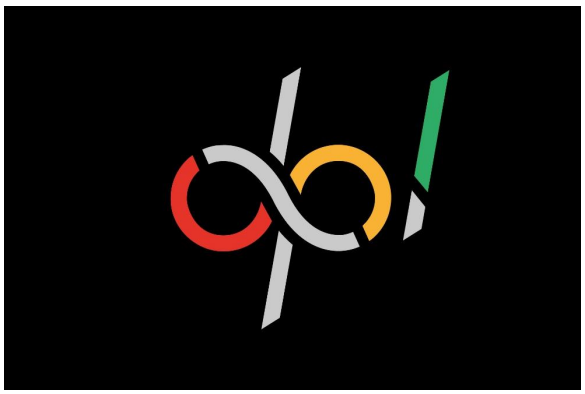

TRANSPORT ASSESSMENT ADDENDUM

DEWSBURY RIVERSIDE

KMBC

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1. EXECUTIVE SUMMARY

1.1.1 Development Planning Limited have been instructed to provide a Transport Assessment Addendum as part of the Dewsbury Riverside Phase 1 planning application.

1.1.2 The Addendum follows on from the agreed Traffic Distribution Note which considered the traffic impact of Phase 1 across the Dewsbury highway network. The Traffic Distribution Note confirmed the junctions for which a material traffic impact relating to the first 350 dwellings at Dewsbury Riverside is forecast.

1.1.3 Accordingly, this first phase focusses on providing the central gateway access, essential link road infrastructure for access to the full allocation (including this phase), mitigation at the key junctions of the Forge Lane double mini-roundabout and at the Calder Road gyratory and a sustainable travel fund.

1.1.4 The contribution that this application commits to through the on-site infrastructure and financial contributions to off-site highways works and the sustainable travel fund is estimated to be in excess of £50,000 per dwelling, which includes link road infrastructure to unlock the access requirements for the wider site allocation.

1.1.5 The wider allocation will provide a suite of strategic highway works across the wider highway network. Those works are currently being updated and will be informed by an up to date assessment of the impacts of the allocation as a whole.

1.1.6 This Transport Assessment Addendum summarises the key updates with regard to transport relating to the current development proposals. Each of these is summarised by heading below.

1.2 PRELIMINARY SITE ACCESS

1.2.1 Minor updates to the preliminary access have been made since the submission of the planning application. These includes amended and replacement car parking as well as the incorporation of improved bridleway facilities. These changes are included within the submitted layout plans.

1.3 CENTRAL GATEWAY CYCLOPS SITE ACCESS

1.3.1 The central gateway site access is now proposed to be a CYCLOPS junction. A preliminary LINSIG traffic model has been undertaken which demonstrates that the site access proposals are suitable for accommodating Dewsbury Riverside Phase 1 and could accommodate up to 1,000 residential units prior to a second and/ or third access to the wider allocation being required.

1.4 INTERNAL COMPACT ROUNDABOUT

1.4.1 The key internal junction within Phase 1 is now proposed to be a compact-style roundabout (previously a normal-style roundabout). The compact-style provides advantages in terms of active travel accessibility and reduced vehicle speeds.

1.4.2 The junction has been assessed for the full development build-out of 4,000 allocated residential units on the site and demonstrated to have sufficient traffic capacity to accommodate the forecast future traffic demand.

1.5 PUBLIC RIGHTS OF WAY

1.5.1 Public Right of Way (PROW) DEW 94/10 would be crossed by the proposed link road. Discussion have been held with the PROW team within the council and their requirements incorporated in to the layout of the link road, which include widening the route to 4m and surfacing in Textureflex or similar.

1.5.2 Additional claimed PROW cross Phase 1 and details relating to these routes would need to be agreed as the scheme progresses to Reserved Matters.

1.6 PUBLIC TRANSPORT CONTRIBUTION

1.6.1 The Phase 1 planning application incorporated a Travel Plan which can be considered as the framework for more detailed Travel Plans at reserved matters stage. Since submission of the application, highway development management have calculated a suitable contribution from Phase 1 towards sustainable travel of £365,275.

1.6.2 For the avoidance of doubt, the Travel Plan to be submitted at reserved matters stage will incorporate the sustainable travel sum of £365,275 and the method of expenditure would require the prior agreement and approval of highway development management.

1.7 FORGE LANE DOUBLE MINI-ROUNDABOUT

1.7.1 A significant highway intervention has been forecast to be required at the Forge Lane double mini-roundabout junction by around 2033 to accommodate the full Local Plan allocation.

1.7.2 Traffic modelling has been undertaken at the junction to assess Phase 1 in isolation. The traffic modelling forecasts that Phase 1 would contribute towards the requirement for this future scheme and, consequently, financial contribution is considered to be reasonably applicable to Phase 1 of Dewsbury Riverside. A formula for calculating this contribution has been agreed.

1.7.3 In the interim, it has been agreed that yellow box markings on the B6409 to reduce the interaction of queues relating to Vicarage Road would be appropriate. These works would be conditioned to be delivered by the Phase 1 development, in addition to the financial contribution.

1.8 CALDER ROAD TRAFFIC SIGNALS

1.8.1 Traffic impact at the junction Calder Road gyratory was accepted within the submitted Transport Assessment and a package of highway mitigation proposals submitted at that stage. Subsequent discussions have been held with UTMC and a revised package of works has been discussed. The total cost of those works is £80,000 and a flexible approach to their expenditure is proposed to allow either a standalone mitigation package or a larger package or works based upon pooled contributions to be delivered.

1.9 RAVENSTHORPE ROAD REFUGE ISLAND

1.9.1 During a site visit it was observed that the western active travel access could benefit from a new refuge island to be provided on Ravensthorpe Road to the west of the site.

1.9.2 The refuge island would be delivered as part of the Phase 1 development.

1.10 HIGHWAY ASSESSMENT UPDATES

1.10.1 Updated traffic analysis has been undertaken at the residual offsite junctions highlighted within the approved Traffic Distribution Report. The updated traffic analysis forecasts no additional traffic impacts on the wider highway network.

1.11 CONCLUSION

1.11.1 This Transport Assessment Addendum captures all of the transport updates pertinent to the determination of the planning application and matters raised in relation to transport are now agreed. There are considered to be no reasonable residual highway reasons for refusal of the application.

2. INTRODUCTION

2.1 BACKGROUND

2.1.1 Development Planning Limited have been instructed to provide a Transport Assessment Addendum as part of the Dewsbury Riverside Phase 1 planning application.

2.1.2 This Transport Assessment Addendum summarises the key updates with regard to transport relating to the development proposals.

2.2 HIGHWAY DEVELOPMENT MANAGEMENT CONSULTATION

2.2.1 Since the submission of the planning application, the Highway Development Management team within the council have had the opportunity to review the submitted planning application proposals for the Dewsbury Riverside Phase 1 scheme.

2.2.2 The review has resulted in a number of comments being made between submission and the current time. Consequently, a number of discussions have been held between the applicant and the Highway Development Management team which have resulted in this Transport Assessment Addendum being produced to capture the key updates.

2.3 KEY DRIVERS FOR THE UPDATES

2.3.1 The Dewsbury Riverside site was allocated within the Kirklees Local Plan Allocations and Designations on the 27th February 2019. The site had been a draft allocation for some considerable time prior to its allocation.

2.3.2 Over recent years there has been significant and important changes to the way in which the environment is treated at a national and local level. This includes that on the 1st May 2019 the UK Parliament passed a national declaration of an Environment and Climate Emergency, following independent declarations on the 28th and 29th April by Scotland and Wales, respectively. The UK Parliament was the first to do so in the world.

2.3.3 These changes have been significant drivers in the evolution of sustainable travel, which have included the advent of Local Transport Note 1/20 (Cycle Infrastructure Design) on the 27th July 2020.

2.3.4 The implementation and understanding of Local Transport Note 1/20 guidance has evolved and it has been agreed as appropriate to capture these changes within updated designs for the access routes for the Dewsbury Riverside scheme, which itself is a strategically important residential development to be built out over the Local Plan period and beyond. Planning now for the future is a key aspect of sustainable development.

2.3.5 The design ethos within LTN 1/20 has also been a driver in the advancement of junction layout philosophies, including innovative designs such as the CYCLOPS (Cycle Optimised Protected Signals) junctions which originated in Greater Manchester and are now becoming increasingly considered for implementation across the UK. The first CYCLOPS junction was planned prior to the formal adoption of LTN 1/20 however are based upon the same philosophies.

2.3.6 Alongside the adoption of LTN 1/20 standards within the Dewsbury Riverside scheme, the opportunity to implement a CYCLOPS traffic signal junction at the site access for Phase 1 has now been embraced. This innovative solution significantly benefits cycle access and safety and would be the first of its kind within the district.

2.3.7 Other changes have included the adoption of a compact-style roundabout within the heart of the site, which again is a change from the previously envisaged normal-style roundabout. The adoption of a compact-style roundabout could accommodate innovative

circulatory cycle tracks around the perimeter of the junction, whilst also helping to manage traffic speeds to the benefit of active travellers.

2.3.8 Alongside these changes, material improvements to the original proposals in relation to the Public Rights of Way across the site have also been incorporated, having been discussed in detail with the authority's Public Rights of Way team.

2.3.9 Overall, the key changes embrace the evolving nature of highway design and provide an even greater emphasis on access by sustainable modes, particularly by active travel, whilst also planning for future access within the site for public transport.

2.4 UPDATE SUMMARY

2.4.1 The Addendum follows on from the agreed Traffic Distribution Note which considered the traffic impact of Phase 1 across the Dewsbury highway network. The Traffic Distribution Note confirmed the junctions for which a material traffic impact relating to the first 350 dwellings at Dewsbury Riverside is forecast.

2.4.2 Accordingly, this first phase focusses on providing the central gateway access, essential link road infrastructure for access to the full allocation (including this phase), mitigation at the key junctions of the Forge Lane double mini-roundabout and at the Calder Road gyratory and a sustainable travel fund.

2.4.3 The contribution that this application commits to through the on-site infrastructure and financial contributions to off-site highways works and the sustainable travel fund is estimated to be in excess of £50,000 per dwelling, which includes link road infrastructure to unlock the access requirements for the wider site allocation.

2.4.4 The wider allocation will provide a suite of strategic highway works across the wider highway network. Those works are currently being updated and will be informed by an up to date assessment of the impacts of the allocation as a whole.

2.4.5 This Transport Assessment Addendum summarises the key updates with regard to transport relating to the current development proposals. The following sets out the updates in relation to the proposals which are captured within this Transport Assessment Addendum:

- Chapter 3 – Preliminary Site Access;
- Chapter 4 – Central Gateway CYCLOPS Site Access;
- Chapter 5 – Internal Compact Roundabout;
- Chapter 6 – Public Rights of Way;
- Chapter 7 – Public Transport Contribution – Financial Contribution ;
- Chapter 8 – Forge Lane Double Mini-Roundabout – Financial Contribution;
- Chapter 9 – Calder Road Traffic Signals – Financial Contribution;
- Chapter 10 – Ravensthorpe Road Refuge Island; and
- Chapter 11 – Highway Assessment Updates

2.5 UPDATED ACCESS PLANS

2.5.1 Throughout Chapters 3, 4, 5, 6 and 10 reference will be made to the updated highway access plans. These plans are attached within the Appendices, as follows:

- Appendix A – Preliminary Site Access (Prior to Central Gateway);
- Appendix B – Link Road Proposals (Central Gateway to Compact Roundabout); and
- Appendix C – Swept Path Analysis.

2.5.2 The plans within Appendices A to C are preliminary 2D layouts and engineered 3D plans are being progressed by Bruro Happold. The plans which will be referred to within planning conditions relating to any planning permission for the site will be submitted and registered on the planning portal separately.

3. PRELIMINARY SITE ACCESS

3.1 INTRODUCTION

3.1.1 The preliminary site access is proposed to be along the existing line of the Ravensthorpe Road side road, located adjacent to Number 19 Ravensthorpe Road.

3.1.2 The proposed use of this access has not changed since the original planning submission, however the layout design has evolved. This chapter summarises the current layout.

3.2 ACCESS

3.2.1 The preliminary site access via Ravensthorpe Road (side road) is proposed for the initial phase of development, which is envisaged to include the first 150 dwellings on the site.

3.2.2 The preliminary site access would be utilised until the central gateway to the site (formed at the junction of Ravensthorpe Road/ Forge Lane/ Lees Hall Road) is constructed and operational.

3.2.3 The access layout is shown in drawing DPL SK161C, attached within Appendix A.

3.2.4 The key features of the layout include:

- Minor reduction to the available parking available on Ravensthorpe Road, by around 9m (two parking spaces) to improve visibility to and from the junction;
- New dropped-kerb tactile paving across the side road to benefit those with impaired vision;
- New bollards at the junction to protect the pedestrian footways from vehicle encroachment;
- Removal of the parking layby to the west of Number 19 Ravensthorpe Road (a loss of around two parking spaces);
- A new car parking area access via turning head, forming six replacement parking spaces (i.e., a net gain in parking);
- A new 4m wide Textureflex (or similar) style of bridleway to the east of the Ravensthorpe Road (side road); and
- Double yellow lines extended along the preliminary access to prevent parking on this stretch and outside the school.

3.3 TRAFFIC CAPACITY

3.3.1 In line with the Traffic Distribution Report, an updated traffic capacity assessment of the preliminary site access has been undertaken.

3.3.2 The modelling has been based upon the maximum peak hour eastbound and westbound traffic flows from an automatic traffic count which was laid in 2022.

3.3.3 The side road flows for the existing scenario have been estimated as 80 two-way peak hour vehicle trips relating to the existing school and terraced properties.

3.3.4 For the purposes of robustness, development-generated traffic relating to the full Phase 1 development of 350 units has been undertaken. The assessment is purely for robustness, and it is expected that the central gateway CYCLOPS junction would be delivered by the 150th property within Phase 1.

3.3.5 Based upon these robust assumptions, the following traffic capacity is forecast:

Table 3.1 Preliminary Site Access (Robust Assessment of 350 dwellings)

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
Side Road	1	22	0.50	1	17	0.34
Main Road	0	6	0.09	1	6	0.15

3.3.6 It can be seen from Table 3.1 that there are forecast to be no operational issues with the preliminary site access for initial phase of development, which would be up to 150 dwellings. The detailed model is attached at Appendix D.

3.4 CONSTRUCTION ACCESS

3.4.1 Swept path analysis of an articulated HGV and rigid HGV along the preliminary site access route are attached in Appendix C. The dimensions of the preliminary access have been demonstrated as suitable for carrying a managed number of these vehicle types.

3.4.2 The full construction access arrangements and details of construction compounds and routing would be dealt with by way of a Construction Management Plan. The Construction Management Plan would need to consider all potential routes for construction access, which may include alternative access locations along Ravensthorpe Road.

3.4.3 In order to reduce the impacts on local residents and the school a Construction Management Plan would be agreed with the planning authority to manage the timing and type of vehicles which can access via this and any other route.

3.5 SUMMARY

3.5.1 Minor updates to the preliminary access have been made since the submission of the planning application. These includes amended and replacement car parking as well as the incorporation of improved bridleway facilities. These changes are included within the submitted layout plans.

4. CENTRAL GATEWAY CYCLOPS SITE ACCESS

4.1 INTRODUCTION

4.1.1 As discussed in Chapter 2, the original proposals for the site access have been updated to incorporate an innovative CYCLOPS junction. This chapter discusses the proposals and provides the traffic analysis which has been undertaken in relation to the design.

4.2 DESIGN PHILOSOPHY

4.2.1 The advancement of CYCLOPS traffic signal junctions has been focussed within the Greater Manchester area and have been promoted through the Greater Manchester Cycling and Walking Network, supported by the Mayor of Greater Manchester, Greater Manchester Combined Authority and Transport for Greater Manchester.

4.2.2 As the largest urban area outside of London (by population), Manchester has a significant network of traffic signal junctions and, also, a significant and dense urban populous. These factors have led Manchester to innovate junction design and technology which combine the traffic capacity benefits of traffic signals with safe and protected space for cyclists. These junctions are CYCLOPS (**CYCL**e **O**ptimised **P**rotected **S**ignals).

4.2.3 The key features are:

- Orbital cycle route;
- Safety enhancement for all junction users with delays minimised;
- Cycling and walking conflicts with vehicular traffic are safety managed; and
- Signal controlled junction design technique.

4.3 LAYOUT

4.3.1 The layout of the CYCLOPS junction is attached within Appendix B as drawing DPL SK165C. The layout incorporates the following:

- Single lane approaches east and west;
- Single lane with flared right turn approaches north and south;
- Pedestrians cross within the central area of the junction;
- Cyclists have priority within the circulatory elements of the junction;
- Pedestrians and cyclists benefit from signalised crossing points parallel to each other; and
- Seamless connection to the cycle tracks on the new link road (southern arm).

4.3.2 The layout has been kept to minimal urban dimensions, whilst also ensuring that heavy vehicles (such as articulated HGVS) and buses can safely travel through the junction. The swept path associated with the heavy vehicle movements through the junction are attached within Appendix C.

4.3.3 The layout makes provision to retain access to the rear of the industrial unit which sits at the corner of Ravensthorpe Road/ Forge Lane. The access has been assessed for a large rigid HGV, which is the largest vehicle type which it is considered could reasonably access the industrial unit.

4.4 TRAFFIC ANALYSIS METHODOLOGY

4.4.1 The overall layout and proposals of the wider Dewsbury Riverside Local Plan allocation are evolving and are to be the subject of future outline and reserved matters planning applications.

4.4.2 In conjunction with the evolving masterplan, updated traffic analysis relating to the wider traffic impact for the allocation is currently being programmed. The updated traffic analysis is understood to incorporate:

- New traffic counts across the local highway network;
- Reassessment of the wide area traffic model;
- Revalidation of the wide area traffic model; and
- Updated traffic modelling assumptions.

4.4.3 The updates are proposed due to the period of time over which the future planning applications are likely to be forthcoming and to ensure that changes to local travel patterns (particularly following the Covid-19 pandemic) are captured for future applications.

4.4.4 Even so, for this first phase of development a number of assumptions can be made to allow the traffic modelling of the CYCLOPS traffic signal site access to be progressed. These assumptions have been discussed and agreed with Highway Development Management as appropriate for this initial phase.

4.4.5 The assumptions are based upon the use of traffic counts from 2018 (i.e. pre-pandemic) which were undertaken on behalf of KMBC relating to the traffic model testing of the Local Plan. The 2018 traffic counts have been assessed for the AM and PM peak hour periods.

4.4.6 In addition to the 2018 traffic flows, the agreed residential traffic generation rates for Phase 1 have been applied to 500 and 1,000 units using the central gateway access. These assumptions are higher than the currently proposed 350 residential units within Phase 1 and allow consideration of the potential capacity of the traffic signals prior to a second and/ or third access being opened up in to Dewsbury Riverside.

4.4.7 The traffic distribution assumptions are those which have been agreed with Highways Development Control within the Traffic Distribution Report (Dated March 2022 by Development Planning Limited). The Traffic Distribution Report has been agreed with Highway Development Management for application to Phase 1 of Dewsbury Riverside, prior to the wider area traffic modelling updates taking place for the wider scheme.

4.4.8 The traffic flow forecasts are attached at Appendix E.

4.4.9 Once a second and/ or third access is opened up, the distribution of traffic would be dependent upon the layout of the new access points and the new routing options that they would present. The traffic assessments for central gateway should be updated once the wider traffic model updates have been undertaken for the wider allocation. Even so, assessing the access for up to 1,000 dwellings in isolation provides a suitable indication of potential future traffic capacity.

4.5 LINSIG TRAFFIC MODEL

4.5.1 The traffic modelling has been undertaken within the LINSIG traffic signal package and been reviewed by Highways Development Control as a suitable preliminary traffic model of the junction. The LINSIG traffic model is attached at Appendix F.

4.5.2 The traffic model includes pedestrian traffic signal stages to represent the pedestrian crossings shown within the layout. Specific cyclist traffic signal stages have not been incorporated within this preliminary model as cyclists travel quicker than pedestrians and can reasonably be assumed to be able to cross at the same time as cyclists.

4.5.3 As the design progresses, further discussion and progression of the traffic model would be required with UTMC officers within the council to incorporate cycle stages. As the first CYCLOPS junction within the authority the way in which the cyclists could operate would require specific consideration and agreement with UTMC.

4.5.4 It should be noted that the traffic models have been run based upon a fixed-time of 120 seconds, i.e. the maximum likely to be acceptable in the future. The traffic signals would operate utilising MOVA (Microprocessor Optimised Vehicle Actuation) or similar optimisation process which would alter traffic signal timings based upon measured traffic and pedestrian flow conditions. As such, the 120 seconds cycle time is presented for information purposes only, to give an indication of potential traffic capacity, and not likely to represent the optimal cycle time or operation on street.

4.6 JUNCTION MODELLING RESULTS

4.6.1 The traffic model has been run for the following scenarios:

- Base traffic flows with 500 residential units (single access, AM and PM); and
- Base traffic flows with 1,000 residential units (single access, AM and PM).

4.6.2 The key junction model results are summarised below:

Table 4.1 LINSIG Modelling Results – CYCLOPS Site Access

	Base Plus 500 Units				Base Plus 1,000 Units			
	AM		PM		AM		PM	
	DOS	Q	DOS	Q	DOS	Q	DOS	Q
Site Access	26.3%	3	16.1%	2	52.8%	9	30.6%	4
Ravensthorpe Road	76.5%	13	70.7%	13	81.8%	14	81.5%	16
Forge Lane	76.3%	16	71.5%	15	92.8%	23	79.9%	18
Lees Hall Road	64.7%	5	45.8%	3	82.5%	6	76.7%	6
DOS	11.7%		25.8%		-3.1%		10.5%	

4.6.3 It can be seen from the LINSIG traffic model results that the CYCLOPS site access junction is forecast to operate at or within capacity up to 1,000 units as a single site access. This is significantly in excess of the 350 units proposed within Phase 1.

