.01	0.0	B	6	8
C-AB	0.07	4.16	0.1	A	50	76
C-A					521	782
A-B					72	107
A-C					400	600

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	605	0.014	8	0.0	0.0	6.035	A
B-A	5	1	389	0.012	4	0.0	0.0	9.361	A
C-AB	33	8	901	0.037	33	0.0	0.1	4.148	A
C-A	436	109			436				
A-B	59	15			59				
A-C	328	82			328				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	585	0.017	10	0.0	0.0	6.260	A
B-A	5	1	354	0.015	5	0.0	0.0	10.317	B
C-AB	46	12	943	0.049	46	0.1	0.1	4.009	A
C-A	514	128			514				
A-B	70	18			70				
A-C	392	98			392				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	557	0.022	12	0.0	0.0	6.603	A
B-A	7	2	306	0.022	7	0.0	0.0	12.004	B
C-AB	71	18	1005	0.071	71	0.1	0.1	3.849	A
C-A	615	154			615				
A-B	86	21			86				
A-C	480	120			480				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	12	3	557	0.022	12	0.0	0.0	6.603	A
B-A	7	2	306	0.022	7	0.0	0.0	12.006	B
C-AB	71	18	1005	0.071	71	0.1	0.1	3.857	A
C-A	615	154			615				
A-B	86	21			86				
A-C	480	120			480				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	10	2	585	0.017	10	0.0	0.0	6.263	A
B-A	5	1	354	0.015	5	0.0	0.0	10.320	B
C-AB	47	12	943	0.049	47	0.1	0.1	4.025	A
C-A	514	128			514				
A-B	70	18			70				
A-C	392	98			392				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8	2	605	0.014	8	0.0	0.0	6.035	A
B-A	5	1	389	0.012	5	0.0	0.0	9.366	A
C-AB	33	8	901	0.037	33	0.1	0.1	4.157	A
C-A	436	109			436				
A-B	59	15			59				
A-C	328	82			328				

Junctions 10

ARCADY 10 - Roundabout Module

Filename: Import of J7 Betsyle Circus.j10
Path: Y:\3000 Projects\3013-London, New Southgate, Royal Brunswick Park\Stomor Documents\Junctions 10\J7 Betstyle Circus
Report generation date: 7/12/2022 3:09:50 PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2021 Observed									
Arm 1	D1	2.2	6.46	0.69	A	D2	1.1	4.33	0.53	A
Arm 2		0.7	4.64	0.42	A		0.9	4.55	0.48	A
Arm 3		1.1	4.70	0.51	A		2.1	7.04	0.68	A
Arm 4		0.7	5.21	0.41	A		1.0	6.88	0.51	A
	2031 Without Dev									
Arm 1	D3	2.6	7.41	0.73	A	D4	1.2	4.69	0.56	A
Arm 2		0.8	5.05	0.46	A		1.1	4.94	0.52	A
Arm 3		1.2	5.13	0.55	A		2.4	8.07	0.71	A
Arm 4		0.9	5.86	0.47	A		1.3	8.04	0.57	A
	2031 With Dev									
Arm 1	D5	2.9	8.13	0.74	A	D6	1.3	4.79	0.56	A
Arm 2		0.9	5.35	0.47	A		1.1	5.11	0.53	A
Arm 3		1.2	5.23	0.55	A		2.9	9.25	0.75	A
Arm 4		1.1	6.75	0.54	A		1.5	8.64	0.60	A

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

File summary

File Description

Title	
Location	
Site number	
Date	6/4/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	STOMORLTD\Simon
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 With Dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2021 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.47	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.47	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Waterfall Rd		
2	Bowes Rd		
3	Friern Barnet Rd		
4	Oakleigh Rd		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1	7.50	7.50	0.0	16.0	77.0	39.0		
2	5.50	7.55	18.8	17.0	77.0	26.0		
3	4.73	7.53	20.3	13.0	77.0	32.0		
4	4.11	7.08	9.3	32.0	77.0	34.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.541	2174
2	0.547	2138
3	0.511	1955
4	0.481	1698

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	2021 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1130	100.000
2		ONE HOUR	✓	516	100.000
3		ONE HOUR	✓	735	100.000
4		ONE HOUR	✓	429	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	29	216	758	127
	2	154	3	131	228
	3	498	165	5	67
	4	113	196	120	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	3	10	2	2
	2	14	0	9	11
	3	2	5	0	6
	4	1	6	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.69	6.46	2.2	A	1037	1555
2	0.42	4.64	0.7	A	473	710
3	0.51	4.70	1.1	A	674	1012
4	0.41	5.21	0.7	A	394	590

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	851	213	367	1896	0.449	847	596	0.0	0.8	3.424	A
2	388	97	779	1528	0.254	387	435	0.0	0.3	3.152	A
3	553	138	406	1677	0.330	551	760	0.0	0.5	3.191	A
4	323	81	641	1307	0.247	322	317	0.0	0.3	3.649	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1016	254	439	1856	0.547	1014	713	0.8	1.2	4.270	A
2	464	116	933	1450	0.320	463	521	0.3	0.5	3.645	A
3	661	165	486	1634	0.404	660	910	0.5	0.7	3.694	A
4	386	96	767	1246	0.309	385	379	0.3	0.4	4.178	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1244	311	537	1801	0.691	1240	873	1.2	2.2	6.371	A
2	568	142	1140	1345	0.422	567	637	0.5	0.7	4.620	A
3	809	202	594	1575	0.514	808	1113	0.7	1.0	4.682	A
4	472	118	939	1164	0.406	471	464	0.4	0.7	5.190	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1244	311	538	1801	0.691	1244	874	2.2	2.2	6.463	A
2	568	142	1144	1344	0.423	568	639	0.7	0.7	4.641	A
3	809	202	596	1575	0.514	809	1116	1.0	1.1	4.702	A
4	472	118	940	1163	0.406	472	465	0.7	0.7	5.208	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1016	254	441	1855	0.548	1020	715	2.2	1.2	4.330	A
2	464	116	937	1448	0.320	465	523	0.7	0.5	3.665	A
3	661	165	488	1633	0.405	662	915	1.1	0.7	3.712	A
4	386	96	769	1245	0.310	387	380	0.7	0.5	4.198	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	851	213	369	1895	0.449	852	599	1.2	0.8	3.460	A
2	388	97	784	1525	0.255	389	437	0.5	0.3	3.171	A
3	553	138	408	1676	0.330	554	765	0.7	0.5	3.211	A
4	323	81	644	1305	0.247	323	318	0.5	0.3	3.670	A

2021 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.67	A

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	2021 Observed	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	840	100.000
2		ONE HOUR	✓	675	100.000
3		ONE HOUR	✓	966	100.000
4		ONE HOUR	✓	485	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	29	151	583	77
	2	180	8	178	309
	3	664	222	9	71
	4	118	228	139	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	1	0
	2	9	0	4	6
	3	1	2	0	3
	4	0	7	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.53	4.33	1.1	A	771	1156
2	0.48	4.55	0.9	A	619	929
3	0.68	7.04	2.1	A	886	1330
4	0.51	6.88	1.0	A	445	668

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	632	158	454	1873	0.338	630	743	0.0	0.5	2.893	A
2	508	127	628	1687	0.301	506	457	0.0	0.4	3.045	A
3	727	182	452	1687	0.431	724	682	0.0	0.8	3.728	A
4	365	91	834	1243	0.294	363	343	0.0	0.4	4.087	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	755	189	544	1824	0.414	754	890	0.5	0.7	3.366	A
2	607	152	752	1623	0.374	606	547	0.4	0.6	3.538	A
3	868	217	542	1640	0.530	867	816	0.8	1.1	4.650	A
4	436	109	998	1165	0.374	435	410	0.4	0.6	4.930	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	925	231	665	1757	0.526	923	1088	0.7	1.1	4.309	A
2	743	186	920	1536	0.484	742	669	0.6	0.9	4.527	A
3	1064	266	663	1575	0.675	1060	999	1.1	2.0	6.937	A
4	534	133	1221	1059	0.504	532	502	0.6	1.0	6.817	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	925	231	667	1756	0.527	925	1091	1.1	1.1	4.330	A
2	743	186	922	1535	0.484	743	670	0.9	0.9	4.547	A
3	1064	266	664	1575	0.676	1063	1001	2.0	2.1	7.042	A
4	534	133	1224	1057	0.505	534	503	1.0	1.0	6.880	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	755	189	547	1822	0.414	757	894	1.1	0.7	3.386	A
2	607	152	754	1622	0.374	608	549	0.9	0.6	3.555	A
3	868	217	543	1639	0.530	872	819	2.1	1.1	4.717	A
4	436	109	1003	1162	0.375	438	412	1.0	0.6	4.979	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	632	158	457	1871	0.338	633	747	0.7	0.5	2.909	A
2	508	127	631	1686	0.301	509	459	0.6	0.4	3.060	A
3	727	182	455	1686	0.431	729	685	1.1	0.8	3.768	A
4	365	91	839	1240	0.294	366	345	0.6	0.4	4.121	A

2031 Without Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.12	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.12	A

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	2031 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1170	100.000
2		ONE HOUR	✓	544	100.000
3		ONE HOUR	✓	767	100.000
4		ONE HOUR	✓	491	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	30	220	773	147
	2	157	3	134	250
	3	508	168	5	86
	4	133	218	140	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	3	10	2	2
	2	14	0	9	11
	3	2	5	0	6
	4	1	6	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.73	7.41	2.6	A	1074	1610
2	0.46	5.05	0.8	A	499	749
3	0.55	5.13	1.2	A	704	1056
4	0.47	5.86	0.9	A	451	676

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	881	220	400	1878	0.469	877	621	0.0	0.9	3.588	A
2	410	102	821	1506	0.272	408	457	0.0	0.4	3.273	A
3	577	144	440	1658	0.348	575	789	0.0	0.5	3.320	A
4	370	92	653	1301	0.284	368	362	0.0	0.4	3.852	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1052	263	479	1834	0.574	1050	743	0.9	1.3	4.583	A
2	489	122	983	1425	0.343	488	547	0.4	0.5	3.842	A
3	690	172	527	1611	0.428	689	944	0.5	0.7	3.899	A
4	441	110	782	1239	0.356	441	434	0.4	0.5	4.501	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1288	322	587	1774	0.726	1283	910	1.3	2.6	7.256	A
2	599	150	1201	1314	0.456	598	669	0.5	0.8	5.015	A
3	844	211	645	1548	0.546	843	1154	0.7	1.2	5.095	A
4	541	135	957	1156	0.468	539	530	0.5	0.9	5.829	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1288	322	588	1774	0.726	1288	912	2.6	2.6	7.406	A
2	599	150	1205	1312	0.456	599	670	0.8	0.8	5.045	A
3	844	211	646	1547	0.546	844	1158	1.2	1.2	5.125	A
4	541	135	959	1155	0.468	541	532	0.9	0.9	5.861	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1052	263	481	1833	0.574	1057	746	2.6	1.4	4.670	A
2	489	122	989	1422	0.344	490	549	0.8	0.5	3.869	A
3	690	172	529	1610	0.428	691	950	1.2	0.8	3.926	A
4	441	110	785	1238	0.357	443	436	0.9	0.6	4.533	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	881	220	403	1876	0.469	883	624	1.4	0.9	3.629	A
2	410	102	826	1504	0.272	410	459	0.5	0.4	3.295	A
3	577	144	443	1657	0.349	578	794	0.8	0.5	3.342	A
4	370	92	657	1299	0.284	370	364	0.6	0.4	3.877	A

2031 Without Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.40	A

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	2031 Without Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	874	100.000
2		ONE HOUR	✓	706	100.000
3		ONE HOUR	✓	1001	100.000
4		ONE HOUR	✓	544	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	30	154	595	95
	2	184	8	182	332
	3	677	226	9	89
	4	137	249	158	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	1	0
	2	9	0	4	6
	3	1	2	0	3
	4	0	7	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.56	4.69	1.2	A	802	1203
2	0.52	4.94	1.1	A	648	972
3	0.71	8.07	2.4	A	919	1378
4	0.57	8.04	1.3	A	499	749

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	658	164	487	1855	0.355	656	771	0.0	0.5	2.996	A
2	532	133	665	1668	0.319	530	478	0.0	0.5	3.157	A
3	754	188	487	1669	0.452	750	708	0.0	0.8	3.905	A
4	410	102	850	1236	0.331	408	387	0.0	0.5	4.335	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	786	196	583	1803	0.436	785	923	0.5	0.8	3.533	A
2	635	159	796	1600	0.397	634	572	0.5	0.7	3.721	A
3	900	225	583	1618	0.556	898	848	0.8	1.2	4.991	A
4	489	122	1018	1156	0.423	488	463	0.5	0.7	5.380	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	962	241	713	1732	0.556	960	1128	0.8	1.2	4.655	A
2	777	194	974	1508	0.516	776	699	0.7	1.1	4.908	A
3	1102	276	713	1548	0.712	1097	1037	1.2	2.4	7.902	A
4	599	150	1244	1049	0.571	597	567	0.7	1.3	7.924	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	962	241	716	1730	0.556	962	1132	1.2	1.2	4.686	A
2	777	194	977	1506	0.516	777	701	1.1	1.1	4.937	A
3	1102	276	715	1548	0.712	1102	1039	2.4	2.4	8.070	A
4	599	150	1248	1046	0.572	599	568	1.3	1.3	8.041	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	786	196	587	1801	0.436	788	928	1.2	0.8	3.562	A
2	635	159	800	1598	0.397	636	575	1.1	0.7	3.747	A
3	900	225	585	1617	0.557	905	851	2.4	1.3	5.087	A
4	489	122	1024	1153	0.424	491	465	1.3	0.7	5.457	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	658	164	491	1854	0.355	659	776	0.8	0.6	3.015	A
2	532	133	669	1666	0.319	532	481	0.7	0.5	3.176	A
3	754	188	489	1667	0.452	755	712	1.3	0.8	3.956	A
4	410	102	856	1233	0.332	411	389	0.7	0.5	4.379	A

2031 With Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.63	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.63	A

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
D5	2031 With Dev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1170	100.000
2		ONE HOUR	✓	547	100.000
3		ONE HOUR	✓	778	100.000
4		ONE HOUR	✓	561	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	30	220	773	147
	2	157	3	134	253
	3	508	168	5	97
	4	133	223	205	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	3	10	2	2
	2	14	0	9	11
	3	2	5	0	6
	4	1	6	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.74	8.13	2.9	A	1074	1610
2	0.47	5.35	0.9	A	502	753
3	0.55	5.23	1.2	A	714	1071
4	0.54	6.75	1.1	A	515	772

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	881	220	453	1848	0.477	877	621	0.0	0.9	3.694	A
2	412	103	870	1481	0.278	410	460	0.0	0.4	3.359	A
3	586	146	442	1656	0.354	584	837	0.0	0.5	3.349	A
4	422	106	653	1297	0.326	420	373	0.0	0.5	4.097	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1052	263	542	1798	0.585	1050	743	0.9	1.4	4.796	A
2	492	123	1041	1394	0.353	491	551	0.4	0.5	3.985	A
3	699	175	530	1609	0.435	699	1002	0.5	0.8	3.950	A
4	504	126	782	1236	0.408	504	446	0.5	0.7	4.913	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1288	322	663	1731	0.744	1283	909	1.4	2.8	7.924	A
2	602	151	1272	1277	0.472	601	674	0.5	0.9	5.314	A
3	857	214	648	1545	0.554	855	1225	0.8	1.2	5.199	A
4	618	154	957	1152	0.536	616	546	0.7	1.1	6.689	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1288	322	665	1730	0.745	1288	912	2.8	2.9	8.131	A
2	602	151	1277	1274	0.473	602	676	0.9	0.9	5.355	A
3	857	214	650	1544	0.555	857	1230	1.2	1.2	5.233	A
4	618	154	959	1151	0.537	618	547	1.1	1.1	6.747	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1052	263	545	1797	0.585	1058	747	2.9	1.4	4.905	A
2	492	123	1048	1390	0.354	493	554	0.9	0.6	4.019	A
3	699	175	532	1608	0.435	701	1009	1.2	0.8	3.979	A
4	504	126	785	1234	0.409	506	448	1.1	0.7	4.959	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	881	220	456	1847	0.477	883	624	1.4	0.9	3.745	A
2	412	103	875	1478	0.279	412	463	0.6	0.4	3.383	A
3	586	146	445	1655	0.354	587	843	0.8	0.6	3.372	A
4	422	106	657	1295	0.326	423	375	0.7	0.5	4.133	A

2031 With Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.98	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.98	A

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	2031 With Dev	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	874	100.000
2		ONE HOUR	✓	717	100.000
3		ONE HOUR	✓	1046	100.000
4		ONE HOUR	✓	573	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	30	154	595	95
	2	184	8	182	343
	3	677	226	9	134
	4	137	255	181	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	1	0
	2	9	0	4	6
	3	1	2	0	3
	4	0	7	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.56	4.79	1.3	A	802	1203
2	0.53	5.11	1.1	A	658	987
3	0.75	9.25	2.9	A	960	1440
4	0.60	8.64	1.5	A	526	789

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	658	164	509	1844	0.357	656	771	0.0	0.6	3.026	A
2	540	135	683	1659	0.325	538	482	0.0	0.5	3.205	A
3	787	197	495	1663	0.473	784	725	0.0	0.9	4.078	A
4	431	108	850	1237	0.349	429	429	0.0	0.5	4.446	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	786	196	609	1789	0.439	785	922	0.6	0.8	3.582	A
2	645	161	817	1589	0.406	644	577	0.5	0.7	3.803	A
3	940	235	593	1611	0.584	938	868	0.9	1.4	5.332	A
4	515	129	1017	1157	0.445	514	513	0.5	0.8	5.589	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	962	241	744	1715	0.561	960	1127	0.8	1.3	4.758	A
2	789	197	999	1495	0.528	788	705	0.7	1.1	5.081	A
3	1152	288	725	1541	0.747	1146	1062	1.4	2.8	8.978	A
4	631	158	1243	1050	0.601	628	628	0.8	1.5	8.486	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	962	241	747	1713	0.562	962	1132	1.3	1.3	4.794	A
2	789	197	1002	1493	0.529	789	708	1.1	1.1	5.114	A
3	1152	288	727	1540	0.748	1151	1065	2.8	2.9	9.247	A
4	631	158	1248	1047	0.603	631	630	1.5	1.5	8.641	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	786	196	614	1786	0.440	788	929	1.3	0.8	3.613	A
2	645	161	821	1587	0.406	646	581	1.1	0.7	3.831	A
3	940	235	595	1610	0.584	946	872	2.9	1.4	5.471	A
4	515	129	1025	1153	0.447	518	516	1.5	0.8	5.689	A

18:00 - 18:15

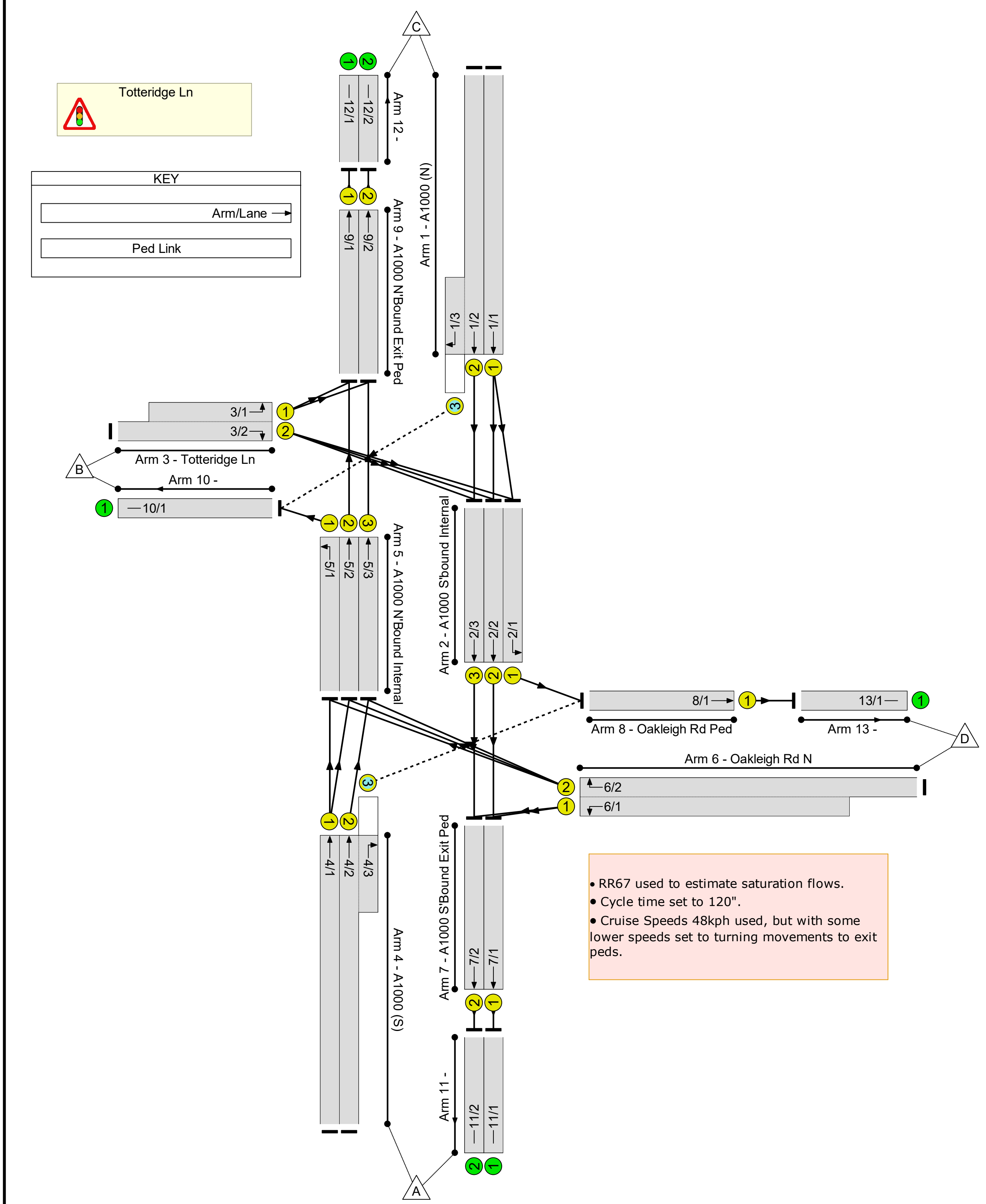
Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	658	164	512	1842	0.357	659	776	0.8	0.6	3.047	A
2	540	135	686	1657	0.326	541	485	0.7	0.5	3.225	A
3	787	197	498	1662	0.474	790	729	1.4	0.9	4.136	A
4	431	108	856	1234	0.350	432	431	0.8	0.5	4.496	A

Totteridge Ln Update Full LinSig Report

User and Project Details

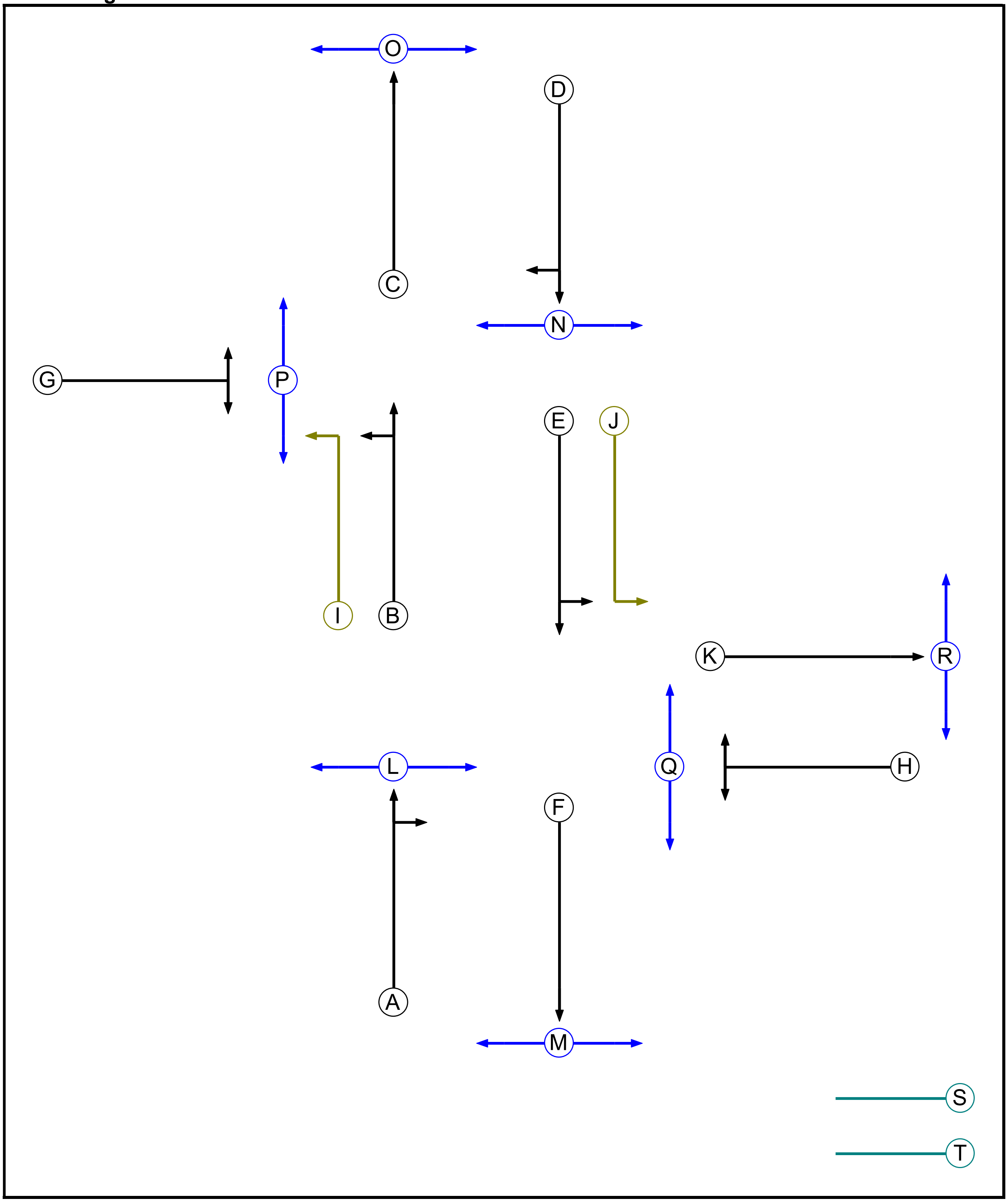
Project:	**21041 Oakleigh Rd**
Title:	**Totteridge Ln Existing**
Location:	Whetstone
Client:	Stomor
Date Started:	13/07/2022
Flow Details:	Updated model with new 2031+C+D traffic flows
Checked By:	Simon Swanston
Additional detail:	
File name:	Totteridge Ln Update.lsg3x
Author:	Stuart Hanson
Company:	JCT Consultancy Ltd
Address:	LinSig House, Deepdale Enterprise park, Nettleham, Lincoln LN2 2LL

Network Layout Diagram



- RR67 used to estimate saturation flows.
- Cycle time set to 120".
- Cruise Speeds 48kph used, but with some lower speeds set to turning movements to exit peds.