4.6.4 It is likely that future phases of Dewsbury Riverside would need to deliver a second and/ or third access at around 1,000 units. The exact trigger level would need to be agreed during the determination of planning applications for the future phases.

4.6.5 Prior to the 1,000 units being implemented, there could be emergency access options available to the Dewsbury Riverside site which include the active travel access shown in Appendix B (DPL SK170C) and/ or the stopped-up route of Ravensthorpe Road side road, (shown in DPL SK166C).

4.7 SUMMARY

4.7.1 A preliminary LINSIG traffic model has been undertaken for the proposed central gateway CYCLOPS junction. The LINSIG model demonstrates that the site access proposals are suitable for accommodating the Dewsbury Riverside Phase 1 and could accommodate up to 1,000 residential units prior to a second and/ or third access to the wider allocation being required.

5. INTERNAL COMPACT ROUNDABOUT

5.1 INTRODUCTION

5.1.1 The key internal junction within the site in Phase 1 was in the form of a normal-style roundabout within the initial submission. This layout has now been updated to a compact-style roundabout.

5.2 COMPACT ROUNDABOUTS

5.2.1 Compact roundabouts are promoted within LTN 1/20 and differ from normal-style roundabouts. Compact roundabouts are described within LTN 1/20 as having the following key features:

Compact roundabouts have arms that are aligned in a radial pattern, with unflared single lane entries and exits, and a single lane circulatory carriageway... It may be necessary to have short sections of 're-entrant curves' on the outside of the circulatory carriageway where the outside kerbline is concentric with the central island.

Deflection is therefore greater than with normal roundabouts and the design can be used as an effective speed reducing feature. Cycle symbols to TSRGD diagram 1057 may be placed on the entries, exits and circulatory carriageway in the primary position.

5.2.2 LTN 1/20 goes on to state that:

Compact roundabouts will tend to have a lower traffic capacity than conventional roundabouts, and can be assessed using traffic modelling software.

5.2.3 Consequently, the forecast traffic capacity of the proposed compact roundabout has been assessed using the Junctions 10 traffic modelling package.

5.3 LAYOUT

5.3.1 The compact roundabout is shown in drawing DPL SK168C, Appendix B. The key features include:

- One-way circulatory cycle tracks (external to the carriageway);
- Raised zebra/ parallel crossings on all approach arms (subject to DfT approval); and
- Compact geometry (confirmed by the swept path analysis in Appendix C).

5.4 TRAFFIC MODELLING

5.4.1 The future traffic flows through the internal roundabout would be dependent upon the final layout and routing provided by the second and third access points in to the site, as well as the layout of any internal link roads and residential plots.

5.4.2 Consequently, traffic analysis of the internal roundabout has required assumptions to be made in terms of future traffic flows, which have been provided by the client. The client has been informed by discussions which are ongoing in relation to the programmed traffic modelling for the evolving wider Dewsbury Riverside allocation.

5.4.3 The forecast traffic flows within the site have been assessed for the AM and PM peak hours for up to the allocated 4,000 residential units. The traffic flows are attached at Appendix G.

5.4.4 By way of a simple summary, the results for the full 4,000 residential unit scenario are shown below and the full Junctions 10 model results attached at Appendix H. For ease of reference, the arm naming convention is that Arm 1 is the northern arm and the

ascending arm numbers are clockwise, such that Arm 2 is the eastern arm, Arm 3 the southern arm and Arm 4 the western arm.

5.4.5 The design of the compact roundabout is that it is dimensionally symmetric, therefore the same parameters have been used for all arms.

Table 5.1 Junctions 10 Model Result – Full 4,000 Units

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
Arm 1	0	5	0.23	1	9	0.59
Arm 2	0	5	0.37	1	9	0.52
Arm 3	4	18	0.79	1	6	0.42
Arm 4	1	9	0.52	1	7	0.44

5.4.6 It can be seen from Table 5.1 that the internal roundabout is forecast to operate with spare traffic capacity with 4,000 units built-out. The traffic model should be updated as the future forecasts evolve.

5.5 SUMMARY

5.5.1 The key internal junction within Phase 1 is now proposed to be a compact-style roundabout (previously a normal-style roundabout). The compact-style provides advantages in terms of active travel accessibility and reduced vehicle speeds.

5.5.2 The junction has been assessed for the full development build-out of 4,000 allocated residential units on the site and demonstrated to have sufficient traffic capacity to accommodate the forecast future traffic demand.

6. PUBLIC RIGHTS OF WAY

6.1 INTRODUCTION

6.1.1 A number of Public Rights of Way (PROW) and claimed Public Rights of Way cross the proposed development site.

6.1.2 The PROW plan is attached at Appendix I.

6.2 DEW/94/10

6.2.1 Within this first phase of Dewsbury Riverside, the dedicated PROW which would be affected by the access works is DEW/94/10. DEW/94/10 runs north/ south towards the east of the Phase 1 boundary and would be crossed by the proposed link road.

6.2.2 Discussion have been held with the Public Rights of Way team and their requirements for PROW DEW/94/10 have now been incorporated within the updated layouts.

6.2.3 Drawing 167C and 166C, Appendix B, show the proposed treatment of the PROW where it would meet with the link road and its connection to Ravensthorpe Road. The proposed treatment is as follows:

- South of the link road - widen existing route to 4m and provide in Textureflex or similar surfacing;
- Separate pedestrian/ cycle movements from equestrians for the crossing of the link road, with the equestrian crossing being a dropped-kerb informal arrangement with 10mx5m pens provided each side of the link road;
- North of the link road – widen existing route to 4m and provide in Textureflex or similar surfacing to the connection with Ravensthorpe Road (side road);
- Provide new 4m wide Textureflex or similar surfacing route to the east of the Ravensthorpe Road (side road) carriageway for the residual length of the route (up to the rear of the terraced properties fronting Ravensthorpe Road);
- Close Ravensthorpe Road (side road) to traffic at its northern end and provide a 4m wide Textureflex or similar surfacing along this northern length; and
- Provide bollard protection to the route along Ravensthorpe Road side road.

6.2.4 Prior to the delivery of the central gateway CYCLOPS junction, all of the above elements with the exception of the northern end treatment (which requires the closure of that length to traffic) could be delivered.

6.3 CLAIMED PROW

6.3.1 At the northwest corner of Phase 1 is a claimed PROW (DEW/dmmo app69/40). This route is not currently proposed to be affected by the works within Phase 1, however it does sit adjacent to the proposed works for the western active travel access, as shown in drawing DPL SK170C, Appendix B. The active travel access has been shown at a total of 6m wide, to potentially accommodate the requirements of this claimed PROW, should it be required.

6.3.2 A second claimed PROW meets with Ravensthorpe Road at the allotment access. The access proposals for the allotments are understood to account for the claimed PROW (DEW/dmmo app69/20) and the route passes through Phase 1 of the development.

6.3.3 Further claimed PROW sit within Phase 1, including DEW/dmmo app69/80, DEW/dmmo app69/90 and Dew/dmmo app69/100. The requirements for these claimed PROW would need to be agreed as part of future reserved matters planning submissions as Phase 1 progresses.

6.4 SUMMARY

6.4.1 Public Right of Way (PROW) DEW 94/10 would be crossed by the proposed link road. Discussion have been held with the PROW team within the council and their requirements incorporated in to the layout of the link road, which include widening the route to 4m and surfacing in Textureflex or similar.

6.4.2 Additional claimed PROW cross Phase 1 and the detail of these sites would need to be agreed as the scheme progresses to Reserved Matters.

7. PUBLIC TRANSPORT CONTRIBUTION

7.1 INTRODUCTION

7.1.1 This chapter sets out the proposed public transport contribution and mechanism for the Phase 1 development.

7.1.2 The contribution has been discussed in detail since the application has been submitted and has been committed to by the applicant.

7.2 CONTRIBUTION

7.2.1 The agreed scale and form of sustainable travel contributions have been provided by Highway Development Management and agreed with the West Yorkshire Combined Authority and are summarised below:

- Sustainable Travel Fund (350 units x £511.50) - £179,025.00
- Bus Shelter/Realtime Infrastructure Contribution (2 No. Stops) - £46,000.00
- Bus Service Contribution (18.7% of £750,000) - £140,250.00
- **Total** **- £365,275.00**

7.2.2 This sum should be taken to represent the scale of contribution and it is expected that flexibility in the approach to the application of the sum would be required to take account of the phased way in which the overall Dewsbury Riverside allocation is to be brought forward.

7.2.3 It is agreed that the sum of £365,275 is to be applied to the site and would be detailed within an updated Travel Plan at reserved matters planning stage. This process would allow any progress towards future development phases to also be taken into account.

7.3 TRAVEL PLAN

7.3.1 The Phase 1 planning application incorporated a Travel Plan which can be considered as the framework for a more detailed Travel Plan at reserved matters stage. For the avoidance of doubt, the Travel Plan to be submitted at reserved matters stage will incorporate the sustainable travel sum of £365,275, as set out above and confirm that the method of expenditure would require the prior agreement and approval of highway development management.

7.4 SUMMARY

7.4.1 The Phase 1 planning application incorporated a Travel Plan which can be considered as the framework for more detailed Travel Plan at reserved matters stage. Since submission of the application, highway development management have calculated a suitable contribution from Phase 1 towards sustainable travel of £365,275.

7.4.2 For the avoidance of doubt, the Travel Plan to be submitted at reserved matters stage will incorporate the sustainable travel sum of £365,275 and will confirm that the method of expenditure would require the prior agreement and approval of highway development management.

8. FORGE LANE DOUBLE MINI-ROUNDABOUT

8.1 INTRODUCTION

8.1.1 The Forge Lane double mini-roundabout is the first key junction on the road network to the north of the central gateway CYCLOPS traffic signal junction.

8.1.2 Since the submission of the Phase 1 planning application a planning application for a new LIDL supermarket at the southern corner of the junction has been submitted.

8.1.3 This chapter discusses the forecast operation of the junction with and without the proposed supermarket to allow the cumulative impact of development to be considered.

8.2 ROUNDABOUT GEOMETRY

8.2.1 The traffic analysis of mini-roundabouts requires consideration of specific geometric parameters which are different to those for a standard roundabout. The geometric parameters are subject to engineering judgement.

8.2.2 Both the Phase 1 Transport Assessment and the LIDL Transport Assessment included interpretations of the geometric parameters for the junction. These parameters were similar, however did vary.

8.2.3 Discussions have been held with highway development management who have used their engineering judgement to appraise the two submitted models and agree a final set of parameters for input to the model. The agreed parameters are set out within Appendix J.

8.3 MODEL METHODOLOGY

8.3.1 A number of traffic modelling scenarios have been assessed to arrive at the overall results. These are based upon:

- 2022 Traffic Count (for Dewsbury Riverside), AM and PM;
- 2022 Traffic Count (for LIDL), PM only;
- 2023 Wide Area Traffic Model (by Systra), AM and PM;
- 2030 Wide Area Traffic Model (by Systra), AM and PM.

8.3.2 Each of these based scenarios has been assessed within the traffic model, with a flat traffic flow profile applied to the future year assessments and the LIDL traffic count.

8.3.3 The future year traffic models (2023 and 2030) are forecast to produce results which appear to be reasonable when compared to the 2022 traffic counts. Consequently, the 'with development' assessment scenarios have been based upon the 2023 and 2030 future year traffic flow scenarios (by Systra and include Local Plan growth).

8.3.4 The forecast traffic flows for Dewsbury Riverside have been based upon the approved Traffic Distribution Report and the forecast traffic flows for LIDL are taken from the Transport Assessment for that site. Notably, the LIDL Transport Assessment did not forecasts AM peak hour flows and these have been estimated on the proportion of two-AM peak hour traffic generation vs the forecast two-way PM peak hour traffic generation.

8.3.5 The overall traffic flow forecast is attached at Appendix I.

8.4 RESULTS

8.4.1 The traffic modelling results have been considered on the basis of the maximum forecast Ratio of Flow to Capacity (RFC) and the Network Residual Capacity (measured in percent). The full traffic models are attached at Appendix L.

8.4.2 The results are summarised below. For ease of reference, the shorthand DR has been used for Dewsbury Riverside.

Table 8.1 Forge Lane Double Mini-Roundabout Summary Results

	AM		PM	
	Max RFC	Network Residual Capacity	Max RFC	Network Residual Capacity
2022 Count (DR)	1.50	-27%	1.32	-19%
2022 Count (LIDL)	N/A	N/A	1.08	-13%
2023 Base Model	1.34	-27%	1.15	-16%
2030 Base Model	1.35	-29%	1.28	-21%
2023 Base + DR	1.36	-31%	1.20	-18%
2023 Base + DR + LIDL	1.38	-33%	1.20	-22%
2030 Base + DR	1.37	-33%	1.32	-24%
2030 Base + DR + LIDL	1.39	-35%	1.40	-27%

8.4.3 It can be seen from Table 8.1 that the junction is forecast to operate without spare network capacity in both the AM and PM peak hours through all scenarios.

8.4.4 The addition of the Dewsbury Riverside traffic is forecast to result in an adverse operational impact on the junction, increasing the RFC by around 5% (PM peak model) and a maximum reduction in Network Residual Capacity of 4%.

8.4.5 In order to consider the results, a review of observed and modelled queue lengths for the 2022 Dewsbury Riverside traffic count scenario has been undertaken. This is the only scenario for which there are both traffic and queue counts available.

Table 8.2 Observed Vs Modelled Maximum Queue Lengths (2022 Count DR)

	AM		PM	
Junction 1	Model	Observed	Model	Observed
Arm 1	3	20	2	26
Arm 2	4	N/A	3	N/A
Arm 3	26	22	93	26
Junction 2	Model	Observed	Model	Observed
Arm 1	26	22	10	8

Arm 2	69	25	13	10
Arm 3	2	N/A	2	N/A

8.4.6 It can be seen from Table 8.2 that the queues on Junction 1 Arm 1 (Station Road/ B6409) were observed to be higher than are forecast within the model. On-site observations suggest that this could be a result of the proximity of Vicarage Road to the junction, particularly in the AM peak hour where cars are observed to be dropping-off at the Headfield C of E Junior School.

8.4.7 It can also be seen that, particularly in the PM peak hour, the queues on Junction 1 Arm 3 (Thornhill Road) are observed to be less than are forecast in the model.

8.4.8 Similarly, the queue length on Junction 2 Arm 2 (Forge Lane) is forecast to be significantly longer in the AM peak hour than was observed.

8.4.9 It is clear that both the observed and modelled junction operation results in queuing on key arms, however the traffic models do not fully reflect the on-site operation of the junction. Even so, it is reasonable to conclude from the models that the development-generated traffic is forecast to result in an adverse impact on the operation of the junction.

8.5 JUNCTION MITIGATION

8.5.1 A significant highway intervention has been forecast as being required by Systra's wide area modelling associated with the Local Plan by around 2033. That highway intervention has yet to be designed in detail, however would be required to deliver the wider Dewsbury Riverside allocation and forthcoming major development schemes local to the junction.

8.5.2 The initial appraisal of the likely timescale for such works is around 2033, which falls outside of the timescales for this first phase of development. Even so, the analysis of the junction demonstrates that this first phase does contribute towards the future requirements for improved traffic capacity.

8.5.3 For this reason, a financial contribution is considered to be reasonably applicable to Phase 1 of Dewsbury Riverside. The financial contribution would be towards a potentially significant junction improvement scheme which would be forthcoming in later stages of the Dewsbury Riverside scheme.

8.5.4 The formula for assessing the scale of this contribution is set out below:

$$\left(\frac{\text{X (cost of highway improvement scheme)}}{\text{Y (4,000 dwellings in HS61 site allocation)}} \right) \text{X} \text{ Z (number of dwellings proposed in each development (e.g., 350 dwellings))}$$

8.5.5 In the interim, discussions have also been held with highway development management to consider the observed queue lengths on the B6409. Given the interaction of vehicles accessing/ egressing Vicarage Road it has been agreed that yellow box markings on the

B6409 to reduce the interaction of queues could be appropriate. These proposals are shown within drawing DPL SK009A, attached at Appendix M. These works would be conditioned to be delivered by the Phase 1 development in addition to the financial contribution.

8.5.6 It should be noted that drawing DPL SK009A, Appendix M, also shows the swept path analysis of articulated HGVs entering and exiting Thornhill Road. Whilst consideration has been given to providing a physical island on Thornhill Road, the swept path analysis demonstrate that this option is not feasible.

8.6 SUMMARY

8.6.1 A significant highway intervention has been forecast to be required at the Forge Lane double mini-roundabout junction by around 2033 to accommodate the full Local Plan allocation.

8.6.2 Traffic modelling has been undertaken at the junction to assess Phase 1 in isolation. The traffic modelling forecasts that Phase 1 would contribute towards the requirement for this future scheme and, consequently, financial contribution is considered to be reasonably applicable to Phase 1 of Dewsbury Riverside. A formula for calculating this contribution has been agreed.

8.6.3 In the interim, discussions have also been held with highway development management to consider the observed queue lengths on the B6409. Given the interaction of vehicles accessing/ egressing Vicarage Road it has been agreed that yellow box markings on the B6409 to reduce the interaction of queues could be appropriate. These works would be conditioned to be delivered by the Phase 1 development in addition to the financial contribution.

9. CALDER ROAD TRAFFIC SIGNALS

9.1 INTRODUCTION

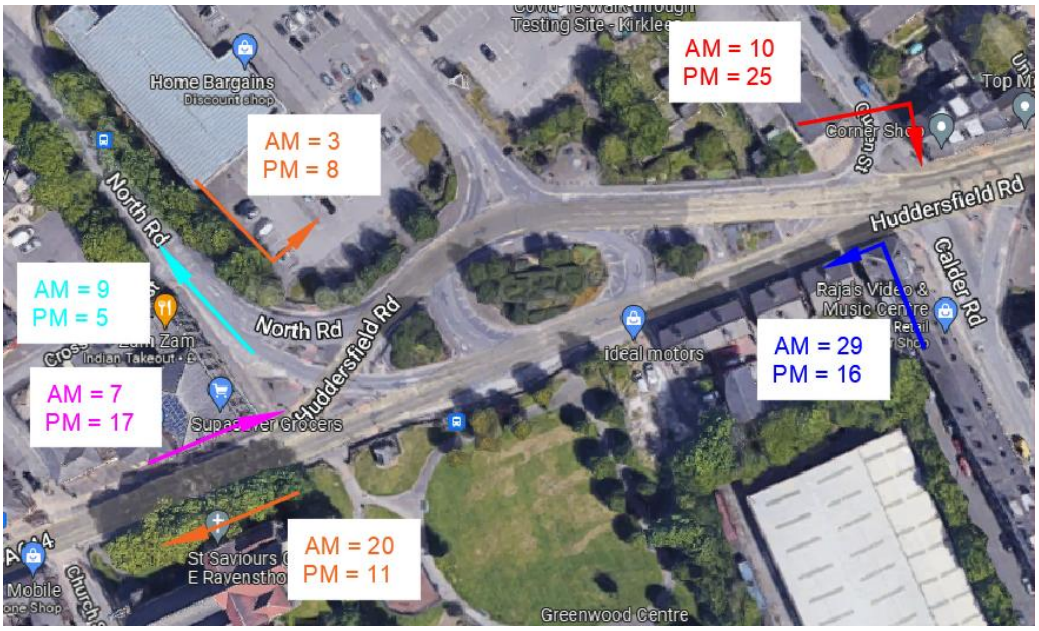
9.1.1 This chapter sets out the assessment and proposals relating to the Phase 1 development at the Calder Road traffic signals, which form part of the larger Calder Road gyratory.

9.2 FORECAST TRAFFIC IMPACT

9.2.1 A forecast traffic generation and distribution exercise was undertaken and presented within the approved Traffic Distribution Report (March 2022).

9.2.2 The forecast development generated traffic at the Calder Road traffic signals is set out below:

Extract 9.1 Huddersfield Road/ Calder Road/ North Road Gyratory – Traffic Flow Forecast AM and PM Peak Hours



9.2.3 The forecast traffic impact on the Calder Road traffic signals is 29 outbound and 10 inbound vehicle movements in the AM peak hour had 16 outbound and 25 inbound in the PM peak hour.

9.2.4 This quantum of forecast impact relating to the development proposals could occur at the full development build-out, i.e. at the end of the construction period.

9.3 TRAFFIC CAPACITY

9.3.1 As part of the M2D2L Transport Study an assessment was undertaken of the Ravensthorpe Gyratory. The Ravensthorpe Gyratory Assessment was undertaken based upon survey data from October 2018 and presented in a report in February2020. The study was also informed by on-site observations.

9.3.2 With regard to the overall study, the conclusions state that:

Onsite observations have confirmed that the A644 experiences large queues on each approach in the vicinity of the Ravensthorpe Gyratory, especially during the AM and PM peak periods.

The results of the modelling exercise suggest that the network operates well within capacity for the given demand. Therefore, it follows that queues approaching the gyratory are as a result of external factors, other than the available capacity at each junction.

Initial onsite observations suggest that additional queueing occurs on approaches to the junction as a result of:

• The proximity of the pedestrian crossings which are not synchronised to the main junction controller timings;

• Presence of bus stop facilities located within the main traffic streams; and

• General friction of traffic flow based on frontage activity.

9.3.3 Notably, the assessment also notes the following with regard to Calder Road:

• Observed green time of 20 seconds with a maximum of 10 vehicles passing the stop line.

• No discernible queuing observed at the stop line.

• The left turn onto the A644 was difficult for large vehicles which encroached onto the right turn lane to Calder Road.

9.3.4 There are existing waiting restrictions on Calder Road (consisting of double yellow lines and time restrictions) for around 35m from the stopline, which is around 6 to 7 vehicle lengths.

9.3.5 Whilst the queuing overall across the junction was observed, the queues on Calder Road were observed to dissipate, i.e. that arm was shown to be within capacity.

9.3.6 The report sets out the following queue length observations on Calder Road:

- AM mean maximum queue – 4 vehicles;
- AM maximum queue – 9 vehicles;
- PM mean maximum queue – 4 vehicles; and
- PM maximum queue 13 vehicles.

9.3.7 These observed queue lengths have been used in Section 9.4 to consider the scale of impact of the Phase 1 development-generated traffic.

9.4 JUNCTION IMPACT

9.4.1 The M2D2L junction assessment utilises a traffic signal cycle time of 88 seconds, which equates to roughly 40 traffic signal cycles per hour. The forecast increase in traffic on Calder Road (outbound) in the AM peak hour is 29 vehicles, which is slightly less than 1 vehicle per traffic signal cycle. Consequently, the forecast junction impact is an increase in the mean maximum queue of 4 vehicles to 5 vehicles and a potential increase in the maximum queue from 9 vehicle to 10 vehicles in the AM peak hour.

9.4.2 The forecast increase in outbound traffic in the PM peak hour is 16 vehicles, which is less than half a vehicle every traffic signal cycle. Consequently, the forecast impact in the PM peak hour is considered to be negligible.

9.4.3 Based upon the forecast junction impact mitigation measures were originally proposed within the Transport Assessment forming part of the planning application package. Since that time, additional discussions have been held with the UTMC team and they have requested the following measures as an alternative to those previously proposed:

- Revalidation and optimisation of SCOOT at Gyratory, including necessary surveys/assessment;
- Upgrading of zebra crossing to east of gyratory (adjacent to Spen Valley Road junction) to puffin crossing and linking to the gyratory signals;
- TRO alterations and associated relining/signing works to further restrict parking on Calder Road.

9.4.4 The estimated sum of these works is a total of £80,000 which would be payable by Phase 1 of Dewsbury Riverside in relation to works at this junction.

9.4.5 Given that there will be other schemes which could impact the junction, including later phases of Dewsbury Riverside, a flexible approach to the expenditure of this contribution is required and could provide input to one of the following options:

- Revalidation and optimisation of SCOOT at Ravensthorpe Gyratory including necessary surveys/assessment, upgrading/linking of the Zebra crossing immediately east of the Spen Valley Road junction to a linked puffin crossing, and extended waiting restrictions on the Calder Road approach;
- or, an alternative standalone scheme to improve the efficiency of the Ravensthorpe Gyratory traffic signals;
- or, to contribute towards a wider package of improvement measures at Ravensthorpe Gyratory traffic signals.

9.5 SUMMARY

9.5.1 Traffic impact at the junction Calder Road gyratory was accepted within the submitted Transport Assessment and a package of highway mitigation proposals submitted at that stage. Subsequent discussions have been held with UTMC and a revised package of works has been discussed. The total cost of those works is £80,000 and a flexible approach to their expenditure is proposed to allow either a standalone mitigation package or a larger package or works based upon pooled contributions to be delivered.

10. RAVENSTHORPE ROAD REFUGE ISLAND

10.1 INTRODUCTION

10.1.1 This chapter confirms the proposed works to deliver the Ravensthorpe Road refuge island.

10.2 LAYOUT

10.2.1 During discussions on the overall highway proposals for the Phase 1 scheme, a joint site visit was undertaken by the applicant and highway development management.

10.2.2 During the site visit it was observed that the western active travel access could benefit from a new refuge island to be provided on Ravensthorpe Road to the west of the site. The refuge island's location was considered and has been shown in drawing DPL SK170C, Appendix B.

10.2.3 The refuge island would be delivered as part of the Phase 1 development.

10.3 SUMMARY

10.3.1 During a site visit it was observed that the western active travel access could benefit from a new refuge island to be provided on Ravensthorpe Road to the west of the site.

10.3.2 The refuge island would be delivered as part of the Phase 1 development.

11. HIGHWAY ASSESSMENT UPDATES

11.1 INTRODUCTION

11.1.1 The approved Traffic Distribution Report set out the additional junction modelling which would be undertaken as a result of the updated traffic distribution parameters. The key traffic model updates are already included within the previous chapters of this report. There are two further offsite junctions for which updated junction model updates were stated as being required. This chapter summarises the updated assessments.

11.2 LEES HALL ROAD/ BREWERY LANE

11.2.1 The Traffic Distribution Report set out that the junction was previously forecast to benefit from significant spare traffic capacity. Even so, due to the manual redistribution of development-generated traffic flows updated junction models were recommended.

11.2.2 The model was previously run with the 2023 and 2030 base and 'with development' scenarios from the Systra wide-area traffic model. In order to update the models, the base scenarios have been kept, with the manually distributed development-generated traffic added on to form new 'with development' scenarios. The results are summarised below.

Table 11.1 Lees Hall Road/ Brewery Lane 2030 With Development (Manual Distribution)

	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
Brewery lane	0	5	0.23	0	5	0.27
Lees Hall Road E	1	8	0.52	1	6	0.35
Lees Hall Road W	0	6	0.24	1	7	0.43

11.2.3 It can be seen from Table 11.1 that the junction is forecast to operate with significant spare traffic capacity in 2030 with the full phase 1 development in place. The detailed model is attached at Appendix N.

11.3 LEES HALL ROAD/ INGHAM ROAD

11.3.1 The same methodology as has been used in Section 11.2 has been used for this junction. The results are summarised below.

Table 11.2 Lees Hall Road/ Ingham 2030 With Development (Manual Distribution)

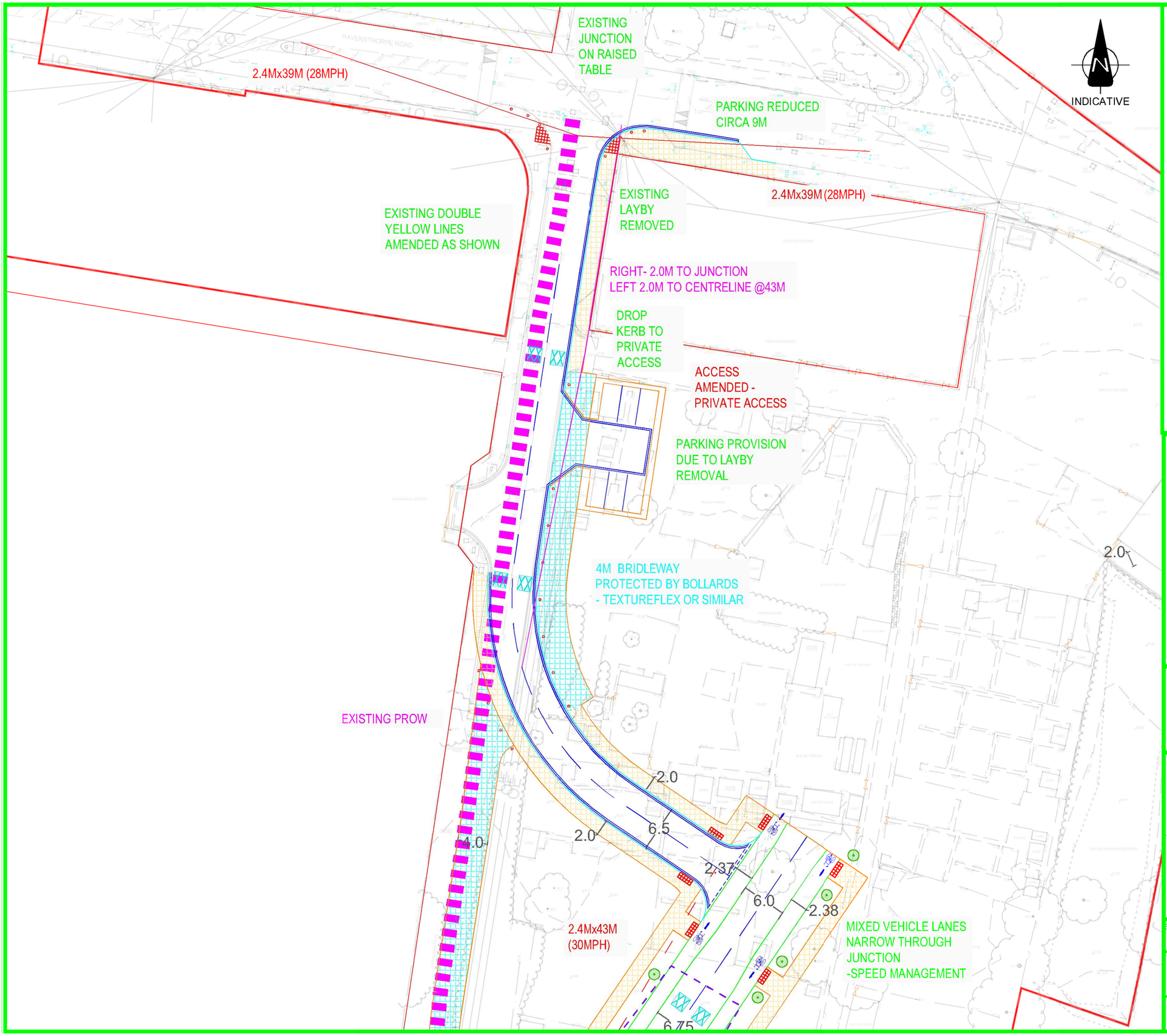
	AM			PM		
	Q (PCU)	Delay (s)	RFC	Q (PCU)	Delay (s)	RFC
Ingham Road	1	14	0.50	1	13	0.49
Lees Hall Road	0	0	0	0	0	0

11.3.2 It can be seen from Table 11.2 that the junction is forecast to operate with significant spare traffic capacity in 2030 with the full phase 1 development in place. The detailed model is attached at Appendix O.

11.4 SUMMARY

11.4.1 Updated traffic analysis has been undertaken at the residual offsite junctions highlighted within the approved Traffic Distribution Report. The updated traffic analysis forecasts no additional traffic impacts on the wider highway network.

APPENDIX A



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CLIENT:
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PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SITE ACCESS LAYOUT PLAN
PRELIMINARY SITE ACCESS
PRIOR TO LINK ROAD CONSTRUCTION

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK161	C

APPENDIX B

INDICATIVE

DPL SK170

DPL SK169

DPL SK165

DPL SK166

DPL SK167

DPL SK171

DPL SK168

EXISTING PROW

EXISTING PROW
PROW DIVERSION

POTENTIAL
FUTURE PROW
DIVERSION

NOTE: HATCHING SHOWN DIAGRAMMATICALLY - SURFACE COLOURS NOT SHOWN ON THESE PLANS

HALF-HEIGHT KERB
EDGING
KERB
WHITE LINING

BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT CUSHION/ TABLE

FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING

BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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TITLE:
SITE ACCESS LAYOUT PLAN
WIDE AREA AND KEY

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK164	C

ACCESS AMENDED -INDUSTRIAL UNIT

SUBSTATION RELOCATED

INDICATIVE

PARKING REDUCED CIRCA 9M

2.4Mx39M (28MPH)

4M WIDE BRIDLEWAY PROTECTED AT ENDS WITH BOLLARDS

EXISTING DOUBLE YELLOW LINES AMENDED AS SHOWN

DROP KERB TO PRIVATE ACCESS

ACCESS AMENDED - PRIVATE ACCESS

TURNING HEAD - DUE TO ROAD CLOSURE

CYCLOPS SIGNAL JUNCTION

INTERVISIBILITY (2.5M BEHIND ADVANCED STOPLINES & CROSSINGS)

ACCESS REMOVED - EXISTING PARKING SPACES REMOVED

DROPPED KERB RETAINED TO COBBLE AREA

FORWARD VISIBILITY - 43M

BRIDLEWAY
OTECTED BY BOLLARDS
EXTUREFLEX OR SIMILAR

SPEED CUSHION

2.4Mx43M (30MPH)

2.4Mx43M (30MPH)

DROPPED KERB ACCESS TO PRIVATE CAR PARK

2.4Mx43M (30MPH)

MIXED VEHICLE LANES NARROW THROUGH JUNCTION -SPEED MANAGEMENT

FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING

BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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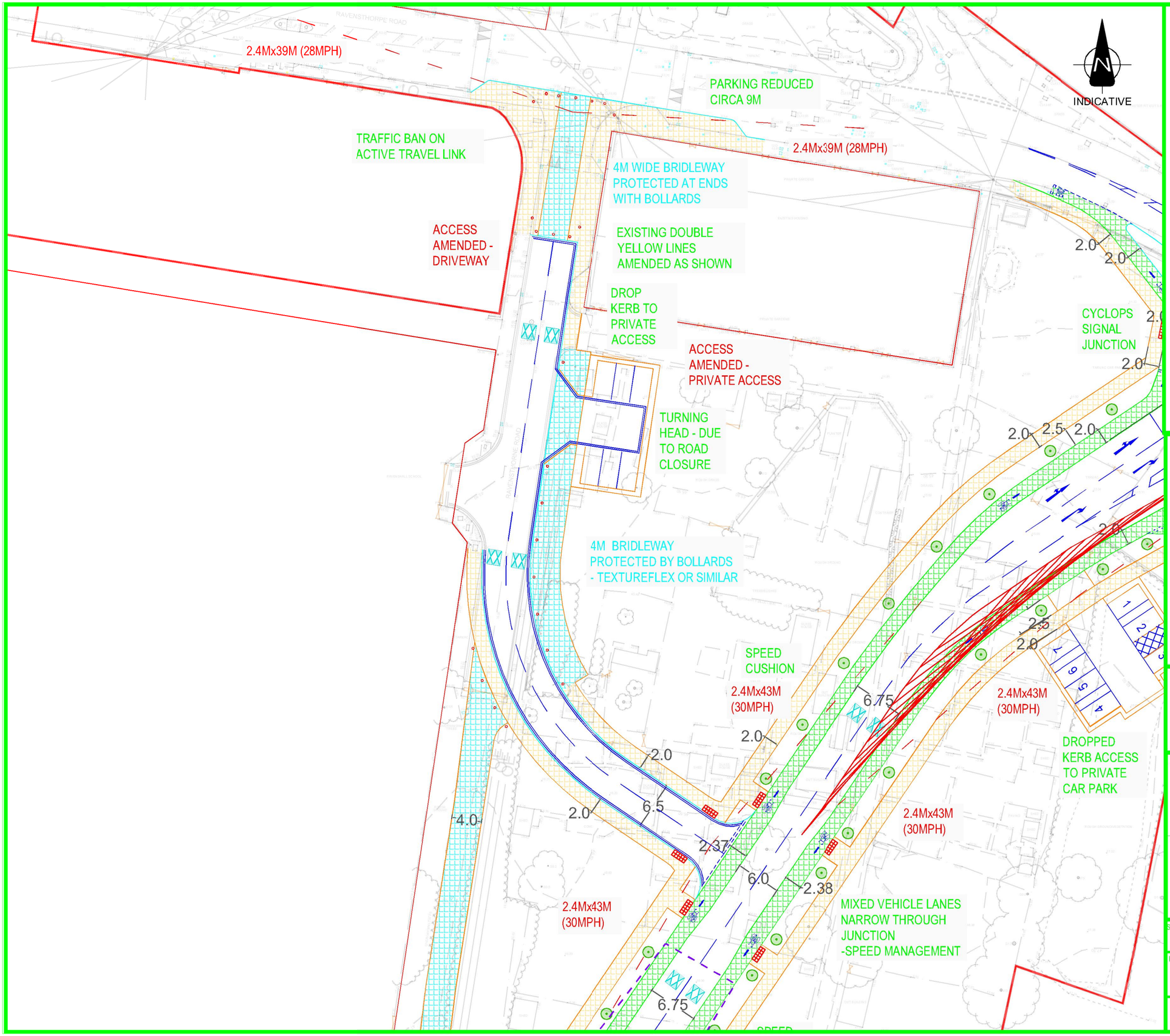
CLIENT: KMBC

PROJECT: DEWSBURY RIVERSIDE

TITLE: SITE ACCESS LAYOUT PLAN
CENTRAL GATEWAY SIGNAL JUNCTION

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK165	C



FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING
BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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TITLE: SITE ACCESS LAYOUT PLAN
PRELIMINARY ACCESS
FOLLOWING LINK ROAD CONSTRUCTION

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK166	C

CONNECTION TO EXISTING BRIDLEWAY

SPEED CUSHION

43M TO 2.5M INTERVISIBILITY

INDICATIVE

2.5
2.0
2.0
6.0
2.375
3.0

PARALLEL CROSSING ON RAISED TABLE

MIXED VEHICLE LANES NARROW THROUGH CROSSING -SPEED MANAGEMENT

CONNECTION TO ACTIVE TRAVEL ROUTES - TO BE DEFINED AT RM

5Mx10M HOLDING AREA

SHADING SHOWS PROPOSED BRIDLEWAY

SPEED CUSHION

5Mx10M HOLDING AREA

CONNECTION TO EXISTING BRIDLEWAY

PARALLEL CROSSING ON RAISED TABLE

MIXED VEHICLE LANES NARROW THROUGH CROSSING -SPEED MANAGEMENT

3.0
3.0

43M TO 2.5M INTERVISIBILITY

FORWARD VISIBILITY - 43M

6.5

4.0

4.0

HATCHED BRIDLEWAY TO BE TEXTUREFLEX SURFACE OR SIMILAR

SPEED CUSHION

CONNECTION TO EXISTING BRIDLEWAY

BRIDLEWAY SURFACED AND WIDENED TO 4M TO

FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING

BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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TITLE: SITE ACCESS LAYOUT PLAN
LINK ROAD

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK167	C

NARROW THROUGH CROSSING - SPEED MANAGEMENT

INDICATIVE

FORWARD VISIBILITY - 43M

SPEED CUSHION

FORWARD VISIBILITY - 43M

15M TO CIRCULATORY

ZEBRA/ PARALLEL CROSSINGS ON RAISED TABLES - SUBJECT TO DFT APPROVAL

2.0
2.5
2.0

3.0

R15.0

3.0

2.0

4.6

2.0

2.0
2.5
2.0

FORWARD VISIBILITY - 43M

43M VISIBILITY TO PEDESTRIANS

15M TO CIRCULATORY

15M TO CIRCULATORY

43M VISIBILITY TO PEDESTRIANS

R12.0

47°

Ø36.000

Ø26.400

1.5

4.8

R54.4
(ENTRY PATH)

4.5

3.0

COMPACT ROUNDABOUT WITH ORBITAL CYCLE ROUTE

FORWARD VISIBILITY - 43M

15M TO CIRCULATORY

SPEED CUSHION

FORWARD VISIBILITY - 43M

SPEED CUSHION

CONNECTION TO EXISTING BRIDLEWAY

CONNECTION TO EXISTING BRIDLEWAY

INDICATIVE CROSSING - PART OF LATER PHASE

FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING
BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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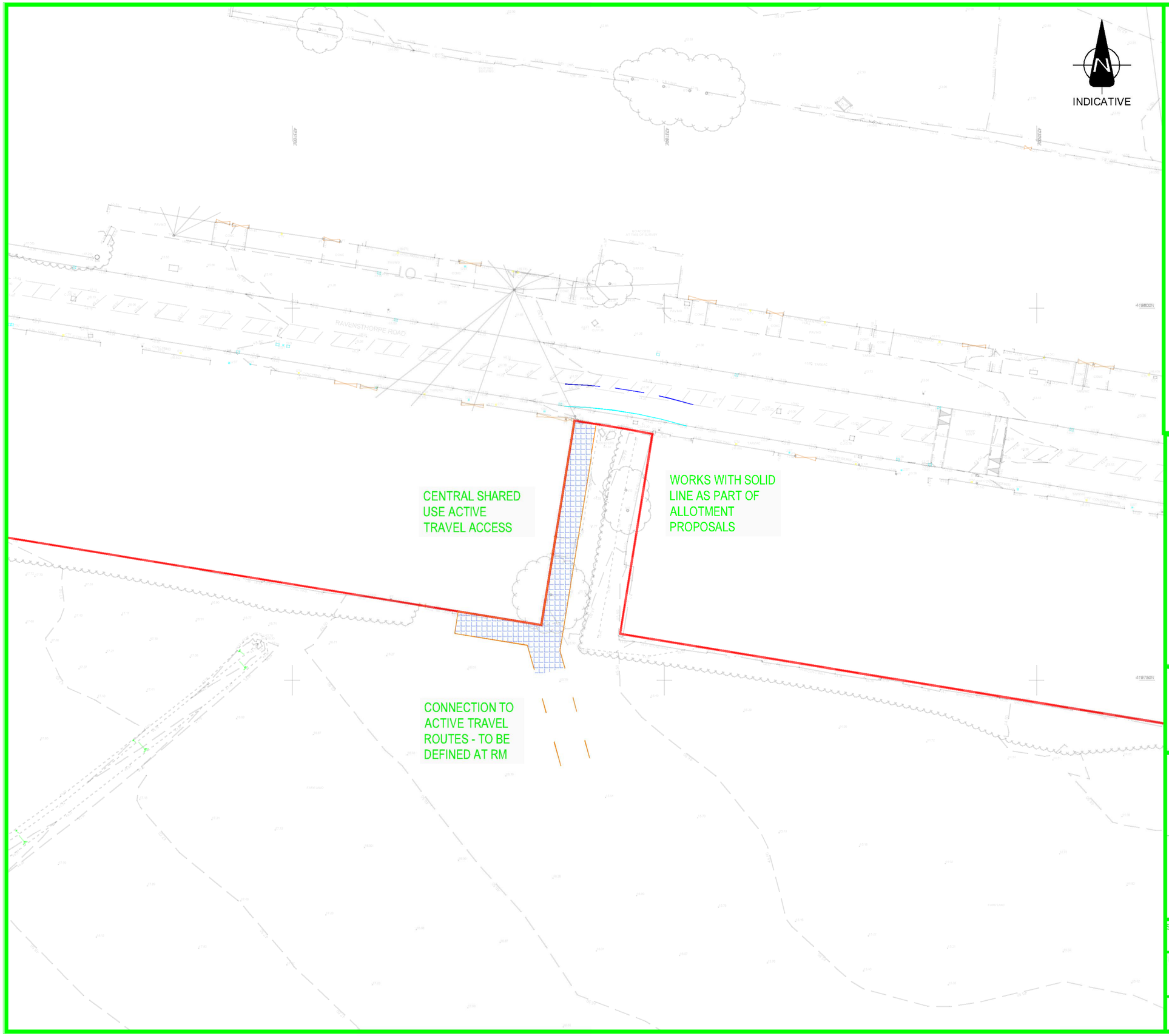
TITLE: SITE ACCESS LAYOUT PLAN
COMPACT ROUNDABOUT