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		-9999	7
B	Traffic		-9999	7
C	Traffic		-9999	7
D	Traffic		-9999	7
E	Traffic		-9999	7
F	Traffic		-9999	7
G	Traffic		-9999	7
H	Traffic		-9999	7
I	Filter	B	-9999	4
J	Filter	E	-9999	4
K	Traffic		-9999	7
L	Pedestrian		-9999	6
M	Pedestrian		-9999	6
N	Pedestrian		-9999	6
O	Pedestrian		-9999	6
P	Pedestrian		-9999	6
Q	Pedestrian		-9999	6
R	Pedestrian		-9999	6
S	Dummy		-9999	3
T	Dummy		-9999	1

Phase Intergreens Matrix

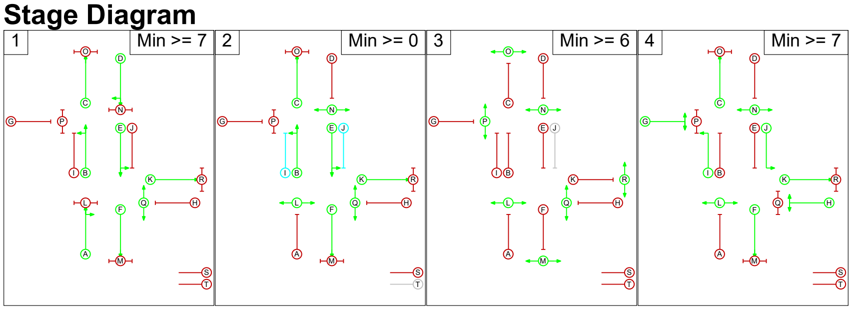
		Starting Phase																			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Terminating Phase	A		-	-	-	-	-	-	5	-	8	-	5	-	-	-	-	-	-	3	5
	B	-		-	-	-	-	5	-	-	-	-	-	-	-	-	7	-	-	3	-
	C	-	-		-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	3	-
	D	-	-	-		-	-	6	-	7	-	-	-	-	5	-	15	-	-	3	5
	E	-	-	-	-		-	-	6	-	-	-	-	-	-	-	-	-	-	3	-
	F	-	-	-	-	-		-	-	-	-	-	-	5	-	-	-	-	-	3	-
	G	-	6	-	5	-	-		-	-	-	-	-	-	-	-	5	-	-	3	6
	H	5	-	-	-	5	-	-		-	-	-	-	-	-	-	-	5	-	3	5
	I	-	-	-	5	-	-	-	-		-	-	-	-	-	-	7	-	-	3	-
	J	5	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	3	-
	K	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	5	3	-
	L	10	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	4	-
	M	-	-	-	-	-	8	-	-	-	-	-	-		-	-	-	-	-	3	8
	N	-	-	-	9	-	-	-	-	-	-	-	-	-		-	-	-	-	4	-
	O	-	-	8	-	-	-	-	-	-	-	-	-	-	-		-	-	-	3	8

P	-	12	-	12	-	-	12	-	12	-	-	-	-	-	-		-	-	5	12
Q	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-		-	5	-
R	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-		3	8
S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		-
T	10	-	-	9	-	-	5	11	-	-	-	-	5	-	5	7	-	5	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B C D E F K Q
2	B C E F K L N Q
3	L M N O P Q R
4	C F G H I J K L N

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	A	Losing	1	1
1	3	B	Losing	6	6
1	3	C	Losing	10	10
1	3	E	Losing	6	6
1	3	F	Losing	10	10
1	3	K	Losing	10	10
2	3	C	Losing	4	4
2	3	F	Losing	4	4
2	3	K	Losing	4	4

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		5	15	11
	2	10		9	11
	3	12	12		12
	4	11	6	X	

Give-Way Lane Input Data

Junction: Totteridge Ln											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/3 (A1000 (N))	10/1 (Right)	1439	0	5/1	1.09	All	3.00	-	0.50	3	3.00
				5/2	1.09	All					
				5/3	1.09	All					
4/3 (A1000 (S))	8/1 (Right)	1439	0	2/1	1.09	All	3.00	-	0.50	3	3.00
				2/2	1.09	All					
				2/3	1.09	All					

Lane Input Data

Junction: Totteridge Ln												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A1000 (N))	U	D	2	3	60.0	Geom	-	2.30	0.00	Y	Arm 2 Ahead	Inf
1/2 (A1000 (N))	U	D	2	3	60.0	Geom	-	2.60	0.00	N	Arm 2 Ahead	Inf
1/3 (A1000 (N))	O	D	2	3	6.0	Geom	-	2.60	0.00	Y	Arm 10 Right	13.00
2/1 (A1000 S'bound Internal)	U	E J	2	3	9.0	Geom	-	3.20	0.00	Y	Arm 8 Left	9.00
2/2 (A1000 S'bound Internal)	U	E	2	3	9.0	Geom	-	2.65	0.00	Y	Arm 7 Ahead	Inf
2/3 (A1000 S'bound Internal)	U	E	2	3	9.0	Geom	-	2.50	0.00	N	Arm 7 Ahead	Inf
3/1 (Totteridge Ln)	U	G	2	3	14.0	Geom	-	2.40	0.00	Y	Arm 9 Left	6.00
3/2 (Totteridge Ln)	U	G	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 2 Right	19.00
4/1 (A1000 (S))	U	A	2	3	60.0	Geom	-	2.30	0.00	Y	Arm 5 Ahead	Inf
4/2 (A1000 (S))	U	A	2	3	60.0	Geom	-	2.60	0.00	N	Arm 5 Ahead	Inf
4/3 (A1000 (S))	O	A	2	3	6.0	Geom	-	2.65	0.00	Y	Arm 8 Right	23.00
5/1 (A1000 N'Bound Internal)	U	B I	2	3	8.2	Geom	-	2.75	0.00	Y	Arm 10 Left	9.00
5/2 (A1000 N'Bound Internal)	U	B	2	3	8.2	Geom	-	3.00	0.00	Y	Arm 9 Ahead	Inf
5/3 (A1000 N'Bound Internal)	U	B	2	3	8.2	Geom	-	2.80	0.00	N	Arm 9 Ahead	Inf
6/1 (Oakleigh Rd N)	U	H	2	3	24.0	Geom	-	3.00	0.00	Y	Arm 7 Left	18.00
6/2 (Oakleigh Rd N)	U	H	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Right	13.00
7/1 (A1000 S'Bound Exit Ped)	U	F	2	3	6.6	Geom	-	2.70	0.00	Y	Arm 11 Ahead	Inf

7/2 (A1000 S'Bound Exit Ped)	U	F	2	3	6.6	Geom	-	2.70	0.00	N	Arm 11 Ahead	Inf
8/1 (Oakleigh Rd Ped)	U	K	2	3	3.8	Geom	-	4.00	0.00	Y	Arm 13 Ahead	Inf
9/1 (A1000 N'Bound Exit Ped)	U	C	2	3	6.1	Geom	-	2.70	0.00	Y	Arm 12 Ahead	Inf
9/2 (A1000 N'Bound Exit Ped)	U	C	2	3	6.1	Geom	-	2.70	0.00	N	Arm 12 Ahead	Inf
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/2	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2021'	08:00	09:00	01:00	
2: 'AM 2031 + School'	08:00	09:00	01:00	
3: 'AM 2031 + School + Development'	08:00	09:00	01:00	
4: 'PM 2021'	17:00	18:00	01:00	
5: 'PM 2031 + School'	17:00	18:00	01:00	
6: 'PM 2031 + School + Development'	17:00	18:00	01:00	

Scenario 1: 'AM 21' (FG1: 'AM 2021', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	161	560	80	801
	B	135	0	89	250	474
	C	637	132	0	90	859
	D	127	295	142	0	564
	Tot.	899	588	791	420	2698

Traffic Lane Flows

Lane	Scenario 1: AM 21
Junction: Totteridge Ln	
1/1	383
1/2 (with short)	476(In) 344(Out)
1/3 (short)	132
2/1	340
2/2	358
2/3	414
3/1 (short)	89
3/2 (with short)	474(In) 385(Out)
4/1	358
4/2 (with short)	443(In) 363(Out)
4/3 (short)	80
5/1	456
5/2	266
5/3	436
6/1 (short)	127
6/2 (with short)	564(In) 437(Out)
7/1	364
7/2	535
8/1	420
9/1	276
9/2	515
10/1	588
11/1	364
11/2	535
12/1	276
12/2	515
13/1	420

Lane Saturation Flows

Junction: Totteridge Ln								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1000 (N))	2.30	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1845	1845
1/2 (A1000 (N))	2.60	0.00	N	Arm 2 Ahead	Inf	100.0 %	2015	2015

1/3 (A1000 (N))	2.60	0.00	Y	Arm 10 Right	13.00	100.0 %	1681	1681
2/1 (A1000 S'bound Internal)	3.20	0.00	Y	Arm 8 Left	9.00	100.0 %	1659	1659
2/2 (A1000 S'bound Internal)	2.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1880	1880
2/3 (A1000 S'bound Internal)	2.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2005	2005
3/1 (Totteridge Ln)	2.40	0.00	Y	Arm 9 Left	6.00	100.0 %	1484	1484
3/2 (Totteridge Ln)	2.90	0.00	Y	Arm 2 Right	19.00	100.0 %	1766	1766
4/1 (A1000 (S))	2.30	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1845	1845
4/2 (A1000 (S))	2.60	0.00	N	Arm 5 Ahead	Inf	100.0 %	2015	2015
4/3 (A1000 (S))	2.65	0.00	Y	Arm 8 Right	23.00	100.0 %	1765	1765
5/1 (A1000 N'Bound Internal)	2.75	0.00	Y	Arm 10 Left	9.00	100.0 %	1620	1620
5/2 (A1000 N'Bound Internal)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
5/3 (A1000 N'Bound Internal)	2.80	0.00	N	Arm 9 Ahead	Inf	100.0 %	2035	2035
6/1 (Oakleigh Rd N)	3.00	0.00	Y	Arm 7 Left	18.00	100.0 %	1768	1768
6/2 (Oakleigh Rd N)	3.10	0.00	Y	Arm 5 Right	13.00	100.0 %	1726	1726
7/1 (A1000 S'Bound Exit Ped)	2.70	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1885	1885
7/2 (A1000 S'Bound Exit Ped)	2.70	0.00	N	Arm 11 Ahead	Inf	100.0 %	2025	2025
8/1 (Oakleigh Rd Ped)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
9/1 (A1000 N'Bound Exit Ped)	2.70	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1885	1885
9/2 (A1000 N'Bound Exit Ped)	2.70	0.00	N	Arm 12 Ahead	Inf	100.0 %	2025	2025
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'AM 31+C' (FG2: 'AM 2031 + School', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	171	594	85	850
	B	143	0	94	310	547
	C	675	140	0	123	938
	D	135	358	178	0	671
	Tot.	953	669	866	518	3006

Traffic Lane Flows

Lane	Scenario 2: AM 31+C
Junction: Totteridge Ln	
1/1	398
1/2 (with short)	540(In) 400(Out)
1/3 (short)	140
2/1	433
2/2	345
2/3	473
3/1 (short)	94
3/2 (with short)	547(In) 453(Out)
4/1	382
4/2 (with short)	468(In) 383(Out)
4/3 (short)	85
5/1	529
5/2	297
5/3	475
6/1 (short)	135
6/2 (with short)	671(In) 536(Out)
7/1	472
7/2	481
8/1	518
9/1	307
9/2	559
10/1	669
11/1	472
11/2	481
12/1	307
12/2	559
13/1	518

Lane Saturation Flows

Junction: Totteridge Ln								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1000 (N))	2.30	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1845	1845
1/2 (A1000 (N))	2.60	0.00	N	Arm 2 Ahead	Inf	100.0 %	2015	2015

1/3 (A1000 (N))	2.60	0.00	Y	Arm 10 Right	13.00	100.0 %	1681	1681
2/1 (A1000 S'bound Internal)	3.20	0.00	Y	Arm 8 Left	9.00	100.0 %	1659	1659
2/2 (A1000 S'bound Internal)	2.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1880	1880
2/3 (A1000 S'bound Internal)	2.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2005	2005
3/1 (Totteridge Ln)	2.40	0.00	Y	Arm 9 Left	6.00	100.0 %	1484	1484
3/2 (Totteridge Ln)	2.90	0.00	Y	Arm 2 Right	19.00	100.0 %	1766	1766
4/1 (A1000 (S))	2.30	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1845	1845
4/2 (A1000 (S))	2.60	0.00	N	Arm 5 Ahead	Inf	100.0 %	2015	2015
4/3 (A1000 (S))	2.65	0.00	Y	Arm 8 Right	23.00	100.0 %	1765	1765
5/1 (A1000 N'Bound Internal)	2.75	0.00	Y	Arm 10 Left	9.00	100.0 %	1620	1620
5/2 (A1000 N'Bound Internal)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
5/3 (A1000 N'Bound Internal)	2.80	0.00	N	Arm 9 Ahead	Inf	100.0 %	2035	2035
6/1 (Oakleigh Rd N)	3.00	0.00	Y	Arm 7 Left	18.00	100.0 %	1768	1768
6/2 (Oakleigh Rd N)	3.10	0.00	Y	Arm 5 Right	13.00	100.0 %	1726	1726
7/1 (A1000 S'Bound Exit Ped)	2.70	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1885	1885
7/2 (A1000 S'Bound Exit Ped)	2.70	0.00	N	Arm 11 Ahead	Inf	100.0 %	2025	2025
8/1 (Oakleigh Rd Ped)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
9/1 (A1000 N'Bound Exit Ped)	2.70	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1885	1885
9/2 (A1000 N'Bound Exit Ped)	2.70	0.00	N	Arm 12 Ahead	Inf	100.0 %	2025	2025
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM 31+C+D' (FG3: 'AM 2031 + School + Development', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	171	594	85	850
	B	143	0	94	312	549
	C	675	140	0	124	939
	D	135	368	184	0	687
	Tot.	953	679	872	521	3025

Traffic Lane Flows

Lane	Scenario 3: AM 31+C+D
Junction: Totteridge Ln	
1/1	399
1/2 (with short)	540(In) 400(Out)
1/3 (short)	140
2/1	436
2/2	345
2/3	473
3/1 (short)	94
3/2 (with short)	549(In) 455(Out)
4/1	382
4/2 (with short)	468(In) 383(Out)
4/3 (short)	85
5/1	539
5/2	300
5/3	478
6/1 (short)	135
6/2 (with short)	687(In) 552(Out)
7/1	473
7/2	480
8/1	521
9/1	310
9/2	562
10/1	679
11/1	473
11/2	480
12/1	310
12/2	562
13/1	521

Lane Saturation Flows

Junction: Totteridge Ln								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1000 (N))	2.30	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1845	1845
1/2 (A1000 (N))	2.60	0.00	N	Arm 2 Ahead	Inf	100.0 %	2015	2015

1/3 (A1000 (N))	2.60	0.00	Y	Arm 10 Right	13.00	100.0 %	1681	1681
2/1 (A1000 S'bound Internal)	3.20	0.00	Y	Arm 8 Left	9.00	100.0 %	1659	1659
2/2 (A1000 S'bound Internal)	2.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1880	1880
2/3 (A1000 S'bound Internal)	2.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2005	2005
3/1 (Totteridge Ln)	2.40	0.00	Y	Arm 9 Left	6.00	100.0 %	1484	1484
3/2 (Totteridge Ln)	2.90	0.00	Y	Arm 2 Right	19.00	100.0 %	1766	1766
4/1 (A1000 (S))	2.30	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1845	1845
4/2 (A1000 (S))	2.60	0.00	N	Arm 5 Ahead	Inf	100.0 %	2015	2015
4/3 (A1000 (S))	2.65	0.00	Y	Arm 8 Right	23.00	100.0 %	1765	1765
5/1 (A1000 N'Bound Internal)	2.75	0.00	Y	Arm 10 Left	9.00	100.0 %	1620	1620
5/2 (A1000 N'Bound Internal)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
5/3 (A1000 N'Bound Internal)	2.80	0.00	N	Arm 9 Ahead	Inf	100.0 %	2035	2035
6/1 (Oakleigh Rd N)	3.00	0.00	Y	Arm 7 Left	18.00	100.0 %	1768	1768
6/2 (Oakleigh Rd N)	3.10	0.00	Y	Arm 5 Right	13.00	100.0 %	1726	1726
7/1 (A1000 S'Bound Exit Ped)	2.70	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1885	1885
7/2 (A1000 S'Bound Exit Ped)	2.70	0.00	N	Arm 11 Ahead	Inf	100.0 %	2025	2025
8/1 (Oakleigh Rd Ped)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
9/1 (A1000 N'Bound Exit Ped)	2.70	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1885	1885
9/2 (A1000 N'Bound Exit Ped)	2.70	0.00	N	Arm 12 Ahead	Inf	100.0 %	2025	2025
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM 21' (FG4: 'PM 2021', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	175	685	117	977
	B	123	0	101	271	495
	C	533	121	0	138	792
	D	82	303	129	0	514
	Tot.	738	599	915	526	2778

Traffic Lane Flows

Lane	Scenario 4: PM 21
Junction: Totteridge Ln	
1/1	331
1/2 (with short)	461(In) 340(Out)
1/3 (short)	121
2/1	409
2/2	253
2/3	403
3/1 (short)	101
3/2 (with short)	495(In) 394(Out)
4/1	438
4/2 (with short)	539(In) 422(Out)
4/3 (short)	117
5/1	478
5/2	325
5/3	489
6/1 (short)	82
6/2 (with short)	514(In) 432(Out)
7/1	330
7/2	408
8/1	526
9/1	330
9/2	585
10/1	599
11/1	330
11/2	408
12/1	330
12/2	585
13/1	526

Lane Saturation Flows

Junction: Totteridge Ln								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1000 (N))	2.30	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1845	1845
1/2 (A1000 (N))	2.60	0.00	N	Arm 2 Ahead	Inf	100.0 %	2015	2015

1/3 (A1000 (N))	2.60	0.00	Y	Arm 10 Right	13.00	100.0 %	1681	1681
2/1 (A1000 S'bound Internal)	3.20	0.00	Y	Arm 8 Left	9.00	100.0 %	1659	1659
2/2 (A1000 S'bound Internal)	2.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1880	1880
2/3 (A1000 S'bound Internal)	2.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2005	2005
3/1 (Totteridge Ln)	2.40	0.00	Y	Arm 9 Left	6.00	100.0 %	1484	1484
3/2 (Totteridge Ln)	2.90	0.00	Y	Arm 2 Right	19.00	100.0 %	1766	1766
4/1 (A1000 (S))	2.30	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1845	1845
4/2 (A1000 (S))	2.60	0.00	N	Arm 5 Ahead	Inf	100.0 %	2015	2015
4/3 (A1000 (S))	2.65	0.00	Y	Arm 8 Right	23.00	100.0 %	1765	1765
5/1 (A1000 N'Bound Internal)	2.75	0.00	Y	Arm 10 Left	9.00	100.0 %	1620	1620
5/2 (A1000 N'Bound Internal)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
5/3 (A1000 N'Bound Internal)	2.80	0.00	N	Arm 9 Ahead	Inf	100.0 %	2035	2035
6/1 (Oakleigh Rd N)	3.00	0.00	Y	Arm 7 Left	18.00	100.0 %	1768	1768
6/2 (Oakleigh Rd N)	3.10	0.00	Y	Arm 5 Right	13.00	100.0 %	1726	1726
7/1 (A1000 S'Bound Exit Ped)	2.70	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1885	1885
7/2 (A1000 S'Bound Exit Ped)	2.70	0.00	N	Arm 11 Ahead	Inf	100.0 %	2025	2025
8/1 (Oakleigh Rd Ped)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
9/1 (A1000 N'Bound Exit Ped)	2.70	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1885	1885
9/2 (A1000 N'Bound Exit Ped)	2.70	0.00	N	Arm 12 Ahead	Inf	100.0 %	2025	2025
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'PM 31+C' (FG5: 'PM 2031 + School', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	186	726	124	1036
	B	130	0	107	330	567
	C	565	128	0	172	865
	D	87	364	162	0	613
	Tot.	782	678	995	626	3081

Traffic Lane Flows

Lane	Scenario 5: PM 31+C
Junction: Totteridge Ln	
1/1	367
1/2 (with short)	498(In) 370(Out)
1/3 (short)	128
2/1	502
2/2	259
2/3	436
3/1 (short)	107
3/2 (with short)	567(In) 460(Out)
4/1	469
4/2 (with short)	567(In) 443(Out)
4/3 (short)	124
5/1	550
5/2	360
5/3	528
6/1 (short)	87
6/2 (with short)	613(In) 526(Out)
7/1	343
7/2	439
8/1	626
9/1	362
9/2	633
10/1	678
11/1	343
11/2	439
12/1	362
12/2	633
13/1	626

Lane Saturation Flows

Junction: Totteridge Ln								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1000 (N))	2.30	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1845	1845
1/2 (A1000 (N))	2.60	0.00	N	Arm 2 Ahead	Inf	100.0 %	2015	2015

1/3 (A1000 (N))	2.60	0.00	Y	Arm 10 Right	13.00	100.0 %	1681	1681
2/1 (A1000 S'bound Internal)	3.20	0.00	Y	Arm 8 Left	9.00	100.0 %	1659	1659
2/2 (A1000 S'bound Internal)	2.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1880	1880
2/3 (A1000 S'bound Internal)	2.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2005	2005
3/1 (Totteridge Ln)	2.40	0.00	Y	Arm 9 Left	6.00	100.0 %	1484	1484
3/2 (Totteridge Ln)	2.90	0.00	Y	Arm 2 Right	19.00	100.0 %	1766	1766
4/1 (A1000 (S))	2.30	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1845	1845
4/2 (A1000 (S))	2.60	0.00	N	Arm 5 Ahead	Inf	100.0 %	2015	2015
4/3 (A1000 (S))	2.65	0.00	Y	Arm 8 Right	23.00	100.0 %	1765	1765
5/1 (A1000 N'Bound Internal)	2.75	0.00	Y	Arm 10 Left	9.00	100.0 %	1620	1620
5/2 (A1000 N'Bound Internal)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
5/3 (A1000 N'Bound Internal)	2.80	0.00	N	Arm 9 Ahead	Inf	100.0 %	2035	2035
6/1 (Oakleigh Rd N)	3.00	0.00	Y	Arm 7 Left	18.00	100.0 %	1768	1768
6/2 (Oakleigh Rd N)	3.10	0.00	Y	Arm 5 Right	13.00	100.0 %	1726	1726
7/1 (A1000 S'Bound Exit Ped)	2.70	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1885	1885
7/2 (A1000 S'Bound Exit Ped)	2.70	0.00	N	Arm 11 Ahead	Inf	100.0 %	2025	2025
8/1 (Oakleigh Rd Ped)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
9/1 (A1000 N'Bound Exit Ped)	2.70	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1885	1885
9/2 (A1000 N'Bound Exit Ped)	2.70	0.00	N	Arm 12 Ahead	Inf	100.0 %	2025	2025
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'PM 31+C+D' (FG6: 'PM 2031 + School + Development', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	186	726	124	1036
	B	130	0	107	337	574
	C	565	128	0	176	869
	D	87	367	164	0	618
	Tot.	782	681	997	637	3097

Traffic Lane Flows

Lane	Scenario 6: PM 31+C+D
Junction: Totteridge Ln	
1/1	361
1/2 (with short)	508(In) 380(Out)
1/3 (short)	128
2/1	513
2/2	249
2/3	446
3/1 (short)	107
3/2 (with short)	574(In) 467(Out)
4/1	469
4/2 (with short)	567(In) 443(Out)
4/3 (short)	124
5/1	553
5/2	361
5/3	529
6/1 (short)	87
6/2 (with short)	618(In) 531(Out)
7/1	334
7/2	448
8/1	637
9/1	363
9/2	634
10/1	681
11/1	334
11/2	448
12/1	363
12/2	634
13/1	637

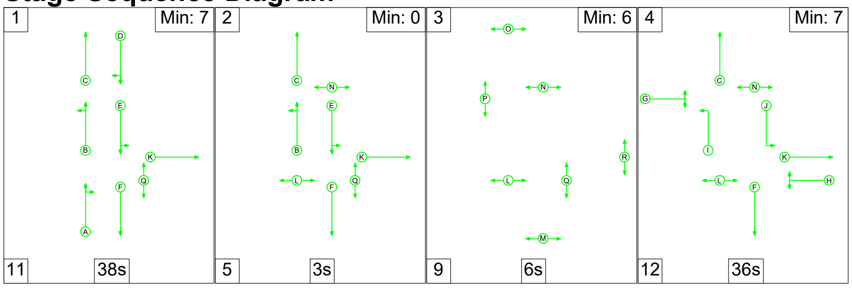
Lane Saturation Flows

Junction: Totteridge Ln								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1000 (N))	2.30	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1845	1845
1/2 (A1000 (N))	2.60	0.00	N	Arm 2 Ahead	Inf	100.0 %	2015	2015

1/3 (A1000 (N))	2.60	0.00	Y	Arm 10 Right	13.00	100.0 %	1681	1681
2/1 (A1000 S'bound Internal)	3.20	0.00	Y	Arm 8 Left	9.00	100.0 %	1659	1659
2/2 (A1000 S'bound Internal)	2.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1880	1880
2/3 (A1000 S'bound Internal)	2.50	0.00	N	Arm 7 Ahead	Inf	100.0 %	2005	2005
3/1 (Totteridge Ln)	2.40	0.00	Y	Arm 9 Left	6.00	100.0 %	1484	1484
3/2 (Totteridge Ln)	2.90	0.00	Y	Arm 2 Right	19.00	100.0 %	1766	1766
4/1 (A1000 (S))	2.30	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1845	1845
4/2 (A1000 (S))	2.60	0.00	N	Arm 5 Ahead	Inf	100.0 %	2015	2015
4/3 (A1000 (S))	2.65	0.00	Y	Arm 8 Right	23.00	100.0 %	1765	1765
5/1 (A1000 N'Bound Internal)	2.75	0.00	Y	Arm 10 Left	9.00	100.0 %	1620	1620
5/2 (A1000 N'Bound Internal)	3.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	1915	1915
5/3 (A1000 N'Bound Internal)	2.80	0.00	N	Arm 9 Ahead	Inf	100.0 %	2035	2035
6/1 (Oakleigh Rd N)	3.00	0.00	Y	Arm 7 Left	18.00	100.0 %	1768	1768
6/2 (Oakleigh Rd N)	3.10	0.00	Y	Arm 5 Right	13.00	100.0 %	1726	1726
7/1 (A1000 S'Bound Exit Ped)	2.70	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1885	1885
7/2 (A1000 S'Bound Exit Ped)	2.70	0.00	N	Arm 11 Ahead	Inf	100.0 %	2025	2025
8/1 (Oakleigh Rd Ped)	4.00	0.00	Y	Arm 13 Ahead	Inf	100.0 %	2015	2015
9/1 (A1000 N'Bound Exit Ped)	2.70	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1885	1885
9/2 (A1000 N'Bound Exit Ped)	2.70	0.00	N	Arm 12 Ahead	Inf	100.0 %	2025	2025
10/1	Infinite Saturation Flow						Inf	Inf
11/1	Infinite Saturation Flow						Inf	Inf
11/2	Infinite Saturation Flow						Inf	Inf
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM 21' (FG1: 'AM 2021', Plan 1: 'Network Control Plan 1')

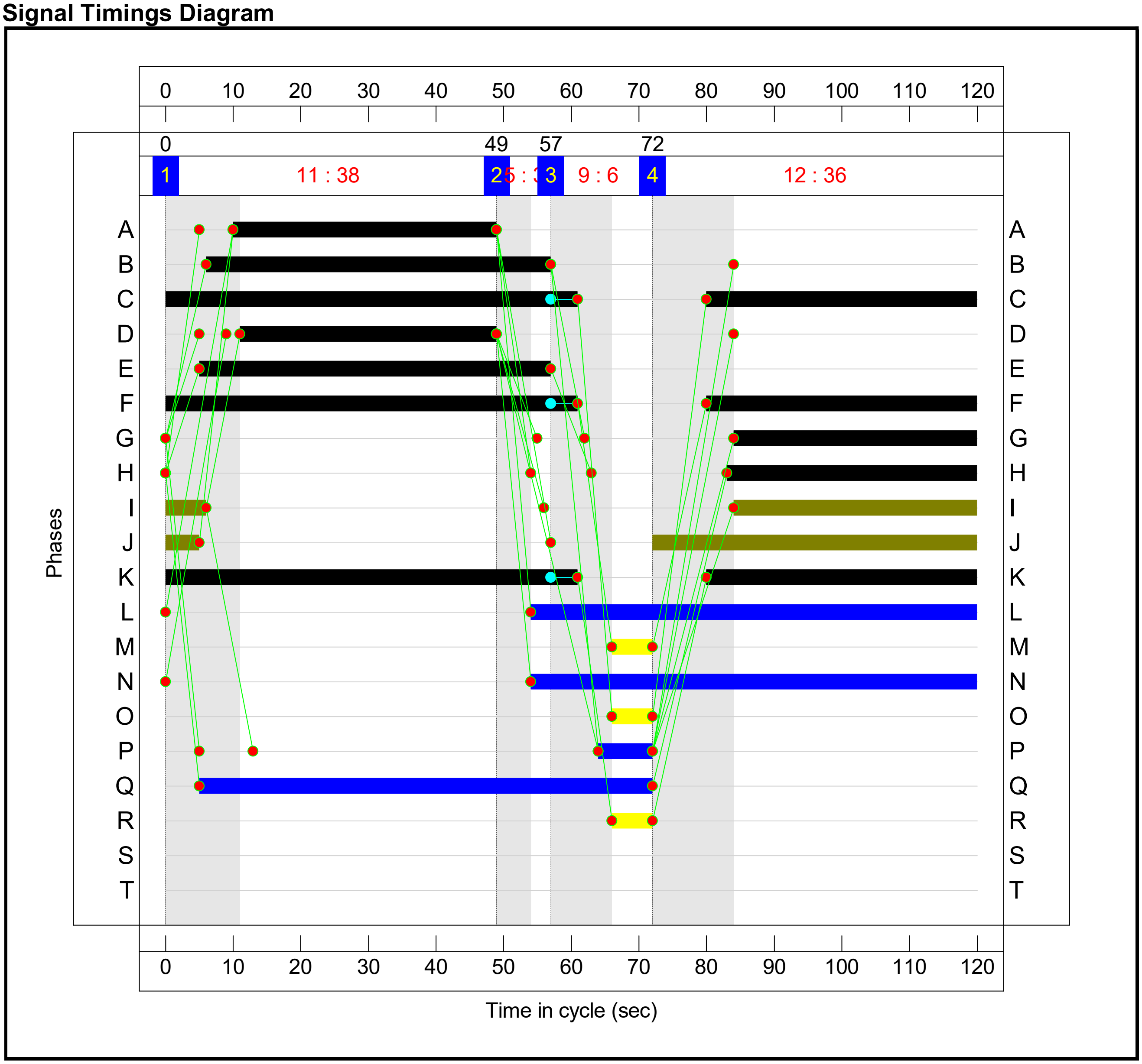
Stage Sequence Diagram



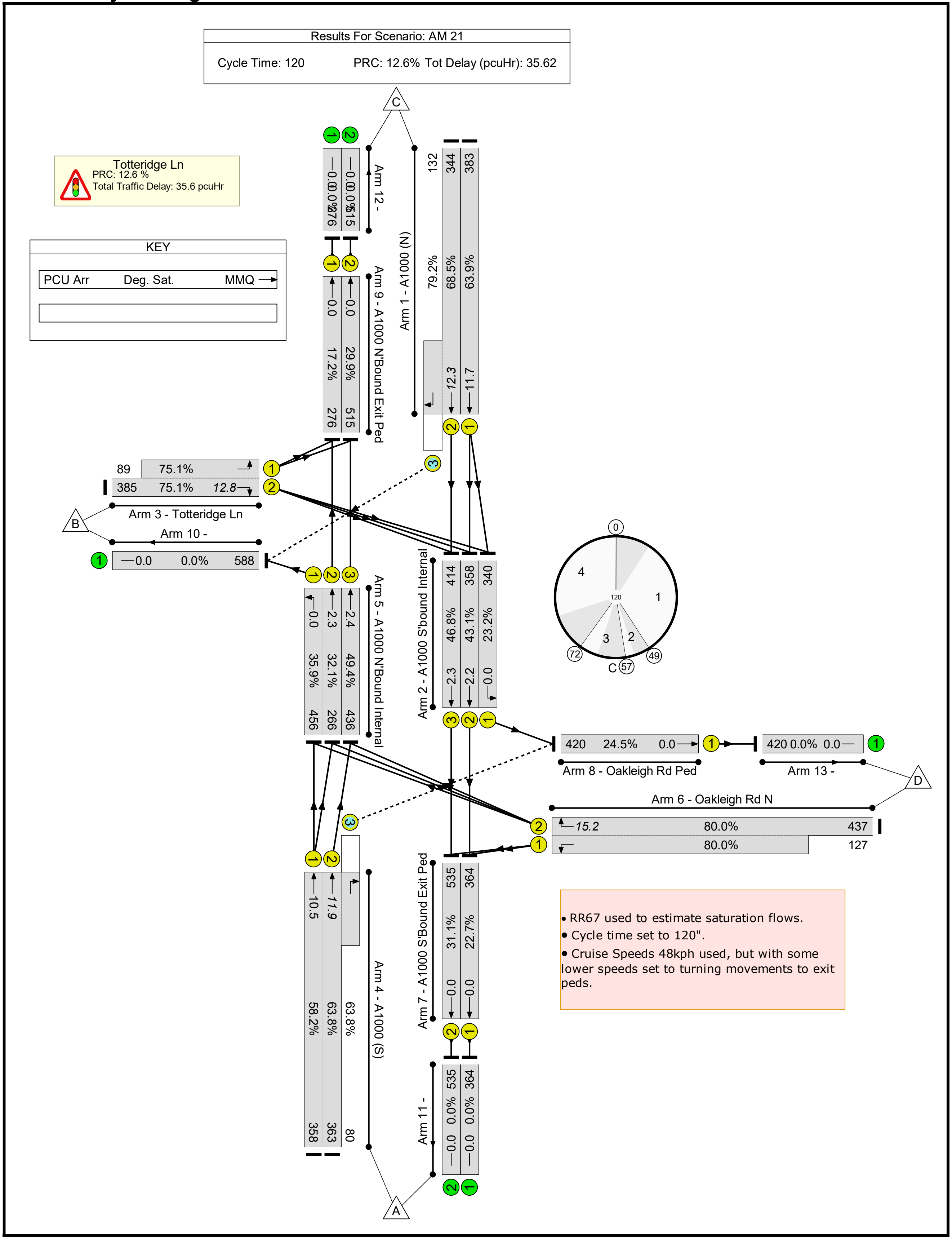
Stage Timings

Stage	1	2	3	4
Duration	38	3	6	36
Change Point	0	49	57	72

Signal Timings Diagram



Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Totteridge Ln Existing	-	-	**N/A**	-	-		-	-	-	-	-	-	**80.0%**
Totteridge Ln	-	-	**N/A**	-	-		-	-	-	-	-	-	**80.0%**
1/1	A1000 (N) Ahead	U	N/A	N/A	D		1	38	-	383	1845	600	63.9%
1/2+1/3	A1000 (N) Ahead Right	U+O	N/A	N/A	D		1	38	-	476	2015:1681	502+167	68.5 : 79.2%
2/1	A1000 S'bound Internal Left	U	N/A	N/A	E	J	1	105	53	340	1659	1465	23.2%
2/2	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	52	-	358	1880	830	43.1%
2/3	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	52	-	414	2005	886	46.8%
3/2+3/1	Totteridge Ln Right Left	U	N/A	N/A	G		1	36	-	474	1766:1484	512+118	75.1 : 75.1%
4/1	A1000 (S) Ahead	U	N/A	N/A	A		1	39	-	358	1845	615	58.2%
4/2+4/3	A1000 (S) Ahead Right	U+O	N/A	N/A	A		1	39	-	443	2015:1765	569+125	63.8 : 63.8%
5/1	A1000 N'Bound Internal Left	U	N/A	N/A	B	I	1	93	42	456	1620	1269	35.9%
5/2	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	51	-	266	1915	830	32.1%
5/3	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	51	-	436	2035	882	49.4%
6/2+6/1	Oakleigh Rd N Right Left	U	N/A	N/A	H		1	37	-	564	1726:1768	547+159	80.0 : 80.0%
7/1	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	364	1885	1602	22.7%
7/2	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	535	2025	1721	31.1%
8/1	Oakleigh Rd Ped Ahead	U	N/A	N/A	K		1	101	-	420	2015	1713	24.5%
9/1	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	276	1885	1602	17.2%

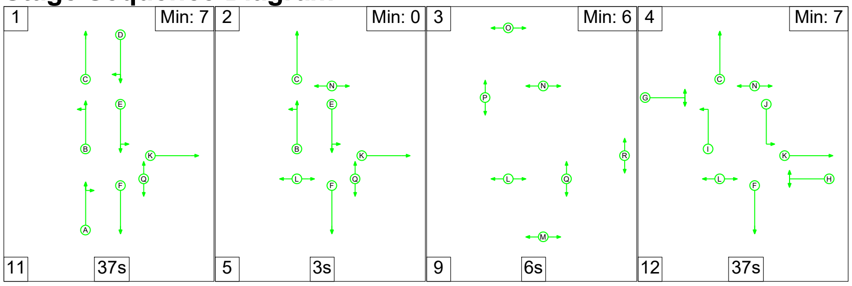
9/2	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	515	2025	1721	29.9%
10/1		U	N/A	N/A	-		-	-	-	588	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	364	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	535	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	276	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	515	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Totteridge Ln Existing	**-**	**-**	**212**	**0**	**0**	**27.7**	**7.1**	**0.9**	**35.6**	**-**	**-**	**-**	**-**
Totteridge Ln	**-**	**-**	**212**	**0**	**0**	**27.7**	**7.1**	**0.9**	**35.6**	**-**	**-**	**-**	**-**
1/1	383	383	-	-	-	3.7	0.9	-	4.5	42.7	10.9	0.9	11.7
1/2+1/3	476	476	132	0	0	4.4	1.2	0.7	6.4	48.1	11.1	1.2	12.3
2/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	358	358	-	-	-	0.5	0.0	-	0.5	4.6	2.2	0.0	2.2
2/3	414	414	-	-	-	0.5	0.0	-	0.5	4.3	2.3	0.0	2.3
3/2+3/1	474	474	-	-	-	4.7	1.5	-	6.2	46.8	11.3	1.5	12.8
4/1	358	358	-	-	-	3.3	0.7	-	4.0	40.1	9.8	0.7	10.5
4/2+4/3	443	443	80	0	0	4.0	0.9	0.2	5.0	40.9	11.0	0.9	11.9
5/1	456	456	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	266	266	-	-	-	0.5	0.0	-	0.5	6.7	2.3	0.0	2.3
5/3	436	436	-	-	-	0.5	0.0	-	0.5	4.3	2.4	0.0	2.4
6/2+6/1	564	564	-	-	-	5.6	1.9	-	7.6	48.3	13.2	1.9	15.2
7/1	364	364	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	276	276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	588	588	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	364	364	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	535	535	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	276	276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	12.6	Total Delay for Signalled Lanes (pcuHr):	35.62	Cycle Time (s):	120
	PRC Over All Lanes (%):	12.6	Total Delay Over All Lanes(pcuHr):	35.62		

Scenario 2: 'AM 31+C' (FG2: 'AM 2031 + School', Plan 1: 'Network Control Plan 1')

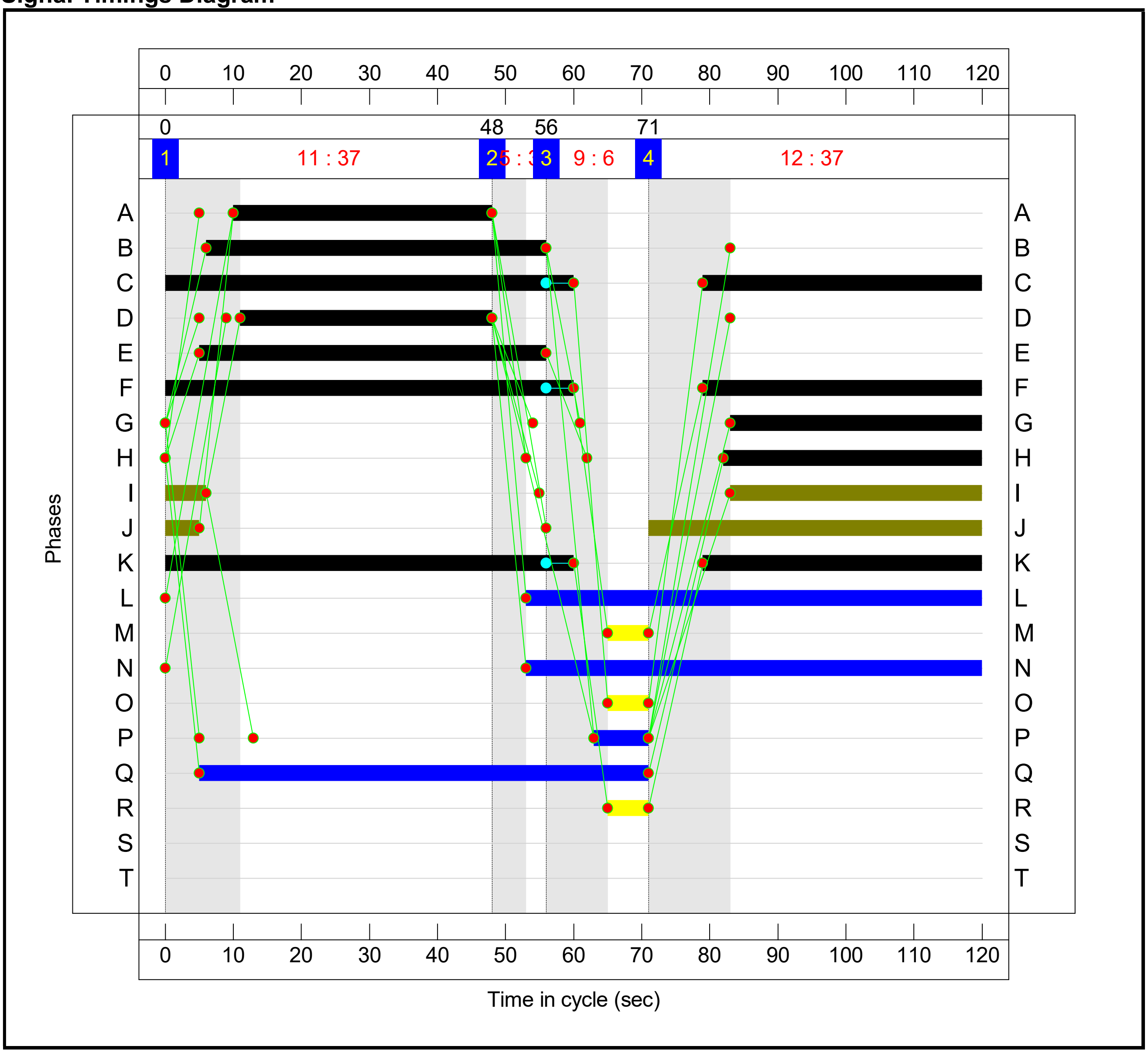
Stage Sequence Diagram



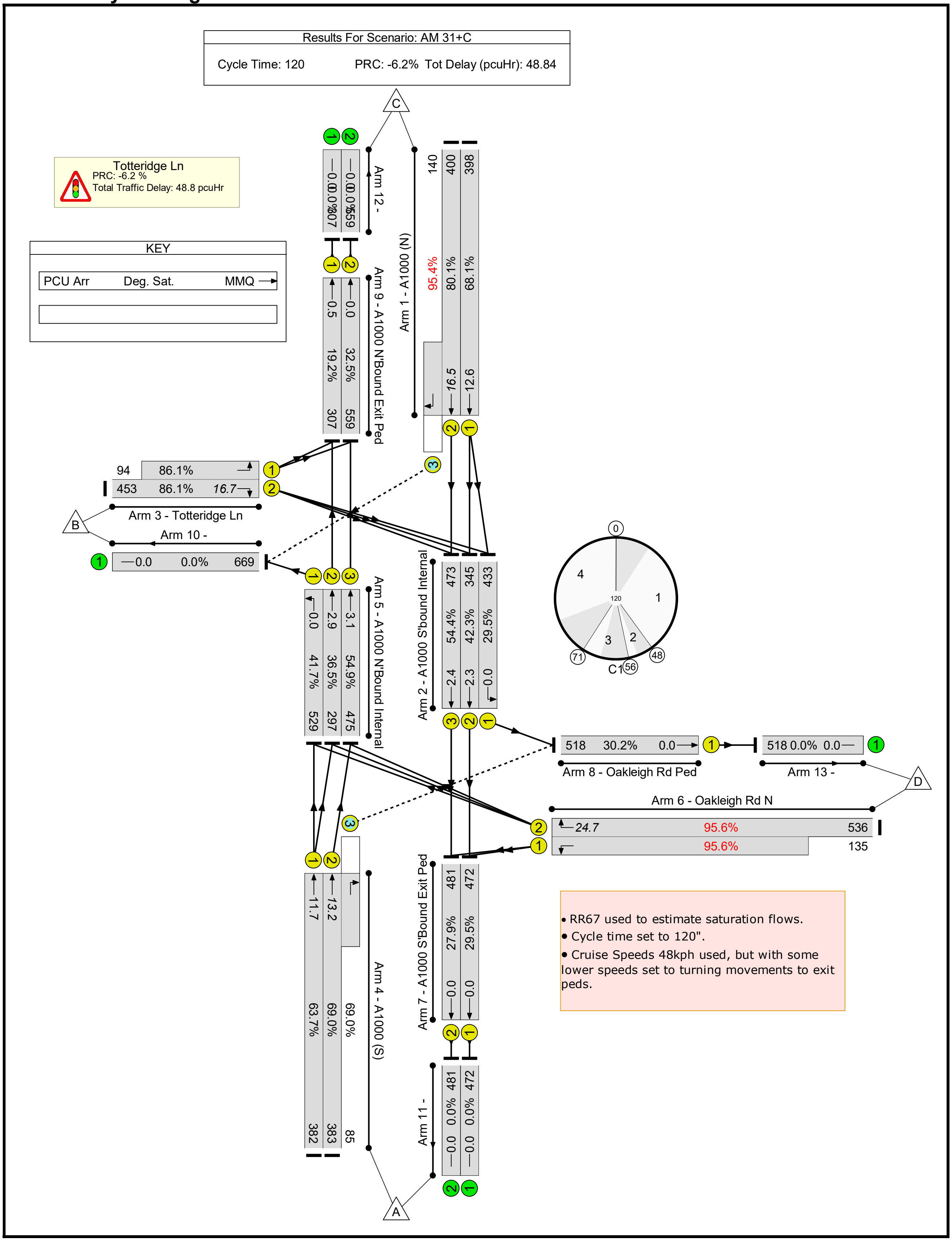
Stage Timings

Stage	1	2	3	4
Duration	37	3	6	37
Change Point	0	48	56	71

Signal Timings Diagram



Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Totteridge Ln Existing	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.6%**
Totteridge Ln	-	-	**N/A**	-	-		-	-	-	-	-	-	**95.6%**
1/1	A1000 (N) Ahead	U	N/A	N/A	D		1	37	-	398	1845	584	68.1%
1/2+1/3	A1000 (N) Ahead Right	U+O	N/A	N/A	D		1	37	-	540	2015:1681	499+147	80.1 : 95.4%
2/1	A1000 S'bound Internal Left	U	N/A	N/A	E	J	1	105	54	433	1659	1465	29.5%
2/2	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	51	-	345	1880	815	42.3%
2/3	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	51	-	473	2005	869	54.4%
3/2+3/1	Totteridge Ln Right Left	U	N/A	N/A	G		1	37	-	547	1766:1484	526+109	86.1 : 86.1%
4/1	A1000 (S) Ahead	U	N/A	N/A	A		1	38	-	382	1845	600	63.7%
4/2+4/3	A1000 (S) Ahead Right	U+O	N/A	N/A	A		1	38	-	468	2015:1765	555+123	69.0 : 69.0%
5/1	A1000 N'Bound Internal Left	U	N/A	N/A	B	I	1	93	43	529	1620	1269	41.7%
5/2	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	50	-	297	1915	814	36.5%
5/3	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	50	-	475	2035	865	54.9%
6/2+6/1	Oakleigh Rd N Right Left	U	N/A	N/A	H		1	38	-	671	1726:1768	561+141	95.6 : 95.6%
7/1	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	472	1885	1602	29.5%
7/2	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	481	2025	1721	27.9%
8/1	Oakleigh Rd Ped Ahead	U	N/A	N/A	K		1	101	-	518	2015	1713	30.2%
9/1	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	307	1885	1602	19.2%

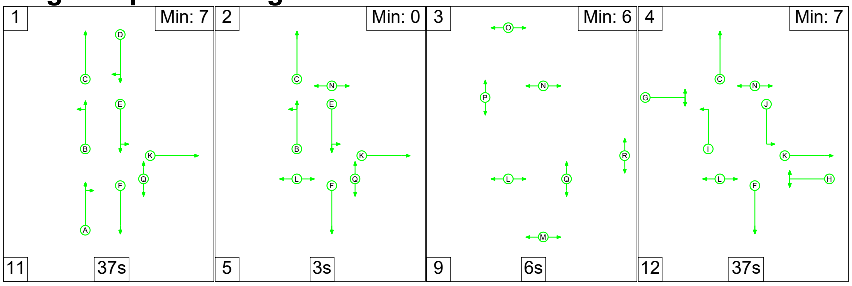
9/2	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	559	2025	1721	32.5%
10/1		U	N/A	N/A	-		-	-	-	669	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	472	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	481	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	307	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	559	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Totteridge Ln Existing	**-**	**-**	**220**	**0**	**5**	**32.2**	**15.7**	**1.0**	**48.8**	**-**	**-**	**-**	**-**
Totteridge Ln	**-**	**-**	**220**	**0**	**5**	**32.2**	**15.7**	**1.0**	**48.8**	**-**	**-**	**-**	**-**
1/1	398	398	-	-	-	3.9	1.1	-	5.0	45.3	11.5	1.1	12.6
1/2+1/3	540	540	135	0	5	5.4	2.4	0.8	8.6	57.5	14.1	2.4	16.5
2/1	433	433	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	345	345	-	-	-	0.5	0.0	-	0.5	5.0	2.3	0.0	2.3
2/3	473	473	-	-	-	0.5	0.0	-	0.5	3.8	2.4	0.0	2.4
3/2+3/1	547	547	-	-	-	5.5	2.9	-	8.4	55.5	13.8	2.9	16.7
4/1	382	382	-	-	-	3.7	0.9	-	4.5	42.7	10.8	0.9	11.7
4/2+4/3	468	468	85	0	0	4.4	1.1	0.2	5.8	44.3	12.1	1.1	13.2
5/1	529	529	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	297	297	-	-	-	0.6	0.0	-	0.6	7.0	2.9	0.0	2.9
5/3	475	475	-	-	-	0.6	0.0	-	0.6	4.7	3.1	0.0	3.1
6/2+6/1	671	671	-	-	-	7.0	7.3	-	14.3	76.9	17.4	7.3	24.7
7/1	472	472	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	481	481	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	307	307	-	-	-	0.0	0.0	-	0.0	0.0	0.5	0.0	0.5
9/2	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	472	472	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	481	481	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	307	307	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	-6.2	Total Delay for Signalled Lanes (pcuHr):	48.84	Cycle Time (s):	120
	PRC Over All Lanes (%):	-6.2	Total Delay Over All Lanes(pcuHr):	48.84		

Scenario 3: 'AM 31+C+D' (FG3: 'AM 2031 + School + Development', Plan 1: 'Network Control Plan 1')

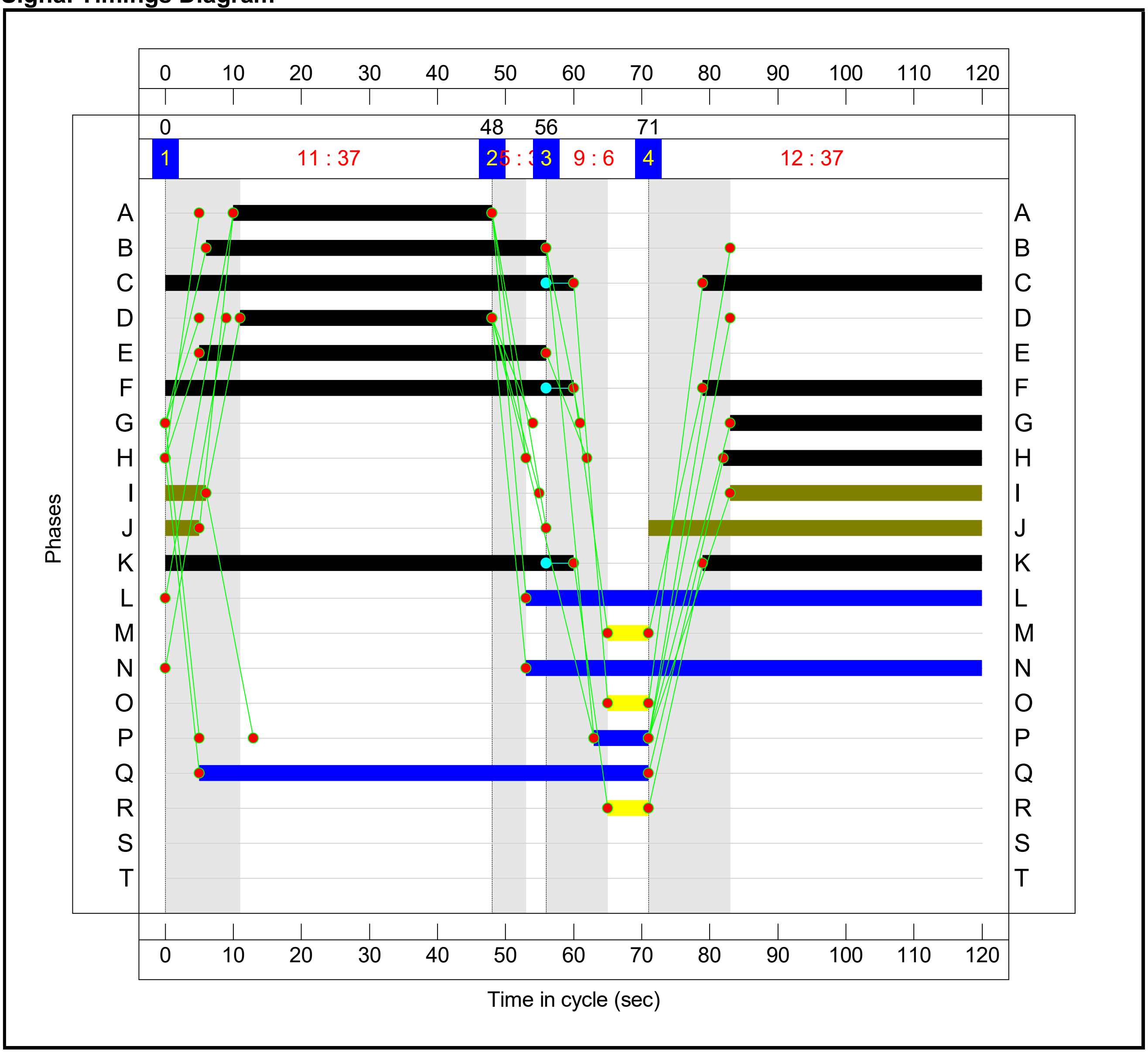
Stage Sequence Diagram



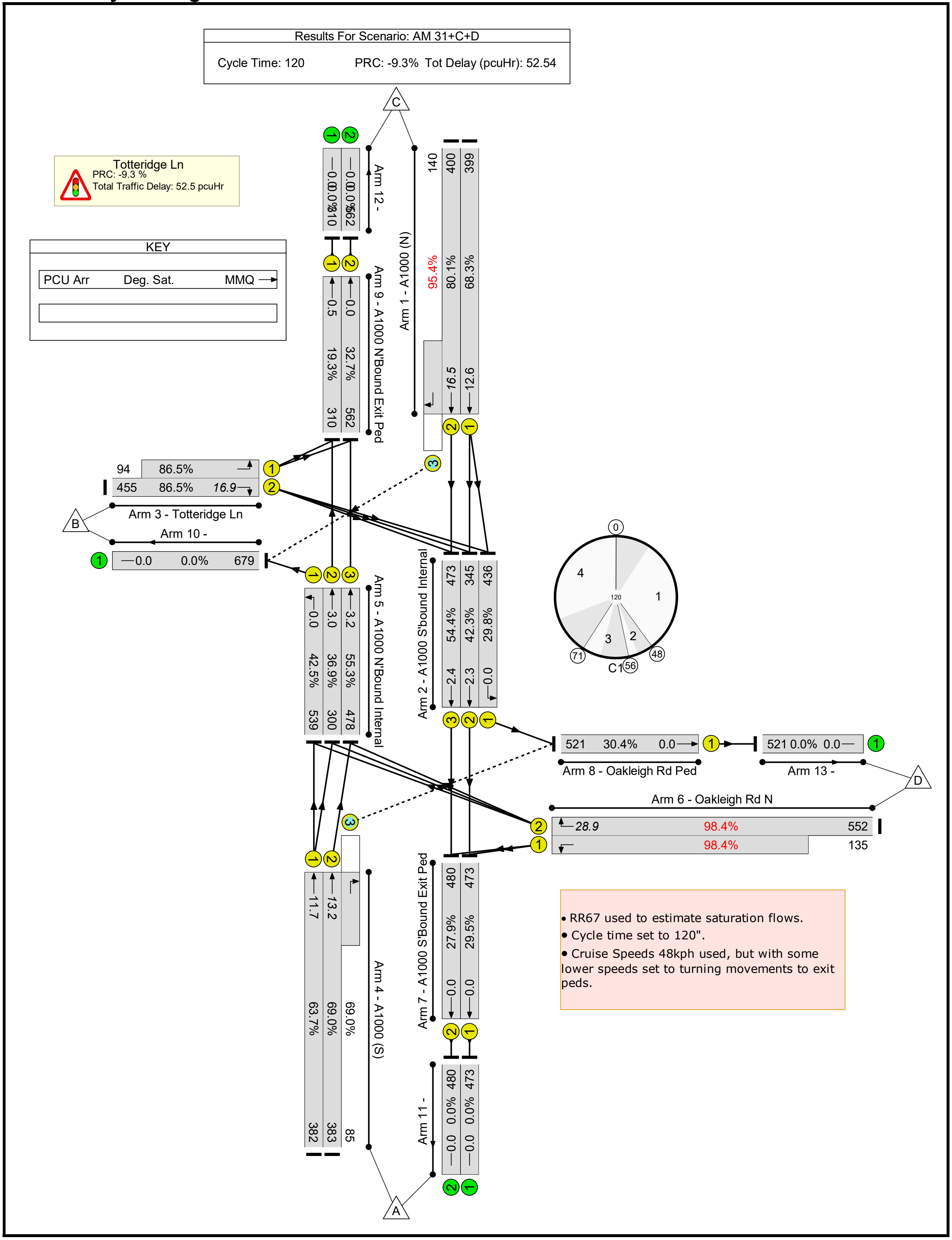
Stage Timings

Stage	1	2	3	4
Duration	37	3	6	37
Change Point	0	48	56	71

Signal Timings Diagram



Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Totteridge Ln Existing	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
Totteridge Ln	-	-	**N/A**	-	-		-	-	-	-	-	-	**98.4%**
1/1	A1000 (N) Ahead	U	N/A	N/A	D		1	37	-	399	1845	584	68.3%
1/2+1/3	A1000 (N) Ahead Right	U+O	N/A	N/A	D		1	37	-	540	2015:1681	499+147	80.1 : 95.4%
2/1	A1000 S'bound Internal Left	U	N/A	N/A	E	J	1	105	54	436	1659	1465	29.8%
2/2	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	51	-	345	1880	815	42.3%
2/3	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	51	-	473	2005	869	54.4%
3/2+3/1	Totteridge Ln Right Left	U	N/A	N/A	G		1	37	-	549	1766:1484	526+109	86.5 : 86.5%
4/1	A1000 (S) Ahead	U	N/A	N/A	A		1	38	-	382	1845	600	63.7%
4/2+4/3	A1000 (S) Ahead Right	U+O	N/A	N/A	A		1	38	-	468	2015:1765	555+123	69.0 : 69.0%
5/1	A1000 N'Bound Internal Left	U	N/A	N/A	B	I	1	93	43	539	1620	1269	42.5%
5/2	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	50	-	300	1915	814	36.9%
5/3	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	50	-	478	2035	865	55.3%
6/2+6/1	Oakleigh Rd N Right Left	U	N/A	N/A	H		1	38	-	687	1726:1768	561+137	98.4 : 98.4%
7/1	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	473	1885	1602	29.5%
7/2	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	480	2025	1721	27.9%
8/1	Oakleigh Rd Ped Ahead	U	N/A	N/A	K		1	101	-	521	2015	1713	30.4%
9/1	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	310	1885	1602	19.3%

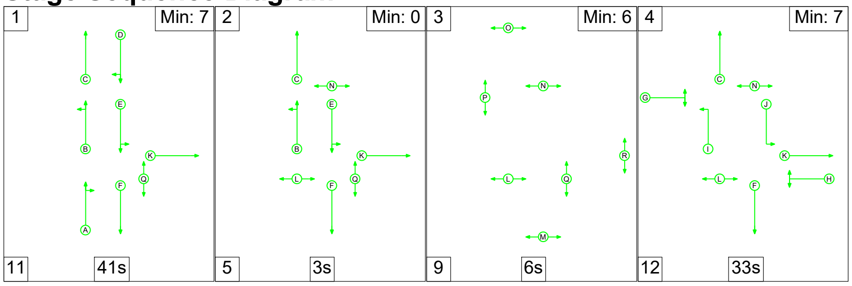
9/2	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	562	2025	1721	32.7%
10/1		U	N/A	N/A	-		-	-	-	679	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	310	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	562	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	521	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Totteridge Ln Existing	**-**	**-**	**220**	**0**	**5**	**32.5**	**19.1**	**1.0**	**52.5**	**-**	**-**	**-**	**-**
Totteridge Ln	**-**	**-**	**220**	**0**	**5**	**32.5**	**19.1**	**1.0**	**52.5**	**-**	**-**	**-**	**-**
1/1	399	399	-	-	-	4.0	1.1	-	5.0	45.4	11.5	1.1	12.6
1/2+1/3	540	540	135	0	5	5.4	2.4	0.8	8.6	57.5	14.1	2.4	16.5
2/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	345	345	-	-	-	0.5	0.0	-	0.5	5.0	2.3	0.0	2.3
2/3	473	473	-	-	-	0.5	0.0	-	0.5	3.8	2.4	0.0	2.4
3/2+3/1	549	549	-	-	-	5.6	3.0	-	8.5	56.0	13.9	3.0	16.9
4/1	382	382	-	-	-	3.7	0.9	-	4.5	42.7	10.8	0.9	11.7
4/2+4/3	468	468	85	0	0	4.4	1.1	0.2	5.8	44.3	12.1	1.1	13.2
5/1	539	539	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	300	300	-	-	-	0.6	0.0	-	0.6	7.0	3.0	0.0	3.0
5/3	478	478	-	-	-	0.6	0.0	-	0.6	4.7	3.2	0.0	3.2
6/2+6/1	687	687	-	-	-	7.3	10.6	-	17.9	93.7	18.2	10.6	28.9
7/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	521	521	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	310	310	-	-	-	0.0	0.0	-	0.0	0.0	0.5	0.0	0.5
9/2	562	562	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	310	310	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	562	562	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	521	521	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	-9.3	Total Delay for Signalled Lanes (pcuHr):	52.54	Cycle Time (s):	120
	PRC Over All Lanes (%):	-9.3	Total Delay Over All Lanes(pcuHr):	52.54		

Scenario 4: 'PM 21' (FG4: 'PM 2021', Plan 1: 'Network Control Plan 1')