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK168	C



FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING

BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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PROJECT:
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TITLE:
SITE ACCESS LAYOUT PLAN
ALLOTMENT ACTIVE TRAVEL ACCESS

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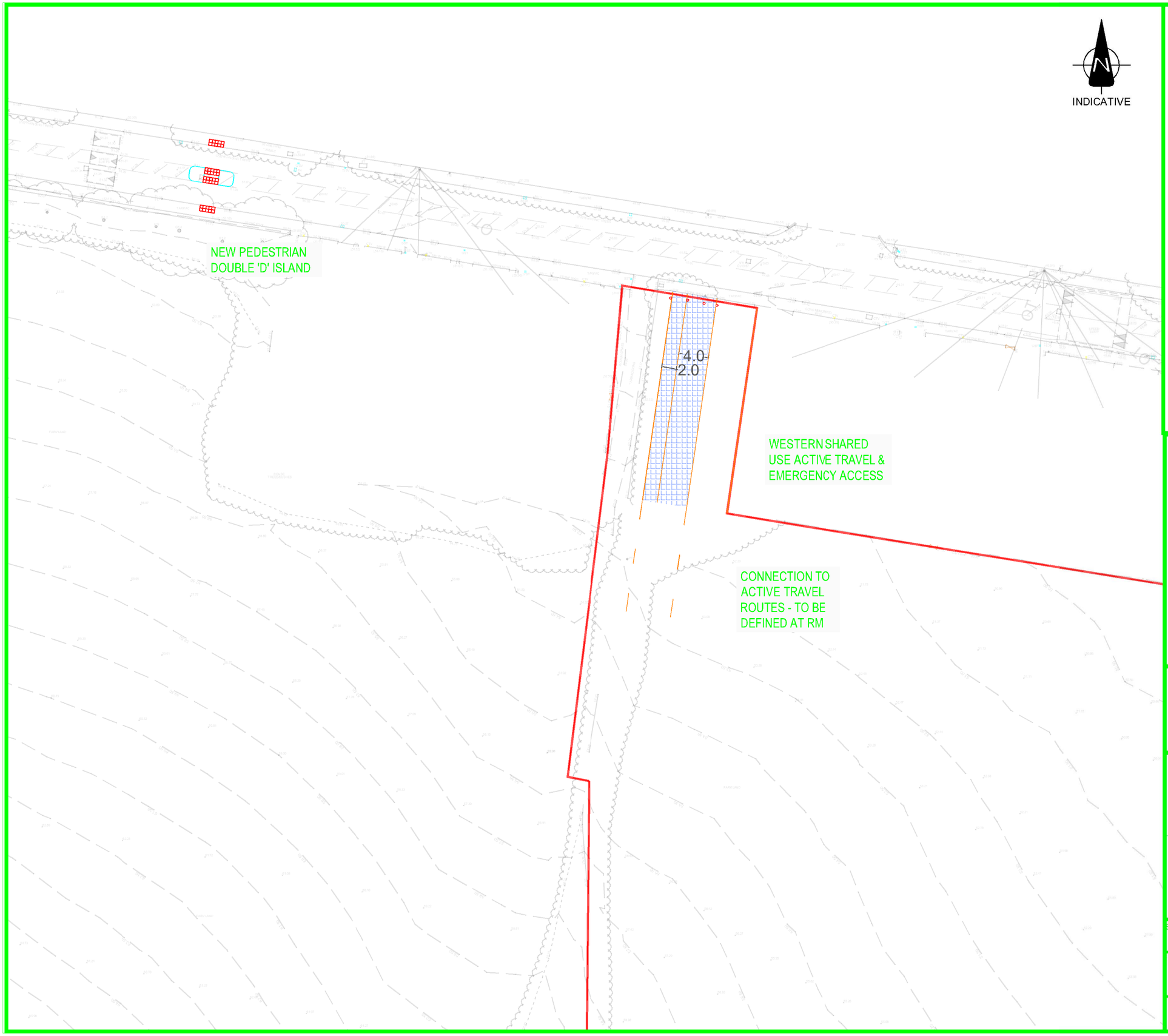
PROJECT No:	DRAWING No:	REV:
2020213	DPL SK169	C



FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING
BRIDLEWAY FEATURE
TACTILE PAVING
SPEED MANAGEMENT

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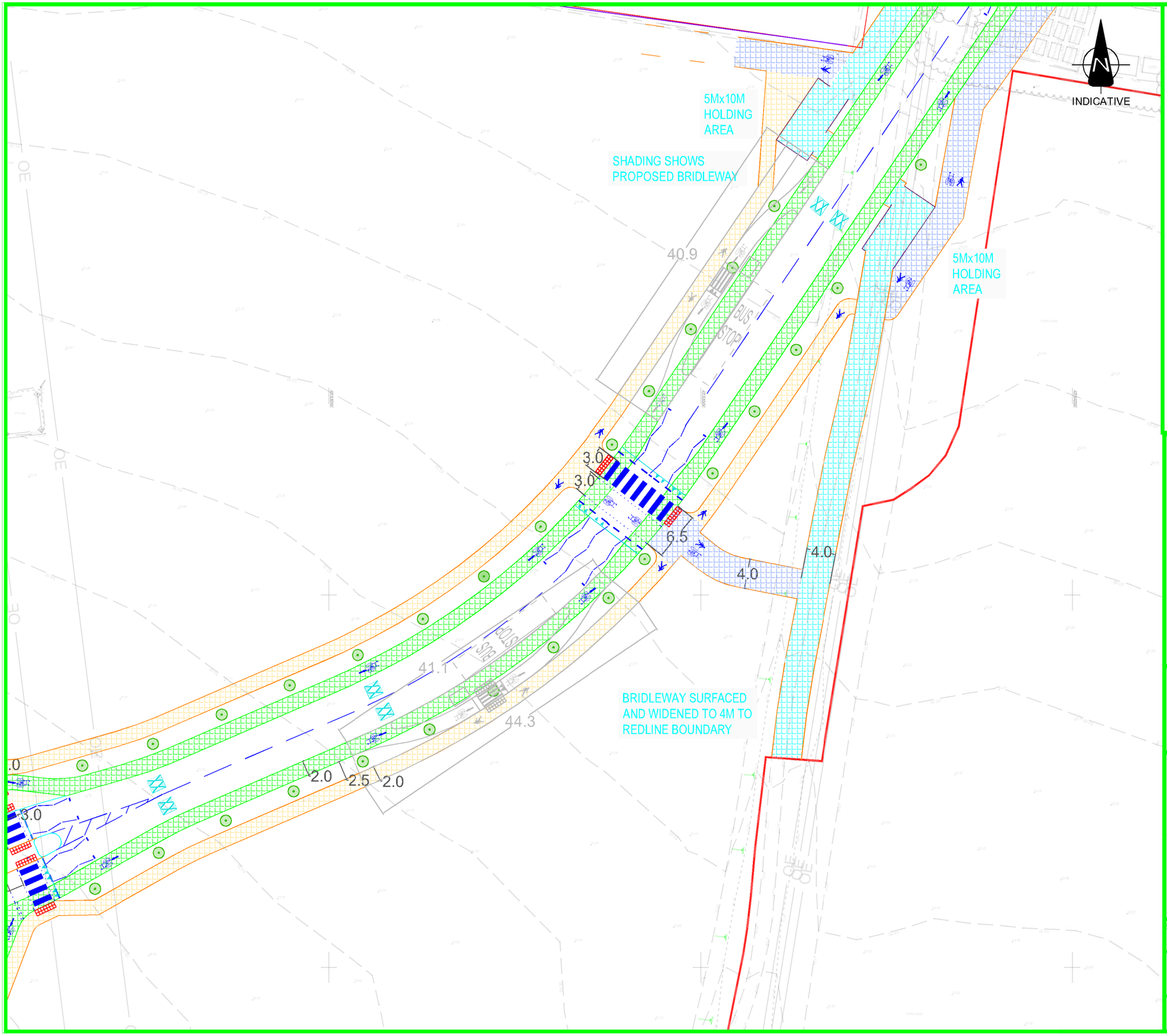
CLIENT: KMBC

PROJECT: DEWSBURY RIVERSIDE

TITLE: SITE ACCESS LAYOUT PLAN
WESTERN ACTIVE TRAVEL ACCESS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK170	C



FOOTWAY
CYCLE TRACK
BRIDLEWAY
SHARED USE
HALF HEIGHT KERB
EDGING
KERB
WHITE LINING
BUS FEATURE
BRIDLEWAY FEATURE
TACTILE PAVING
SPEED CUSHION

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CLIENT:
KMBC

PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SITE ACCESS LAYOUT PLAN
LINK ROAD
SHOWING FUTURE BUS STOP OPTION

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK171	C

APPENDIX C

EXISTING DOUBLE
YELLOW LINES
AMENDED AS SHOWN

4M BRIDLEWAY
PROTECTED BY BOLLARDS
- TEXTUREFLEX OR SIMILAR

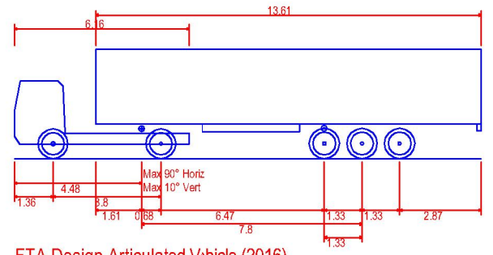
2.0
2.0
6.5
4.0
2.37
6.0
2.38
6.75

EXISTING DOUBLE
YELLOW LINES
AMENDED AS SHOWN

4M BRIDLEWAY
PROTECTED BY BOLLARDS
- TEXTUREFLEX OR SIMILAR

2.0
2.0
6.5
4.0
2.37
6.0
2.38
6.75

INDICATIVE



FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

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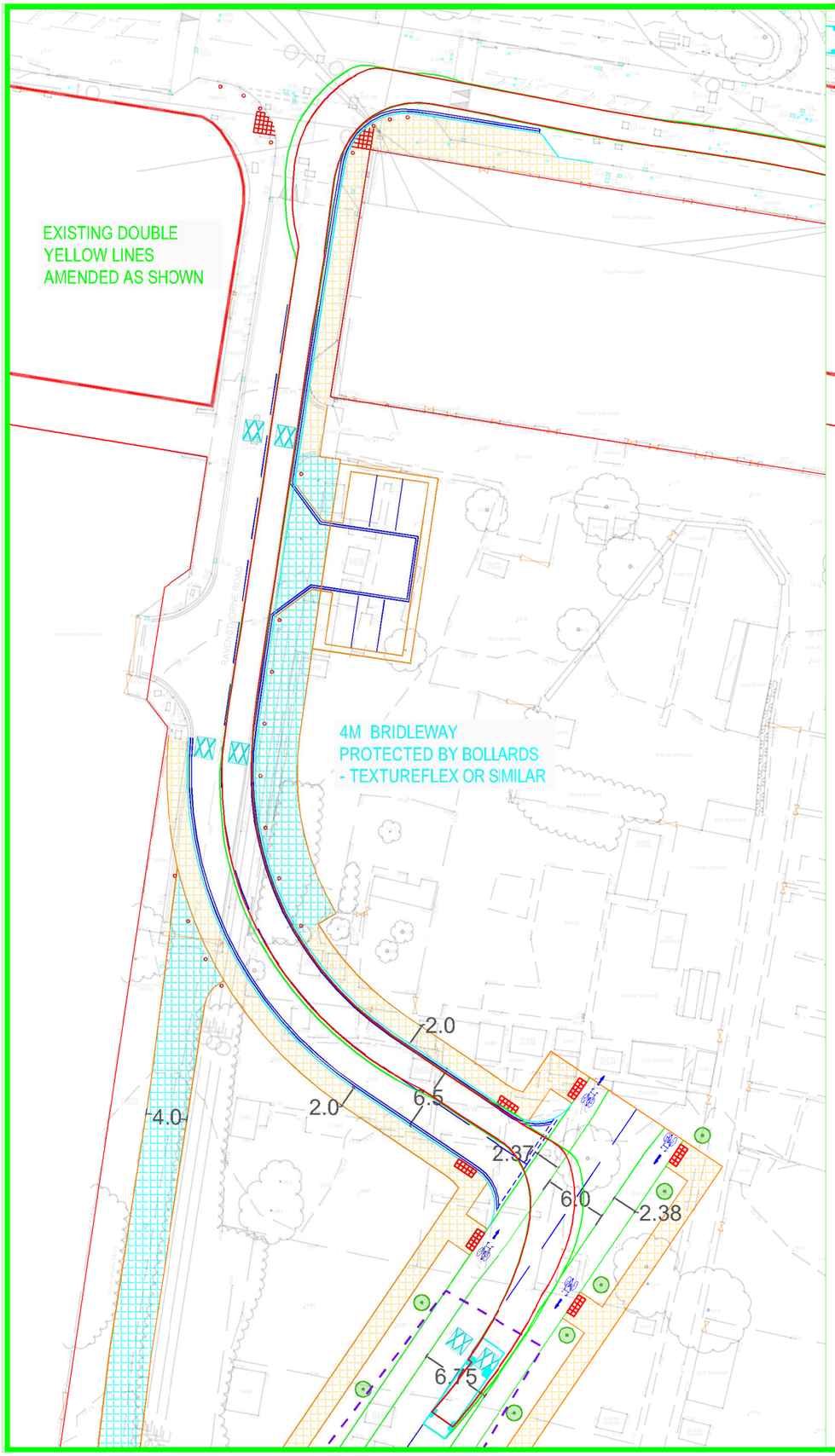
CLIENT:
KMBC

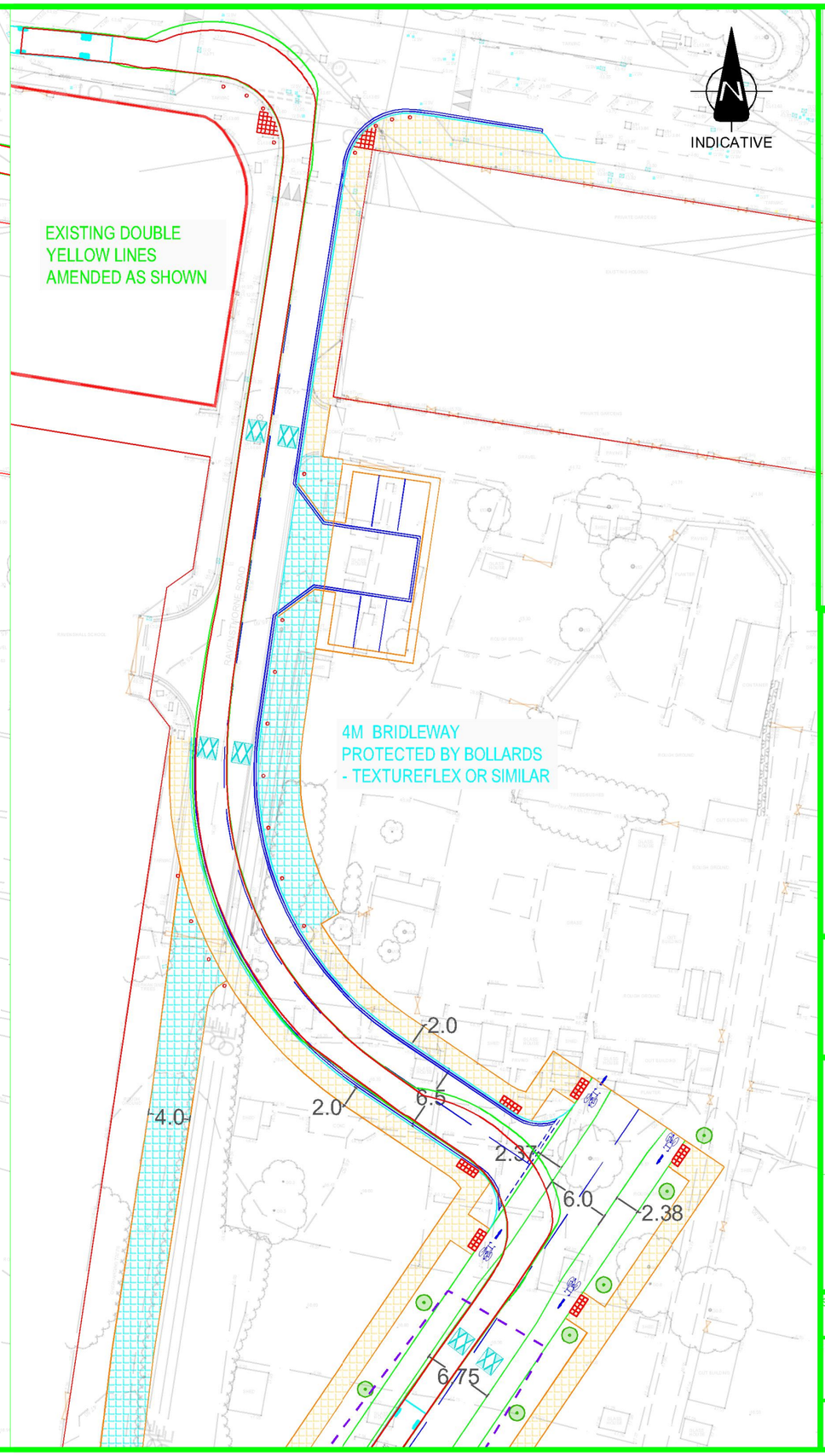
PROJECT:
DEWSBURY RIVERSIDE

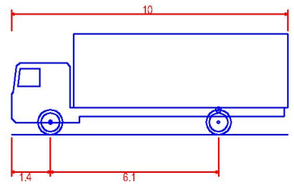
TITLE:
SITE ACCESS LAYOUT PLAN
PRELIMINARY SITE ACCESS
SWEPT PATH - ARTICULATED HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK162	C







FTA Design 13/18 Tonne Rigid Vehicle (2016)

Overall Length	10.000m
Overall Width	2.550m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	11.000m

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CLIENT: KMBC

PROJECT: DEWSBURY RIVERSIDE

TITLE: SITE ACCESS LAYOUT PLAN
PRELIMINARY SITE ACCESS
SWEPT PATH - RIGID HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

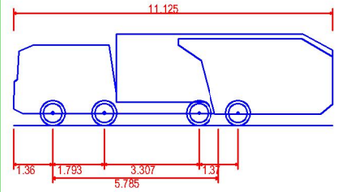
PROJECT No:	DRAWING No:	REV:
2020213	DPL SK163	C

EXISTING DOUBLE
YELLOW LINES
AMENDED AS SHOWN

4M BRIDLEWAY
PROTECTED BY BOLLARDS
- TEXTUREFLEX OR SIMILAR

2.0
2.0
6.5
4.0
2.37
6.0
2.38
6.75

INDICATIVE



Phoenix 2-25W (with Volvo FM12 chassis)	
Overall Length	11.125m
Overall Width	2.530m
Overall Body Height	3.205m
Min Body Ground Clearance	0.410m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.250m

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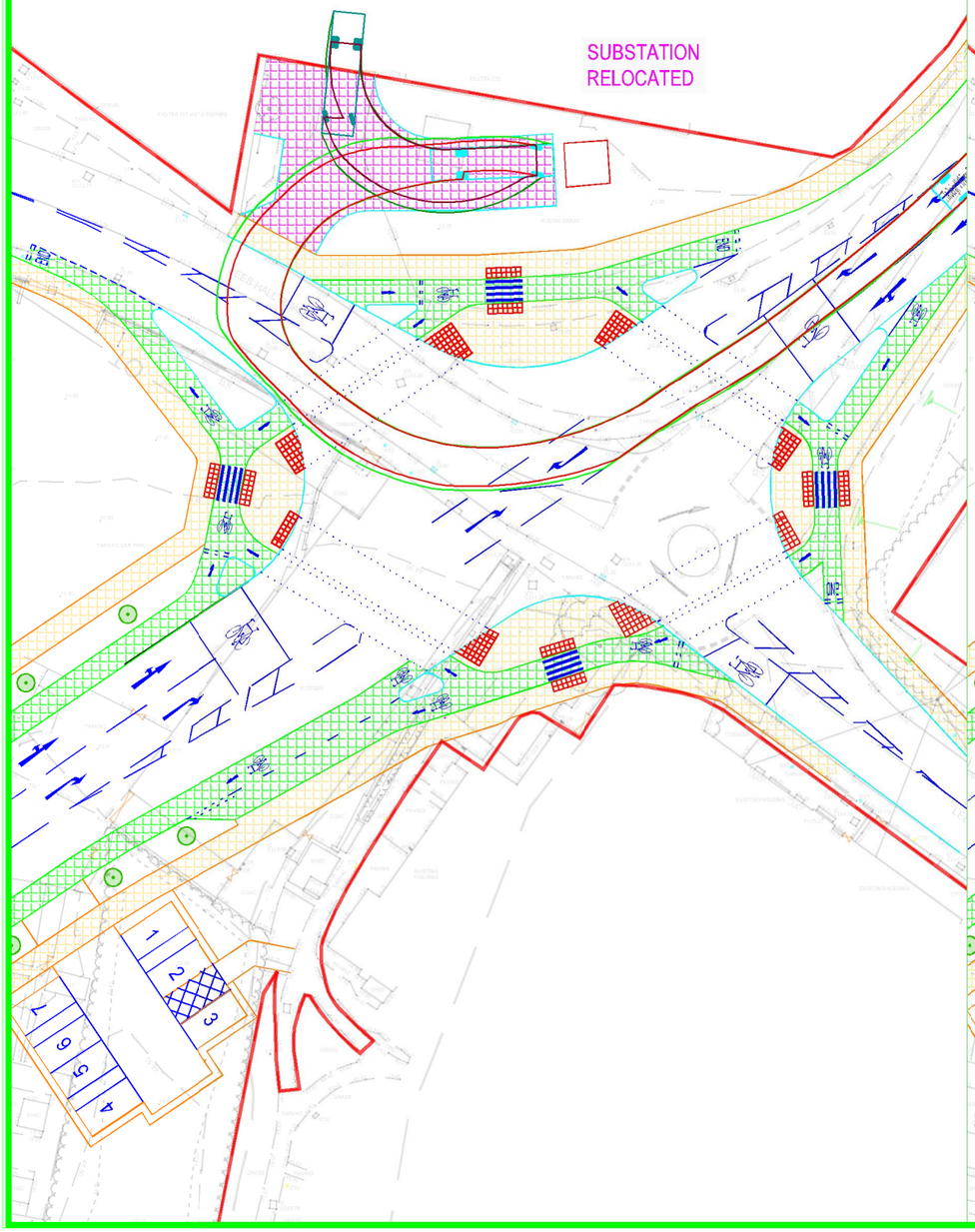
CLIENT:
KMBC

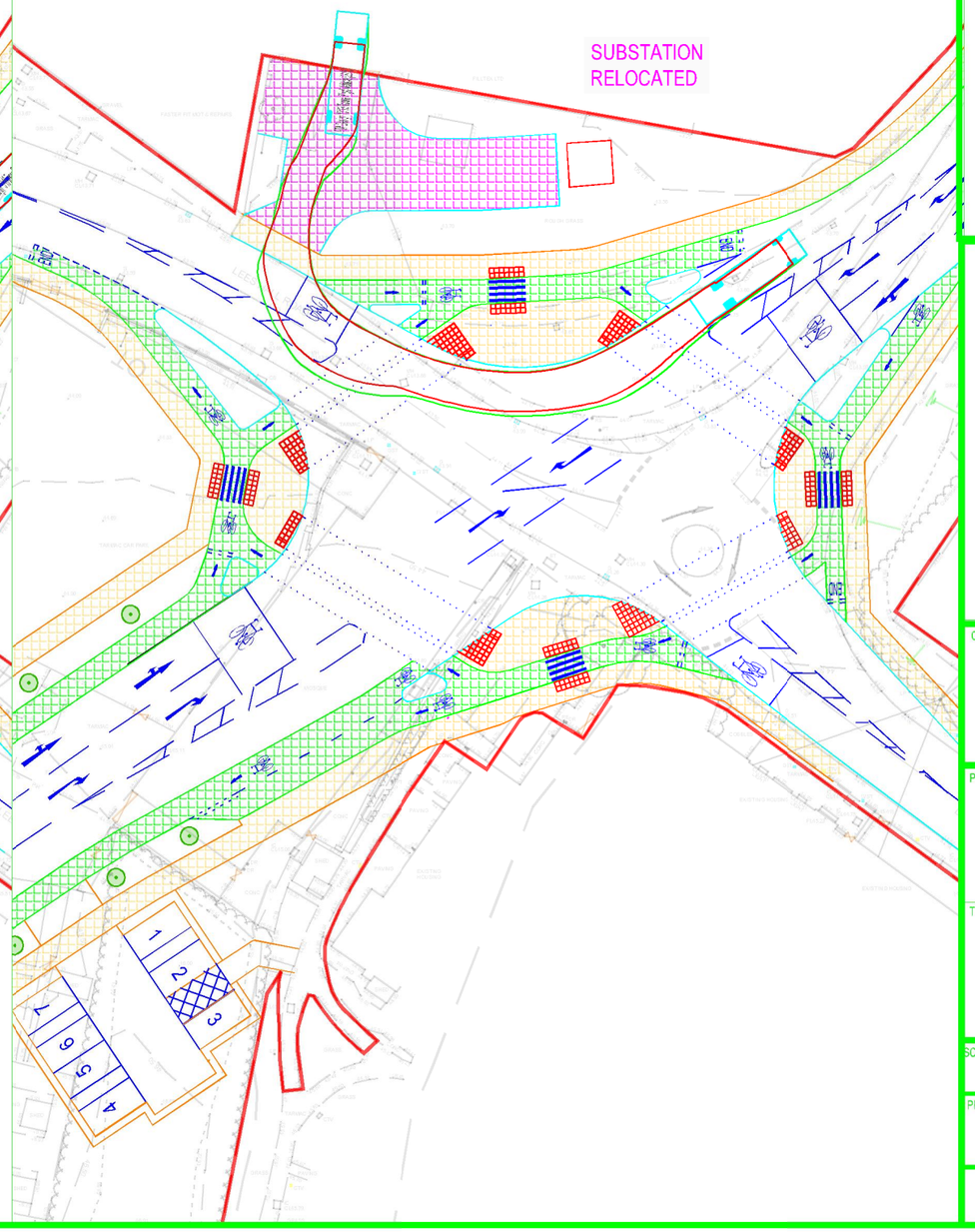
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SITE ACCESS LAYOUT PLAN
PRELIMINARY SITE ACCESS
SWEPT PATH - TURNING HEAD

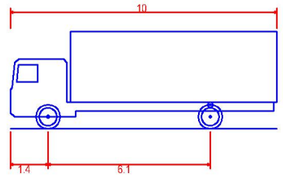
SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK175	C





INDICATIVE



FTA Design 13/18 Tonne Rigid Vehicle (2016)

Overall Length	10.000m
Overall Width	2.550m
Overall Body Height	3.645m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	11.000m

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CLIENT:
KMBC

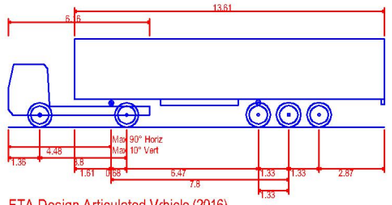
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SITE ACCESS LAYOUT PLAN
CENTRAL GATEWAY SIGNAL JUNCTION
SWEPT PATH - INDUSTRIAL ACCESS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK176	C

INDICATIVE



FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

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CLIENT:
KMBC

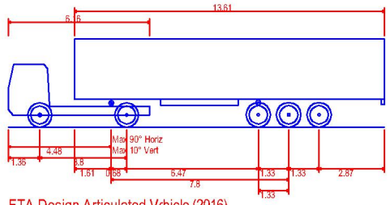
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SWEPT PATH ANALYSIS
ARTICULATED HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK177	C

INDICATIVE



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Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

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CLIENT:
KMBC

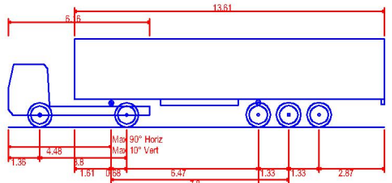
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SWEPT PATH ANALYSIS
ARTICULATED HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK178	C

INDICATIVE



FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

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CLIENT: KMBC

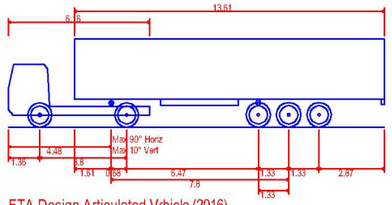
PROJECT: DEWSBURY RIVERSIDE

TITLE: SWEPT PATH ANALYSIS ARTICULATED HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK179	C

INDICATIVE



FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

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CLIENT:
KMBC

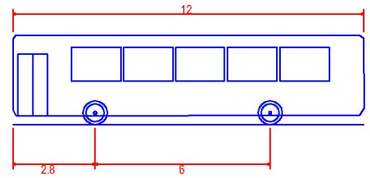
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SWEPT PATH ANALYSIS
ARTICULATED HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK180	C

INDICATIVE



'Standard' Rigid Bus	
Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	3.069m
Min Body Ground Clearance	0.309m
Track Width	2.350m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

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http://www.devplanning.co.uk

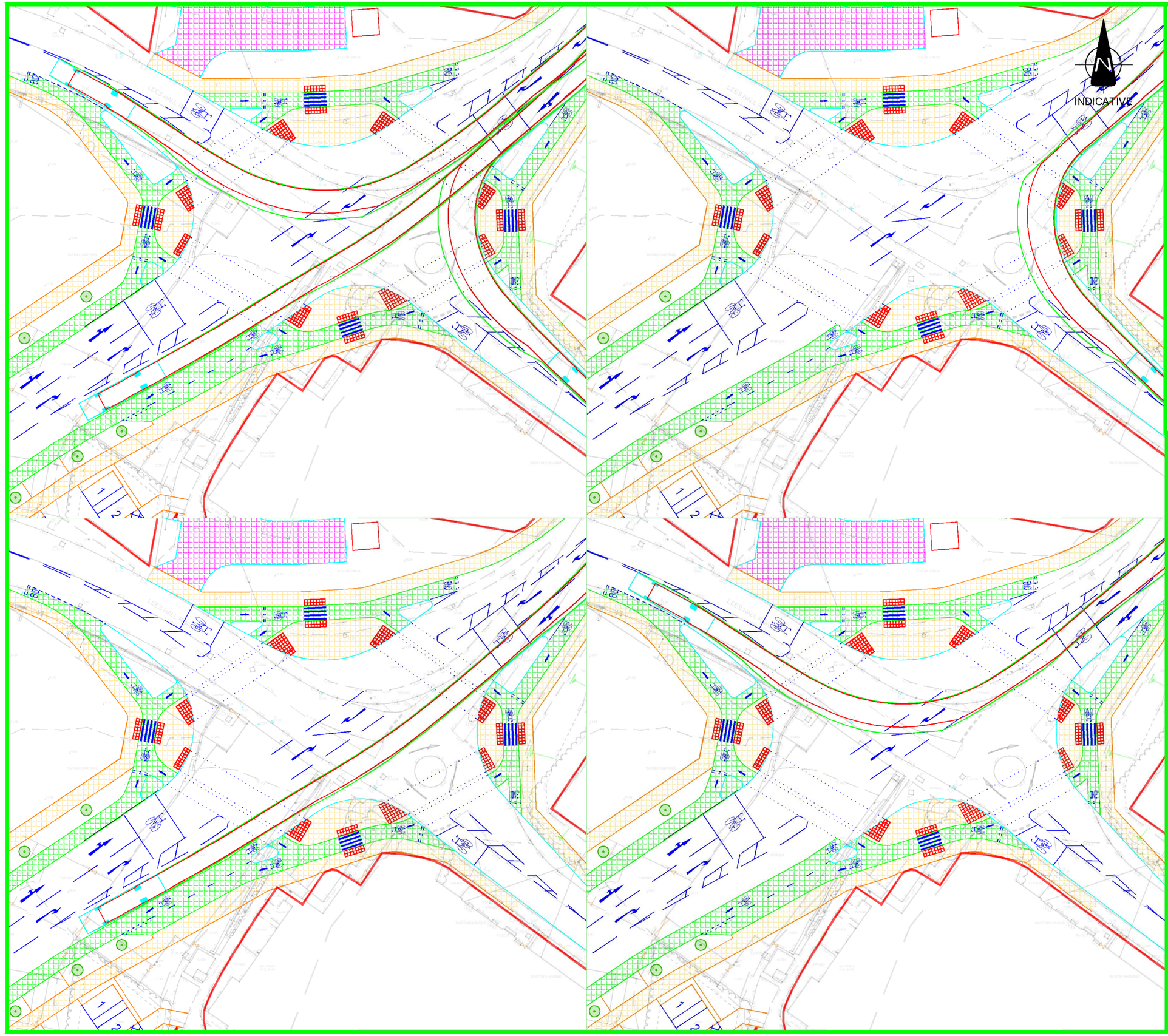
CLIENT: KMBC

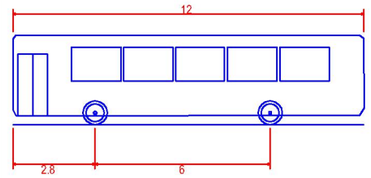
PROJECT: DEWSBURY RIVERSIDE

TITLE: SWEPT PATH ANALYSIS
SINGLE DECKER BUS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK181	C





'Standard' Rigid Bus	
Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	3.069m
Min Body Ground Clearance	0.309m
Track Width	2.350m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

Tel : 01924 684 000 Email : info@devplanning.co.uk
http://www.devplanning.co.uk

CLIENT:
KMBC

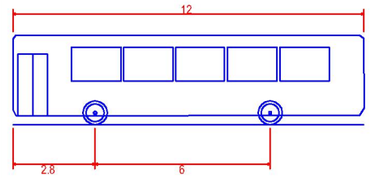
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SWEPT PATH ANALYSIS
SINGLE DECKER BUS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK182	C

INDICATIVE



'Standard' Rigid Bus	
Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	3.069m
Min Body Ground Clearance	0.309m
Track Width	2.350m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

Tel : 01924 684 000 Email : info@devplanning.co.uk
http://www.devplanning.co.uk

CLIENT: KMBC

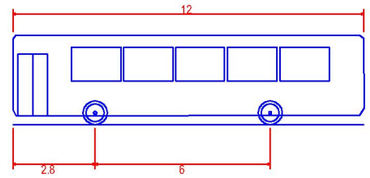
PROJECT: DEWSBURY RIVERSIDE

TITLE: SWEPT PATH ANALYSIS
SINGLE DECKER BUS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK183	C

INDICATIVE



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Overall Length	12.000m
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Overall Body Height	3.069m
Min Body Ground Clearance	0.309m
Track Width	2.350m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

Tel : 01924 684 000 Email : info@devplanning.co.uk
http://www.devplanning.co.uk

CLIENT: KMBC

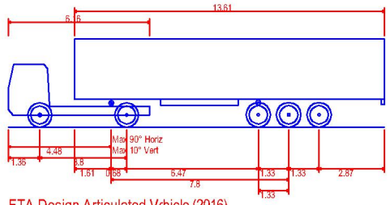
PROJECT: DEWSBURY RIVERSIDE

TITLE: SWEPT PATH ANALYSIS
SINGLE DECKER BUS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK184	C

INDICATIVE



FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m

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CLIENT:
KMBC

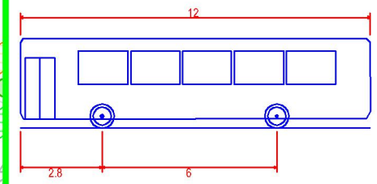
PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SWEPT PATH ANALYSIS
ARTICULATED HGV

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK185	C

INDICATIVE



'Standard' Rigid Bus	
Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	3.069m
Min Body Ground Clearance	0.309m
Track Width	2.350m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

Tel : 01924 684 000 Email : info@devplanning.co.uk
http://www.devplanning.co.uk

CLIENT:
KMBC

PROJECT:
DEWSBURY RIVERSIDE

TITLE:
SWEPT PATH ANALYSIS
SINGLE DECKER BUS

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/09/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK186	C

APPENDIX D

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: 221027 Ravensthorpe Road Initial Access (T Junction).j10
Path: C:\Users\DavidSagstad\Dropbox\Working Back Up\Projects\2020213 Dewsbury Riverside\Analysis\Junction Assessment
Report generation date: 27/10/2022 16:10:44

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2022 Base Count											
Stream B-AC	D6	0.1	10.92	0.11	B	106 %	D7	0.1	11.04	0.11	B	102 %
Stream C-AB		0.1	5.93	0.06	A	[Stream B-AC]		0.1	5.83	0.06	A	[Stream B-AC]
	2022 Base PLus 350 Units											
Stream B-AC	D10	1.1	21.61	0.50	C	19 %	D11	0.6	16.85	0.34	C	38 %
Stream C-AB		0.2	6.09	0.09	A	[Stream B-AC]		0.4	6.25	0.15	A	[Stream B-AC]

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

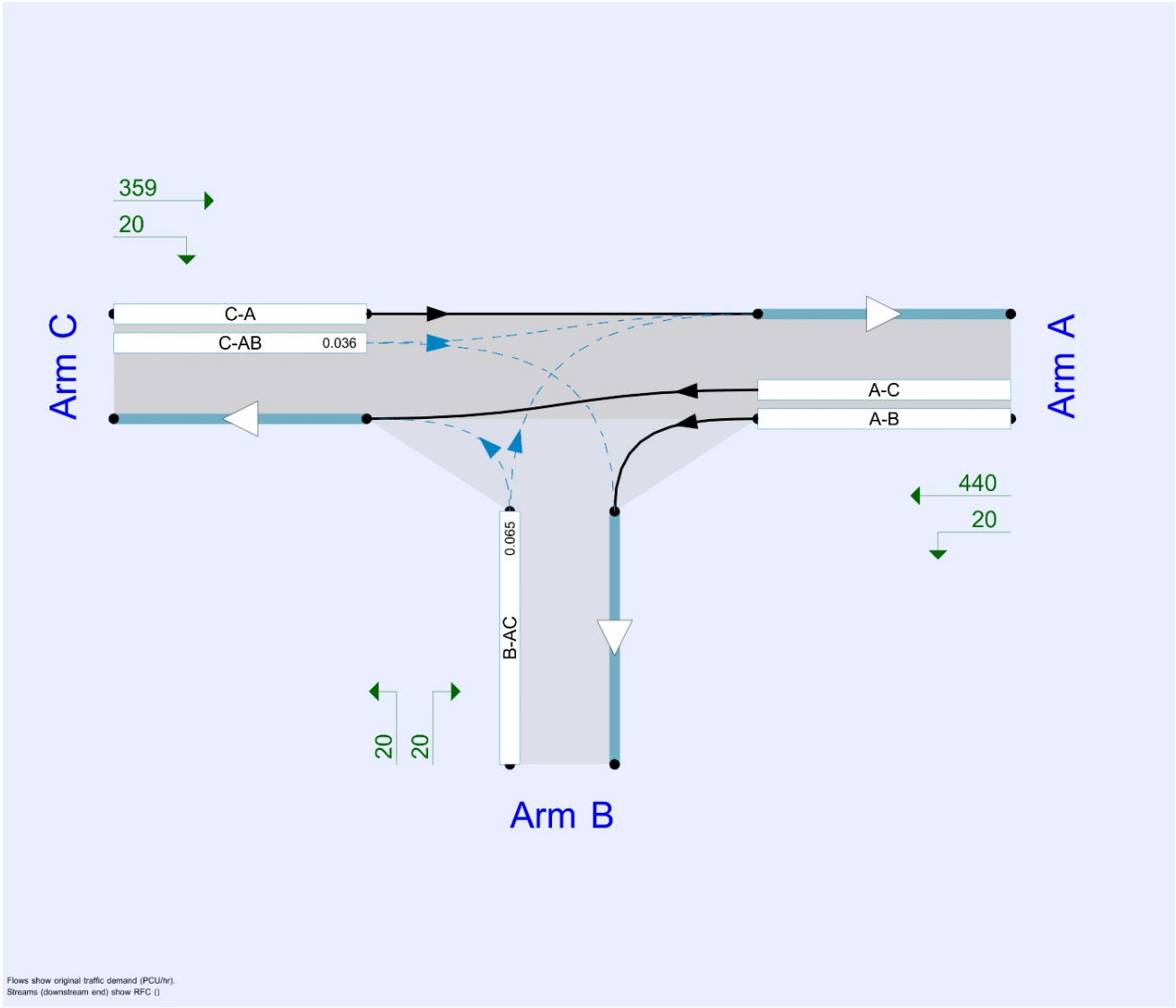
File summary

File Description

Title	
Location	
Site number	
Date	31/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\DavidSagstad
Description	

Units

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



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	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75					✓	Delay	0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2022 Base Count	AM	Note - Side Road Flows Estimated	ONE HOUR	08:00	09:30	15	✓		
D7	2022 Base Count	PM	Note - Side Road Flows Estimated	ONE HOUR	17:00	18:30	15	✓		
D8	350 Units	AM		ONE HOUR	08:00	09:30	15			
D9	350 Units	PM		ONE HOUR	17:00	18:30	15			
D10	2022 Base PLus 350 Units	AM		ONE HOUR	08:00	09:30	15	✓	Simple	D6+D8
D11	2022 Base PLus 350 Units	PM		ONE HOUR	17:00	18:30	15	✓	Simple	D7+D9

Analysis Set Details

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

2022 Base Count, AM

Data Errors and Warnings

No errors or warnings

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		0.75	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	106	Stream B-AC	0.75	A

Arms

Arms

Arm	Name	Description	Arm type
A	Ravensthorpe Road E		Major
B	Development Access (Ravensthorpe Road S)		Minor
C	Ravenstorpe Road W		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	6.00			0.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.35	29	16

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	512	0.093	0.236	0.148	0.337
B-C	656	0.101	0.254	-	-
C-B	574	0.222	0.222	-	-

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	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2022 Base Count	AM	Note - Side Road Flows Estimated	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	460	100.000
B		ONE HOUR	✓	40	100.000
C		ONE HOUR	✓	379	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	20	440
	B	20	0	20
	C	359	20	0

Proportions

		To		
		A	B	C
From	A	0.00	0.04	0.96
	B	0.50	0.00	0.50
	C	0.95	0.05	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Average PCU Per Veh