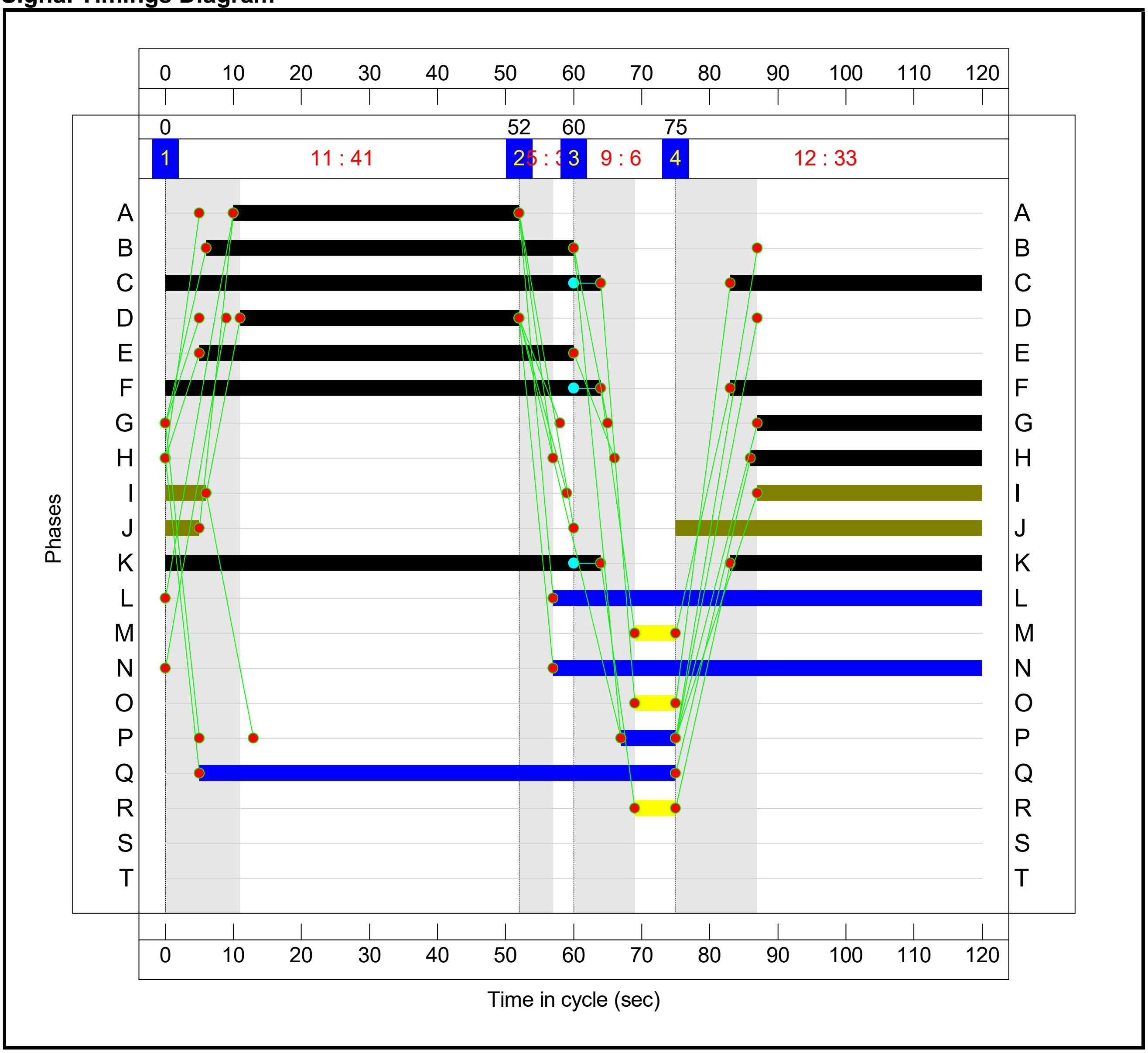
Stage Sequence Diagram



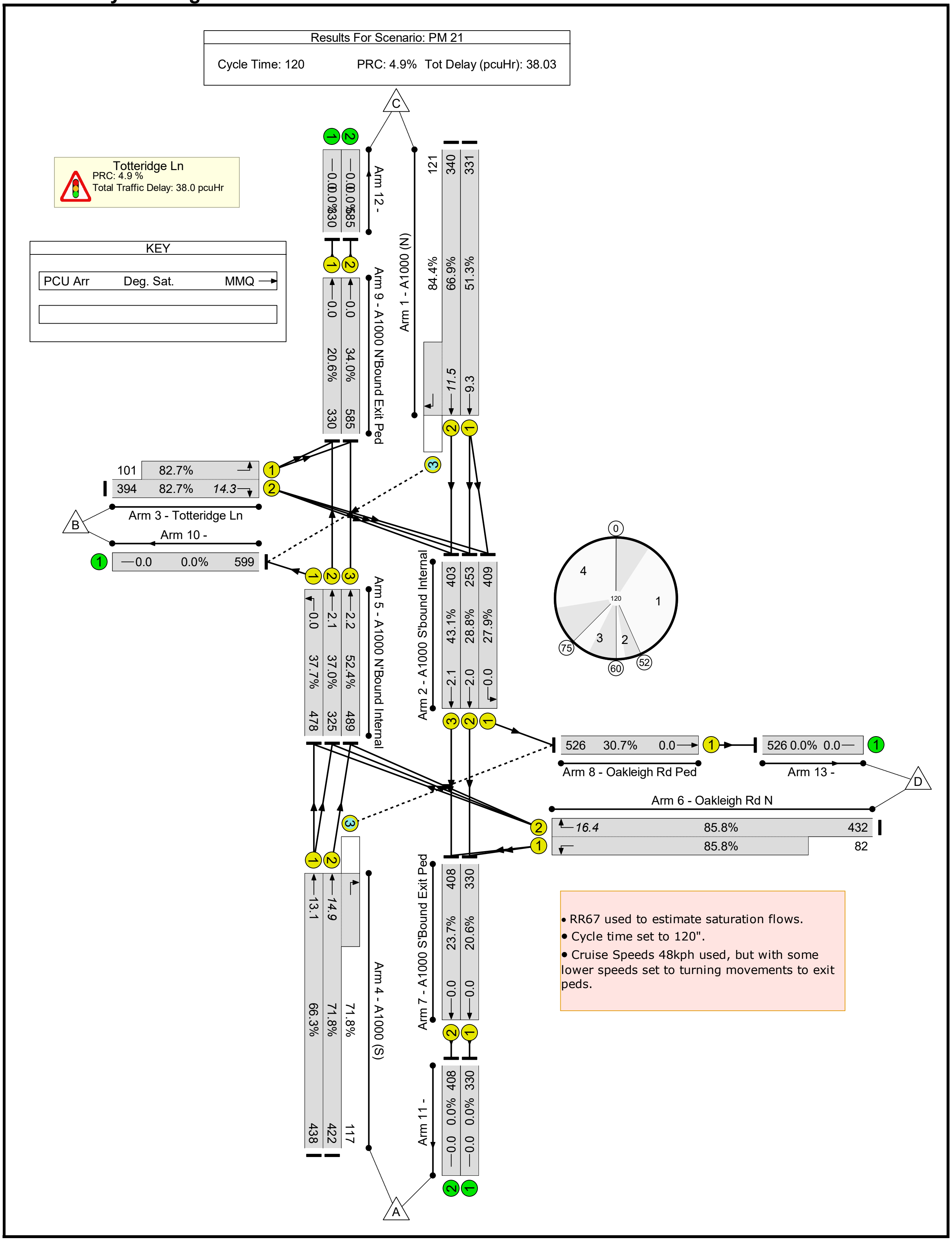
Stage Timings

Stage	1	2	3	4
Duration	41	3	6	33
Change Point	0	52	60	75

Signal Timings Diagram



Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Totteridge Ln Existing	-	-	**N/A**	-	-		-	-	-	-	-	-	**85.8%**
Totteridge Ln	-	-	**N/A**	-	-		-	-	-	-	-	-	**85.8%**
1/1	A1000 (N) Ahead	U	N/A	N/A	D		1	41	-	331	1845	646	51.3%
1/2+1/3	A1000 (N) Ahead Right	U+O	N/A	N/A	D		1	41	-	461	2015:1681	508+143	66.9 : 84.4%
2/1	A1000 S'bound Internal Left	U	N/A	N/A	E	J	1	105	50	409	1659	1465	27.9%
2/2	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	55	-	253	1880	877	28.8%
2/3	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	55	-	403	2005	936	43.1%
3/2+3/1	Totteridge Ln Right Left	U	N/A	N/A	G		1	33	-	495	1766:1484	476+122	82.7 : 82.7%
4/1	A1000 (S) Ahead	U	N/A	N/A	A		1	42	-	438	1845	661	66.3%
4/2+4/3	A1000 (S) Ahead Right	U+O	N/A	N/A	A		1	42	-	539	2015:1765	588+163	71.8 : 71.8%
5/1	A1000 N'Bound Internal Left	U	N/A	N/A	B	I	1	93	39	478	1620	1269	37.7%
5/2	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	54	-	325	1915	878	37.0%
5/3	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	54	-	489	2035	933	52.4%
6/2+6/1	Oakleigh Rd N Right Left	U	N/A	N/A	H		1	34	-	514	1726:1768	503+96	85.8 : 85.8%
7/1	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	330	1885	1602	20.6%
7/2	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	408	2025	1721	23.7%
8/1	Oakleigh Rd Ped Ahead	U	N/A	N/A	K		1	101	-	526	2015	1713	30.7%
9/1	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	330	1885	1602	20.6%

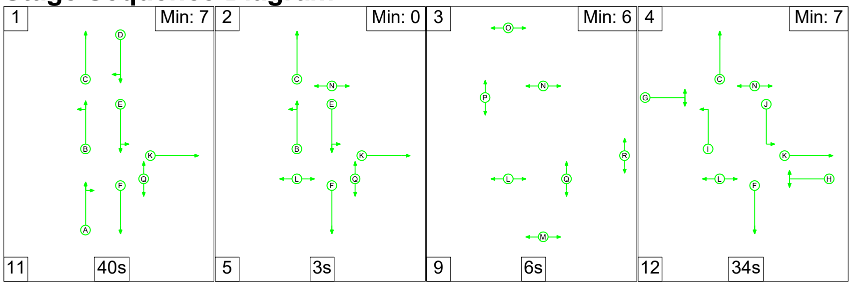
9/2	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	585	2025	1721	34.0%
10/1		U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	330	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	585	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	526	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Totteridge Ln Existing	**-**	**-**	**238**	**0**	**0**	**27.9**	**9.1**	**1.1**	**38.0**	**-**	**-**	**-**	**-**
Totteridge Ln	**-**	**-**	**238**	**0**	**0**	**27.9**	**9.1**	**1.1**	**38.0**	**-**	**-**	**-**	**-**
1/1	331	331	-	-	-	2.8	0.5	-	3.4	36.6	8.7	0.5	9.3
1/2+1/3	461	461	121	0	0	3.9	1.2	0.8	6.0	46.5	10.3	1.2	11.5
2/1	409	409	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	253	253	-	-	-	0.4	0.0	-	0.4	5.3	2.0	0.0	2.0
2/3	403	403	-	-	-	0.4	0.0	-	0.4	3.5	2.1	0.0	2.1
3/2+3/1	495	495	-	-	-	5.3	2.3	-	7.6	55.0	12.0	2.3	14.3
4/1	438	438	-	-	-	3.9	1.0	-	4.9	40.4	12.2	1.0	13.1
4/2+4/3	539	539	117	0	0	4.8	1.3	0.3	6.3	41.9	13.6	1.3	14.9
5/1	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	325	325	-	-	-	0.4	0.0	-	0.4	4.4	2.1	0.0	2.1
5/3	489	489	-	-	-	0.4	0.0	-	0.4	3.1	2.2	0.0	2.2
6/2+6/1	514	514	-	-	-	5.5	2.8	-	8.4	58.6	13.6	2.8	16.4
7/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	526	526	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	526	526	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	4.9	Total Delay for Signalled Lanes (pcuHr):	38.03	Cycle Time (s):	120
	PRC Over All Lanes (%):	4.9	Total Delay Over All Lanes(pcuHr):	38.03		

Scenario 5: 'PM 31+C' (FG5: 'PM 2031 + School', Plan 1: 'Network Control Plan 1')

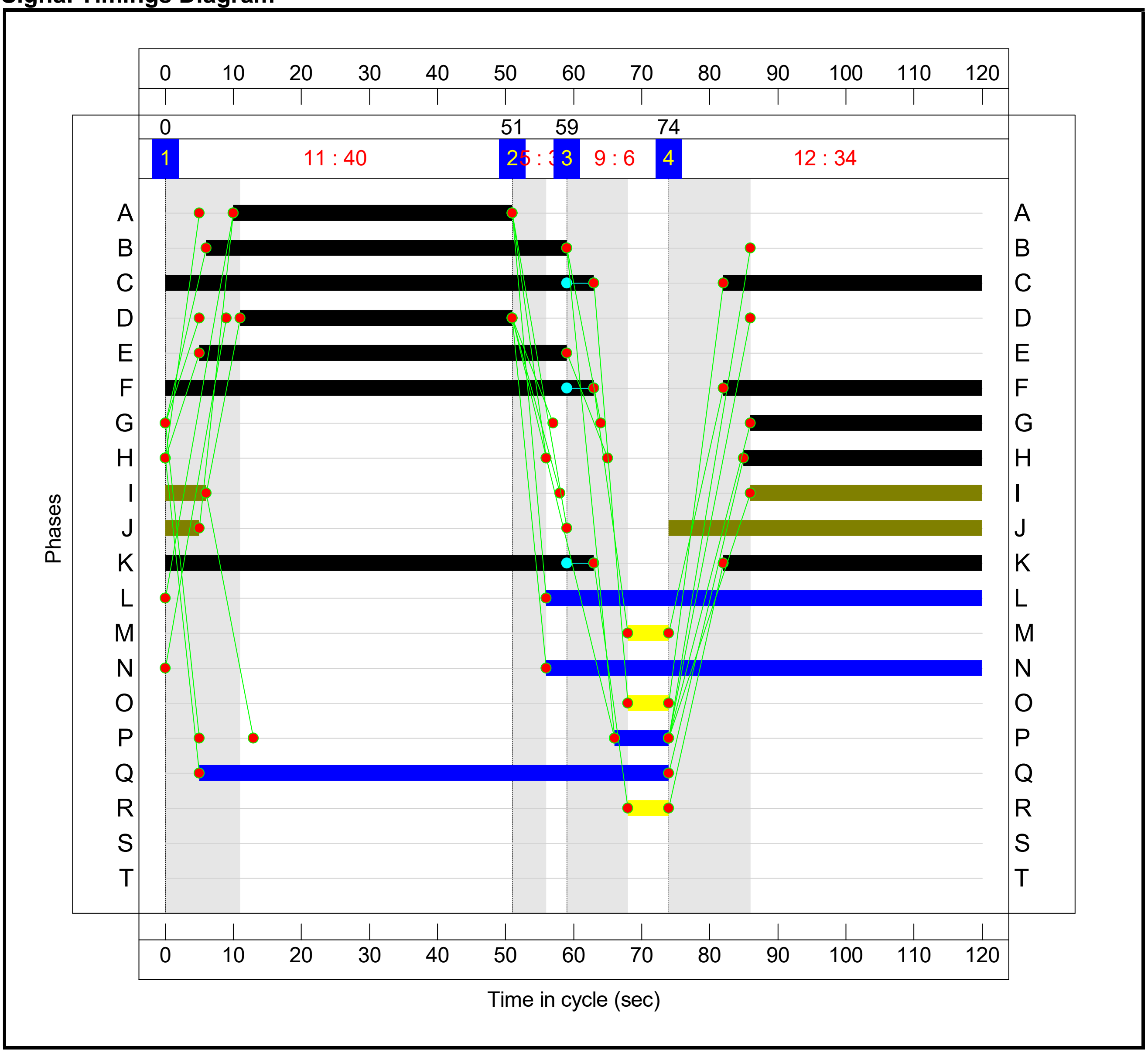
Stage Sequence Diagram



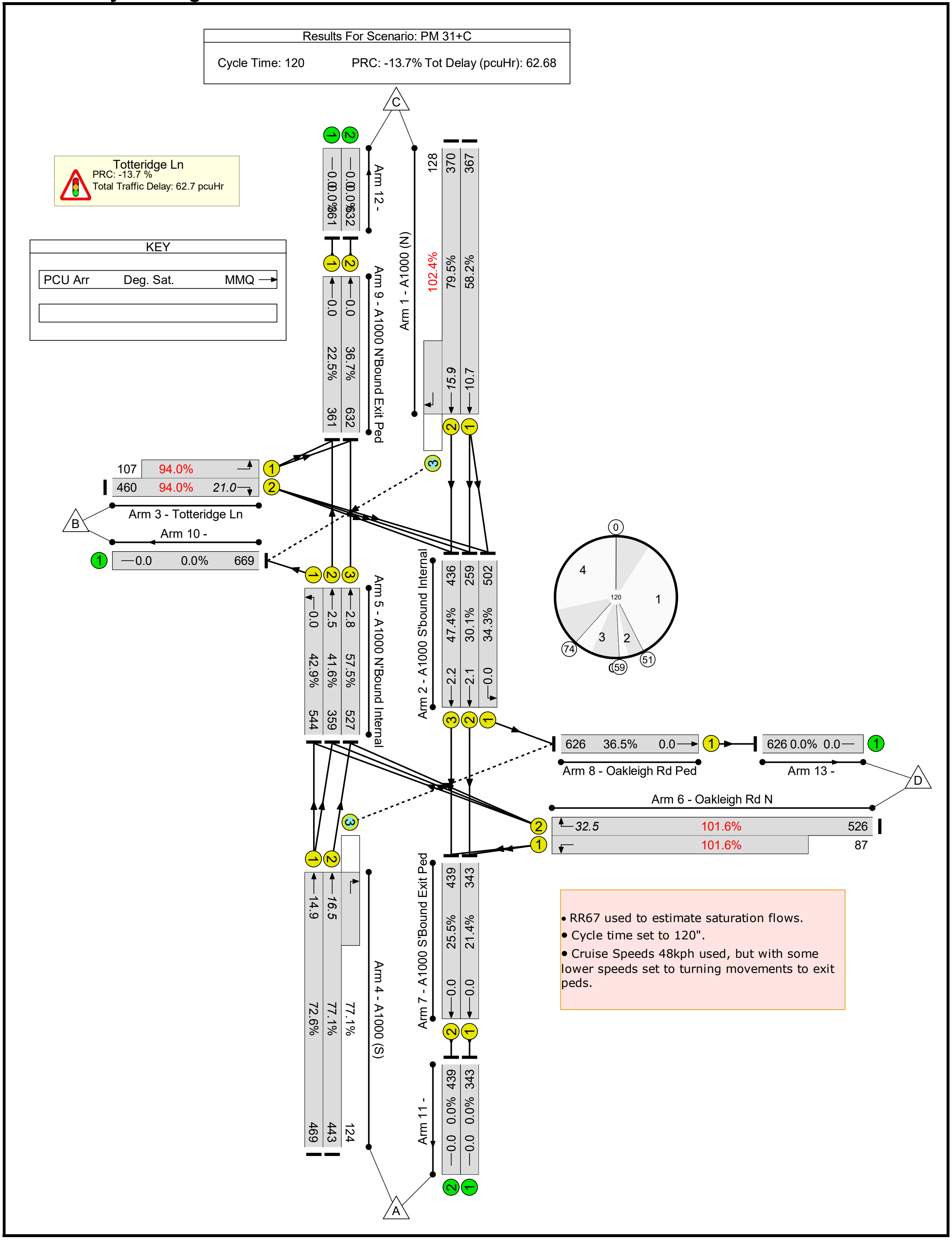
Stage Timings

Stage	1	2	3	4
Duration	40	3	6	34
Change Point	0	51	59	74

Signal Timings Diagram



Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Totteridge Ln Existing	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.4%**
Totteridge Ln	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.4%**
1/1	A1000 (N) Ahead	U	N/A	N/A	D		1	40	-	367	1845	630	58.2%
1/2+1/3	A1000 (N) Ahead Right	U+O	N/A	N/A	D		1	40	-	498	2015:1681	466+125	79.5 : 102.4%
2/1	A1000 S'bound Internal Left	U	N/A	N/A	E	J	1	105	51	502	1659	1465	34.3%
2/2	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	54	-	259	1880	862	30.1%
2/3	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	54	-	436	2005	919	47.4%
3/2+3/1	Totteridge Ln Right Left	U	N/A	N/A	G		1	34	-	567	1766:1484	489+114	94.0 : 94.0%
4/1	A1000 (S) Ahead	U	N/A	N/A	A		1	41	-	469	1845	646	72.6%
4/2+4/3	A1000 (S) Ahead Right	U+O	N/A	N/A	A		1	41	-	567	2015:1765	574+161	77.1 : 77.1%
5/1	A1000 N'Bound Internal Left	U	N/A	N/A	B	I	1	93	40	550	1620	1269	42.9%
5/2	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	53	-	360	1915	862	41.6%
5/3	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	53	-	528	2035	916	57.5%
6/2+6/1	Oakleigh Rd N Right Left	U	N/A	N/A	H		1	35	-	613	1726:1768	518+86	101.6 : 101.6%
7/1	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	343	1885	1602	21.4%
7/2	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	439	2025	1721	25.5%
8/1	Oakleigh Rd Ped Ahead	U	N/A	N/A	K		1	101	-	626	2015	1713	36.5%
9/1	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	362	1885	1602	22.5%

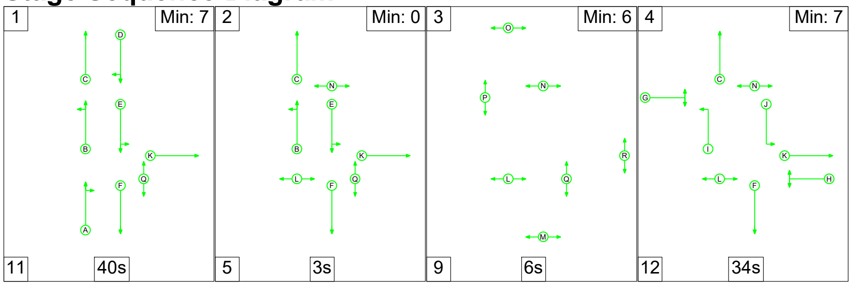
9/2	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	633	2025	1721	36.7%
10/1		U	N/A	N/A	-		-	-	-	678	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	343	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	633	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	626	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Totteridge Ln Existing	**-**	**-**	**229**	**0**	**20**	**32.8**	**28.6**	**1.3**	**62.7**	**-**	**-**	**-**	**-**
Totteridge Ln	**-**	**-**	**229**	**0**	**20**	**32.8**	**28.6**	**1.3**	**62.7**	**-**	**-**	**-**	**-**
1/1	367	367	-	-	-	3.3	0.7	-	4.0	39.3	10.0	0.7	10.7
1/2+1/3	498	495	105	0	20	4.7	4.0	0.9	9.6	69.3	11.9	4.0	15.9
2/1	502	502	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	259	259	-	-	-	0.4	0.0	-	0.4	5.3	2.1	0.0	2.1
2/3	436	436	-	-	-	0.4	0.0	-	0.4	3.2	2.2	0.0	2.2
3/2+3/1	567	567	-	-	-	6.2	5.9	-	12.2	77.2	15.1	5.9	21.0
4/1	469	469	-	-	-	4.4	1.3	-	5.7	44.0	13.5	1.3	14.9
4/2+4/3	567	567	124	0	0	5.2	1.7	0.4	7.3	46.2	14.9	1.7	16.5
5/1	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	359	359	-	-	-	0.5	0.0	-	0.5	4.5	2.5	0.0	2.5
5/3	527	527	-	-	-	0.5	0.0	-	0.5	3.4	2.8	0.0	2.8
6/2+6/1	613	605	-	-	-	7.2	15.0	-	22.2	130.3	17.5	15.0	32.5
7/1	343	343	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	626	626	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	343	343	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	626	626	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	-13.7	Total Delay for Signalled Lanes (pcuHr):	62.68	Cycle Time (s):	120
	PRC Over All Lanes (%):	-13.7	Total Delay Over All Lanes(pcuHr):	62.68		

Scenario 6: 'PM 31+C+D' (FG6: 'PM 2031 + School + Development', Plan 1: 'Network Control Plan 1')

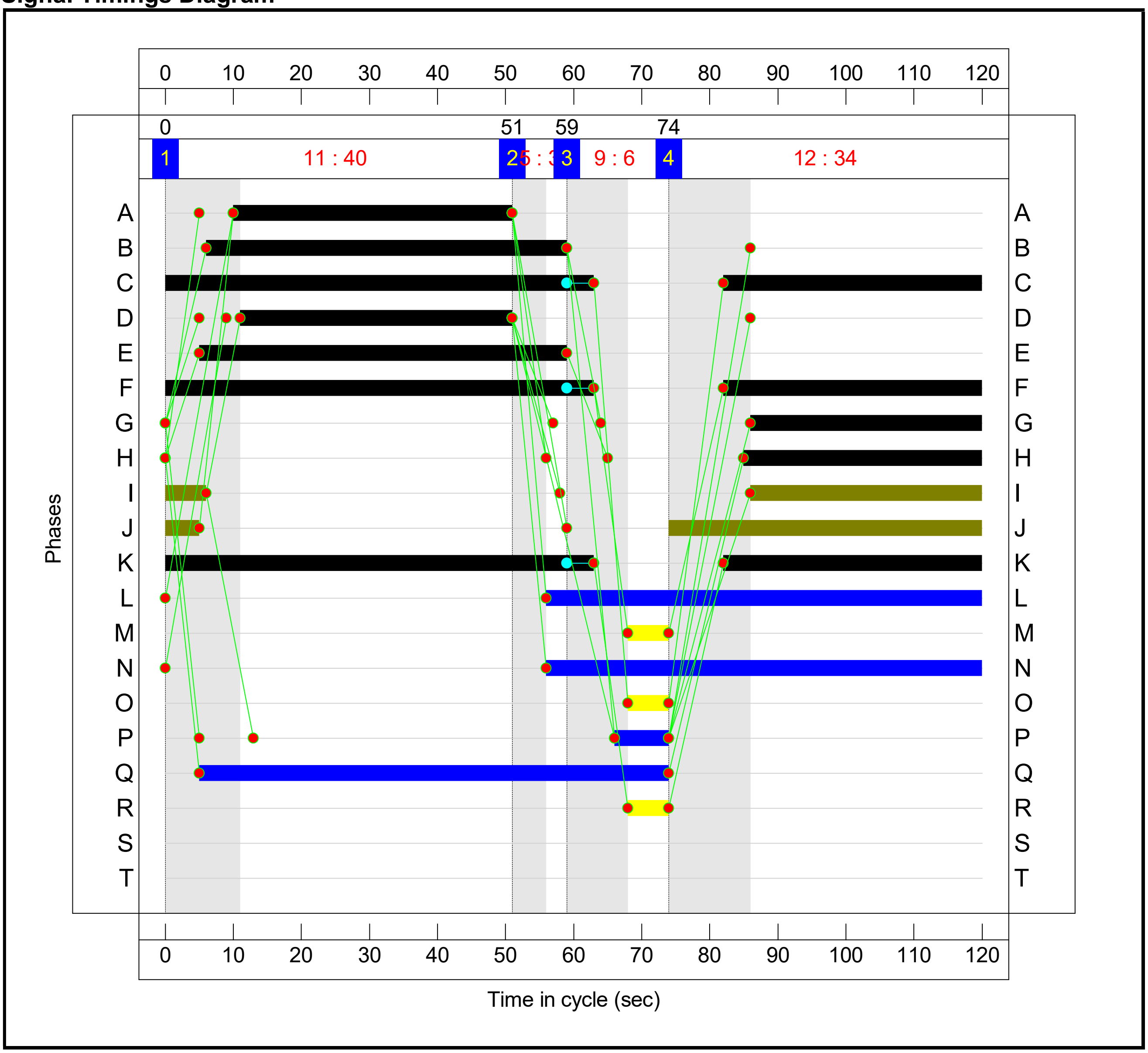
Stage Sequence Diagram



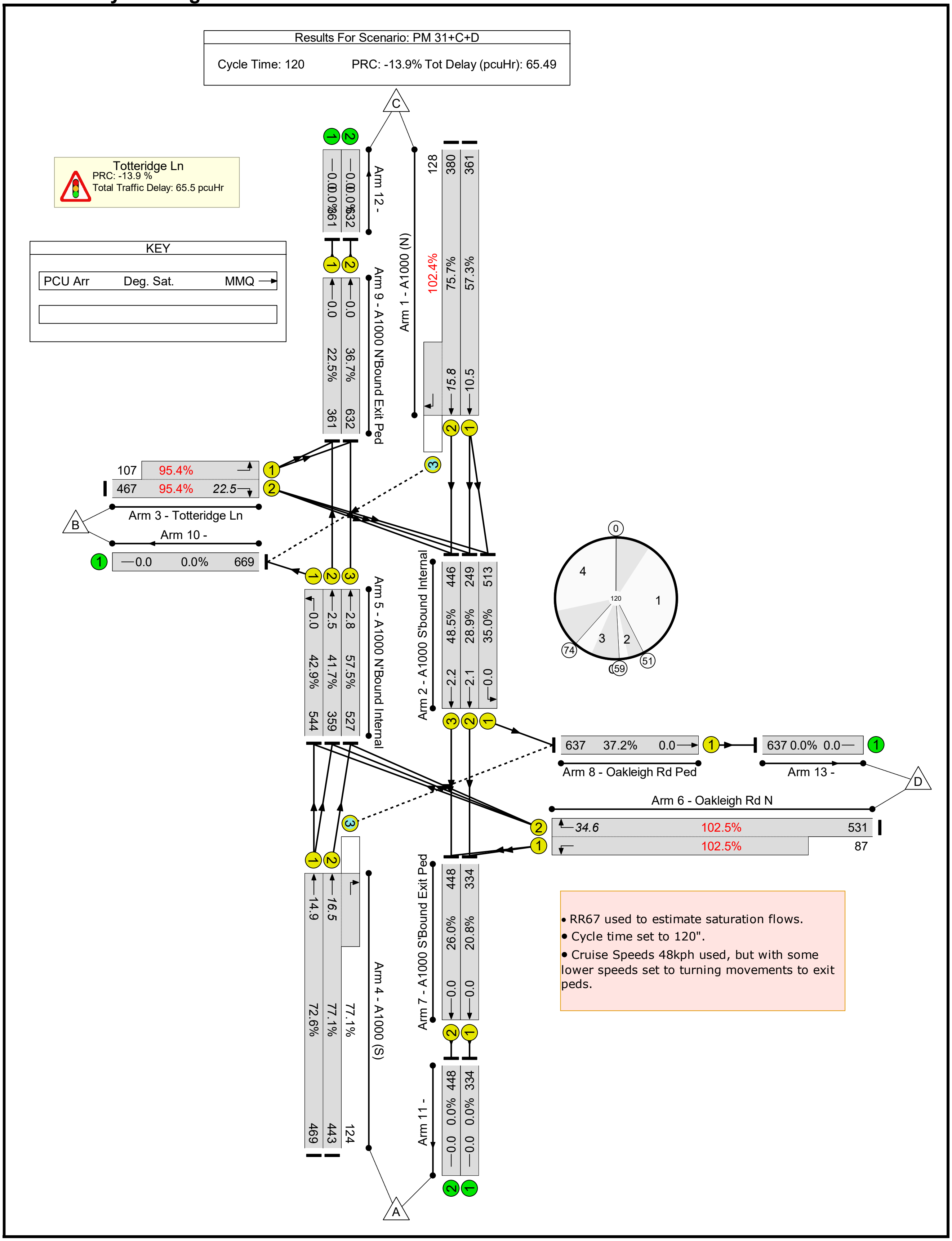
Stage Timings

Stage	1	2	3	4
Duration	40	3	6	34
Change Point	0	51	59	74

Signal Timings Diagram



Network Layout Diagram



Network Results

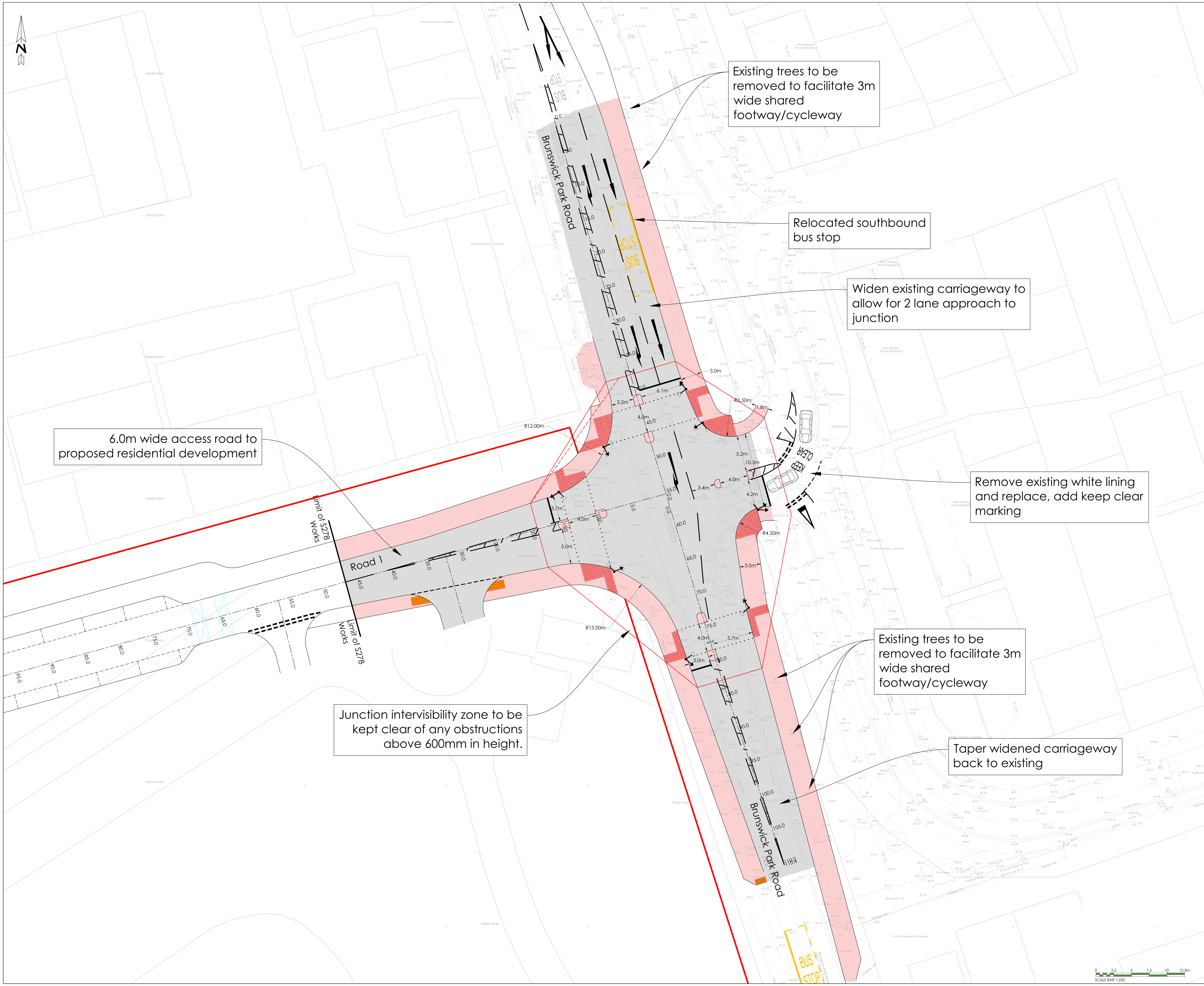
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Totteridge Ln Existing	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.5%**
Totteridge Ln	-	-	**N/A**	-	-		-	-	-	-	-	-	**102.5%**
1/1	A1000 (N) Ahead	U	N/A	N/A	D		1	40	-	361	1845	630	57.3%
1/2+1/3	A1000 (N) Ahead Right	U+O	N/A	N/A	D		1	40	-	508	2015:1681	502+125	75.7 : 102.4%
2/1	A1000 S'bound Internal Left	U	N/A	N/A	E	J	1	105	51	513	1659	1465	35.0%
2/2	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	54	-	249	1880	862	28.9%
2/3	A1000 S'bound Internal Ahead	U	N/A	N/A	E		1	54	-	446	2005	919	48.5%
3/2+3/1	Totteridge Ln Right Left	U	N/A	N/A	G		1	34	-	574	1766:1484	489+112	95.4 : 95.4%
4/1	A1000 (S) Ahead	U	N/A	N/A	A		1	41	-	469	1845	646	72.6%
4/2+4/3	A1000 (S) Ahead Right	U+O	N/A	N/A	A		1	41	-	567	2015:1765	574+161	77.1 : 77.1%
5/1	A1000 N'Bound Internal Left	U	N/A	N/A	B	I	1	93	40	553	1620	1269	42.9%
5/2	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	53	-	361	1915	862	41.7%
5/3	A1000 N'Bound Internal Ahead	U	N/A	N/A	B		1	53	-	529	2035	916	57.5%
6/2+6/1	Oakleigh Rd N Right Left	U	N/A	N/A	H		1	35	-	618	1726:1768	518+85	102.5 : 102.5%
7/1	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	334	1885	1602	20.8%
7/2	A1000 S'Bound Exit Ped Ahead	U	N/A	N/A	F		1	101	-	448	2025	1721	26.0%
8/1	Oakleigh Rd Ped Ahead	U	N/A	N/A	K		1	101	-	637	2015	1713	37.2%
9/1	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	363	1885	1602	22.5%

9/2	A1000 N'Bound Exit Ped Ahead	U	N/A	N/A	C		1	101	-	634	2025	1721	36.7%
10/1		U	N/A	N/A	-		-	-	-	681	Inf	Inf	0.0%
11/1		U	N/A	N/A	-		-	-	-	334	Inf	Inf	0.0%
11/2		U	N/A	N/A	-		-	-	-	448	Inf	Inf	0.0%
12/1		U	N/A	N/A	-		-	-	-	363	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	634	Inf	Inf	0.0%
13/1		U	N/A	N/A	-		-	-	-	637	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Totteridge Ln Existing	**-**	**-**	**229**	**0**	**20**	**33.2**	**31.0**	**1.3**	**65.5**	**-**	**-**	**-**	**-**
Totteridge Ln	**-**	**-**	**229**	**0**	**20**	**33.2**	**31.0**	**1.3**	**65.5**	**-**	**-**	**-**	**-**
1/1	361	361	-	-	-	3.2	0.7	-	3.9	39.0	9.8	0.7	10.5
1/2+1/3	508	505	105	0	20	4.8	3.6	0.9	9.2	65.4	12.2	3.6	15.8
2/1	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	249	249	-	-	-	0.4	0.0	-	0.4	5.4	2.1	0.0	2.1
2/3	446	446	-	-	-	0.4	0.0	-	0.4	3.1	2.2	0.0	2.2
3/2+3/1	574	574	-	-	-	6.4	6.9	-	13.3	83.5	15.6	6.9	22.5
4/1	469	469	-	-	-	4.4	1.3	-	5.7	44.0	13.5	1.3	14.9
4/2+4/3	567	567	124	0	0	5.2	1.7	0.4	7.3	46.3	14.9	1.7	16.5
5/1	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	359	359	-	-	-	0.5	0.0	-	0.5	4.5	2.5	0.0	2.5
5/3	527	527	-	-	-	0.5	0.0	-	0.5	3.4	2.8	0.0	2.8
6/2+6/1	618	605	-	-	-	7.4	16.9	-	24.3	141.5	17.7	16.9	34.6
7/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	448	448	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/2	448	448	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/1	361	361	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	-13.9	Total Delay for Signalled Lanes (pcuHr):	65.49	Cycle Time (s):	120
	PRC Over All Lanes (%):	-13.9	Total Delay Over All Lanes(pcuHr):	65.49		

APPENDIX K



KEY

SITE BOUNDARY
PROPOSED FOOTWAY
PROPOSED VEHICULAR ACCESS
PROPOSED BLISTER TACTILE PAVING (BUFF)
PROPOSED BLISTER TACTILE PAVING (RED)
PROPOSED CORDUROY TACTILE PAVING (BUFF)
JUNCTION INTERVISIBILTY

THIS IS AN INDICATIVE MEANS OF ACCESS PLAN
AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

Rev	Description	Date	Drawn	Checked	Apvd.

Project

New Southgate, Royal Brunswick Park
London

Drawing Description

Means of Access
Brunswick Park Road

Drawing Number	Scale	Date	Drawn	Checked	Approved
ST-3013-700	1:250@A1	02.09.22	TJW	LH	SW

Client

Architect

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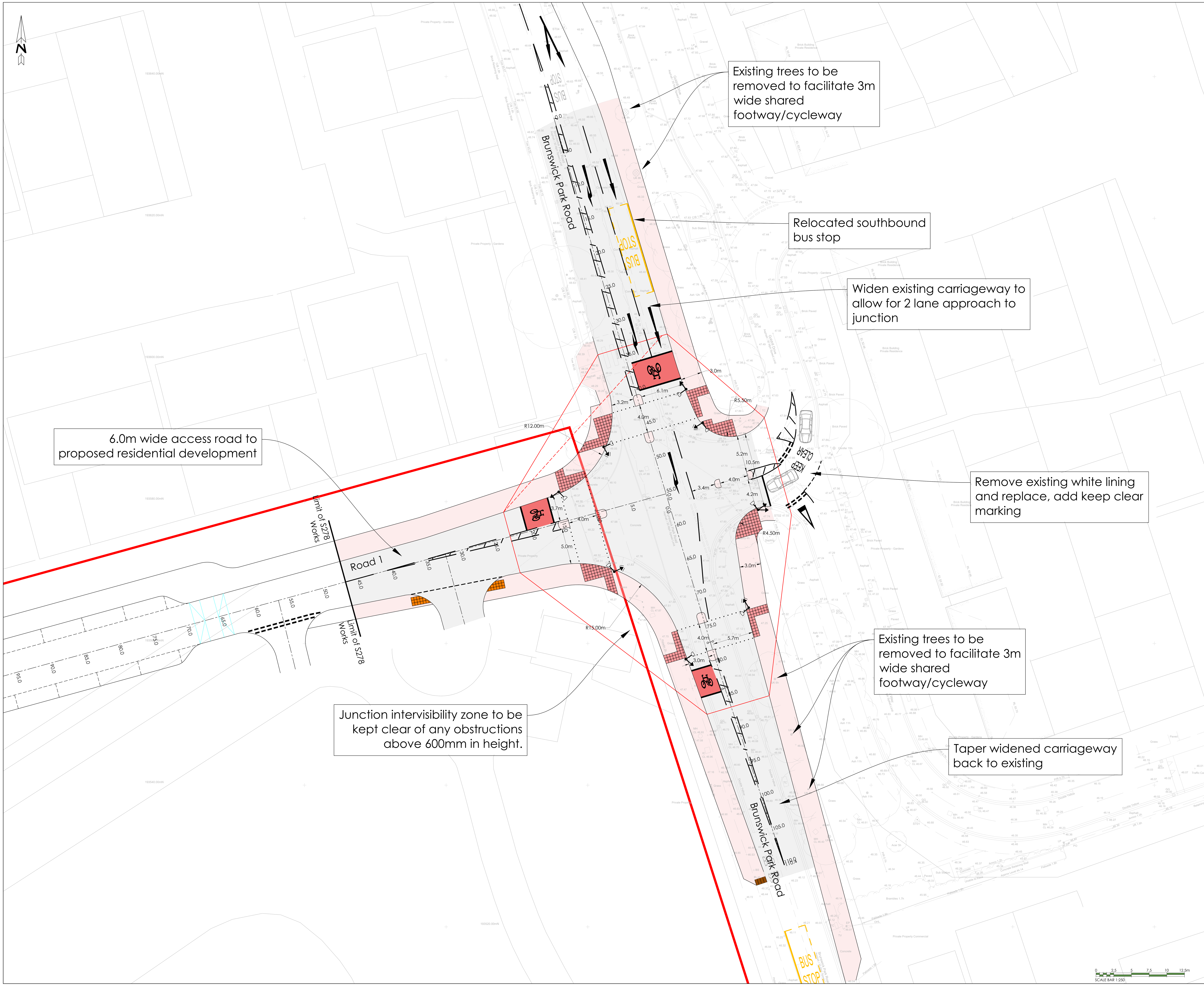

KEY

	SITE BOUNDARY
	PROPOSED FOOTWAY
	PROPOSED VEHICULAR ACCESS
	PROPOSED BLISTER TACTILE PAVING (BUFF)
	PROPOSED BLISTER TACTILE PAVING (RED)
	PROPOSED CORDUROY TACTILE PAVING (BUFF)
	JUNCTION INTERVISIBILTY

THIS IS AN INDICATIVE MEANS OF ACCESS PLAN AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

Rev	Description	Date	Drawn	Checked	Apvd.

Project

New Southgate, Royal Brunswick Park
London

Drawing Description

Means of Access - with Advance Stop Lines
Brunswick Park Road

Drawing Number	Scale	Date	Drawn	Checked	Approved
ST-3013-717	1:250@A1	02.09.22	TJW	LH	SW

Client

Architect

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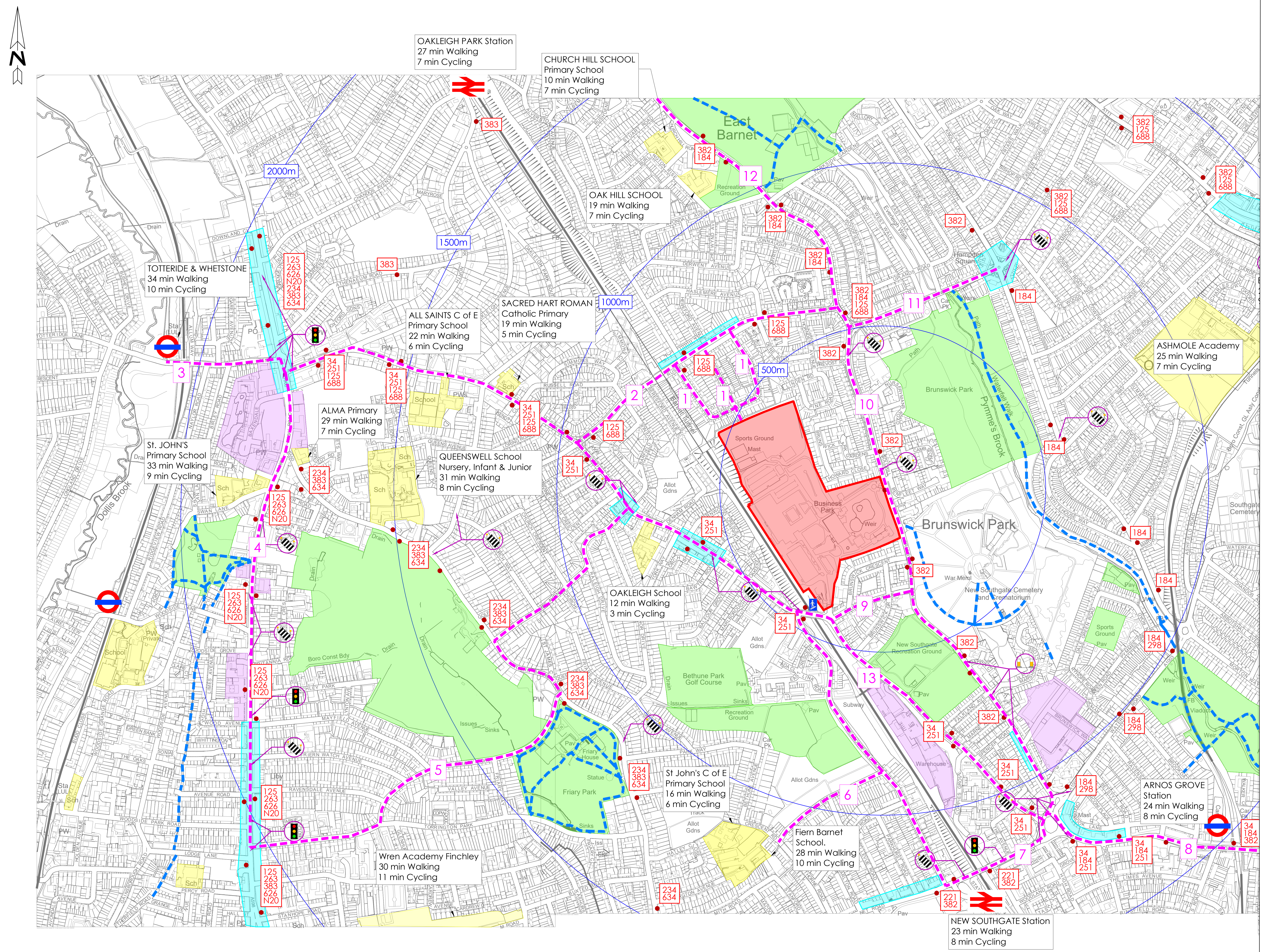
APPENDIX L



KEY

- SITE
- SCHOOLS/COLLEGES
- EMPLOYMENT AREAS
- RECREATIONAL FACILITIES
- SHOPS/RETAIL OUTLETS
- BUS STOP
- BUS SERVICES
- UNDERGROUND STATION
- RAILWAY STATION
- ZEBRA CROSSING
- UNCONTROLLED CROSSING
- SIGNALISED CROSSING
- ELEVATED CROSSING
- ROUTES FOR ASSESSMENT
- CYCLE ROUTES

ALL DISTANCES AS MEASURED FROM THE CENTRE OF THE SITE

Rev	Description	Date	Drawn	Checked	Apvd.
A	Updated to include additional link - Oakleigh Road South	08.11.21	LGM	PLC	-

Project
New Southgate, Royal Brunswick Park
London

Drawing Description
Active Travel Zone Routes

Project Number	Drawing Number			
ST-3013	06-A			
Scale	Date	Drawn	Checked	Approved
NTS@A2	01.06.21	LGM	PLC	-

Client

Architect

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APPENDIX M

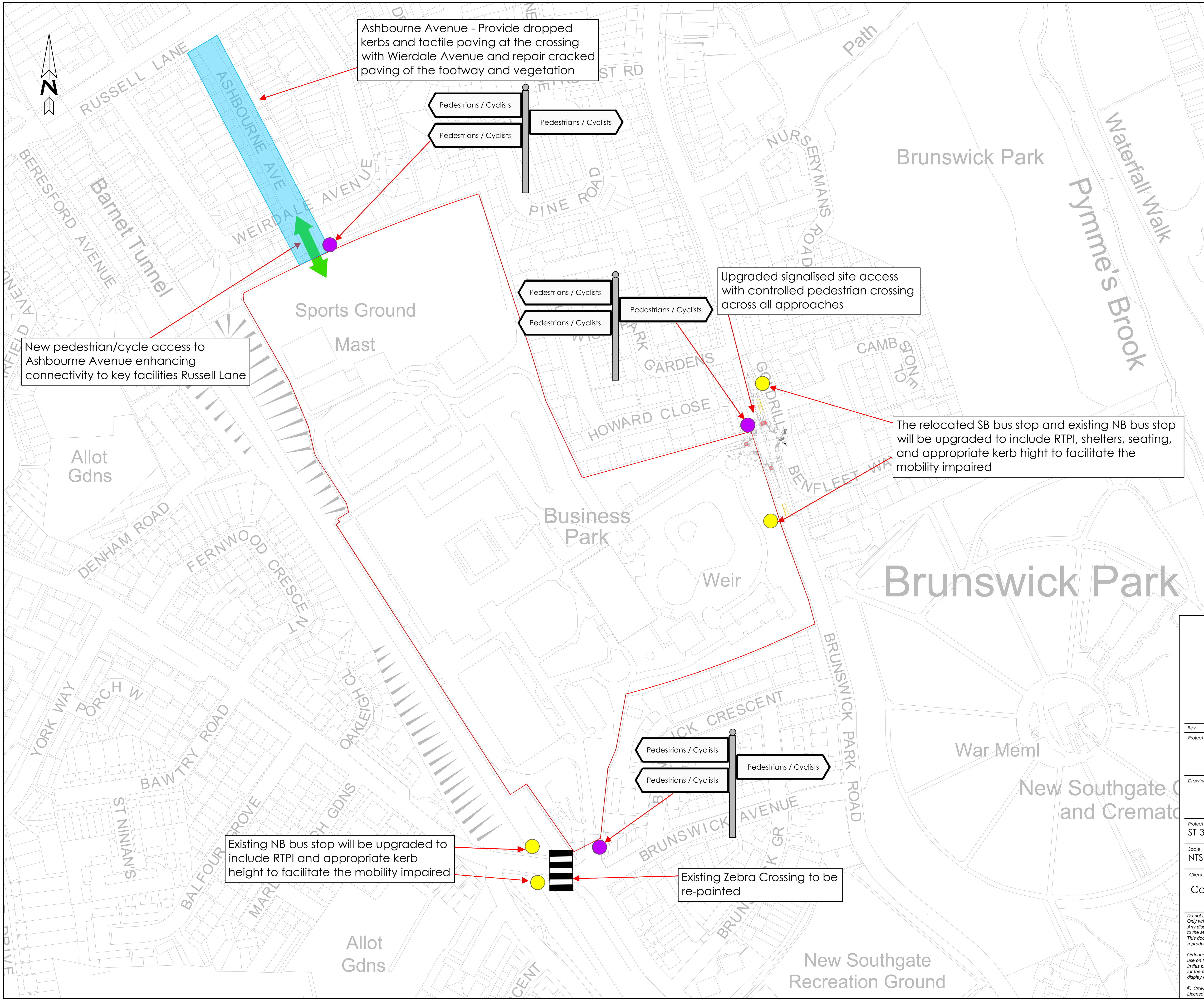
Route 13 – south along A109 Oakleigh Road South – Extracted from Google Maps

Route 13 – south along A109 Oakleigh Road South – Extracted from Google Maps


BUS STOP
A109

Route 13 – south along A109 Oakleigh Road South – Extracted from Google Maps

APPENDIX N



KEY

- SITE BOUNDARY
- BUS STOP
- EXISTING CROSSING ZEBRA
- PROPOSED ENCHANTMENTS TO ASHBOURNE AVENUE
- NEW PEDESTRIAN / CYCLE LINK
- WAYFINDING SIGNAGE TO DIRECT PEDESTRIANS/CYCLISTS TO KEY LOCAL DESTINATIONS/FACILITIES

Rev	Description	Date	Drawn	Checked	Apvd.

Project
New Southgate, Royal Brunswick Park
London

Drawing Description
Proposed Off-site Highway Improvements

Project Number	Drawing Number			
ST-3013	820			
Scale	**Date**	**Drawn**	**Checked**	**Approved**
NTS@A3	10.10.22	LGM	PLC	SW

Client: Comer Homes Group

Architect

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APPENDIX O

TUTUM CONSULTING

CHANGING TIMES, UNCHANGING PRINCIPLES

LONDON BUSINESS SCHOOL, BARNET, LONDON.

PROPOSED SIGNAL-CONTROLLED JUNCTION & ASSOCIATED WORKS

STOMOR CONSULTING ENGINEERS

STAGE 1 ROAD SAFETY AUDIT

Report Ref: 2022/058/0151-01

Produced by:

TUTUM CONSULTING
CHANGING TIMES, UNCHANGING PRINCIPLES

STAGE 1 ROAD SAFETY AUDIT

PROPOSAL: PROPOSED SIGNAL-CONTROLLED JUNCTION & ASSOCIATED WORKS

LOCATION: NORTH LONDON BUSINESS SCHOOL, BARNET, LONDON

CLIENT:

stomor
CIVIL ENGINEERING CONSULTANTS

DOCUMENT CONTROL - REPORT REFERENCE: 202/058/0151-01

DOCUMENT PREPARED BY	DOCUMENT CHECKED BY	REVISION	DATE ISSUED
SP	CB	DRAFT	17th September 22
SP	CB	FINAL	20th September 22

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The opinions and information referred to in this report are based on Tutum Consulting's experience, diligence, and engineering judgement based on the information and guidance available at the time and no explicit warranty is applied concerning the verification or accuracy of any third-party documentation.

CONTENTS

APPENDICES

`

1.0 INTRODUCTION

1.1 This report results from a Stage 1 Road Safety Audit on proposals to introduce a signal-controlled junction to serve a mixed-use development on land off Brunswick Park Road, Barnet, London. The development will provide for up to 1150 units which is in addition to the previously consented 1,1350 dwellings. The audit was requested by Stomor Consulting Engineers (Design Organisation) on behalf of their client Comer Homes. The Overseeing Organisation is Barnet Borough Council.

1.2 The Audit Team membership was as follows:

Audit Team Leader:	Simon Prescott MIHE, National Highways Certificate of Competence Director – Tutum Consulting Limited
Audit Team Member:	Chris Berry National Highways Certificate of Competence Consultant working on behalf of Tutum Consulting

1.3 The proposed works will seek to provide a signal-controlled junction in replace of the existing crossroads arrangement at the junction of Brunswick Park Road/Goldrill Drive/London Business School access. The junction will incorporate pedestrian phases with dedicated facilities provided across all arms. The existing Zebra crossing which presides 20m to the north of the junction will be decommissioned. The southbound approach to the junction is to be allocated two lanes (ahead/left and right only). To accommodate this, it will require widening the eastern side of Brunswick Park Road, which in turn will require altering the Goldrill Drive arm of the junction. Additional junction widening is also proposed at the existing London Business School access.

1.4 The report has been carried out in general accordance with the General Principles and Scheme Governance Information, GG119 'Road Safety Audit'.

1.5 A site visit during the hours of daylight, was carried out by the Audit Team together on the 12th of September 2022 between the hours of 14:35 and 15:05. Weather conditions during the site visit were sunny and the road surface was dry.

1.6 Traffic flows during the site visit were observed as being moderate, with few pedestrian and cycling movements observed.

1.7 All plans and documents provided for the Audit Teams consideration; are listed in Appendix A, were subject to a desktop study prior to the site visit. The location of the site is presented in Appendix B.

1.8 The Audit Team has examined and reported solely on the scheme as presented and has not examined or verified the designs adherence or compliance to any alternate criteria or standards.

1.9 The Audit Team has been selected owing to their independence from the Design Team/Organisation, and whose knowledge, competency and experience are relevant and appropriate for the scheme proposals subject to this audit report.

1.10 Unless general to the scheme, each problem has been identified with reference to key features as well as being marked on the problem identification plan presented in Appendix C.

1.11 All recommendations are made and balanced in context with the information provided and observations made from the site visit. They should not be regarded as a direct instruction to include, remove, or amend any scheme element. Responsibility for designing the scheme rests with the Design Organisation and as such the Audit Team accepts no design responsibility for any changes made to a scheme following the completion of this audit report.

1.12 The Overseeing Organisation should satisfy themselves that their procedures and policies have been followed, in addition to maintaining a formal record of the Audit process.

2.0 DEPARTURES FROM STANDARDS

2.1 The Audit Team have not been made aware of any departures from standards.

3.0 ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS

3.1 It is understood that the proposals subject to this report have not been subject to any previous Road Safety Audit and/or Assessment.

4.0 ITEMS RAISED IN THIS ROAD SAFETY AUDIT

4.1 A total of nine problems have been raised in connection with the proposals subject to this report and these are discussed below:

Problem 1

Location: Bus stop on northern arm

Summary: Stationary buses may force traffic into oncoming vehicles

The location of the bus stop on the southbound approach to the traffic signals will consume the entirety of the southbound lane at an angle and restricts forward visibility for drivers attempting to pass, increasing the risk of collisions with oncoming vehicles. Any resultant queues would also increase the risk of tail-end shunts.

Recommendation
It is recommended to relocate the bus stop or make certain provision whereby a vehicle may pass a stationary bus without encroaching into the opposing carriageway.

Problem 2

Location: Brunswick Park Road - northbound arm

Summary: Alignment may result in late braking and sudden changes in direction

For vehicles approaching the junction from the north (southbound) there alignment will naturally guide them to the right turn lane provided for the development. This may result in drivers unfamiliar with the road layout and wishing to proceed being caught unawares and upon realising this error make a sudden and late change to the nearside ahead lane where tail end shunts and or merge collisions may occur.

Recommendation
It is recommended that drivers' are first directed to the nearside ahead traffic lane, thereby making the right turn into the development a conscious and deliberate decision.

Problem 3

Location: Throughout the junction

Summary: Lack of dedicated cycling provision

There appears to be an absence of dedicated cycling provision at or approaching the junction, albeit a 3.0m hard surface on the eastern side of Brunswick Park Road would indicate a shared footway/cycleway is to be provided, the situation is however unclear. It is expected that Brunswick Park Road will experience high volumes of both pedestrian and vehicle flows. Cyclists have limited opportunity to take primary positions in the road and confined to a secondary position in the road (0.5m from kerb edge), which could encourage close overtaking potentially resulting in cyclists losing balance and falling, where injuries could be sustained. In avoiding these scenarios cyclists could relocate to adjacent footways increasing the likelihood of collisions with pedestrians.

Recommendation
It is recommended that additional cycling facilities are provided which could include, but not limited to the following

- Off-carriageway segregation where practicable and feasible;
- Dedicated gateway lane and advanced stop lanes on all arms;
- Carriageway width of no less than 3.9m maintained at pinch points, and;
- Dedicated/separate cycle stage/phase.

Problem 4

Location: Development access


(View looking north from development access)

Summary: Restrictions to visibility could result in junction pull out type collisions and pedestrian and vehicle collisions at the crossing

The junction intervisibility sight line when looking north (towards southbound vehicles) currently passes through an area of dense vegetation and an existing building. Failure to provide appropriate visibility could lead to collision between persons crossing outside of a dedicated pedestrian phase, north of the junction. In addition, during periods where the signals fail or instances of red light running, it reduces a drivers ability to proceed safely from the junction knowledgeable of the traffic on Brunswick Park Road.

Recommendation
It is recommended that the junction intervisibility zone is kept clear of any obstructions exceeding 0.6m in height.

Problem 5

Location: Benfleet Way junction with Goldrill Drive

Summary: Oversailing of footway/central island resulting in damage to vehicles, street furniture and potential for vehicle to pedestrian collisions.

The swept path and tracking carried out of a refuse vehicle turning west from the junction of Benfleet Way, illustrates a degree of oversailing of the central refuge. This could result in damage to any infrastructure placed on the central island forewarning users of the raised feature in the road. In time the feature may be less obvious to road users, resulting in vehicle strikes and loss of control type collisions. In avoiding the above scenario a vehicle may overrun the footway to the nearside risking collisions with pedestrians.

Recommendation
It is recommended that kerb lines are adjusted to allow for a greater margin of error/safety for vehicles turning from the junction.

Problem 6

Location: Brunswick Park Road south

(View looking towards impacted trees)

Summary: Trees in new footway restrict width thereby hindering passage for footway users.

The realignment of the eastern side of the southbound exit of Brunswick Park Road, would mean the exiting trees present within the verge here would now fall within the limits of the proposed new footway. This in turn would limit the effective width of the footway and create a hazard for visually impaired users and for all footway users during the hours of darkness.