		To		
		A	B	C
From	A	1.100	1.100	1.100
	B	1.100	1.100	1.100
	C	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	346	346
	B	30	30
	C	285	285
08:15-08:30	A	414	414
	B	36	36
	C	341	341
08:30-08:45	A	506	506
	B	44	44
	C	417	417
08:45-09:00	A	506	506
	B	44	44
	C	417	417
09:00-09:15	A	414	414
	B	36	36
	C	341	341
09:15-09:30	A	346	346
	B	30	30
	C	285	285

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.11	10.92	0.1	B	37	55
C-AB	0.06	5.93	0.1	A	35	52
C-A					313	470
A-B					18	28
A-C					404	606

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	8	462	0.065	30	0.0	0.1	9.166	A
C-AB	25	6	693	0.036	24	0.0	0.1	5.925	A
C-A	261	65			261				
A-B	15	4			15				
A-C	331	83			331				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	9	439	0.082	36	0.1	0.1	9.827	A
C-AB	33	8	718	0.046	33	0.1	0.1	5.777	A
C-A	308	77			308				
A-B	18	4			18				
A-C	396	99			396				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	11	407	0.108	44	0.1	0.1	10.903	B
C-AB	46	12	755	0.061	46	0.1	0.1	5.584	A
C-A	371	93			371				
A-B	22	6			22				
A-C	484	121			484				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	11	407	0.108	44	0.1	0.1	10.915	B
C-AB	46	12	755	0.061	46	0.1	0.1	5.586	A
C-A	371	93			371				
A-B	22	6			22				
A-C	484	121			484				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	9	439	0.082	36	0.1	0.1	9.838	A
C-AB	33	8	718	0.046	33	0.1	0.1	5.780	A
C-A	308	77			308				
A-B	18	4			18				
A-C	396	99			396				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	8	461	0.065	30	0.1	0.1	9.183	A
C-AB	25	6	693	0.036	25	0.1	0.1	5.933	A
C-A	261	65			261				
A-B	15	4			15				
A-C	331	83			331				

2022 Base Count, PM

Data Errors and Warnings

No errors or warnings

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		0.74	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	102	Stream B-AC	0.74	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2022 Base Count	PM	Note - Side Road Flows Estimated	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	464	100.000
B		ONE HOUR	✓	40	100.000
C		ONE HOUR	✓	402	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	20	444
	B	20	0	20
	C	382	20	0

Proportions

		To		
		A	B	C
From	A	0.00	0.04	0.96
	B	0.50	0.00	0.50
	C	0.95	0.05	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Average PCU Per Veh

		To		
		A	B	C
From	A	1.100	1.100	1.100
	B	1.100	1.100	1.100
	C	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	349	349
	B	30	30
	C	303	303
17:15-17:30	A	417	417
	B	36	36
	C	361	361
17:30-17:45	A	511	511
	B	44	44
	C	443	443
17:45-18:00	A	511	511
	B	44	44
	C	443	443
18:00-18:15	A	417	417
	B	36	36
	C	361	361
18:15-18:30	A	349	349
	B	30	30
	C	303	303

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.11	11.04	0.1	B	37	55
C-AB	0.06	5.83	0.1	A	36	54
C-A					333	499
A-B					18	28
A-C					407	611

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	8	459	0.066	30	0.0	0.1	9.221	A
C-AB	25	6	705	0.036	25	0.0	0.1	5.828	A
C-A	277	69			277				
A-B	15	4			15				
A-C	334	84			334				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	9	436	0.083	36	0.1	0.1	9.904	A
C-AB	34	8	733	0.046	34	0.1	0.1	5.665	A
C-A	327	82			327				
A-B	18	4			18				
A-C	399	100			399				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	11	403	0.109	44	0.1	0.1	11.027	B
C-AB	48	12	773	0.063	48	0.1	0.1	5.463	A
C-A	394	99			394				
A-B	22	6			22				
A-C	489	122			489				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	11	403	0.109	44	0.1	0.1	11.037	B
C-AB	49	12	774	0.063	49	0.1	0.1	5.465	A
C-A	394	99			394				
A-B	22	6			22				
A-C	489	122			489				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	9	436	0.083	36	0.1	0.1	9.918	A
C-AB	34	9	733	0.046	34	0.1	0.1	5.670	A
C-A	327	82			327				
A-B	18	4			18				
A-C	399	100			399				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	8	459	0.066	30	0.1	0.1	9.239	A
C-AB	26	6	705	0.036	26	0.1	0.1	5.832	A
C-A	277	69			277				
A-B	15	4			15				
A-C	334	84			334				

2022 Base PLus 350 Units, AM

Data Errors and Warnings

No errors or warnings

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		3.74	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	19	Stream B-AC	3.74	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	Relationship type	Relationship
D10	2022 Base PLus 350 Units	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D6+D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	493	100.000
B		ONE HOUR	✓	165	100.000
C		ONE HOUR	✓	389	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	53	440
	B	116	0	49
	C	359	30	0

Proportions

		To		
		A	B	C
From	A	0.00	0.11	0.89
	B	0.70	0.00	0.30
	C	0.92	0.08	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.100	1.100
	B	1.100	1.000	1.100
	C	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	371	371
	B	124	124
	C	293	293
08:15-08:30	A	443	443
	B	148	148
	C	350	350
08:30-08:45	A	543	543
	B	182	182
	C	428	428
08:45-09:00	A	543	543
	B	182	182
	C	428	428
09:00-09:15	A	443	443
	B	148	148
	C	350	350
09:15-09:30	A	371	371
	B	124	124
	C	293	293

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.50	21.61	1.1	C	151	227
C-AB	0.09	6.09	0.2	A	52	79
C-A					305	457
A-B					49	73
A-C					404	606

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	124	31	424	0.293	122	0.0	0.4	13.069	B
C-AB	37	9	688	0.054	37	0.0	0.1	6.083	A
C-A	256	64			256				
A-B	40	10			40				
A-C	331	83			331				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	148	37	399	0.372	148	0.4	0.6	15.699	C
C-AB	49	12	713	0.069	49	0.1	0.1	5.968	A
C-A	300	75			300				
A-B	48	12			48				
A-C	396	99			396				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	182	45	365	0.498	180	0.6	1.0	21.245	C
C-AB	70	18	749	0.094	70	0.1	0.2	5.833	A
C-A	358	90			358				
A-B	58	15			58				
A-C	484	121			484				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	182	45	365	0.498	182	1.0	1.1	21.608	C
C-AB	70	18	749	0.094	70	0.2	0.2	5.838	A
C-A	358	89			358				
A-B	58	15			58				
A-C	484	121			484				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	148	37	399	0.372	150	1.1	0.7	16.003	C
C-AB	50	12	713	0.070	50	0.2	0.1	5.977	A
C-A	300	75			300				
A-B	48	12			48				
A-C	396	99			396				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	124	31	424	0.293	125	0.7	0.5	13.298	B
C-AB	37	9	688	0.054	38	0.1	0.1	6.090	A
C-A	255	64			255				
A-B	40	10			40				
A-C	331	83			331				

2022 Base PLus 350 Units, PM

Data Errors and Warnings

No errors or warnings

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		2.21	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	38	Stream B-AC	2.21	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	Relationship type	Relationship
D11	2022 Base PLus 350 Units	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D7+D9

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	548	100.000
B		ONE HOUR	✓	109	100.000
C		ONE HOUR	✓	427	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	104	444
	B	73	0	36
	C	382	45	0

Proportions

		To		
		A	B	C
From	A	0.00	0.19	0.81
	B	0.67	0.00	0.33
	C	0.89	0.11	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.100	1.100
	B	1.100	1.000	1.100
	C	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	413	413
	B	82	82
	C	321	321
17:15-17:30	A	493	493
	B	98	98
	C	384	384
17:30-17:45	A	603	603
	B	120	120
	C	470	470
17:45-18:00	A	603	603
	B	120	120
	C	470	470
18:00-18:15	A	493	493
	B	98	98
	C	384	384
18:15-18:30	A	413	413
	B	82	82
	C	321	321

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.34	16.85	0.6	C	100	150
C-AB	0.15	6.25	0.4	A	83	124
C-A					309	464
A-B					95	143
A-C					407	611

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	82	21	419	0.196	81	0.0	0.3	11.681	B
C-AB	58	14	693	0.084	57	0.0	0.2	6.229	A
C-A	264	66			264				
A-B	78	20			78				
A-C	334	84			334				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	24	392	0.250	98	0.3	0.4	13.420	B
C-AB	78	19	719	0.108	77	0.2	0.3	6.176	A
C-A	306	77			306				
A-B	93	23			93				
A-C	399	100			399				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	30	355	0.338	119	0.4	0.5	16.742	C
C-AB	112	28	758	0.148	112	0.3	0.4	6.137	A
C-A	358	90			358				
A-B	115	29			115				
A-C	489	122			489				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	30	355	0.338	120	0.5	0.6	16.851	C
C-AB	112	28	758	0.148	112	0.4	0.4	6.147	A
C-A	358	89			358				
A-B	115	29			115				
A-C	489	122			489				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	24	392	0.250	99	0.6	0.4	13.528	B
C-AB	78	20	720	0.108	79	0.4	0.3	6.189	A
C-A	306	76			306				
A-B	93	23			93				
A-C	399	100			399				

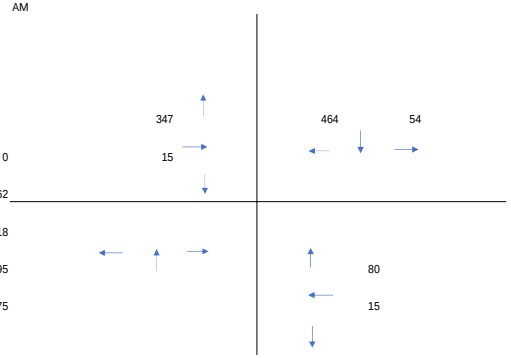
18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	82	21	419	0.196	82	0.4	0.3	11.788	B
C-AB	58	15	693	0.084	59	0.3	0.2	6.252	A
C-A	263	66			263				
A-B	78	20			78				
A-C	334	84			334				

APPENDIX E

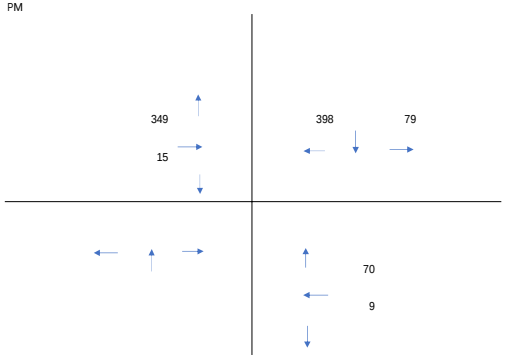
2018 Count

AM



AM	A	B	C	D	Total
A	0	0	0	0	0
B	0	0	347	15	362
C	0	464	0	54	518
D	0	15	80	0	95
Total	0	479	427	69	975

PM

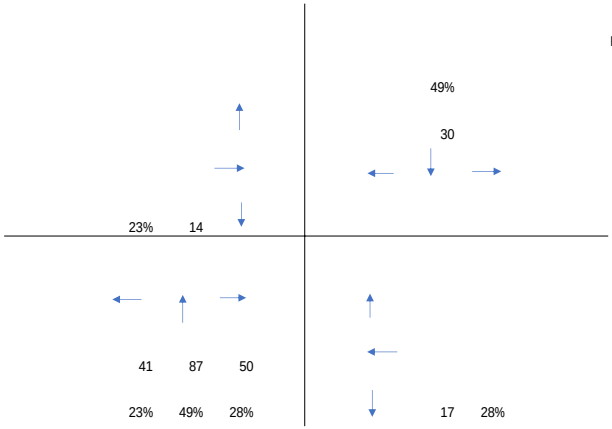


PM	A	B	C	D	Total
A	0	0	0	0	0
B	0	0	349	15	364
C	0	398	0	79	477
D	0	9	70	0	79
Total	0	407	419	94	920

Dev 500

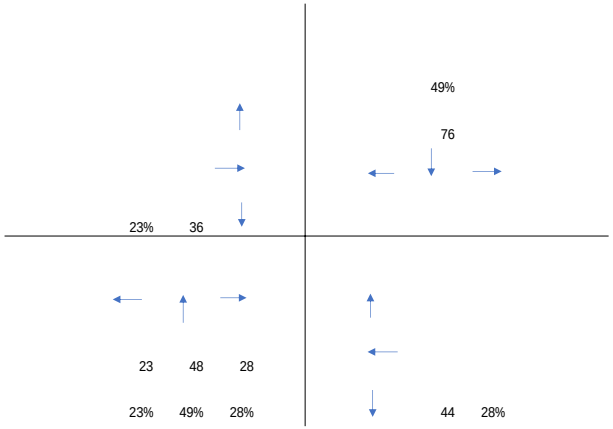
	In	Out	Tot
Rate	0.122	0.357	0.479
500	61	179	240

AM



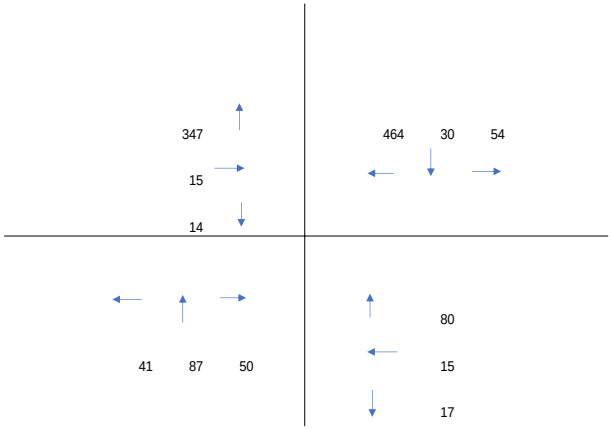
	In	Out	Tot
Rate	0.311	0.197	0.508
500	156	99	254

PM

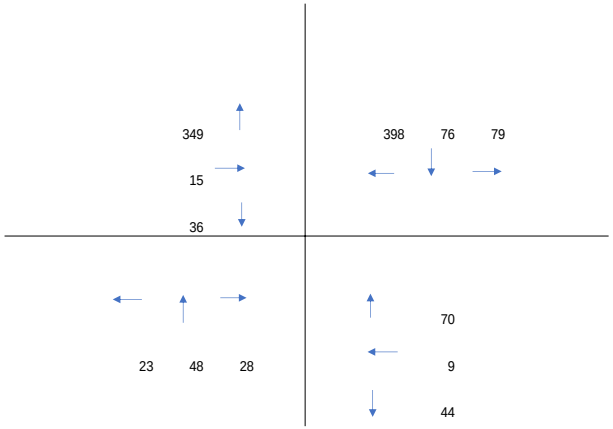


2018 + 500

AM



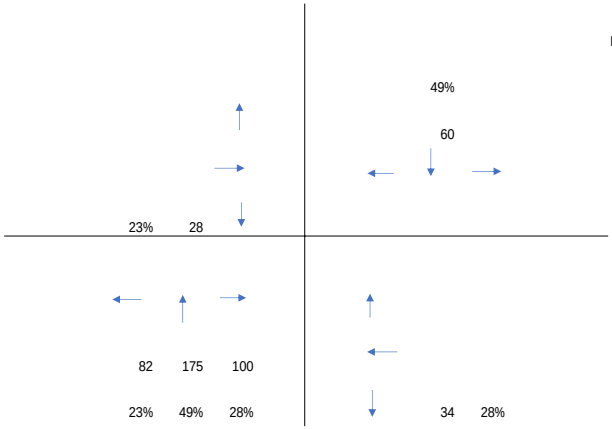
PM



Dev 1000

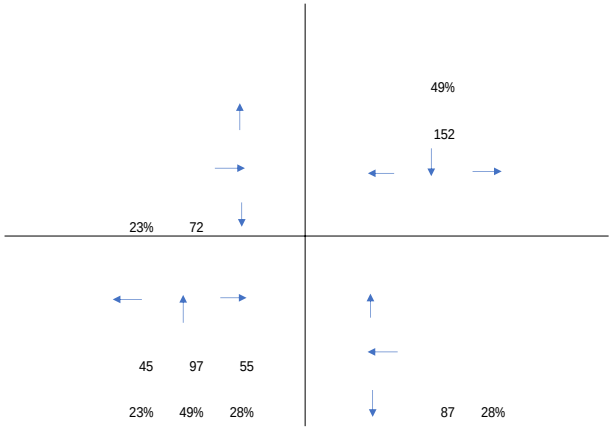
	In	Out	Tot
Rate	0.122	0.357	0.479
1000	122	357	479

AM



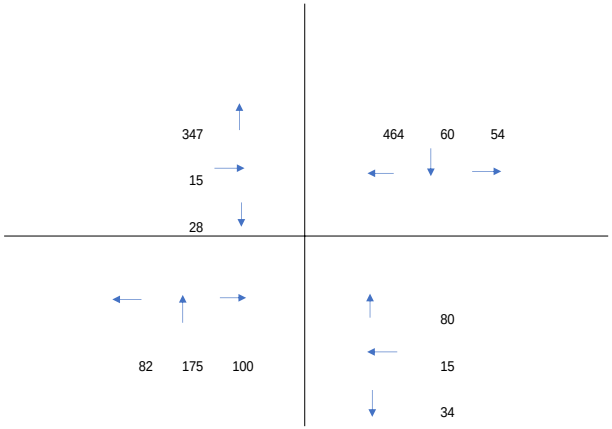
	In	Out	Tot
Rate	0.311	0.197	0.508
1000	311	197	508

PM

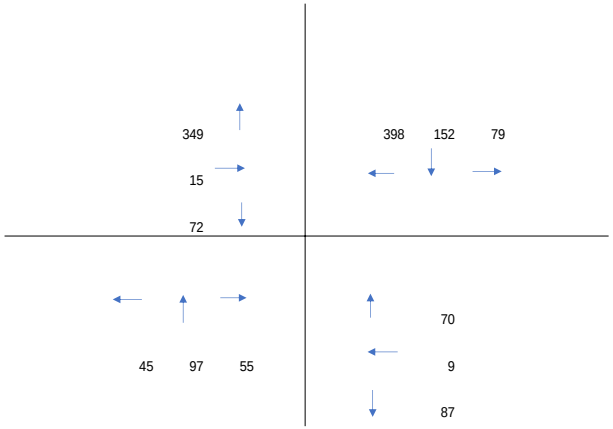


2018 + 1000

AM



PM



APPENDIX F

LinSig V1 style report

User and Project Details

Project:	**Dewsbury Riverside**
Title:	**Site Access Traffic Signals**
Location:	Dewsbury Riverside
Client:	KMBC
Design Layout Ref:	DPL SK160
Date Started:	10/10/2022
Date Completed:	10/10/2022
Checked By:	DRS
Checked By Date:	10/10/2022
Additional detail:	
File name:	221027 Site Access Signals.lsg3x
Author:	
Company:	
Address:	

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	Ind. Arrow	C	4	4
E	Traffic		7	7
F	Pedestrian		14	14
G	Pedestrian		14	14
H	Pedestrian		14	14
I	Pedestrian		14	14

Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I
A		6	-	6	6	5	7	7	7
B	6		6	6	-	7	5	7	7
C	-	6		-	6	7	7	5	7
D	6	6	-		6	-	5	5	-
E	6	-	6	6		7	7	7	5
F	10	7	7	-	7		-	-	-
G	7	9	7	7	7	-		-	-
H	7	7	10	10	7	-	-		-
I	7	7	7	-	10	-	-	-	

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage \ To Stage	1	2	3	4
1		6	6	7
2	6		6	7
3	6	6		7
4	10	10	10	

Phases in Stage

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

Give-Way Lane Input Data

Junction: Central Gateway

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 (Site Access Link Road)	8/1 (Right)	1439	0	3/1	1.09	All	3.00	-	0.50	3	3.00
2/1 (Ravensthorpe Road)	5/1 (Right)	1439	0	4/1	1.09	To 5/1 (Left) To 6/1 (Ahead)	2.00	2.00	0.50	2	2.00
3/2 (Forge Lane)	6/1 (Right)	1439	0	1/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	3.00	-	0.50	3	3.00
4/1 (Lees Hall Road)	7/1 (Right)	1439	0	2/1	1.09	To 7/1 (Left) To 8/1 (Ahead)	2.00	2.00	0.50	2	2.00

Lane Input Data

Junction: Central Gateway

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 (Site Access Link Road)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Left	12.00
											Arm 7 Ahead	Inf
1/2 (Site Access Link Road)	O	A	2	3	3.0	Geom	-	3.50	0.00	Y	Arm 8 Right	25.00
2/1 (Ravensthorpe Road)	O	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Right	15.00
											Arm 7 Left	17.00
											Arm 8 Ahead	Inf
3/1 (Forge Lane)	U	C	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	14.00
3/2 (Forge Lane)	O	C D	2	3	4.0	Geom	-	3.40	0.00	Y	Arm 6 Right	28.00
4/1 (Lees Hall Road)	O	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	17.00
											Arm 6 Ahead	Inf
											Arm 7 Right	15.00
5/1 (Exit Link Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Exit Ravensthorpe Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Exit Forge Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Exit Lees Hall Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

Lane Saturation Flows

Scenario 1: 'AM 2018 + 500' (FG1: 'AM 2018 + 500 Units', Plan 1: 'Network Control Plan 1')