Recommendation
It is recommended that the trees which are present in the footway are removed or the footway is realigned/widened in allowance for these trees.

Problem 7

Location: Tactile paving /signal pole configuration – northeast quadrant of the junction

Summary: Confusing layout may result in pedestrian and vehicle collisions

During detailed design careful consideration should be given to the layout of tactile paving and the placement of signal poles/aspects. The present arrangement on the north-eastern quadrant of the junction would be particularly difficult for visually impaired users to navigate and locate the correct aspect for that crossing and in doing so may cross where the conditions to do so safely have not been met.

Recommendation
It is recommended that the tactile paving and crossing arrangements here are spaced more appropriately and the tactile paving is laid in accordance with published best practice.

Problem 8

Location: Goldrill Drive

Summary: Risk of tail-end shunts resulting from blocked or hindered access

To allow for the signals the junction of Goldrill Drive has been set back notably from its current interface with Brunswick Park Road. The distance behind the stop line and box junction which allows a vehicle to enter Benfleet Way from Goldlrill Drive is in the region of 4.0m. Consequently, any vehicle larger than a car waiting at the stop line is likely to close off the gap with vehicles potentially blocking back onto Brunswick Park Road, increasing the likelihood of tail end shunts.

Recommendation
It is recommended that the distance behind the stop line is increased and/or the length of box junction increased. Alternatively, the signals for Goldrill Drive could be set back beyond Benfleet Way and this side road then signalled separately, thereby allowing vehicles from Brunswick Park Road unimpeded access to Benfleet Way.

Problem 9

Location: Pedestrian central refuge islands

Summary: Insufficient width of central refuges islands may result in pedestrian to vehicle collisions

The width of the central islands has been indicated at 1.2m. This would be insufficient to accommodate, safely, the volume of persons observed and likely to be crossing and anyone pushing a wheelchair or pushchair would be prone to being struck by passing vehicles resulting in injury.

Recommendation
It is recommended that the width of the central islands is no less than 1.5m. If the northern arm is to be a shared use footway/cycleway facility, then this width should be no less than 2.5m.

"End of Safety Comments"

General Observations

i) The proximity of the stop line at Goldrill Drive and the box junction is very limited. If below ground detector/loops are to be employed, then these may not be triggered should a vehicle does not move into this space. Signal specifications may need to take account of this eventuality and above ground detection considered instead. This is a matter for detailed design.

ii) There are no poles/aspects positioned on any of the central island that would allow a pedestrian to demand a secondary pedestrian phase here. This is a matter for detailed design.

5.0 AUDIT TEAM STATEMENT

5.1 We, the undersigned, certify that the terms of reference of the audit are as described in GG 119 and that no member of the Audit Team was directly linked to the scheme design.

Audit Team Leader: Simon Prescott
MIHE,
National Highways Certificate of Competence

Director – Tutum Consulting Limited

………………………………………………………… Dated: 17th September 2022

Audit Team Member: Chris Berry
MSoRSA,
National Highways Certificate of Competence

Consultant working on behalf of Tutum Consulting

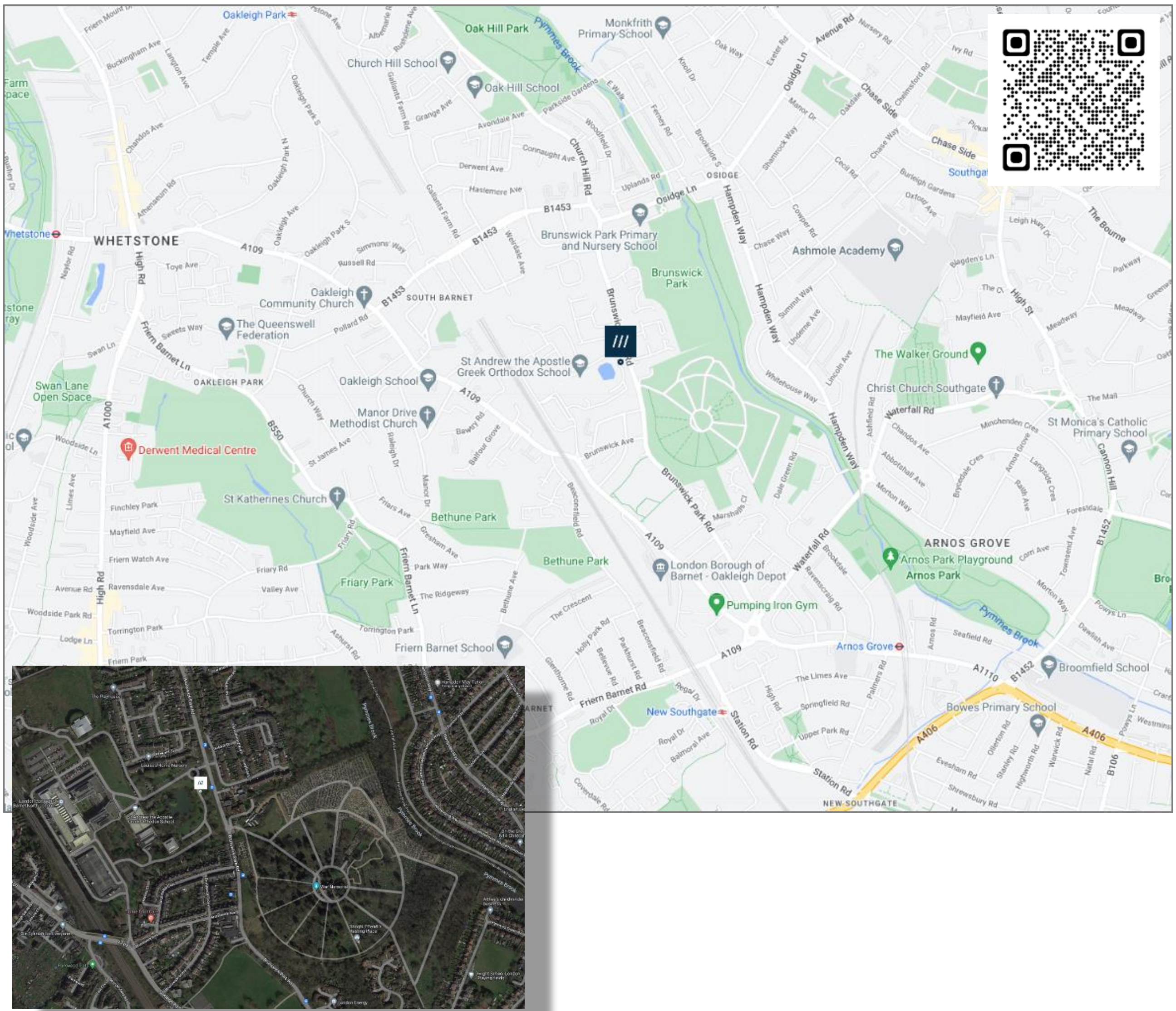
………………………………………………………… Dated: 20th September 2022

Appendix A –Drawing and Documents Reviewed

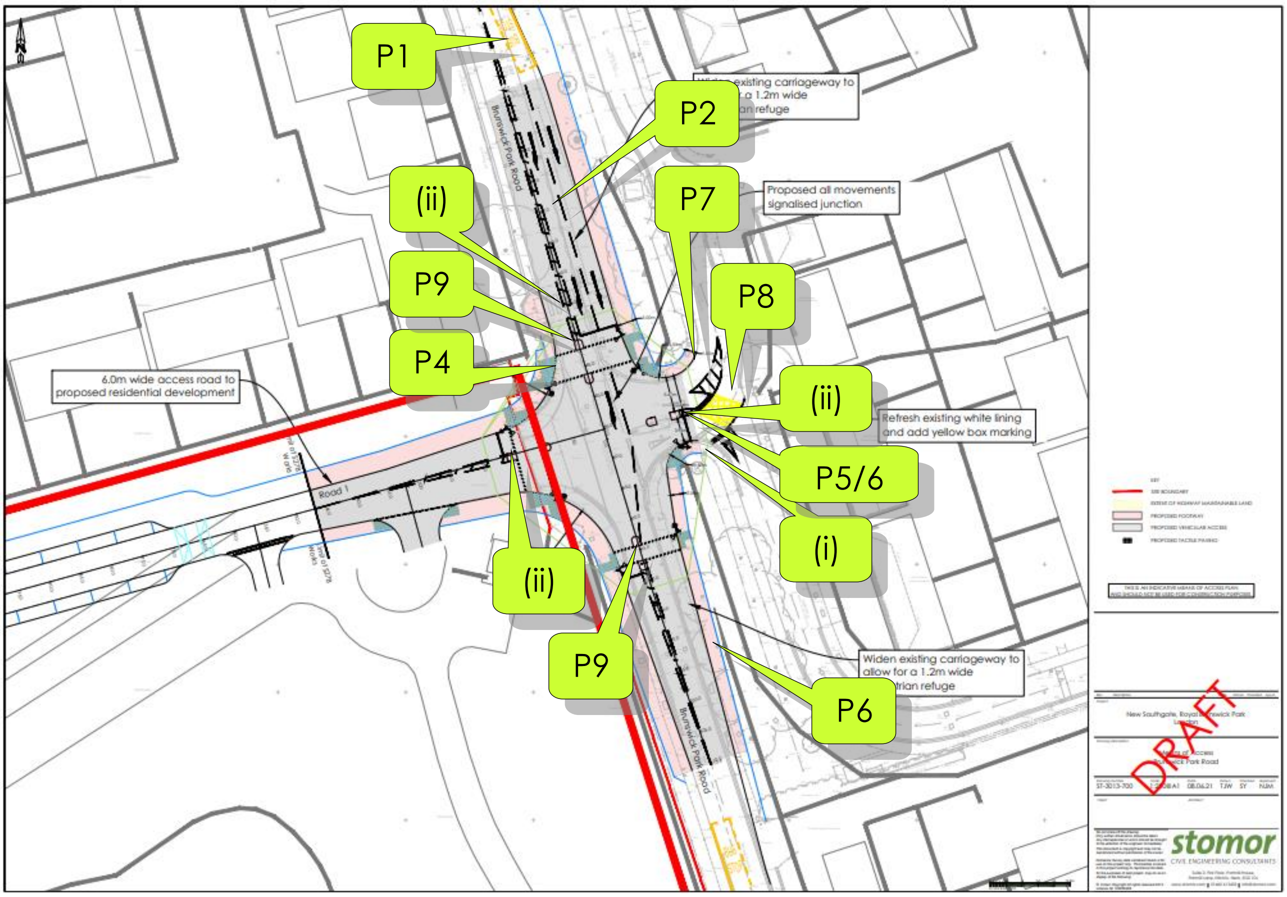
Documents Reference	Title/Description
ST3013/RSAB-2208	ROAD SAFETY AUDIT BRIEF

Drawing Reference	Title/Description
ST-3013-700	MEANS OF ACCESS
ST-3013-804	SWEPT PATH ANALYSIS (REFUSE VEHICLE)

Appendix B – Location Plan



Appendix C – Problem Identification Plan



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TRANSPORT PLANNING | TRAVEL PLANNING | ROAD SAFETY | HIGHWAY DESIGN

APPENDIX P

Road Safety Audit Stage 1 – Design Team Response

Designer's response to the Stage 1 Road Safety Audit (RSA) associated with proposed access arrangements for development at the site of the North London Business Park, New Southgate, Barnet; as shown on the following drawings:

- ST-3013-11;
- ST-3013-700; and
- ST-3013-805;

The RSA was undertaken by Tutum Consulting dated September 2022 (Ref: 202/058/0151-01). The RSA was undertaken for the following proposals:

- Proposed signalised site access. The proposed works will provide a signal-controlled junction in replace of the existing crossroads arrangement at the junction of Brunswick Park Road/Goldrill Drive/London Business School access. The junction will incorporate pedestrian phases with dedicated facilities provided across all arms. The existing Zebra crossing which presides 20m to the north of the junction will be decommissioned. The southbound approach to the junction is to be allocated two lanes (ahead/left and right only). To accommodate this, it will require widening the eastern side of Brunswick Park Road, which in turn will require altering the Goldrill Drive arm of the junction. Additional junction widening is also proposed at the existing London Business School access.

3.1 Problem 1

Location: Bus stop on northern arm

Summary: Stationary buses may force traffic into oncoming vehicles

The location of the bus stop on the southbound approach to the traffic signals will consume the entirety of the southbound lane at an angle and restricts forward visibility for drivers attempting to pass, increasing the risk of collisions with oncoming vehicles. Any resultant queues would also increase the risk of tail-end shunts.

RECOMMENDATION: It is recommended to relocate the bus stop or make certain provision whereby a vehicle may pass a stationary bus without encroaching into the opposing carriageway.

Designer's Response – The proposed recommendation is accepted. The southbound bus stop has been relocated further south to allow vehicles to pass a stationary bus without entering the opposing lane.

3.2 Problem 2

Location: Brunswick Park Road – Northbound Arm

Summary: Alignment may result in late breaking and sudden changes in direction

Road Safety Audit Stage 1 – Design Team Response

For vehicles approaching the junction from the north (southbound) there alignment will naturally guide them to the right turn lane provided for the development. This may result in drivers unfamiliar with the road layout and wishing to proceed being caught unawares and upon realising this error make a sudden and late change to the nearside ahead lane where tail end shunts and or merge collisions may occur.

RECOMMENDATION: It is recommended that drivers' are first directed to the nearside ahead traffic lane, thereby making the right turn into the development a conscious and deliberate decision.

Designer's Response – The proposed recommendations are accepted. A bifurcation marking to diagram 1039 has been added to the southbound approach to direct vehicles to the nearside lane. This could also be supplemented with an appropriate ADS sign.

3.3 Problem 3

Location: Throughout the junction

Summary: Lack of dedicated cycling provision

There appears to be an absence of dedicated cycling provision at or approaching the junction, albeit a 3.0m hard surface on the eastern side of Brunswick Park Road would indicate a shared footway/cycleway is to be provided, the situation is however unclear. It is expected that Brunswick Park Road will experience high volumes of both pedestrian and vehicle flows. Cyclist have a limited opportunity to take priority positions in the road and confined to a secondary position in the road (0.5m from kerb edge), which could encourage close overtaking potentially resulting in cyclists losing balance and falling, where injuries could be sustained. In avoiding these scenarios cyclists could relocate to adjacent footways increasing the likelihood of collisions with pedestrians.

RECOMMENDATION: It is recommended that additional cycling facilities are provided which could include, but not limited to the following:

- **Off-carriageway segregation where practicable and feasible;**
- **Dedicated gateway lane and advanced stop lanes on all arms;**
- **Carriageway width of no less than 3,9m maintained at pinch points, and;**
- **Dedicated/separate cycle stage/phase**

Designer's Response – The proposed recommendations are accepted. The 3.0m hard surface is a shared use footway/cycleway, this has been extended south of the junction to allow cyclists travelling southbound to exit the carriageway north of the junction, cross the junction in a safe manner at the toucan crossings available on all 4 arms, and continue either southbound and enter the carriageway south of the junction, or enter the site where further shared use surfaces are available. Northbound cyclists can also exit the carriageway south of the junction, use the toucan crossings and then enter the carriageway north of the junction.

Road Safety Audit Stage 1 – Design Team Response

3.4 Problem 4

Location: Development Access

Summary: Restrictions to visibility could result in junction pull out type collisions and pedestrian and vehicle collisions at the crossing.

The junction intervisibility sign line when looking north (towards southbound vehicles) currently passes through an area of dense vegetation and an existing building. Failure to provide appropriate visibility could lead to collisions between persons crossing outside of a dedicated pedestrian phase, north of the junction. In addition, during periods where the signals fail or instances of red light running, it reduces a driver's ability to proceed safely from the junction knowledgeable of the traffic on Brunswick Park Road.

RECOMMENDATION: It is recommended that the junction intervisibility zone is kept clear of any obstructions exceeding 0.6m in height.

Designer's Response – The proposed recommendation is accepted. The existing vegetation and building will be removed as part of the works and the area seeded with grass. Any obstructions above 0.6m in height will be removed and the intervisibility line maintained in perpetuity.

3.5 Problem 5

Location: Benfleet Way junction with Goldrill Drive

Summary: Oversailing of footway/central island resulting in damage to vehicles, street furniture and potential for vehicle to pedestrian collisions.

The swept path and tracking carried out of a refuse vehicle turning west from the junction of Benfleet Way, illustrates a degree of oversailing of the central refuge. This could result in damage to any infrastructure placed on the central island forewarning users of a raised feature in the road. In time the feature may be less obvious to road users, resulting in vehicle strikes and loss of control type collisions. In avoiding the above scenario a vehicle may overrun the footway to the nearside risking collisions with pedestrians.

RECOMMENDATION: It is recommended that kerb lines are adjusted to allow for a greater margin of error/safety for vehicles turning from the junction.

Designer's Response – The proposed recommendation is accepted. The central kerbed island has been relocated to enable a refuse vehicle to exit the junction with oversailing.

3.6 Problem 6

Location: Brunswick Park Road south

Summary: Trees in new footway restrict width thereby hindering passage for footway users.

Road Safety Audit Stage 1 – Design Team Response

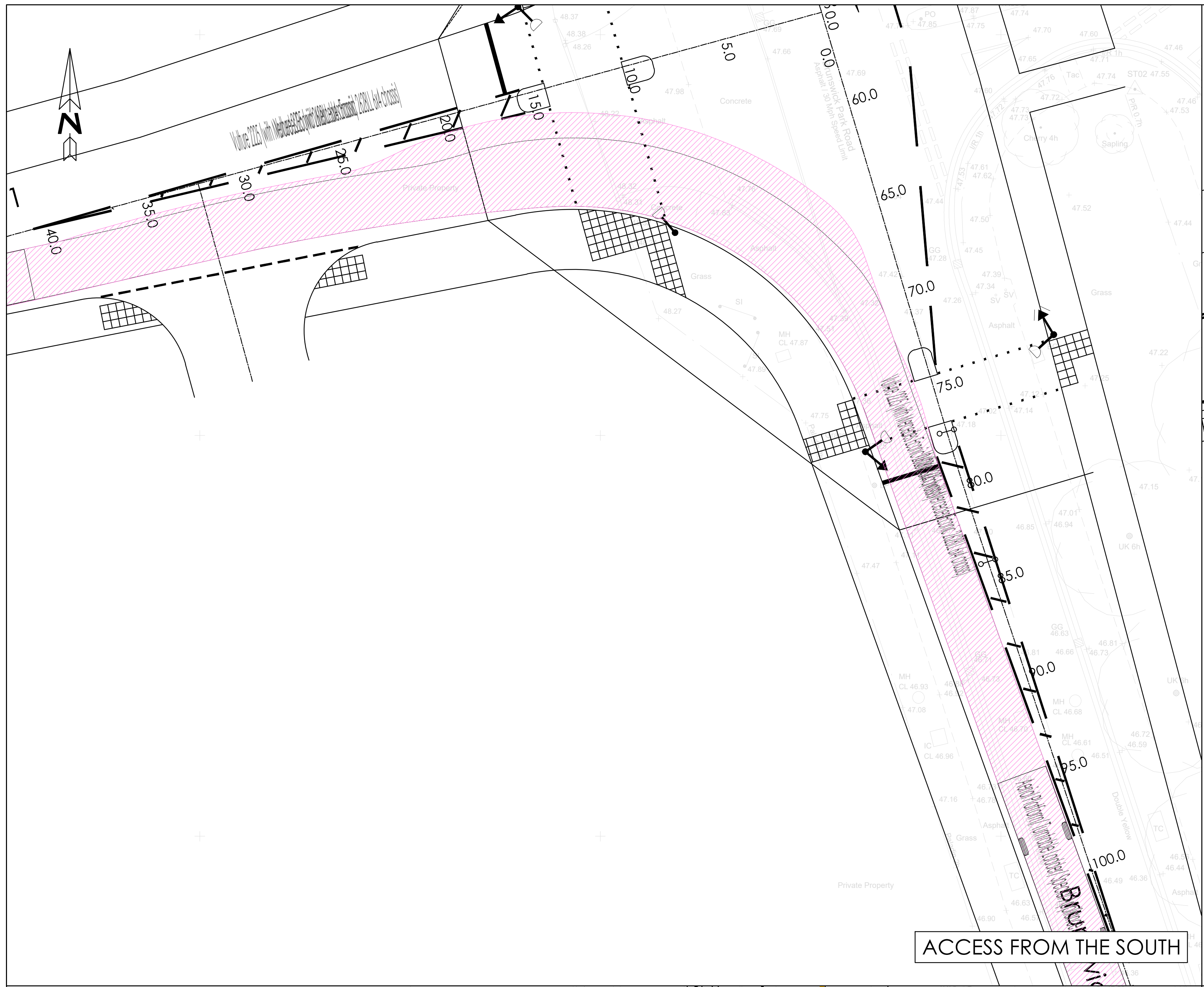
The realignment of the eastern side of the southbound exit of Brunswick Park Road, would mean the existing trees present within the verge here would now fall within the limits of the proposed new footway. This in turn would limit the effective width of the footway and create a hazard for visibility impaired users and for all footway users during the hours of darkness

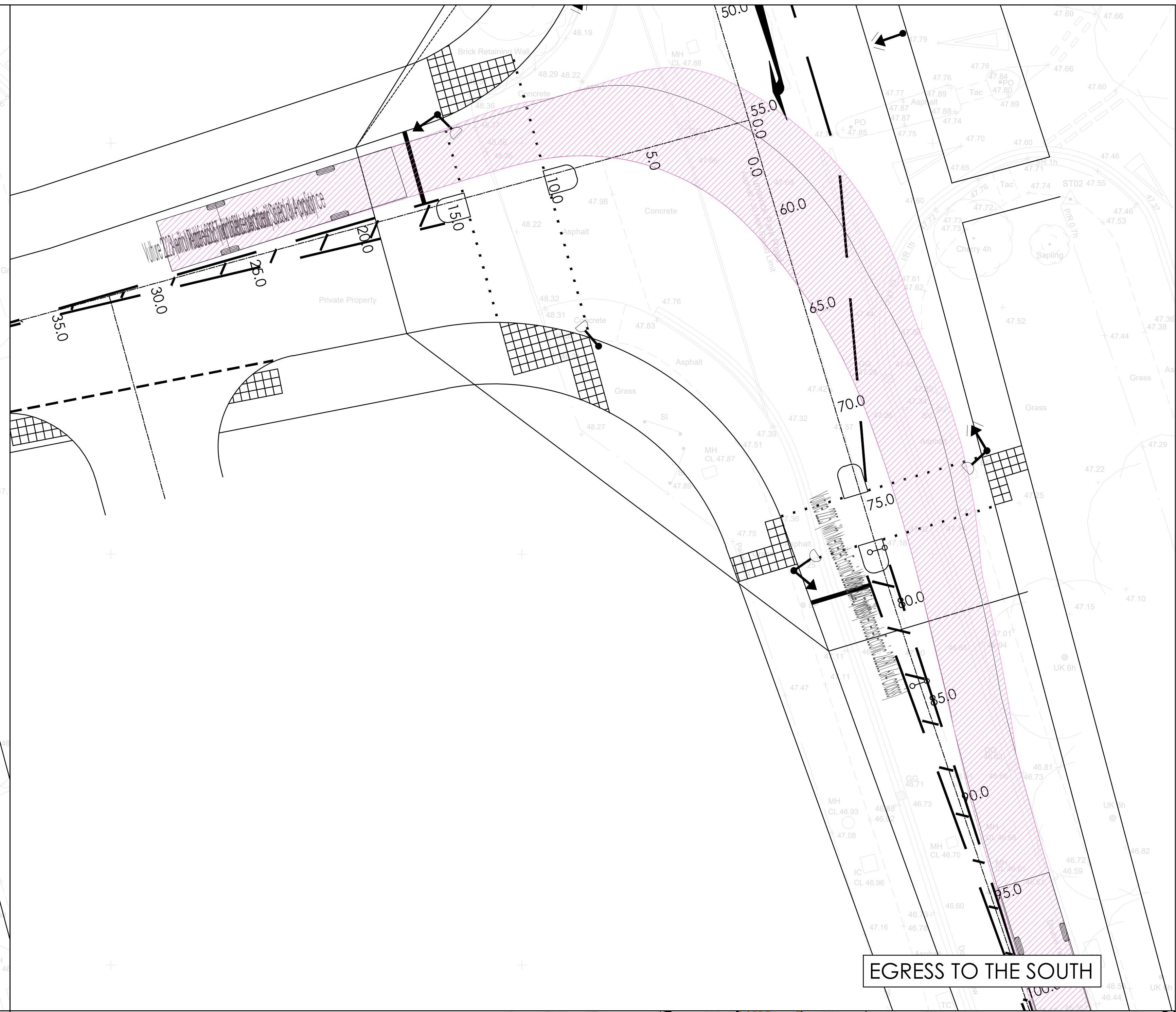
RECOMMENDATION: It is recommended that the trees which are present in the footway are removed or the footway is realigned/widened in allowance for these trees

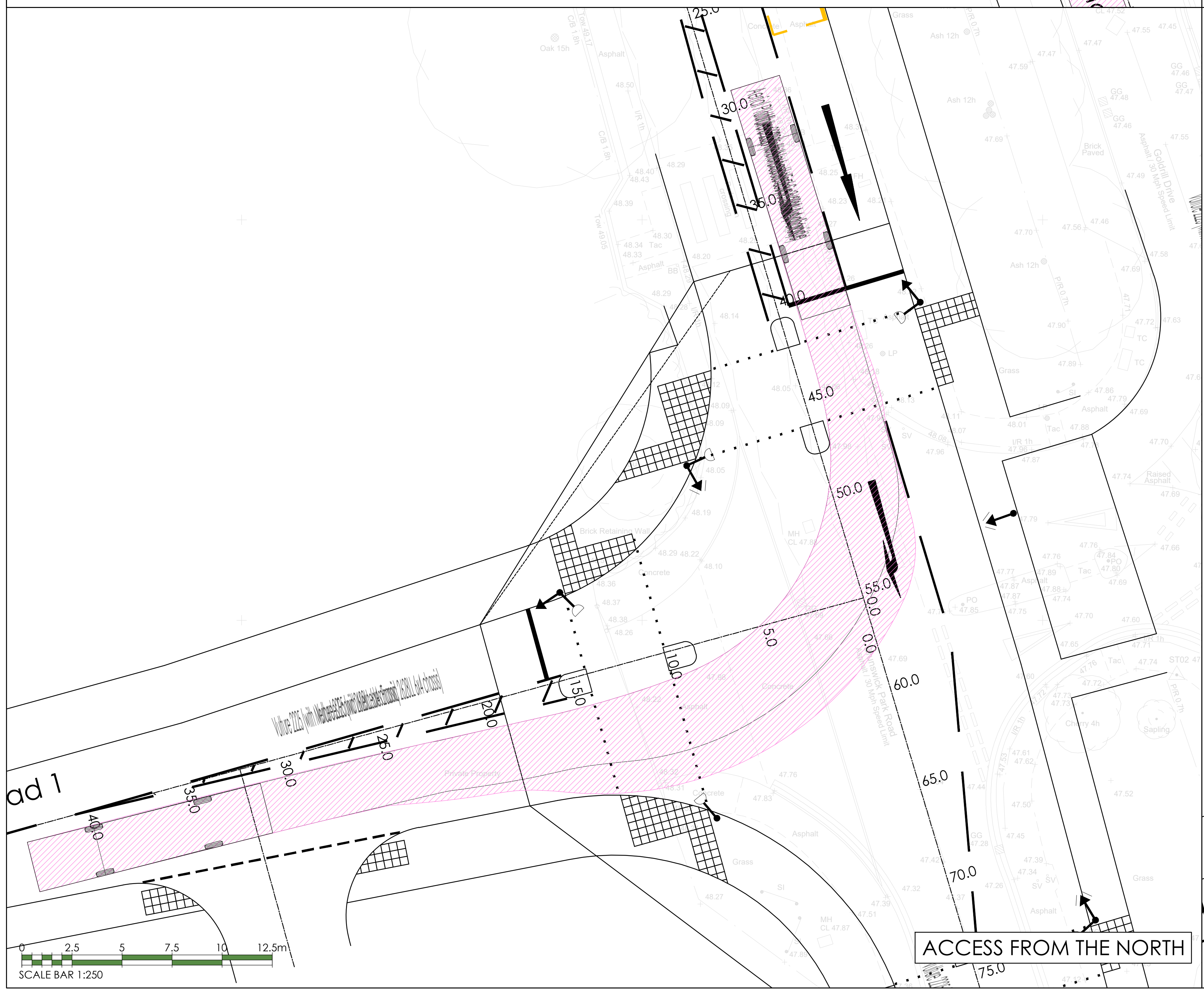
The proposed recommendation is accepted. A tree will be removed as part of the works.

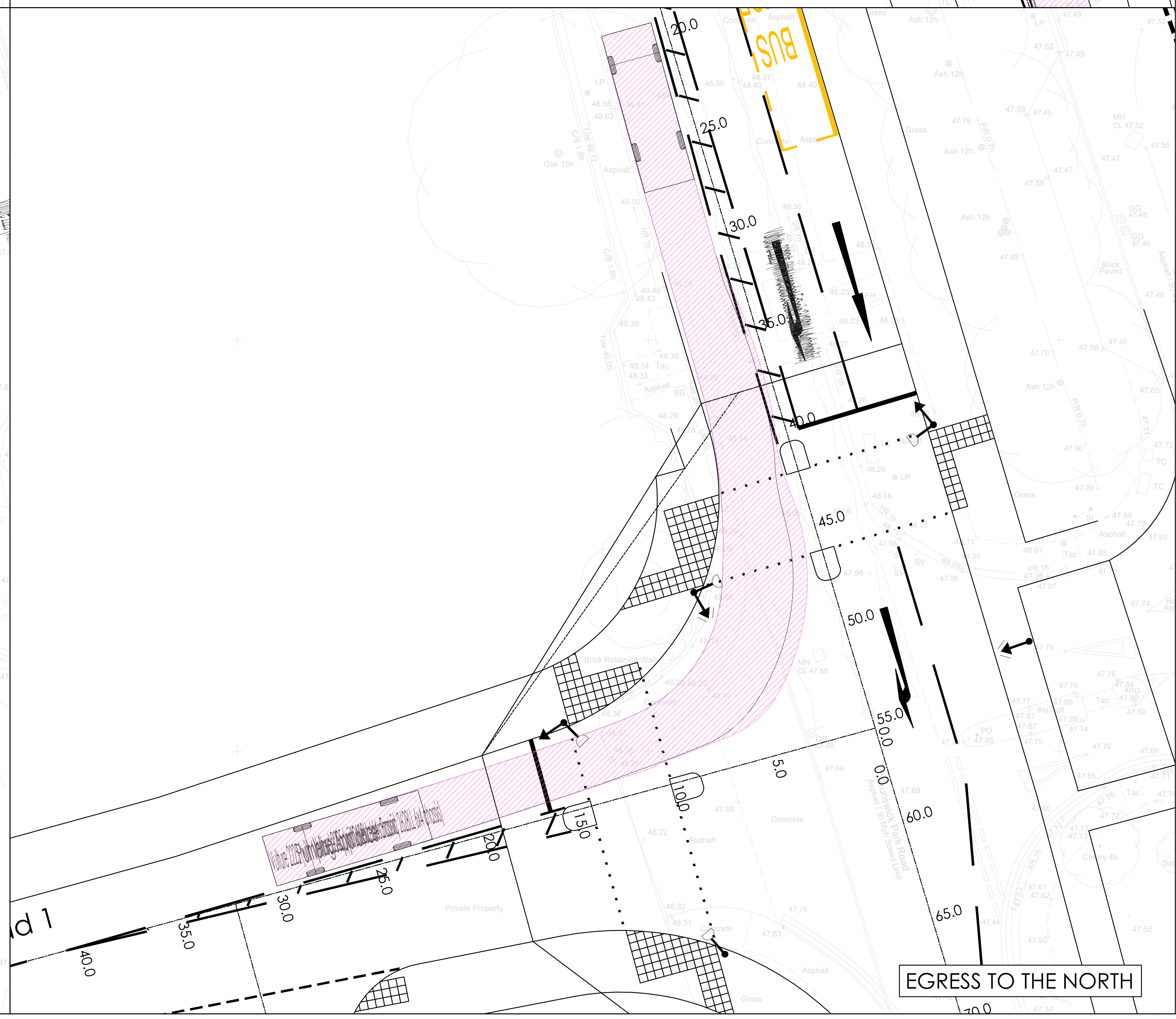
Stomor Ltd
11th October 2022

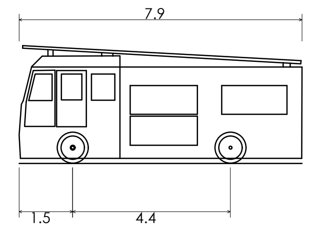
APPENDIX Q











Pumping Appliance	
Overall Length	7.900m
Overall Width	2.500m
Overall Body Height	3.300m
Min Body Ground Clearance	0.140m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.750m

Rev	Description	Date	Drawn	Checked	Apvd.