Junction: Central Gateway

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 (Site Access Link Road)	3.65	0.00	Y	Arm 6 Left	12.00	32.0 %	1904	1904
				Arm 7 Ahead	Inf	68.0 %		
1/2 (Site Access Link Road)	3.50	0.00	Y	Arm 8 Right	25.00	100.0 %	1854	1854
2/1 (Ravensthorpe Road)	3.25	0.00	Y	Arm 5 Right	15.00	3.7 %	1788	1788
				Arm 7 Left	17.00	92.3 %		
				Arm 8 Ahead	Inf	4.0 %		
3/1 (Forge Lane)	3.80	0.00	Y	Arm 5 Ahead	Inf	35.7 %	1866	1866
				Arm 8 Left	14.00	64.3 %		
3/2 (Forge Lane)	3.40	0.00	Y	Arm 6 Right	28.00	100.0 %	1856	1856
4/1 (Lees Hall Road)	3.25	0.00	Y	Arm 5 Left	17.00	15.2 %	1788	1788
				Arm 6 Ahead	Inf	13.4 %		
				Arm 7 Right	15.00	71.4 %		
5/1 (Exit Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Ravensthorpe Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Forge Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lees Hall Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM 2018 +500' (FG2: 'PM 2018 + 500 Units', Plan 1: 'Network Control Plan 1')

Junction: Central Gateway

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 (Site Access Link Road)	3.65	0.00	Y	Arm 6 Left	12.00	32.4 %	1903	1903
				Arm 7 Ahead	Inf	67.6 %		
1/2 (Site Access Link Road)	3.50	0.00	Y	Arm 8 Right	25.00	100.0 %	1854	1854
2/1 (Ravensthorpe Road)	3.25	0.00	Y	Arm 5 Right	15.00	9.0 %	1786	1786
				Arm 7 Left	17.00	87.3 %		
				Arm 8 Ahead	Inf	3.8 %		
3/1 (Forge Lane)	3.80	0.00	Y	Arm 5 Ahead	Inf	49.0 %	1892	1892
				Arm 8 Left	14.00	51.0 %		
3/2 (Forge Lane)	3.40	0.00	Y	Arm 6 Right	28.00	100.0 %	1856	1856
4/1 (Lees Hall Road)	3.25	0.00	Y	Arm 5 Left	17.00	35.8 %	1782	1782
				Arm 6 Ahead	Inf	7.3 %		
				Arm 7 Right	15.00	56.9 %		
5/1 (Exit Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Ravensthorpe Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Forge Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lees Hall Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM2018 + 1000' (FG5: 'AM 2018 + 1000 Units', Plan 1: 'Network Control Plan 1')

Junction: Central Gateway

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 (Site Access Link Road)	3.65	0.00	Y	Arm 6 Left	12.00	31.9 %	1904	1904
				Arm 7 Ahead	Inf	68.1 %		
1/2 (Site Access Link Road)	3.50	0.00	Y	Arm 8 Right	25.00	100.0 %	1854	1854
2/1 (Ravensthorpe Road)	3.25	0.00	Y	Arm 5 Right	15.00	7.2 %	1787	1787
				Arm 7 Left	17.00	89.0 %		
				Arm 8 Ahead	Inf	3.8 %		
3/1 (Forge Lane)	3.80	0.00	Y	Arm 5 Ahead	Inf	52.6 %	1899	1899
				Arm 8 Left	14.00	47.4 %		
3/2 (Forge Lane)	3.40	0.00	Y	Arm 6 Right	28.00	100.0 %	1856	1856
4/1 (Lees Hall Road)	3.25	0.00	Y	Arm 5 Left	17.00	26.4 %	1788	1788
				Arm 6 Ahead	Inf	11.6 %		
				Arm 7 Right	15.00	62.0 %		
5/1 (Exit Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Ravensthorpe Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Forge Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lees Hall Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM2018 + 1000' (FG6: 'PM 2018 + 1000 Units', Plan 1: 'Network Control Plan 1')

Junction: Central Gateway

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 (Site Access Link Road)	3.65	0.00	Y	Arm 6 Left	12.00	31.7 %	1905	1905
				Arm 7 Ahead	Inf	68.3 %		
1/2 (Site Access Link Road)	3.50	0.00	Y	Arm 8 Right	25.00	100.0 %	1854	1854
2/1 (Ravensthorpe Road)	3.25	0.00	Y	Arm 5 Right	15.00	16.5 %	1784	1784
				Arm 7 Left	17.00	80.0 %		
				Arm 8 Ahead	Inf	3.4 %		
3/1 (Forge Lane)	3.80	0.00	Y	Arm 5 Ahead	Inf	65.8 %	1924	1924
				Arm 8 Left	14.00	34.2 %		
3/2 (Forge Lane)	3.40	0.00	Y	Arm 6 Right	28.00	100.0 %	1856	1856
4/1 (Lees Hall Road)	3.25	0.00	Y	Arm 5 Left	17.00	52.4 %	1782	1782
				Arm 6 Ahead	Inf	5.4 %		
				Arm 7 Right	15.00	42.2 %		
5/1 (Exit Link Road Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Ravensthorpe Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Forge Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lees Hall Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2018 + 500 Units'	08:00	09:00	01:00	
2: 'PM 2018 + 500 Units'	16:30	17:30	01:00	
3: 'AM2018 + 2000 Units'	08:00	09:00	01:00	
4: 'PM2018 + 2000 Units'	16:30	17:30	01:00	
5: 'AM 2018 + 1000 Units'	08:00	09:00	01:00	
6: 'PM 2018 + 1000 Units'	16:30	17:30	01:00	
7: 'AM2018 + 2000 (50% Divert Link Road)'	08:00	09:00	01:00	
8: 'PM 2018 + 2000 (50% Divert Link Road)'	16:30	17:30	01:00	
9: 'AM 2018 + 1500 Units'	08:00	09:00	01:00	
10: 'PM 2018 + 1500 Units'	16:30	17:30	01:00	
11: 'AM 2018 + 1500 Units (50% Divert Link Road)'	08:00	09:00	01:00	
12: 'PM 2018 + 1500 Units (50% Divert Link Road)'	16:30	17:30	01:00	

Traffic Flows, Desired

FG1: 'AM 2018 + 500 Units'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	41	87	50	178
	B	14	0	347	15	376
	C	30	464	0	54	548
	D	17	15	80	0	112
	Tot.	61	520	514	119	1214

FG2: 'PM 2018 + 500 Units'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	23	48	28	99
	B	36	0	349	15	400
	C	76	398	0	79	553
	D	44	9	70	0	123
	Tot.	156	430	467	122	1175

FG3: 'AM2018 + 2000 Units'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	164	350	200	714
	B	56	0	347	15	418
	C	120	464	0	54	638
	D	68	15	80	0	163
	Tot.	244	643	777	269	1933

FG4: 'PM2018 + 2000 Units'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	91	193	110	394
	B	143	0	349	15	507
	C	305	398	0	79	782
	D	174	9	70	0	253
	Tot.	622	498	612	204	1936

FG5: 'AM 2018 + 1000 Units'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	82	175	100	357
	B	28	0	347	15	390
	C	60	464	0	54	578
	D	34	15	80	0	129
	Tot.	122	561	602	169	1454

FG6: 'PM 2018 + 1000 Units'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	45	97	55	197
	B	72	0	349	15	436
	C	152	398	0	79	629
	D	87	9	70	0	166
	Tot.	311	452	516	149	1428

FG7: 'AM2018 + 2000 (50% Divert Link Road)'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	164	523	200	887
	B	56	0	174	15	245
	C	352	232	0	54	638
	D	68	15	80	0	163
	Tot.	476	411	777	269	1933

FG8: 'PM 2018 + 2000 (50% Divert Link Road)'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	91	368	110	569
	B	143	0	175	15	333
	C	504	199	0	79	782
	D	174	9	70	0	253
	Tot.	821	299	613	204	1937

FG9: 'AM 2018 + 1500 Units'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	123	262	150	535
	B	42	0	347	15	404
	C	90	464	0	54	608
	D	51	15	80	0	146
	Tot.	183	602	689	219	1693

FG10: 'PM 2018 + 1500 Units'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	68	145	83	296
	B	107	0	349	15	471
	C	229	398	0	79	706
	D	131	9	70	0	210
	Tot.	467	475	564	177	1683

FG11: 'AM 2018 + 1500 Units (50% Divert Link Road)'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	123	436	150	709
	B	42	0	174	15	231
	C	322	232	0	54	608
	D	51	15	80	0	146
	Tot.	415	370	690	219	1694

FG12: 'PM 2018 + 1500 Units (50% Divert Link Road)'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	68	319	83	470
	B	107	0	175	15	297
	C	428	199	0	79	706
	D	131	9	70	0	210
	Tot.	666	276	564	177	1683

Stage Timings

Scenario 1: 'AM 2018 + 500' (FG1: 'AM 2018 + 500 Units', Plan 1: 'Network Control Plan 1')

Stage	**1**	**4**	**2**	**3**
Duration	32	14	40	5
Change Point	0	38	59	109

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: Site Access Traffic Signals	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**76.5%**
Central Gateway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**76.5%**
1/1+1/2	Site Access Link Road Left Ahead Right	U+O	N/A	N/A	A		1	40	-	178	1904:1854	486+190	26.3 : 26.3%
2/1	Ravensthorpe Road Right Left Ahead	O	N/A	N/A	B		1	32	-	376	1788	492	76.5%
3/1+3/2	Forge Lane Ahead Right Left	U+O	N/A	N/A	C	D	1	51	5	548	1866:1856	110+608	76.3 : 76.3%
4/1	Lees Hall Road Left Ahead Right	O	N/A	N/A	E		1	32	-	112	1788	173	64.7%
5/1	Exit Link Road	U	N/A	N/A	-		-	-	-	61	Inf	Inf	0.0%
6/1	Exit Ravensthorpe Road	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
7/1	Exit Forge Lane	U	N/A	N/A	-		-	-	-	514	Inf	Inf	0.0%
8/1	Exit Lees Hall Road	U	N/A	N/A	-		-	-	-	119	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: Site Access Traffic Signals	**-**	**-**	**523**	**74**	**12**	**11.1**	**4.2**	**1.0**	**16.4**	**-**	**-**	**-**	**-**
Central Gateway	**-**	**-**	**523**	**74**	**12**	**11.1**	**4.2**	**1.0**	**16.4**	**-**	**-**	**-**	**-**
1/1+1/2	178	178	50	0	0	1.4	0.2	0.0	1.5	31.3	3.0	0.2	3.2
2/1	376	376	14	0	0	4.2	1.6	0.0	5.8	55.1	11.5	1.6	13.1
3/1+3/2	548	548	379	74	12	4.5	1.6	0.6	6.7	43.7	14.3	1.6	15.9
4/1	112	112	80	0	0	1.1	0.9	0.4	2.4	78.2	3.6	0.9	4.5
5/1	61	61	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	119	119	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 17.7 Total Delay for Signalled Lanes (pcuHr): 16.39 Cycle Time (s): 120
PRC Over All Lanes (%): 17.7 Total Delay Over All Lanes(pcuHr): 16.39

Stage Timings

Scenario 2: 'PM 2018 +500' (FG2: 'PM 2018 + 500 Units', Plan 1: 'Network Control Plan 1')

Stage	1	4	2	3
Duration	37	14	36	4
Change Point	0	43	64	110

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: Site Access Traffic Signals	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.5%**
Central Gateway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.5%**
1/1+1/2	Site Access Link Road Left Ahead Right	U+O	N/A	N/A	A		1	36	-	99	1903:1854	440+174	16.1 : 16.1%
2/1	Ravensthorpe Road Right Left Ahead	O	N/A	N/A	B		1	37	-	400	1786	566	70.7%
3/1+3/2	Forge Lane Ahead Right Left	U+O	N/A	N/A	C	D	1	46	4	553	1892:1856	217+556	71.5 : 71.5%
4/1	Lees Hall Road Left Ahead Right	O	N/A	N/A	E		1	37	-	123	1782	269	45.8%
5/1	Exit Link Road	U	N/A	N/A	-		-	-	-	156	Inf	Inf	0.0%
6/1	Exit Ravensthorpe Road	U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
7/1	Exit Forge Lane	U	N/A	N/A	-		-	-	-	467	Inf	Inf	0.0%
8/1	Exit Lees Hall Road	U	N/A	N/A	-		-	-	-	122	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: Site Access Traffic Signals	**-**	**-**	**496**	**27**	**10**	**10.4**	**2.9**	**0.8**	**14.1**	**-**	**-**	**-**	**-**
Central Gateway	**-**	**-**	**496**	**27**	**10**	**10.4**	**2.9**	**0.8**	**14.1**	**-**	**-**	**-**	**-**
1/1+1/2	99	99	28	0	0	0.8	0.1	0.0	0.9	33.6	1.7	0.1	1.8
2/1	400	400	36	0	0	4.0	1.2	0.0	5.2	46.8	11.7	1.2	12.9
3/1+3/2	553	553	362	27	10	4.6	1.2	0.4	6.2	40.2	13.6	1.2	14.9
4/1	123	123	70	0	0	1.0	0.4	0.4	1.8	53.8	3.0	0.4	3.4
5/1	156	156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	467	467	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	122	122	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 25.8 Total Delay for Signalled Lanes (pcuHr): 14.14 Cycle Time (s): 120
PRC Over All Lanes (%): 25.8 Total Delay Over All Lanes(pcuHr): 14.14

Stage Timings

Scenario 3: 'AM2018 + 1000' (FG5: 'AM 2018 + 1000 Units', Plan 1: 'Network Control Plan 1')

Stage	1	4	2	3
Duration	31	14	36	10
Change Point	0	37	58	104

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: Site Access Traffic Signals	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.8%**
Central Gateway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.8%**
1/1+1/2	Site Access Link Road Left Ahead Right	U+O	N/A	N/A	A		1	36	-	357	1904:1854	441+172	58.2 : 58.2%
2/1	Ravensthorpe Road Right Left Ahead	O	N/A	N/A	B		1	31	-	390	1787	477	81.8%
3/1+3/2	Forge Lane Ahead Right Left	U+O	N/A	N/A	C	D	1	52	10	578	1899:1856	123+500	92.8 : 92.8%
4/1	Lees Hall Road Left Ahead Right	O	N/A	N/A	E		1	31	-	129	1788	156	82.5%
5/1	Exit Link Road	U	N/A	N/A	-		-	-	-	122	Inf	Inf	0.0%
6/1	Exit Ravensthorpe Road	U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%
7/1	Exit Forge Lane	U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
8/1	Exit Lees Hall Road	U	N/A	N/A	-		-	-	-	169	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: Site Access Traffic Signals	**-**	**-**	**385**	**217**	**71**	**15.0**	**10.1**	**1.3**	**26.4**	**-**	**-**	**-**	**-**
Central Gateway	**-**	**-**	**385**	**217**	**71**	**15.0**	**10.1**	**1.3**	**26.4**	**-**	**-**	**-**	**-**
1/1+1/2	357	357	100	0	0	3.4	0.7	0.0	4.1	41.0	8.7	0.7	9.3
2/1	390	390	28	0	0	4.5	2.1	0.0	6.6	61.1	12.1	2.1	14.3
3/1+3/2	578	578	194	217	54	5.8	5.2	0.9	11.8	73.8	17.3	5.2	22.5
4/1	129	129	63	0	17	1.4	2.1	0.4	3.8	107.1	4.2	2.1	6.3
5/1	122	122	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	169	169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -3.1 Total Delay for Signalled Lanes (pcuHr): 26.36 Cycle Time (s): 120
PRC Over All Lanes (%): -3.1 Total Delay Over All Lanes(pcuHr): 26.36

Stage Timings

Scenario 4: 'PM2018 + 1000' (FG6: 'PM 2018 + 1000 Units', Plan 1: 'Network Control Plan 1')

Stage	1	4	2	3
Duration	35	14	38	4
Change Point	0	41	62	110

Network Results

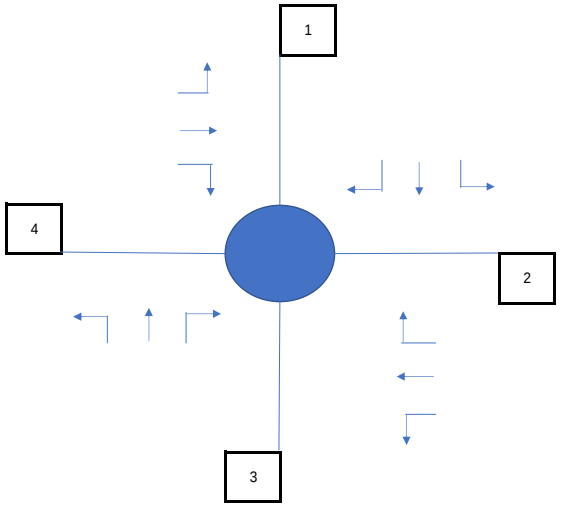
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Site Access Traffic Signals	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.5%**
Central Gateway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.5%**
1/1+1/2	Site Access Link Road Left Ahead Right	U+O	N/A	N/A	A		1	38	-	197	1905:1854	465+180	30.6 : 30.6%
2/1	Ravensthorpe Road Right Left Ahead	O	N/A	N/A	B		1	35	-	436	1784	535	81.5%
3/1+3/2	Forge Lane Ahead Right Left	U+O	N/A	N/A	C	D	1	48	4	629	1924:1856	289+498	79.9 : 79.9%
4/1	Lees Hall Road Left Ahead Right	O	N/A	N/A	E		1	35	-	166	1782	217	76.7%
5/1	Exit Link Road	U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%
6/1	Exit Ravensthorpe Road	U	N/A	N/A	-		-	-	-	452	Inf	Inf	0.0%
7/1	Exit Forge Lane	U	N/A	N/A	-		-	-	-	516	Inf	Inf	0.0%
8/1	Exit Lees Hall Road	U	N/A	N/A	-		-	-	-	149	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: Site Access Traffic Signals	**-**	**-**	**537**	**48**	**10**	**13.1**	**5.8**	**1.0**	**19.9**	**-**	**-**	**-**	**-**
Central Gateway	**-**	**-**	**537**	**48**	**10**	**13.1**	**5.8**	**1.0**	**19.9**	**-**	**-**	**-**	**-**
1/1+1/2	197	197	55	0	0	1.6	0.2	0.0	1.9	34.0	3.7	0.2	3.9
2/1	436	436	72	0	0	4.7	2.1	0.0	6.8	56.3	13.4	2.1	15.6
3/1+3/2	629	629	340	48	10	5.3	1.9	0.5	7.8	44.4	15.8	1.9	17.8
4/1	166	166	70	0	0	1.5	1.5	0.4	3.5	76.0	4.2	1.5	5.8
5/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	452	452	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 10.5 Total Delay for Signalled Lanes (pcuHr): 19.95 Cycle Time (s): 120
PRC Over All Lanes (%): 10.5 Total Delay Over All Lanes(pcuHr): 19.95

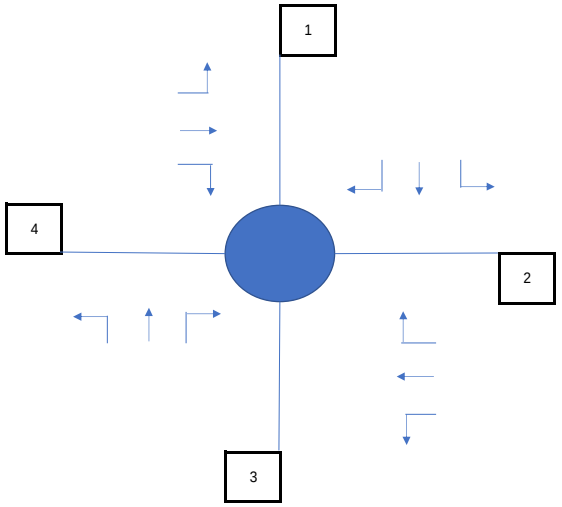
APPENDIX G

AM



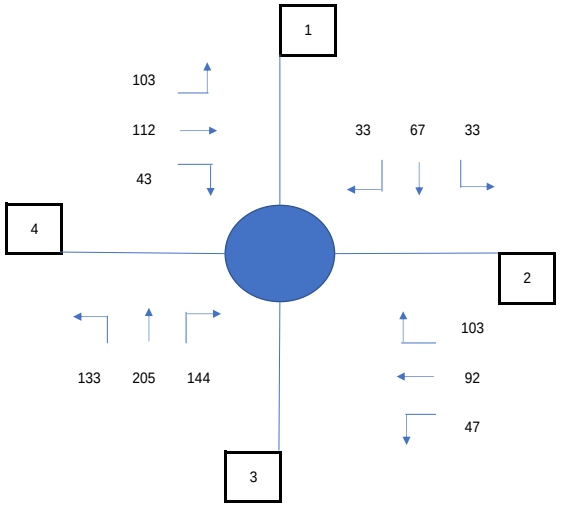
AM	1	2	3	4	Tot
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
Tot	0	0	0	0	0

PM



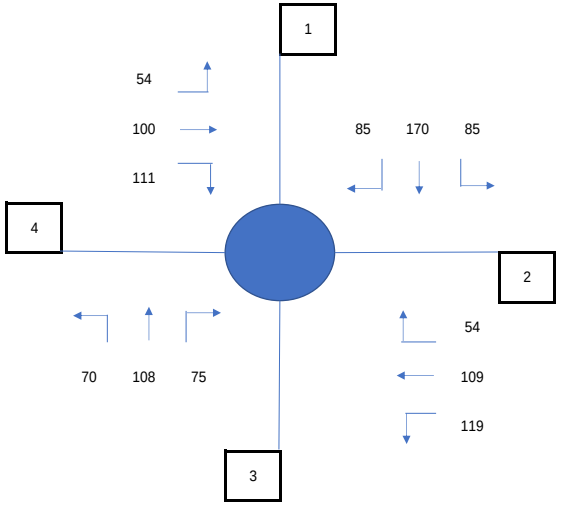
PM	1	2	3	4	Tot
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
Tot	0	0	0	0	0