Project

Proposed redevelopment of North London Business Park
Brunswick Park Road, New Southgate, London

Drawing Description

Swept Path Analysis Fire Tender
Site Access

Project Number	Drawing Number			
ST-3013	804			
Scale	*Date*	*Drawn*	*Checked*	*Approved*
1:250@A2	17.08.22	TJW	PLC	SW

Client *Architect*

Comer Homes Group

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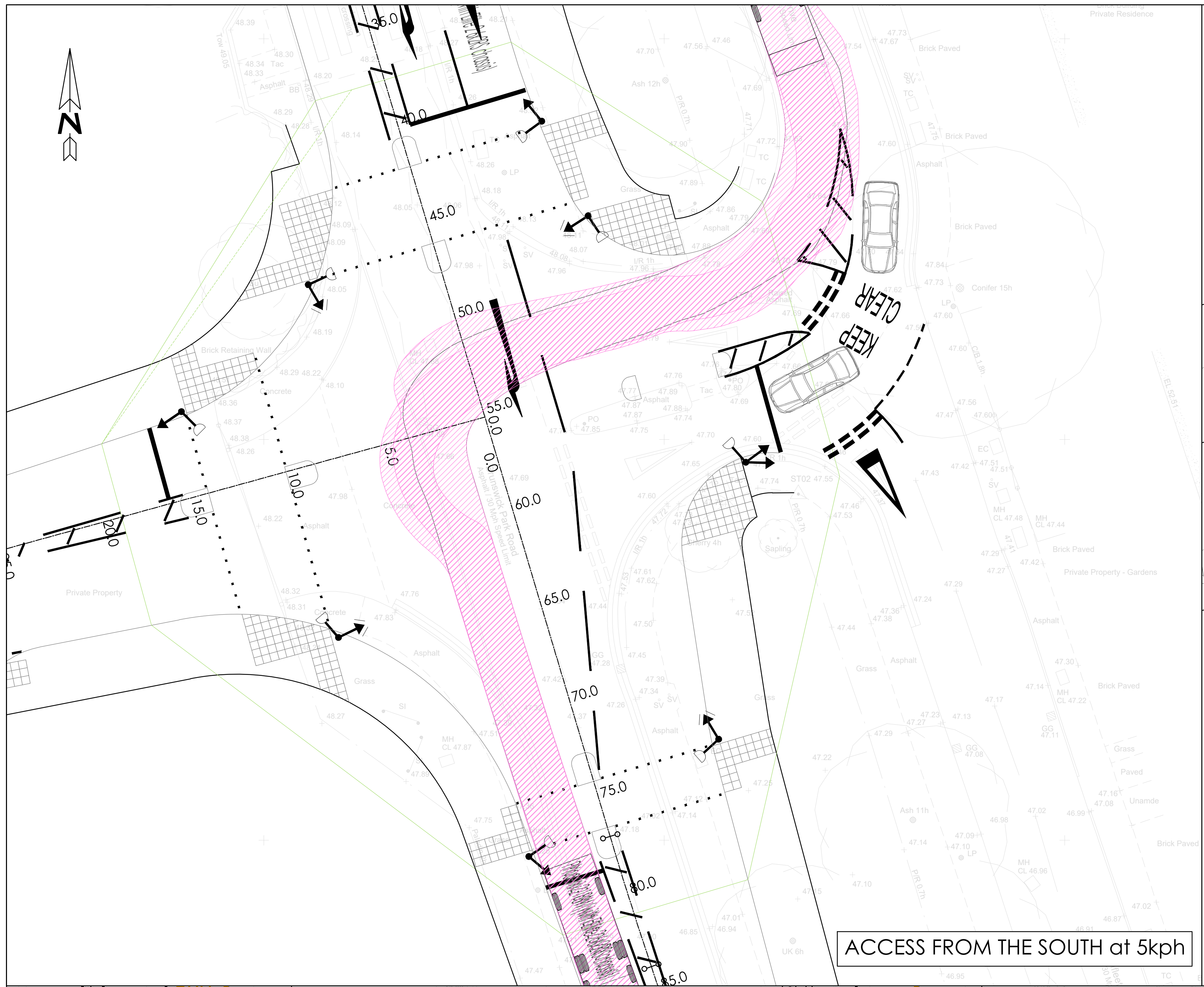
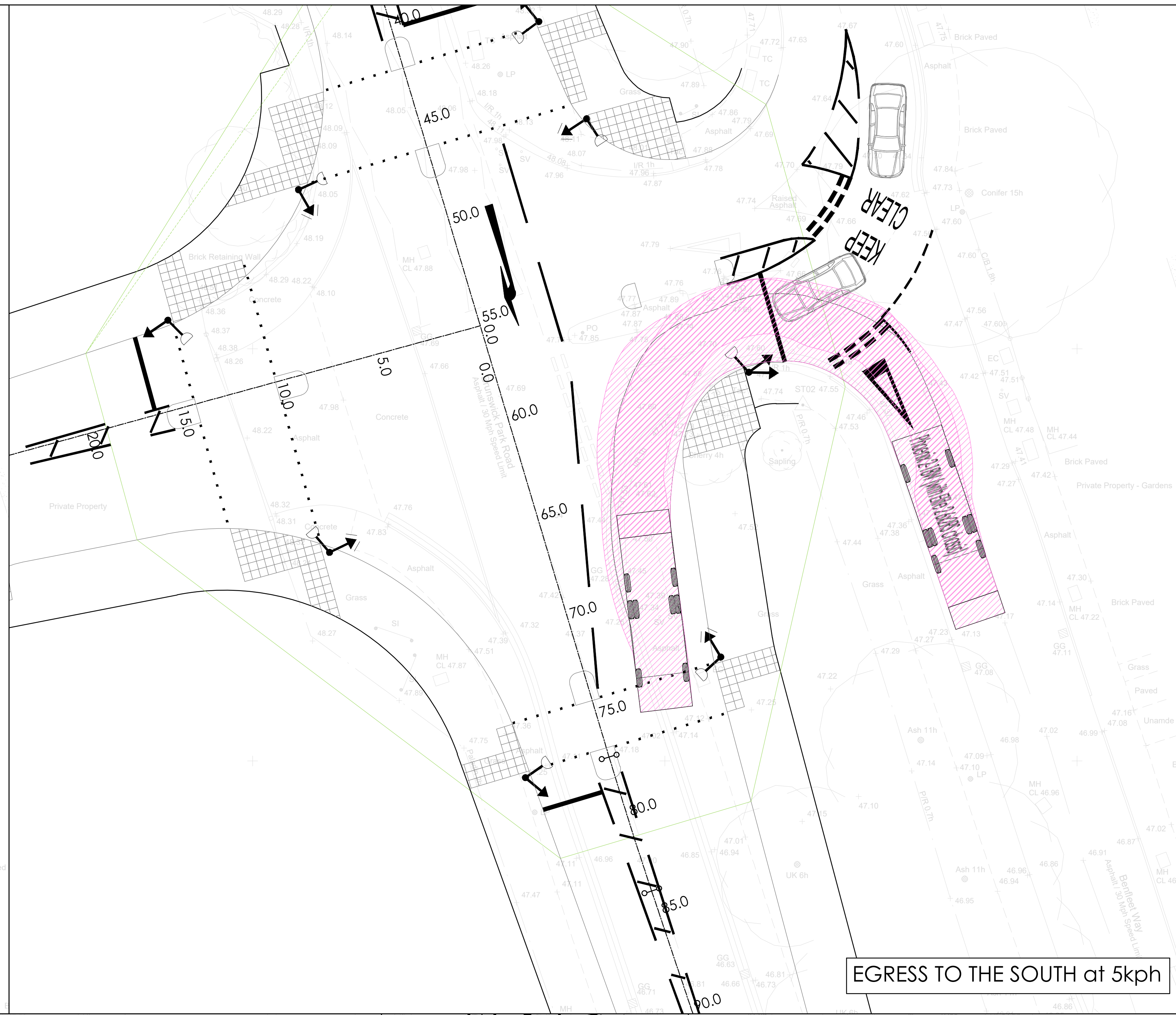
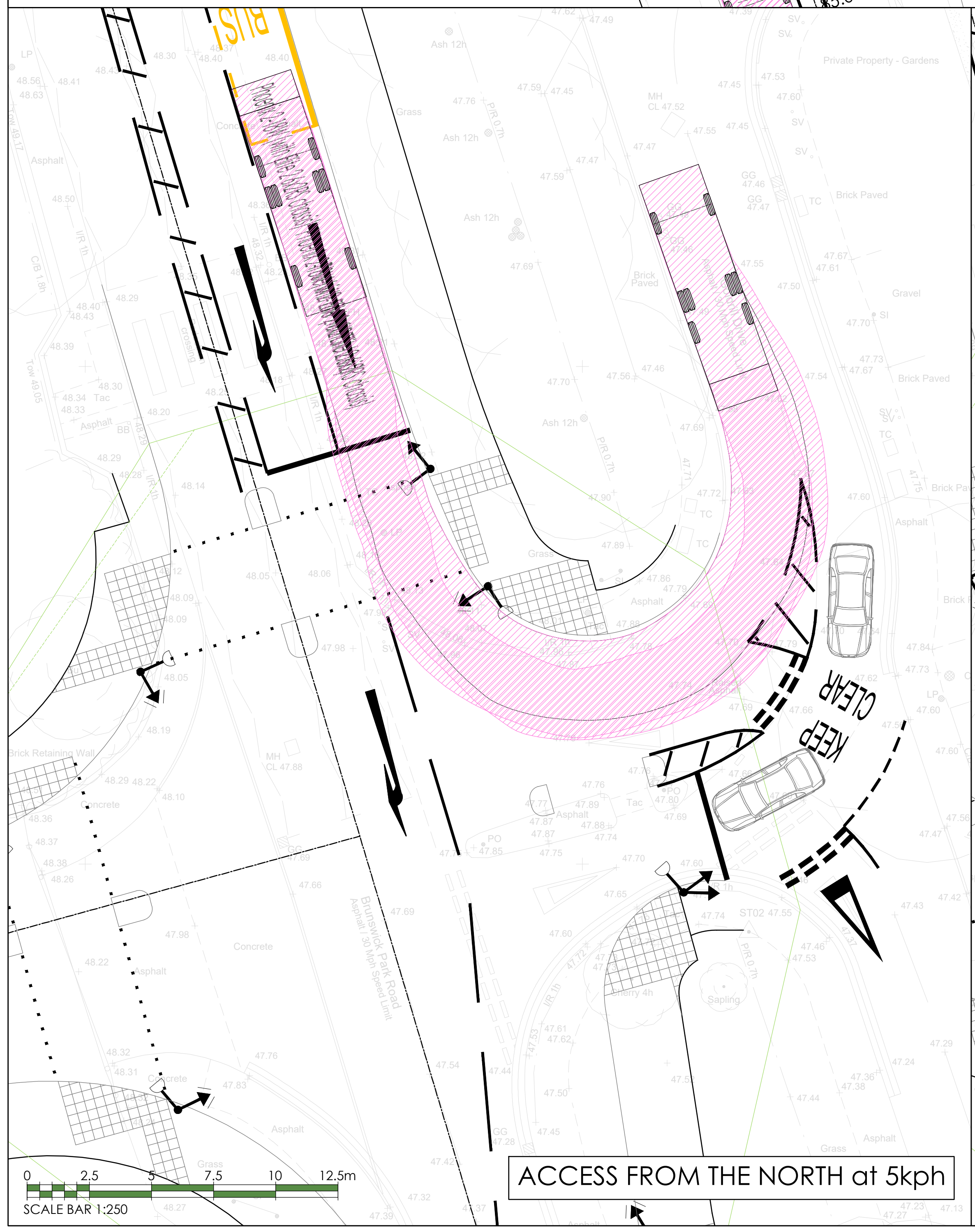


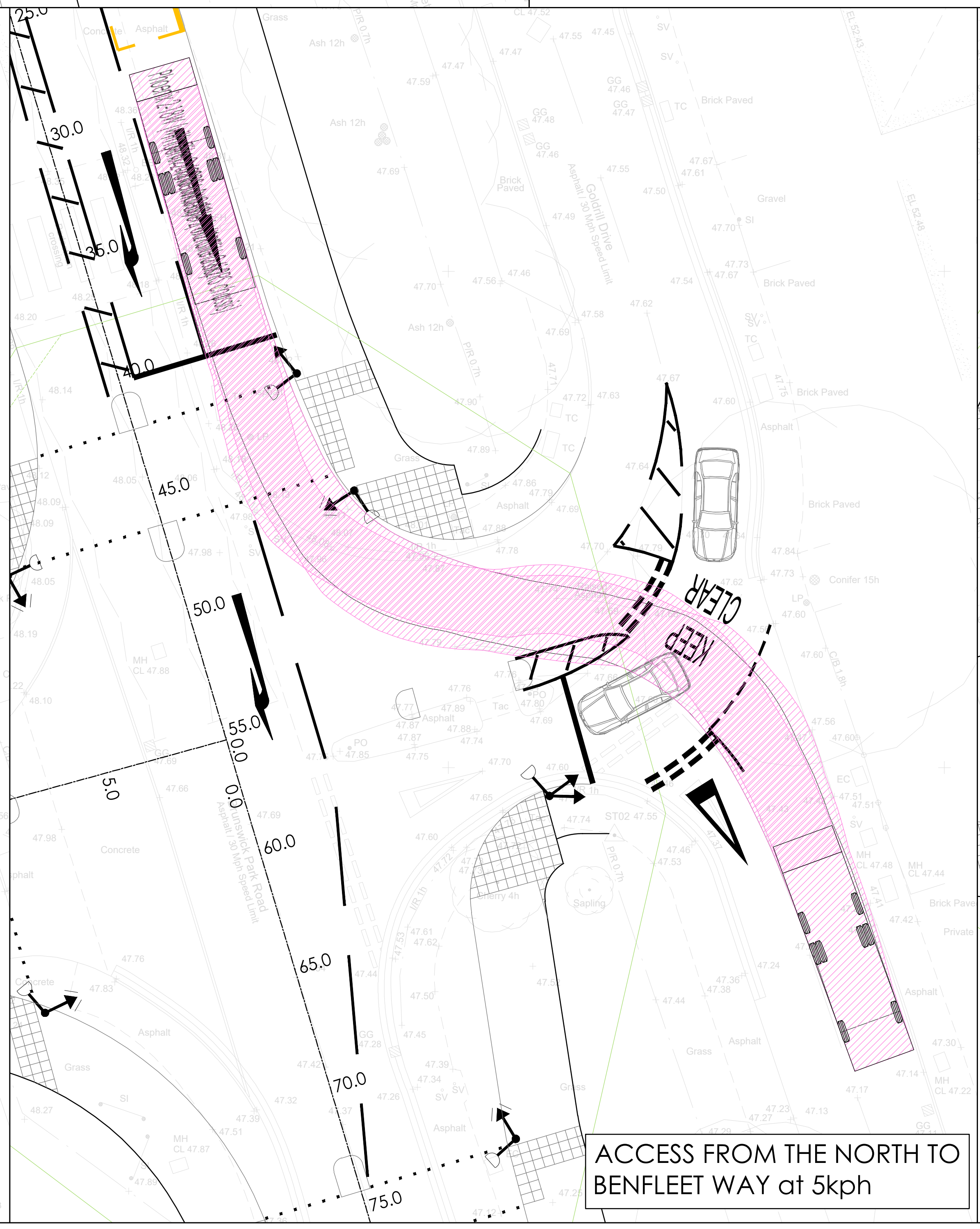
ACCESS FROM THE SOUTH at 5kph



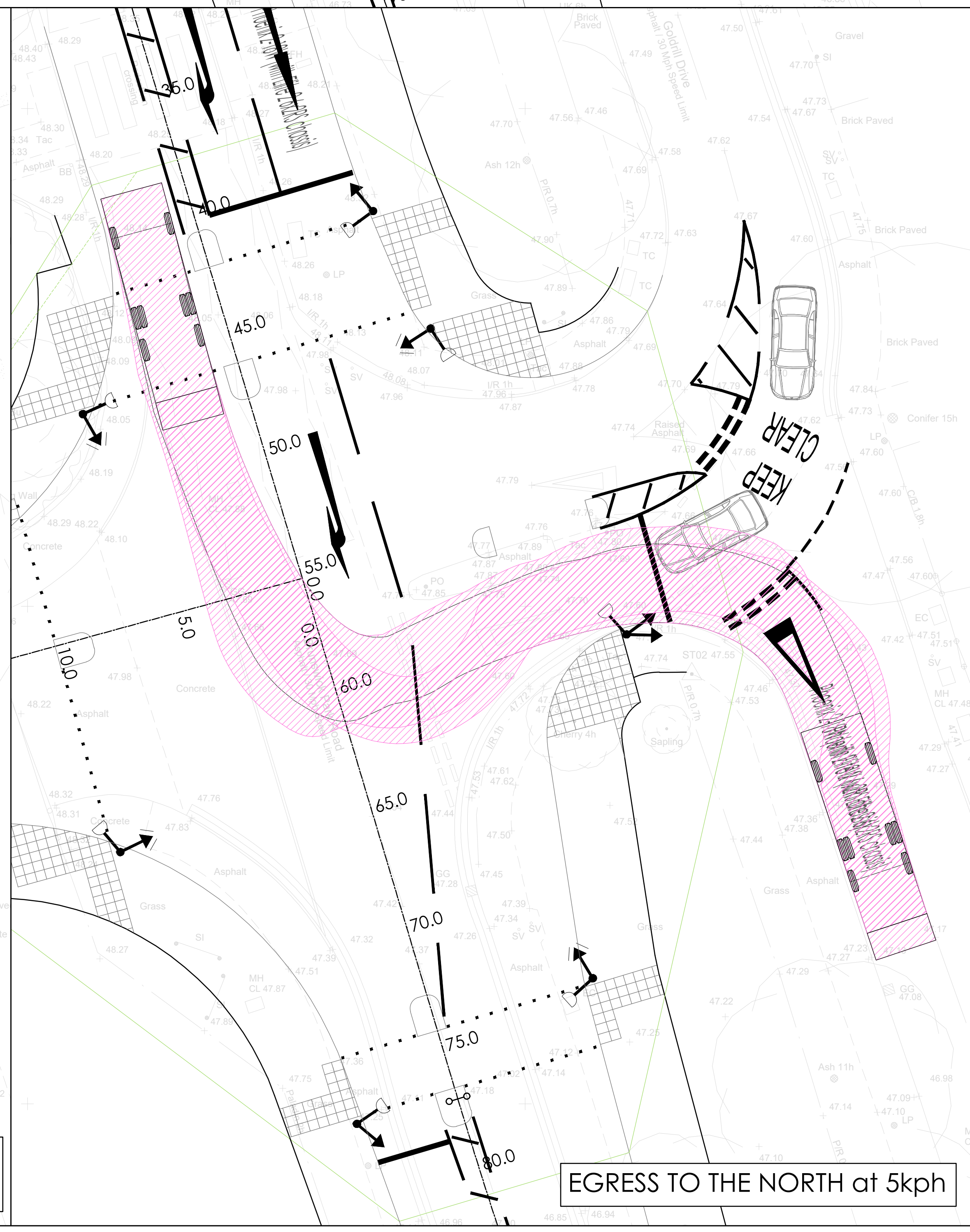
EGRESS TO THE SOUTH at 5kph



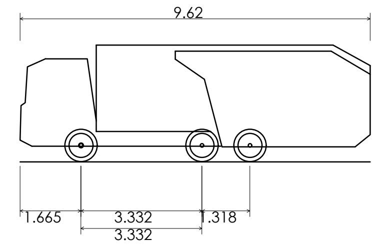
ACCESS FROM THE NORTH at 5kph



ACCESS FROM THE NORTH TO BENFLEET WAY at 5kph



EGRESS TO THE NORTH at 5kph



Phoenix 2-18W (with Elite 2 6x2RS chassis)

Overall Length	9.620m
Overall Width	2.530m
Overall Body Height	3.211m
Min Body Ground Clearance	0.416m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.800m

Rev	Description	Date	Drawn	Checked	Apvd.

Project

Proposed redevelopment of North London Business Park
Brunswick Park Road, New Southgate, London

Drawing Description

Swept Path Analysis Refuse Vehicle
Brunswick Park Road

Project Number	Drawing Number			
ST-3013	805			
Scale	**Date**	**Drawn**	**Checked**	**Approved**
1:250@A2	24.08.22	LGM	PLC	SW

Client

Comer Homes Group

Architect

Do not scale off the drawing.
Only written dimensions should be taken.
Any discrepancies or errors should be brought to the attention of the engineer immediately.

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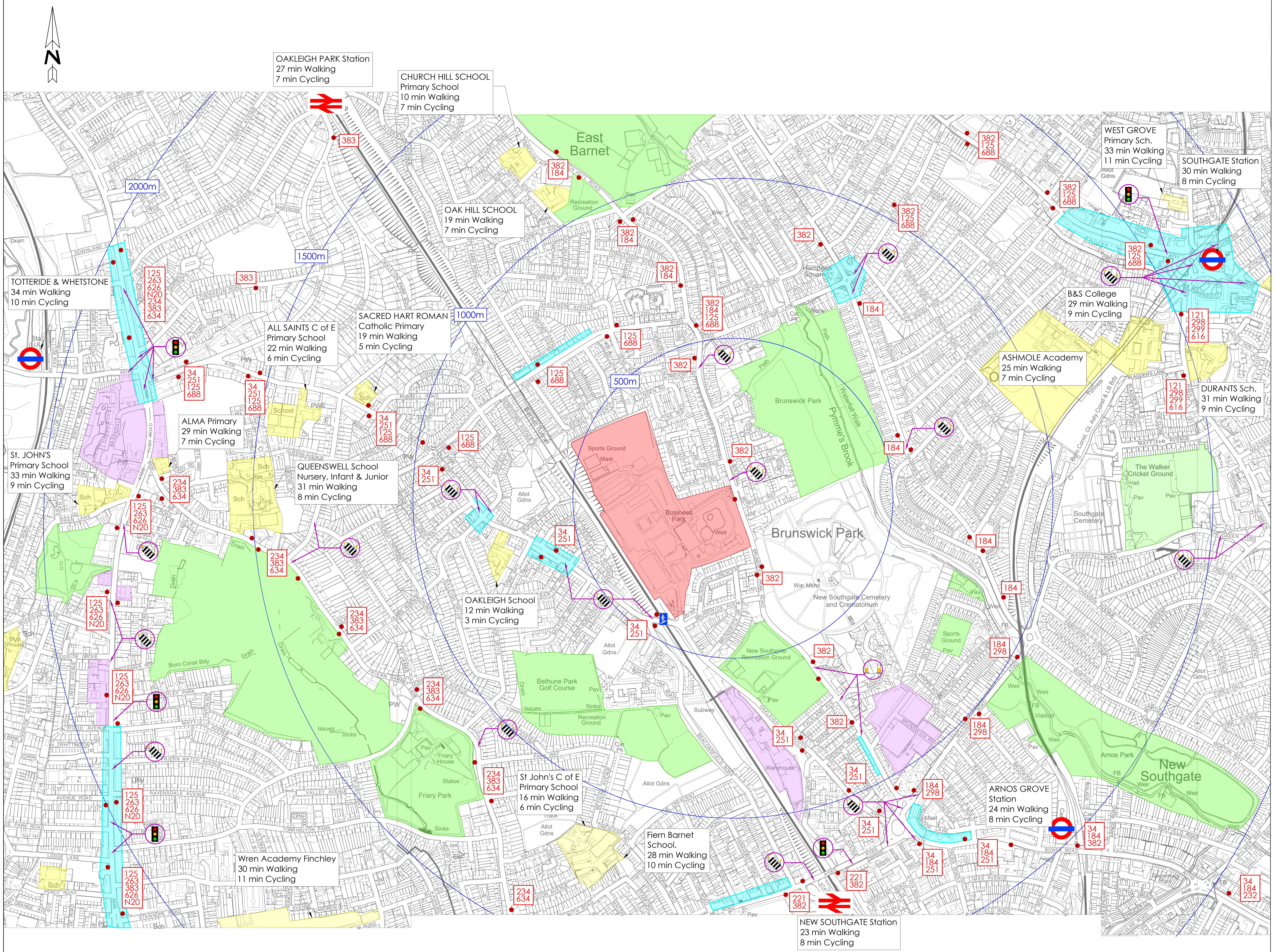
APPENDIX R



KEY

- SITE
- SCHOOLS/COLLEGES
- EMPLOYMENT AREAS
- RECREATIONAL FACILITIES
- SHOPS/RETAIL OUTLETS
- BUS STOP
- BUS SERVICES
- UNDERGROUND STATION
- RAILWAY STATION
- ZEBRA CROSSING
- UNCONTROLLED CROSSING
- SIGNALISED CROSSING
- ELEVATED CROSSING

ALL DISTANCES AS MEASURED FROM THE CENTRE OF THE SITE

Rev	Description	Date	Drawn	Checked	Apvd.

Project

New Southgate, Royal Brunswick Park
London

Drawing Description

Accessibility Plan

Project Number	Drawing Number			
ST-3013	02			
Scale	**Date**	**Drawn**	**Checked**	**Approved**
NTS@A2	22.03.21	LGM	PLC	XXX

Client | Architect

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APPENDIX S

Stomor

ARNOS GROVE UNDERGROUND STATION

Station Capacity & Line Loading Assessments

70888446
SEPTEMBER 2021

INTERNAL

Stomor

ARNOS GROVE UNDERGROUND STATION

Station Capacity & Line Loading Assessments

TYPE OF DOCUMENT (VERSION) INTERNAL

PROJECT NO. 70888446

OUR REF. NO. 70888446

DATE: SEPTEMBER 2021

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	01			
Date	September 2021			
Prepared by	Man Yiu Cheuk / Jose Palma Valiente			
Signature				
Checked by	Renata Buschinelli			
Signature				
Authorised by	Brett Little			
Signature				
Project number	70888446			
Report number				

CONTENTS

FIGURES

1. EXECUTIVE SUMMARY

1.1. STATION CAPACITY ASSESSMENT

1.1.1. This assessment outlines the results of the Station Capacity Assessment at Arnos Grove Station, to identify the impact of the London Underground trip generation associated with the proposed development at North Business Park in Barnet by 2031.

1.1.2. The assessment utilised the Transport forecast demand data provided by Stomor and shows that:

- the current provisions of staircase and passageway widths are sufficient to cater for the future passenger demands related to the proposed development in 2031.
- the current gateline provision does not meet the LU Station Planning guidance requirements in 2031 with or without the additional development trips during the AM peak hour. The 2031 forecast demand (without the development) would require one additional ATG.

1.2. LINE LOADING ASSESSMENT

1.2.1. The line loading assessment shows that the impact on train occupancy levels between 2019 and 2031 demand scenarios would not be significant, considering both the existing and the future rolling stock (post-2025).

2. INTRODUCTION

2.1.1. This report provides a summary of the Static Analysis and Line Loading Assessments at Arnos Grove Underground Station and evaluates the impacts of the additional demand generated by the proposed development of North London Business Park in Barnet. The development will provide 2,500 new dwellings.

2.1.2. Arnos Grove Underground Station is on the Piccadilly line between Bounds Green and Southgate stations and is in Zone 4. The station is located in the London Borough of Enfield and provides street access to Bowes Road. The layout of the station consists of a circular ticket hall with a two-way passageway and main staircases linking to four platform staircases that direct towards two double-sided platforms. Platforms 1 and 2 offer services to Cockfosters while platforms 3 and 4 offer services to Central London and Heathrow Airport.

2.1.3. The results of the assessments will be used to identify the capacity requirements and whether there is a need to upgrade the existing station to accommodate the additional development trips during 2031 AM peak period, according to LU Station Planning guidance requirements.

3. STATION CAPACITY ASSESSMENT

3.1. DESCRIPTION

3.1.1. This section outlines the results of the Station Capacity Assessment including:

- Gateline
- Staircases, including platform stairs
- Passageways

3.1.2. Figure 3-1 and Figure 3-2 show the station layout which consists of a circular ticket hall with a two-way passageway and main staircase linking to four platform staircases that direct towards two double-sided platforms. Platforms 1 and 2 offer services to Cockfosters while platforms 3 and 4 offer services to Central London and Heathrow Airport on the Piccadilly Line within Zone 4.

Figure 3-1 – Arnos Grove Underground Station Concourse Level

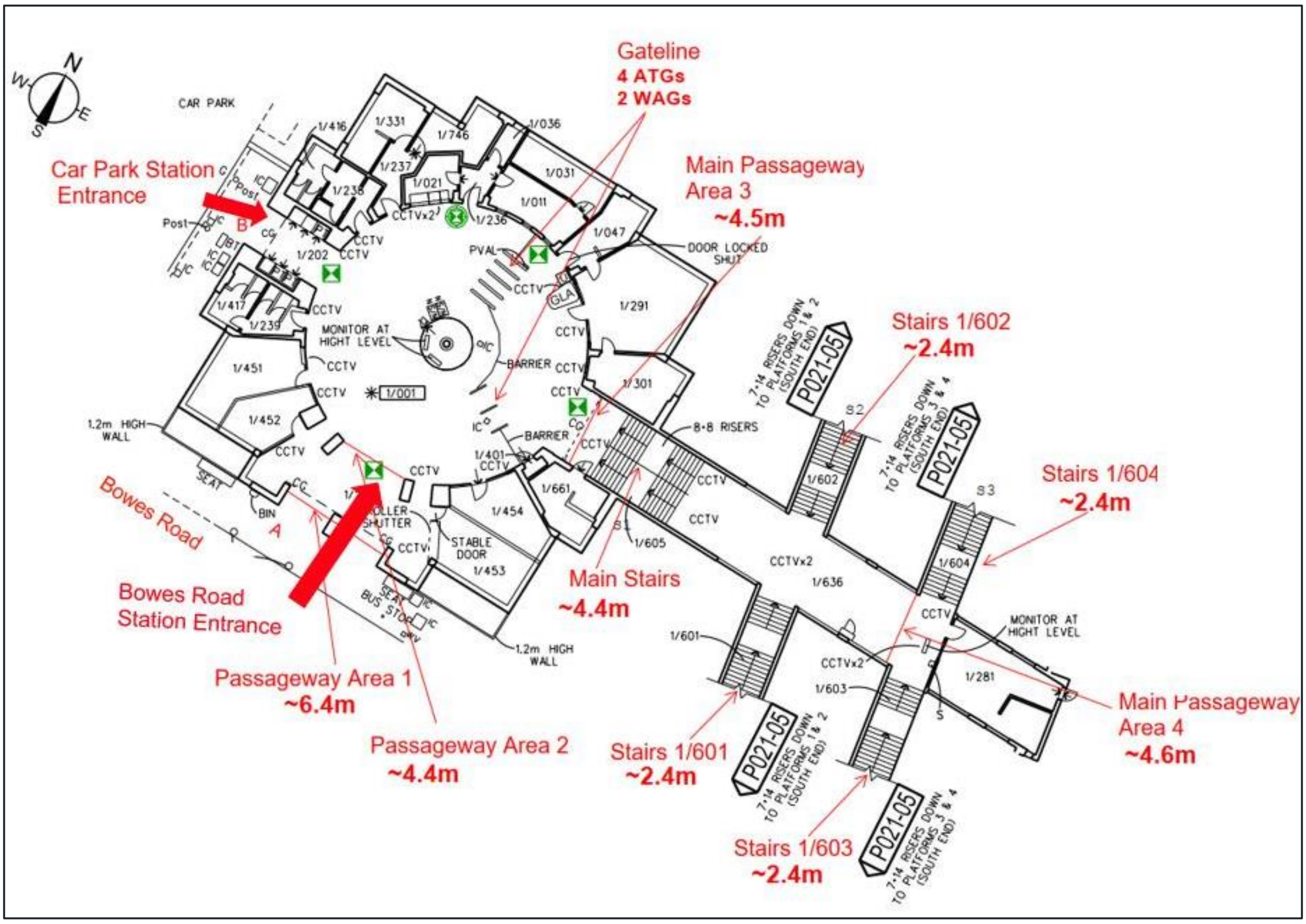
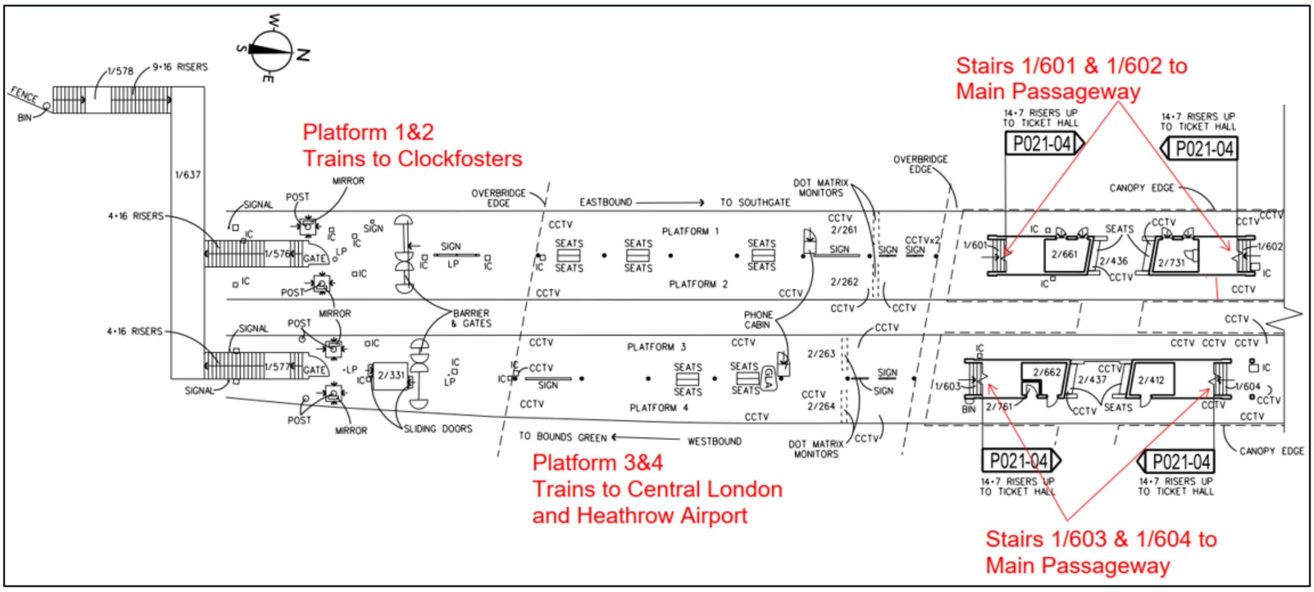


Figure 3-2 – Arnos Grove Underground Station Platform Level



3.2. 2021 DEMAND SCENARIO

3.2.1. The scenario includes 2021 background demand only, which was extracted from Railplan (RSX1102A00221B) provided by Stomor. The capacity assessment was based on the exit and entry peak flows of the year 2021 during the AM period with a 2.5-minute headway towards eastbound and 3.3-min towards westbound.

3.2.2. The peak period conversion factors were used according to S1371 A7 LU Station Planning Guidance, the station peak 3-hour, peak 1-hour and peak 15-minute demands at the gateline are shown in Table 3-1.

Table 3-1 – 2021 scenario - Entry and Exit flows

Peak		Direction	Peak 3-hour at gateline	Peak 1-hour at gateline	Peak 15-min at gateline
AM Peak	Entry	Eastbound	220	106	29
		Westbound	4,472	2,147	580
	Exit	Eastbound	999	480	129
		Westbound	188	90	24

3.3. 2031 DEMAND SCENARIO

3.3.1. The scenario includes 2031 background demand only which was extracted from Railplan (RSX1301A00231B) provided by Stomor. The train frequencies and the peak conversion factors were based on the same assumptions identified in 2021 base year. The 2031 background data is shown in Table 3-2.

Table 3-2 – 2031 scenario - Entry and Exit flows

Peak		Direction	Peak 3-hour at gateline	Peak 1-hour at gateline	Peak 15-min at gateline
AM Peak	Entry	Eastbound	229	110	30
		Westbound	5,146	2,470	667
	Exit	Eastbound	1,067	512	138
		Westbound	196	94	25

3.4. 2031 + DEVELOPMENT DEMAND SCENARIO

3.4.1. Table 3-3 show the 2031 Railplan background demand plus the development trips which was provided by Stomor.

Table 3-3 – 2031 scenario - Entry and Exit flows

Peak		Direction	Peak 3-hour at gateline	Peak 1-hour at gateline	Peak 15-min at gateline
AM Peak	Entry	Eastbound	230	110	30
		Westbound	5,163	2,478	669
	Exit	Eastbound	1,170	562	152
		Westbound	215	103	28

3.5. GATELINE REQUIREMENTS

3.5.1. Table 3-4 shows 5 Automatic Ticket Gates (ATG) + 2 wide aisle gates (WAG) will be required to accommodate the passenger flows during the 2031 AM peak period with or without the additional development trips. The assessment identifies that one additional ATG is required to accommodate the forecast 2031 entry/exit movements even without the additional development trips.

Table 3-4 – 2021, 2031 and 2031 + dev AM peak scenarios - Gate line requirements

	2021 AM Peak	2031 AM Peak	2031 + dev AM Peak
5-minute entry flow (pax)	243	279	280
Total exiting passengers (pax)	32	34	38
Gate requirement	**4 ATGs + 2 WAGs**	**5 ATGs +2 WAGs**	**5 ATGs +2 WAGs**
Gate provision	**4 ATGs + 2 WAGs**	**4 ATGs + 2 WAGs**	**4 ATGs + 2 WAGs**

3.6. STAIRCASE WIDTH REQUIREMENTS

3.6.1. All measurements were taken from station drawings provided by TfL (Arnos Grove - P021 - Station Layout). Table 3-5, Table 3-6 and Table 3-7 show that the current staircase widths provided meet the required widths to accommodate future demands and allows comfortable passenger circulation during the AM peak period for the 2021, 2031 and 2031 + development scenarios.

3.6.2. As stairs are centrally located within the platforms, a 50%-50% flow distribution is assumed between Stairs 1/601 and 1/602 towards Eastbound platform and between Stairs 1/603 and 1/604 towards Westbound Platforms.

Table 3-5 – 2021 scenario - Staircase width required

Location	Direction	Peak 15-min flow	Peak Minute	Min. Width required (m)	Width provided
Main stairs[1]	Entry	608	41	2.4m	4.4m
	Exit	154	10		
Stairs 1/601 Plat 1&2 Eastbound	Entry	14	1	2.4m	2.4m
	Exit	65	4		
Stairs 1/602 Plat 1&2 Eastbound	Entry	14	1	2.4m	2.4m
	Exit	65	4		
Stairs 1/603 Plat 3&4 Westbound	Entry	290	19	2.4m	2.4m
	Exit	12	1		
Stairs 1/604 Plat 3&4 Westbound	Entry	290	19	2.4m	2.4m
	Exit	12	1		

[1] Width provided does not include central handrail

Table 3-6 – 2031 scenario - Staircase width requirements and provisions

Location	Direction	Peak 15-min flow	Peak Minute	Min. Width required (m)	Width provided
Main stairs[1]	Entry	697	46	2.4m	4.4m
	Exit	164	11		
Stairs 1/601 Plat 1&2 Eastbound	Entry	15	1	2.4m	2.4m
	Exit	69	5		
Stairs 1/602 Plat 1&2 Eastbound	Entry	15	1	2.4m	2.4m
	Exit	69	5		
Stairs 1/603 Plat 3&4 Westbound	Entry	333	22	2.4m	2.4m
	Exit	13	1		
Stairs 1/604 Plat 3&4 Westbound	Entry	333	22	2.4m	2.4m
	Exit	13	1		

Table 3-7 – 2031 + dev scenario - Staircase width

Location	Direction	Peak 15-min flow	Peak Minute	Min. Width required (m)	Width provided
Main stairs[1]	Entry	699	47	2.4m	4.4m
	Exit	180	12		
Stairs 1/601 Plat 1&2 Eastbound	Entry	15	1	2.4m	2.4m
	Exit	76	5		
Stairs 1/602 Plat 1&2 Eastbound	Entry	15	1	2.4m	2.4m
	Exit	76	5		
Stairs 1/603 Plat 3&4 Westbound	Entry	335	22	2.4m	2.4m
	Exit	14	1		
Stairs 1/604 Plat 3&4 Westbound	Entry	335	22	2.4m	2.4m
	Exit	14	1		

3.7. PASSAGEWAY WIDTH REQUIREMENTS

Considering the peak flows forecast, Table 3-8,

3.7.1. Table 3-9 and Table 3-10 show that the current passageway widths provided surpass the required widths and allows comfortable passenger circulation during the AM peak period for the 2021, 2031 and 2031 + development demand scenarios.

Table 3-8 – 2021 scenario - Passageway width requirements and provisions

Location	Direction	Peak 15-min flow	Peak Minute	Min. Width required (m)	Width provided
Entrance A Bottom (Area 1)	Entry	608	41	2.2m	6.4m
	Exit	154	10		
Entrance A Top (Area 2)	Entry	608	41	2.2m	4.4m
	Exit	154	10		
Main Passageway Top (Area 3)	Entry	608	41	2.2m	4.5m
	Exit	154	10		
Main Passageway Bottom (Area 4)	Entry	580	39	2.2m	4.6m
	Exit	24	2		

Table 3-9 – 2031 scenario - Passageway width requirements and provisions

Location	Direction	Peak 15-min flow	Peak Minute	Min. Width required (m)	Width provided
Entrance A Bottom (Area 1)	Entry	697	46	2.2m	6.4m
	Exit	164	11		
Entrance A Top (Area 2)	Entry	697	46	2.2m	4.4m
	Exit	164	11		
Main Passageway Top (Area 3)	Entry	697	46	2.2m	4.5m
	Exit	164	11		
Main Passageway Bottom (Area 4)	Entry	667	44	2.2m	4.6m
	Exit	25	2		

Table 3-10 – 2031 + dev scenario - Passageway width requirements and provisions

Location	Direction	Peak 15-min flow	Peak Minute	Min. Width required (m)	Width provided
Entrance A Bottom (Area 1)	Entry	699	47	2.2m	6.4m
	Exit	180	12		
Entrance A Top (Area 2)	Entry	699	47	2.2m	4.4m
	Exit	180	12		
Main Passageway Top (Area 3)	Entry	699	47	2.2m	4.5m
	Exit	180	12		
Main Passageway Bottom (Area 4)	Entry	669	45	2.2m	4.6m
	Exit	28	2		

4. LINE LOADING ASSESSMENT

4.1.1. The capacity requirements at Arnos Grove Station were identified in the previous section. This section focuses on the line loading capacity at the station, which assesses the number of passengers on the train for journeys between Arnos Grove and its adjacent stations to the west and to the east.

4.1.2. The line loading assessment in this section assess the 2021, 2031 and 2031 + development trips' line loading capacity requirements during the AM peak hour. The assessment takes into account both existing and future rolling stocks proposed to be in operation from 2025. The assessment identifies the remaining capacity based on fully seated and standing capacity of 4 passengers per square metre during 2021, 2031 and 2031 + development AM peak hour.

4.2. ROLLING STOCK

4.2.1. Rolling Stock Information Sheets provide information related to both the existing and proposed rolling stocks' seating and standing capacity of 4pax/sqm for Piccadilly Line trains. Both rolling stock types will be used to assess the occupancy levels during the 2031 AM peak period.

4.2.2. The information related to the new rolling stock was extracted from Siemens Mobility – Piccadilly Line tube train data sheet. The document outlines that in November 2018, TfL commissioned Siemens to supply 94 nine-car Inspiro London trains (Figure 4-1), which will be in operation on London Underground's Piccadilly Line from 2025.

Figure 4-1 - Proposed Rolling Stock by Siemens

4.2.3. Table 4-1 and Table 4-2 show the existing and the proposed 94 nine-car Inspiro London trains' rolling stock capacities.

Table 4-1 - Existing Rolling Stock Capacities

Line	Total Capacity (Persons)	Seating Capacity (Persons)	Standing Capacity (Persons)
Piccadilly Line (4pax/sqm)	684	228	456

Table 4-2 - Proposed 94 nine-car Inspiro London trains' Rolling Stock Capacities

Line	Total Capacity (Persons)	Seating Capacity (Persons)	Standing Capacity (Persons)
Piccadilly Line (4pax/sqm)	914	268	646

4.3. 2019 BASELINE LINE LOADING ASSESSMENT

4.3.1. NUMBAT 2019 data, collated by TfL, has provided information on the link loads in both eastbound and westbound directions, to and from Arnos Grove, Bounds Green, and Southgate.

4.3.2. The 2019 AM peak hour number of loads were extracted from the total daily number of loads in the data and are shown in Table 4-3.

Table 4-3 – 2019 NUMBAT - AM Peak Hour Demand

From	To	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	216	221	225	213
Arnos Grove	Southgate	158	159	161	158
Southgate	Arnos Grove	679	727	679	648
Arnos Grove	Bounds Green	969	991	1,011	928

4.3.3. In order to assess the current capacity and occupancy levels of the existing rolling stock, the peak hour loads in Table 4-3 are divided by the total capacity multiplied by the train frequency throughout the peak hours. This is shown in Table 4-4 based on fully seated and standing capacity of 4 passenger per square metre.

Table 4-4 - Existing Rolling Stock 2019 Peak 15-Minute Occupancy

From	To	Train Frequency per 15-min	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	6	5.3%	5.4%	5.5%	5.2%
Arnos Grove	Southgate	5[2]	4.6%	5.8%	4.7%	5.8%
Southgate	Arnos Grove	5[3]	24.8%	21.2%	24.8%	18.9%
Arnos Grove	Bounds Green	6	23.6%	24.1%	24.6%	22.6%

4.4. 2021 LINE LOADING ASSESSMENT

4.4.1. The 2021 line loading demand was developed based on the growth rates between 2019 and 2021 (Railplan, RSX1102A00221B), which is shown below in Table 4-5.

Table 4-5 – 2021 scenario AM peak hour demand

From	To	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	305	312	318	301
Arnos Grove	Southgate	240	241	245	240
Southgate	Arnos Grove	960	1,027	960	916
Arnos Grove	Bounds Green	1,474	1,506	1,537	1,412

[2] Between 0800-0815 and 0830-0845 there is a train frequency of 4 trains
[3] Between 0745-0800 and 0815-0830 there is a train frequency of 4 trains

4.4.2. The same methodology as outlined previously is then applied to the 2021 demand in order to provide the peak 15-minute occupancy levels based on a fully seated and standing capacity of 4 pax/sqm. Table 4-6 presents the occupancy levels in 2021 during the AM peak period.

Table 4-6 2021 AM Peak 15 Minute Occupancy

From	To	Train Frequency per 15-min	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	6	7.4%	7.6%	7.7%	7.3%
Arnos Grove	Southgate	5[2]	7.0%	8.8%	7.2%	8.8%
Southgate	Arnos Grove	5[3]	35.1%	30.0%	35.1%	26.8%
Arnos Grove	Bounds Green	6	35.9%	36.7%	37.4%	34.4%

4.5. 2031 LINE LOADING ASSESSMENT

4.5.1. Two forecast demand scenarios were provided by Stomor, which include 2031 Railplan data and the 2031 Railplan + development. These are shown below in Table 4-7 and Table 4-8.

Table 4-7 - 2031 AM peak hour demand

From	To	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	324	332	338	320
Arnos Grove	Southgate	275	276	281	275
Southgate	Arnos Grove	1,021	1,093	1,021	975
Arnos Grove	Bounds Green	1,688	1,726	1,760	1,617

Table 4-8 – 2031 + dev AM peak hour demand

From	To	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	332	339	346	328
Arnos Grove	Southgate	276	277	281	276
Southgate	Arnos Grove	1,044	1,108	1,037	990
Arnos Grove	Bounds Green	1,692	1,729	1,764	1,621

4.5.2. The same methodology as outlined previously is then applied to the development demand in order to provide the peak 15-minute occupancy levels based on a fully seated and standing capacity of 4 pax/sqm.

4.5.3. Table 4-9 and Table 4-10 present the occupancy levels using the existing rolling stock during the 2031 and 2031 + development scenarios AM peak period.

4.5.4. Table 4-11 and Table 4-12 present the occupancy levels using the proposed 94 nine-car Inspiro London trains' Rolling Stock during the 2031 and 2031 + development scenarios AM peak period.

Table 4-9 - Existing Rolling Stock 2031 Scenario AM Peak Hour Occupancy

From	To	Train Frequency per 15-min	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	6	7.9%	8.1%	8.2%	7.8%
Arnos Grove	Southgate	5[2]	8.1%	10.1%	8.2%	10.1%
Southgate	Arnos Grove	5[3]	37.3%	32.0%	37.3%	28.5%
Arnos Grove	Bounds Green	6	41.1%	42.0%	42.9%	39.4%

Table 4-10 - Existing Rolling Stock 2031 + Dev Scenario AM Peak Hour Occupancy

From	To	Train Frequency per 15-min	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	6	8.1%	8.3%	8.4%	8.0%
Arnos Grove	Southgate	5[2]	8.1%	10.1%	8.2%	10.1%
Southgate	Arnos Grove	5[3]	38.2%	32.4%	37.9%	28.9%
Arnos Grove	Bounds Green	6	41.2%	42.1%	43.0%	39.5%

Table 4-11 - Proposed Rolling Stock 2031 Scenario AM Peak Hour Occupancy

From	To	Train Frequency per 15-min	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	6	5.9%	6.0%	6.2%	5.8%
Arnos Grove	Southgate	5[2]	6.0%	7.6%	6.1%	7.5%
Southgate	Arnos Grove	5[3]	27.9%	23.9%	27.9%	21.3%
Arnos Grove	Bounds Green	6	30.8%	31.5%	32.1%	29.5%

Table 4-12 - Proposed Rolling Stock 2031 + Dev Scenario AM Peak Hour Occupancy

From	To	Train Frequency per 15-min	0745-0800 (AM)	0800-0815 (AM)	0815-0830 (AM)	0830-0845 (AM)
Bounds Green	Arnos Grove	6	6.0%	6.2%	6.3%	6.0%
Arnos Grove	Southgate	5[2]	6.0%	7.6%	6.2%	7.5%
Southgate	Arnos Grove	5[3]	28.5%	24.2%	28.4%	21.6%
Arnos Grove	Bounds Green	6	30.8%	31.5%	32.2%	29.5%

4.5.5. The existing rolling stock operates within good capacity levels with the peak occupancy of 43% recorded during 2031 + development peak 15 minute and 42.9% during 2031 peak 15 minute. In addition, the proposed new rolling stock will increase the train capacity by 33% with the peak occupancy reduced to 32.2% during the 2031 + development AM peak 15 minute and 32.1% during 2031 AM peak 15 minute.

4.5.6. The line loading assessment results identify that both the existing and proposed rolling stock provide sufficient capacity to accommodate the forecast 2031 and development demand. With the new rolling stock, the occupancy level will only be increased by 7.6% between 2019 and 2031 (from 24.6% to 32.2%) during the AM peak 15 minute. Therefore, the forecast development demand will have minimal impact when the new rolling stock on the Piccadilly Line at Arnos Grove is in use.

4.5.7. The line loading assessment results show that the impact in occupancy levels between 2019, 2021 and 2031 demand scenarios are insignificant with an increase of up to 18.3% between 2019 and 2031 + development (from 24.6% to 42.9%) even if using the existing rolling stock. In addition, the existing and proposed rolling stock types can operate well within capacity during 2031 + development AM peak 15 minute and no capacity issues were identified.

5. CONCLUSION

5.1. STATION CAPACITY ASSESSMENT

5.1.1. This assessment outlines the results of the Station Capacity Assessment at Arnos Grove Station, to identify the impact of the London Underground trip generation associated with the proposed development at North Business Park in Barnet by 2031.

5.1.2. The assessment utilised the Transport forecast demand data provided by Stomor and shows that

- the current provisions of staircase and passageway widths are sufficient to cater for the future passenger demands related to the proposed development in 2031.
- However, the current gateline provision does not meet the LU Station Planning guidance requirements in 2031 with or without the additional development trips during the AM peak hour. The existing station provides 4 ATGs + 2 WAGs when the minimum gates required are 5 ATGs + 2 WAGs during 2031 and 2031 + development AM peak periods.

5.1.3. The overall station capacity assessment results are summarised below:

5.1.4. **2021 Scenario**

Passageway / staircase / gateline – all passageways, staircases and gateline facilities operate within capacity. No capacity issues identified.

5.1.5. **2031 Scenario**

Passageway / staircase – all passageways and staircases operate within capacity. No capacity issues identified.
Gateline requirement – 5 ATGs + 2 WAGs are required. Therefore, one additional ATG is required to accommodate the 2031 demand.

5.1.6. **2031 + development Scenario**

Passageway / staircase – all passageways and staircases operate within capacity. No capacity issues identified.
Gateline requirement – 5 ATGs + 2 WAGs are required. Therefore, one additional ATG is required to accommodate the 2031 + development demand.

5.2. LINE LOADING ASSESSMENT

5.2.1. The line loading assessment shows that the impact on train occupancy levels between 2019 and 2031 demand scenarios is insignificant with an increase of up to 18.3% between 2019 and 2031 + development, even if using the existing rolling stock.

5.2.2. The existing rolling stock operates within good capacity levels with the peak occupancy of 43% recorded during 2031 + development peak 15 minute and 42.9% during 2031 peak 15 minute. In addition, the proposed new rolling stock will increase the train capacity by 33% with the peak occupancy reduced to 32.2% during the 2031 + development AM peak 15 minute and 32.1% during 2031 AM peak 15 minute.

5.2.3. The line loading assessment results identify that both the existing and proposed rolling stock provide sufficient capacity to accommodate the forecast 2031 and development demand. With the new rolling stock, the occupancy level will only be increased by 7.6% between 2019 and 2031 (from 24.6% to 32.2%) during the AM peak 15 minute. Therefore, the forecast development demand will have minimal impact when the new rolling stock on the Piccadilly Line at Arnos Grove is in use.

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APPENDIX T

Checked by NJM 3/8/2021

WF01BEW - Location of usual residence and place of work (OA level)

population	All usual residents ages 16 and over in employment the week before the census
units	Persons
date	2011
Site	

place of work	**currently residing in E02000033 : Barnet 010**
E02000033 : Barnet 010	109
Barking and Dagenham	11
Barnet	874
Brent	81
Camden	250
Ealing	34
Enfield	331
Greenwich	14
Hackney	67
Hammersmith and Fulham	43
Haringey	191
Harrow	34
Hillingdon	14
Hounslow	13
Islington	158
Kensington and Chelsea	40
Lambeth	23
Newham	17
Redbridge	18
Southwark	57
Tower Hamlets	74
Waltham Forest	27
Wandsworth	15
Westminster, City of Londo	478
Central Bedfordshire	11
Hertsmere	74
Three Rivers	11
Watford	15
Welwyn Hatfield	37
Total	3,121

Note: Areas with <10 trips have been discounted

Only destinations with 3 changes of line are assessed

Arnos Grove - Piccadilly Line
Trips into main London areas

Destination	Census Trips	%
Islington	158	20.9%
Kensington and Chelsea	40	5.3%
Lambeth	23	3.0%
Southwark	57	7.5%
Westminster, City of London	478	63.2%
Total	756	100.0%

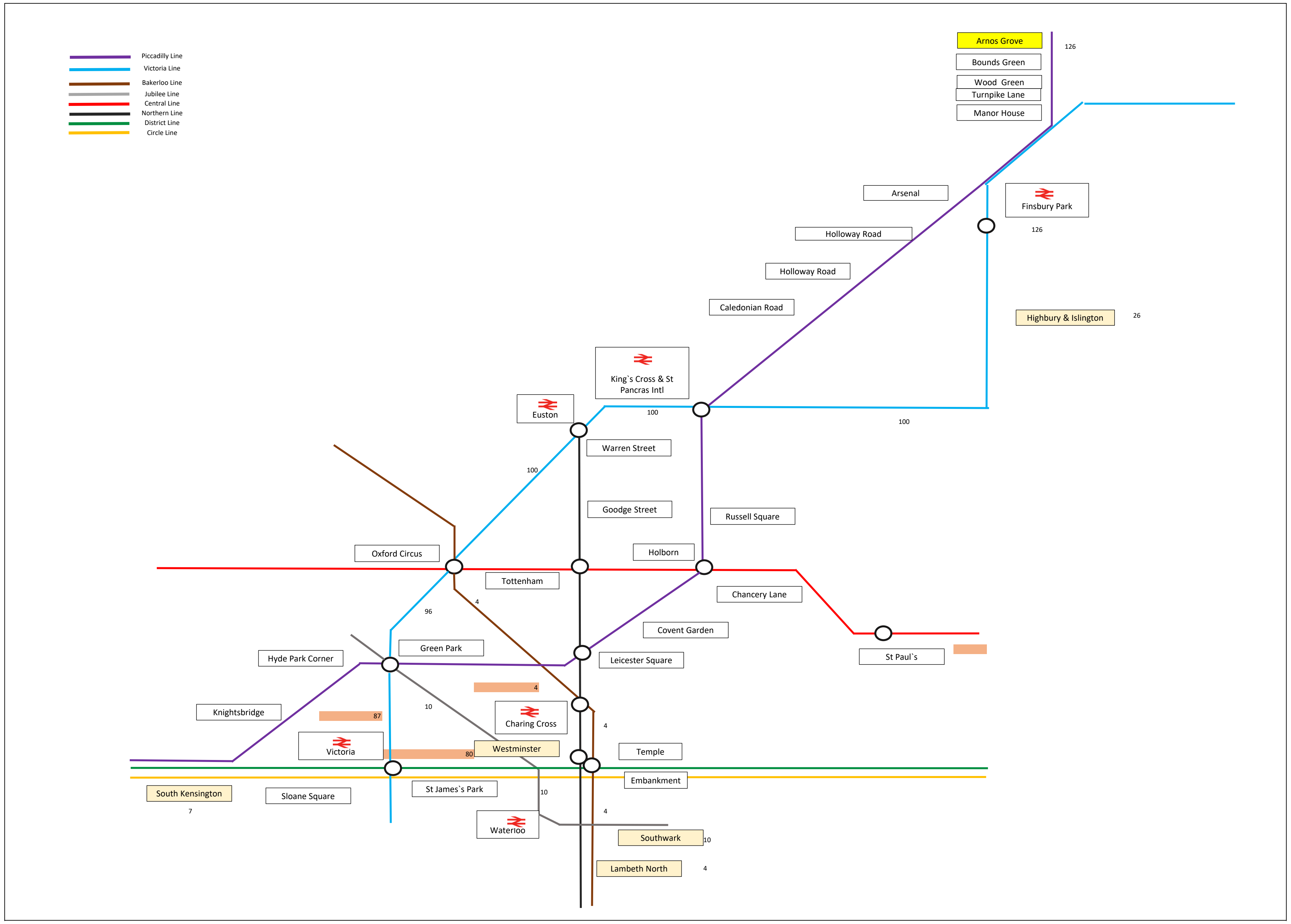
AM Peak only assessed as suggested by TfL

Development Trips by Mode

Mode	AM Peak 2-Way
Work mainly at or from home	57
Underground, metro, light rail or	126
Train	40
Bus, minibus or coach	57
Taxi	3
Motorcycle, scooter or moped	7
Driving a car or van	223
Passenger in a car or van	11
Bicycle	5
On foot	23
Other method of travel to work	3
Total	557

Arnos Grove - Piccadilly Line
Trips into key London areas

Destination	Dev Trips AM Peak 2WAY	%	End Destination LU Station
Islington	26	20.9%	Highbury & Islington
Kensington and Chelsea	7	5.3%	South Kensington
Lambeth	4	3.0%	North Lambeth
Southwark	10	7.5%	Lambeth South
Westminster, City of London	80	63.2%	Westminster
Total	126	100.0%	



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