AM



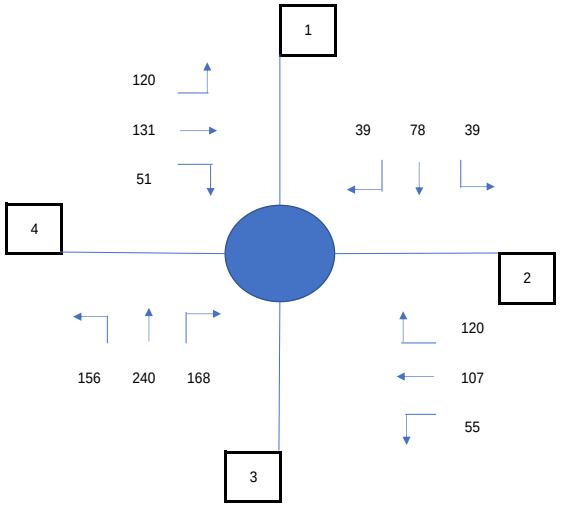
AM	1	2	3	4	Tot
1	0	33	67	33	133
2	103	0	47	92	242
3	205	144	0	133	482
4	103	112	43	0	258
Tot	411	289	157	258	1115

PM



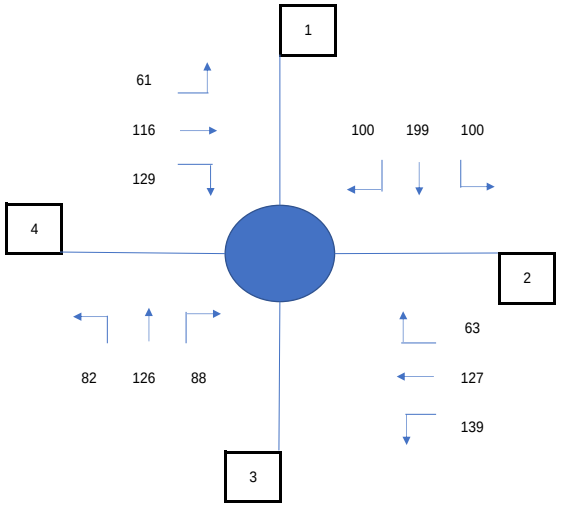
PM	1	2	3	4	Tot
1	0	85	170	85	340
2	54	0	119	109	282
3	108	75	0	70	253
4	54	100	111	0	265
Tot	216	260	400	264	1140

AM



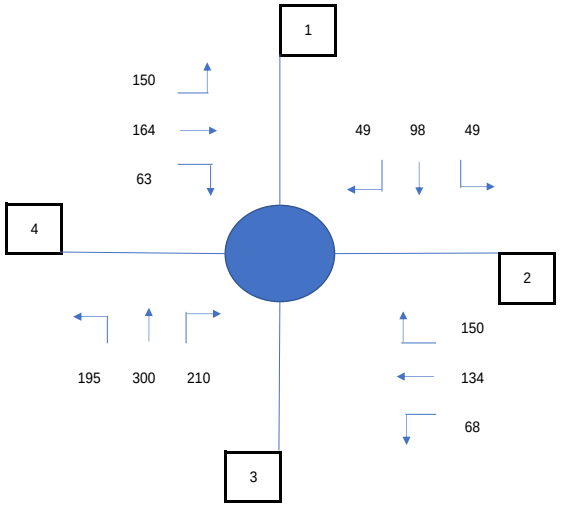
AM	1	2	3	4	Tot
1	0	39	78	39	156
2	120	0	55	107	282
3	240	168	0	156	564
4	120	131	51	0	302
Tot	480	338	184	302	1304

PM



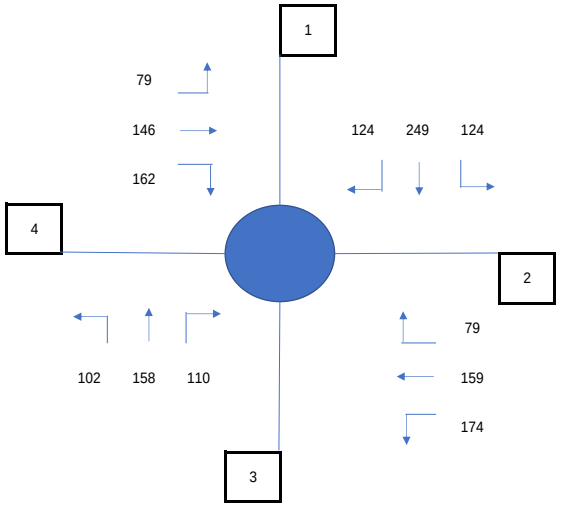
PM	1	2	3	4	Tot
1	0	100	199	100	399
2	63	0	139	127	329
3	126	88	0	82	296
4	61	116	129	0	306
Tot	250	304	467	309	1330

AM



AM	1	2	3	4	Tot
1	0	49	98	49	196
2	150	0	68	134	352
3	300	210	0	195	705
4	150	164	63	0	377
Tot	600	423	229	378	1630

PM



PM	1	2	3	4	Tot
1	0	124	249	124	497
2	79	0	174	159	412
3	158	110	0	102	370
4	79	146	162	0	387
Tot	316	380	585	385	1666

APPENDIX H

Junctions 10

ARCADY 10 - Roundabout 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: 221007 Internal Junction.j10
Path: C:\Users\DavidSagstad\Dropbox\Working Back Up\Projects\2020213 Dewsbury Riverside\Analysis\2022 Internal Junction
Report generation date: 07/10/2022 10:26:19

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2737 Units											
Arm 1	D1	0.2	4.56	0.16	A	53 % [Arm 3]	D2	0.6	5.70	0.37	A	100 % [Arm 1]
Arm 2		0.3	4.51	0.25	A			0.5	5.54	0.32	A	
Arm 3		1.1	7.67	0.53	A			0.4	4.81	0.27	A	
Arm 4		0.5	6.64	0.34	A			0.4	4.85	0.28	A	
	3200 Units											
Arm 1	D3	0.2	4.51	0.18	A	39 % [Arm 3]	D4	0.8	6.67	0.45	A	71 % [Arm 1]
Arm 2		0.4	4.72	0.29	A			0.6	6.39	0.39	A	
Arm 3		1.5	9.08	0.61	A			0.5	5.31	0.32	A	
Arm 4		0.6	6.71	0.38	A			0.5	5.34	0.33	A	
	4000 Units											
Arm 1	D5	0.3	5.11	0.23	A	11 % [Arm 3]	D6	1.4	9.38	0.59	A	37 % [Arm 1]
Arm 2		0.6	5.44	0.37	A			1.1	8.75	0.52	A	
Arm 3		3.7	17.57	0.79	C			0.7	6.48	0.42	A	
Arm 4		1.1	9.49	0.52	A			0.8	6.60	0.44	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. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	07/10/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\DavidSagstad
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75					✓	Delay	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	2737 Units	AM	ONE HOUR	08:00	09:30	15	✓
D2	2737 Units	PM	ONE HOUR	17:00	18:30	15	✓
D3	3200 Units	AM	ONE HOUR	08:00	09:30	15	✓
D4	3200 Units	PM	ONE HOUR	17:00	18:30	15	✓
D5	4000 Units	AM	ONE HOUR	08:00	09:30	15	✓
D6	4000 Units	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

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

2737 Units, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

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	6.38	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	53	Arm 3	6.38	A

Arms

Arms

Arm	Name	Description	No give-way line
1	To Forge Lane (E)	To Forge Lane (E)	
2	To Lees Hall Road (S)	To Lees Hall Road (S)	
3	To Housing (W)	To Housing (W)	
4	To Calder Road (N)	To Calder Road (N)	

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	4.00	4.50	1.5	12.0	36.0	47.0		
2	4.00	4.50	1.5	12.0	36.0	47.0		
3	4.00	4.50	1.5	12.0	36.0	47.0		
4	4.00	4.50	1.5	12.0	36.0	47.0		

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	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)
1	1.00	1.00	✓	Distance	4.00	2.86	4.00	2.86
2	1.00	1.00	✓	Distance	4.00	2.86	4.00	2.86
3	1.00	1.00	✓	Distance	4.00	2.86	4.00	2.86
4	1.00	1.00	✓	Distance	4.00	2.86	4.00	2.86

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.514	1168
2	0.514	1168
3	0.514	1168
4	0.514	1168

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	2737 Units	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	133	100.000
2		ONE HOUR	✓	242	100.000
3		ONE HOUR	✓	482	100.000
4		ONE HOUR	✓	258	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	200.00
2	[ONEHOUR]	100.00
3	[ONEHOUR]	100.00
4	[ONEHOUR]	200.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	33	67	33
	2	103	0	47	92
	3	205	144	0	133
	4	103	112	43	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.16	4.56	0.2	A	122	183
2	0.25	4.51	0.3	A	222	333
3	0.53	7.67	1.1	A	442	663
4	0.34	6.64	0.5	A	237	355

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	100	25	224	150.57	1018	0.098	100	308	0.0	0.1	3.919	A
2	182	46	107	75.29	1101	0.165	181	216	0.0	0.2	3.911	A
3	363	91	171	75.29	1061	0.342	361	118	0.0	0.5	5.125	A
4	194	49	338	150.57	948	0.205	193	193	0.0	0.3	4.762	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	120	30	268	179.80	984	0.122	119	369	0.1	0.1	4.165	A
2	218	54	128	89.90	1086	0.200	217	259	0.2	0.2	4.144	A
3	433	108	205	89.90	1036	0.418	433	141	0.5	0.7	5.955	A
4	232	58	406	179.80	898	0.258	232	232	0.3	0.3	5.401	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	146	37	328	220.20	936	0.156	146	451	0.1	0.2	4.554	A
2	266	67	157	110.10	1064	0.250	266	317	0.2	0.3	4.509	A
3	531	133	251	110.10	1000	0.531	529	173	0.7	1.1	7.616	A
4	284	71	496	220.20	827	0.343	283	283	0.3	0.5	6.612	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	146	37	329	220.20	936	0.156	146	452	0.2	0.2	4.559	A
2	266	67	157	110.10	1064	0.250	266	318	0.3	0.3	4.514	A
3	531	133	251	110.10	1000	0.531	531	173	1.1	1.1	7.671	A
4	284	71	498	220.20	826	0.344	284	284	0.5	0.5	6.637	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	120	30	270	179.80	983	0.122	120	371	0.2	0.1	4.171	A
2	218	54	129	89.90	1085	0.200	218	261	0.3	0.3	4.152	A
3	433	108	205	89.90	1036	0.418	435	141	1.1	0.7	6.006	A
4	232	58	408	179.80	897	0.259	233	233	0.5	0.4	5.426	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	100	25	226	150.57	1017	0.098	100	310	0.1	0.1	3.929	A
2	182	46	108	75.29	1101	0.166	182	218	0.3	0.2	3.922	A
3	363	91	172	75.29	1061	0.342	364	118	0.7	0.5	5.169	A
4	194	49	341	150.57	947	0.205	195	195	0.4	0.3	4.788	A

2737 Units, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

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	5.27	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	100	Arm 1	5.27	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	2737 Units	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	340	100.000
2		ONE HOUR	✓	282	100.000
3		ONE HOUR	✓	253	100.000
4		ONE HOUR	✓	265	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	0.00
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	85	170	85
	2	54	0	119	109
	3	108	75	0	70
	4	54	100	111	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.37	5.70	0.6	A	312	468
2	0.32	5.54	0.5	A	259	388
3	0.27	4.81	0.4	A	232	348
4	0.28	4.85	0.4	A	243	365

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	256	64	214	0.00	1057	0.242	255	162	0.0	0.3	4.471	A
2	212	53	274	0.00	1027	0.207	211	195	0.0	0.3	4.410	A
3	190	48	186	0.00	1072	0.178	190	300	0.0	0.2	4.076	A
4	200	50	178	0.00	1076	0.185	199	198	0.0	0.2	4.097	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	306	76	257	0.00	1036	0.295	305	194	0.3	0.4	4.928	A
2	254	63	329	0.00	999	0.254	253	233	0.3	0.3	4.827	A
3	227	57	223	0.00	1053	0.216	227	359	0.2	0.3	4.358	A
4	238	60	213	0.00	1058	0.225	238	237	0.2	0.3	4.388	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	374	94	314	0.00	1006	0.372	374	237	0.4	0.6	5.688	A
2	310	78	402	0.00	961	0.323	310	286	0.3	0.5	5.527	A
3	279	70	273	0.00	1027	0.271	278	440	0.3	0.4	4.803	A
4	292	73	261	0.00	1034	0.282	291	290	0.3	0.4	4.848	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	374	94	315	0.00	1006	0.372	374	238	0.6	0.6	5.701	A
2	310	78	403	0.00	960	0.323	310	286	0.5	0.5	5.538	A
3	279	70	273	0.00	1027	0.271	279	440	0.4	0.4	4.808	A
4	292	73	261	0.00	1033	0.282	292	291	0.4	0.4	4.853	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	306	76	258	0.00	1035	0.295	306	195	0.6	0.4	4.943	A
2	254	63	330	0.00	998	0.254	254	234	0.5	0.3	4.843	A
3	227	57	223	0.00	1053	0.216	228	360	0.4	0.3	4.367	A
4	238	60	213	0.00	1058	0.225	239	238	0.4	0.3	4.396	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	256	64	216	0.00	1057	0.242	256	163	0.4	0.3	4.499	A
2	212	53	276	0.00	1026	0.207	213	196	0.3	0.3	4.430	A
3	190	48	187	0.00	1071	0.178	191	302	0.3	0.2	4.088	A
4	200	50	179	0.00	1076	0.185	200	199	0.3	0.2	4.112	A

3200 Units, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

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	7.05	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	39	Arm 3	7.05	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	3200 Units	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	156	100.000
2		ONE HOUR	✓	282	100.000
3		ONE HOUR	✓	564	100.000
4		ONE HOUR	✓	302	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	0.00
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	39	78	39
	2	120	0	55	107
	3	240	168	0	156
	4	120	131	51	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.18	4.51	0.2	A	143	215
2	0.29	4.72	0.4	A	259	388
3	0.61	9.08	1.5	A	518	776
4	0.38	6.71	0.6	A	277	416

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	117	29	262	0.00	1033	0.114	117	359	0.0	0.1	3.929	A
2	212	53	126	0.00	1103	0.193	211	253	0.0	0.2	4.034	A
3	425	106	199	0.00	1065	0.399	422	138	0.0	0.7	5.576	A
4	227	57	395	0.00	964	0.236	226	226	0.0	0.3	4.869	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	140	35	314	0.00	1006	0.139	140	431	0.1	0.2	4.157	A
2	254	63	151	0.00	1090	0.233	253	303	0.2	0.3	4.301	A
3	507	127	239	0.00	1045	0.485	506	165	0.7	0.9	6.668	A
4	271	68	474	0.00	924	0.294	271	271	0.3	0.4	5.510	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	172	43	384	0.00	970	0.177	172	527	0.2	0.2	4.507	A
2	310	78	185	0.00	1073	0.289	310	371	0.3	0.4	4.719	A
3	621	155	292	0.00	1017	0.610	619	202	0.9	1.5	8.977	A
4	333	83	579	0.00	870	0.382	332	332	0.4	0.6	6.683	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	172	43	385	0.00	969	0.177	172	528	0.2	0.2	4.512	A
2	310	78	185	0.00	1072	0.290	310	372	0.4	0.4	4.724	A
3	621	155	293	0.00	1017	0.611	621	203	1.5	1.5	9.085	A
4	333	83	581	0.00	869	0.383	332	332	0.6	0.6	6.713	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	140	35	316	0.00	1005	0.140	140	433	0.2	0.2	4.165	A
2	254	63	151	0.00	1090	0.233	254	305	0.4	0.3	4.310	A
3	507	127	240	0.00	1044	0.485	509	166	1.5	1.0	6.759	A
4	271	68	477	0.00	923	0.294	272	272	0.6	0.4	5.544	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	117	29	264	0.00	1032	0.114	118	362	0.2	0.1	3.939	A
2	212	53	127	0.00	1102	0.193	213	255	0.3	0.2	4.046	A
3	425	106	201	0.00	1064	0.399	426	139	1.0	0.7	5.648	A
4	227	57	398	0.00	963	0.236	228	228	0.4	0.3	4.903	A

3200 Units, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

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	5.99	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	71	Arm 1	5.99	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	3200 Units	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	399	100.000
2		ONE HOUR	✓	329	100.000
3		ONE HOUR	✓	296	100.000
4		ONE HOUR	✓	306	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	0.00
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	100	199	100
	2	63	0	139	127
	3	126	88	0	82
	4	61	116	129	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.45	6.67	0.8	A	366	549
2	0.39	6.39	0.6	A	302	453
3	0.32	5.31	0.5	A	272	407
4	0.33	5.34	0.5	A	281	421

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	300	75	250	0.00	1039	0.289	299	187	0.0	0.4	4.850	A
2	248	62	321	0.00	1003	0.247	246	228	0.0	0.3	4.752	A
3	223	56	217	0.00	1056	0.211	222	350	0.0	0.3	4.310	A
4	230	58	208	0.00	1061	0.217	229	231	0.0	0.3	4.324	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	359	90	299	0.00	1014	0.354	358	224	0.4	0.5	5.485	A
2	296	74	384	0.00	970	0.305	295	273	0.3	0.4	5.332	A
3	266	67	260	0.00	1034	0.257	266	419	0.3	0.3	4.685	A
4	275	69	249	0.00	1040	0.265	275	277	0.3	0.4	4.704	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	439	110	366	0.00	979	0.449	438	275	0.5	0.8	6.641	A
2	362	91	470	0.00	926	0.391	361	334	0.4	0.6	6.370	A
3	326	81	319	0.00	1004	0.325	325	513	0.3	0.5	5.302	A
4	337	84	304	0.00	1011	0.333	336	339	0.4	0.5	5.331	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	439	110	367	0.00	979	0.449	439	275	0.8	0.8	6.669	A
2	362	91	471	0.00	925	0.392	362	335	0.6	0.6	6.393	A
3	326	81	319	0.00	1003	0.325	326	514	0.5	0.5	5.313	A
4	337	84	305	0.00	1011	0.333	337	340	0.5	0.5	5.341	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	359	90	300	0.00	1013	0.354	360	225	0.8	0.6	5.517	A
2	296	74	386	0.00	969	0.305	297	274	0.6	0.4	5.359	A
3	266	67	261	0.00	1033	0.258	267	421	0.5	0.3	4.699	A
4	275	69	250	0.00	1039	0.265	276	278	0.5	0.4	4.719	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	300	75	251	0.00	1038	0.289	301	189	0.6	0.4	4.884	A
2	248	62	323	0.00	1002	0.247	248	229	0.4	0.3	4.782	A
3	223	56	219	0.00	1055	0.211	223	352	0.3	0.3	4.330	A
4	230	58	209	0.00	1060	0.217	231	233	0.4	0.3	4.343	A

4000 Units, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

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	11.58	B

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	11	Arm 3	11.58	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	4000 Units	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	196	100.000
2		ONE HOUR	✓	352	100.000
3		ONE HOUR	✓	705	100.000
4		ONE HOUR	✓	377	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	0.00
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	49	98	49
	2	150	0	68	134
	3	300	210	0	195
	4	150	164	63	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.23	5.11	0.3	A	180	270
2	0.37	5.44	0.6	A	323	485
3	0.79	17.57	3.7	C	647	970
4	0.52	9.49	1.1	A	346	519

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	148	37	327	0.00	1000	0.148	147	449	0.0	0.2	4.218	A
2	265	66	157	0.00	1087	0.244	264	316	0.0	0.3	4.368	A
3	531	133	249	0.00	1039	0.511	527	172	0.0	1.0	6.967	A
4	284	71	493	0.00	914	0.311	282	283	0.0	0.4	5.681	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	176	44	392	0.00	966	0.182	176	538	0.2	0.2	4.555	A
2	316	79	189	0.00	1071	0.296	316	379	0.3	0.4	4.769	A
3	634	158	299	0.00	1014	0.625	631	206	1.0	1.6	9.353	A
4	339	85	591	0.00	863	0.393	338	339	0.4	0.6	6.843	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	216	54	478	0.00	922	0.234	215	656	0.2	0.3	5.094	A
2	388	97	231	0.00	1049	0.369	387	463	0.4	0.6	5.431	A
3	776	194	366	0.00	979	0.793	769	252	1.6	3.5	16.508	C
4	415	104	721	0.00	797	0.521	413	414	0.6	1.1	9.346	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	216	54	481	0.00	920	0.235	216	660	0.3	0.3	5.109	A
2	388	97	231	0.00	1049	0.370	388	466	0.6	0.6	5.444	A
3	776	194	367	0.00	979	0.793	776	252	3.5	3.7	17.570	C
4	415	104	726	0.00	794	0.523	415	416	1.1	1.1	9.492	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	176	44	396	0.00	964	0.183	177	544	0.3	0.2	4.573	A
2	316	79	189	0.00	1070	0.296	317	383	0.6	0.4	4.783	A
3	634	158	300	0.00	1013	0.625	642	206	3.7	1.7	9.877	A
4	339	85	599	0.00	859	0.394	341	342	1.1	0.7	6.960	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	148	37	330	0.00	998	0.148	148	453	0.2	0.2	4.236	A
2	265	66	158	0.00	1086	0.244	265	320	0.4	0.3	4.388	A
3	531	133	251	0.00	1038	0.511	533	173	1.7	1.1	7.165	A
4	284	71	499	0.00	911	0.312	285	286	0.7	0.5	5.754	A

4000 Units, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

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	7.94	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	37	Arm 1	7.94	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	4000 Units	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	497	100.000
2		ONE HOUR	✓	412	100.000
3		ONE HOUR	✓	370	100.000
4		ONE HOUR	✓	387	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	0.00
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	124	249	124
	2	79	0	174	159
	3	158	110	0	102
	4	79	146	162	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.59	9.38	1.4	A	456	684
2	0.52	8.75	1.1	A	378	567
3	0.42	6.48	0.7	A	340	509
4	0.44	6.60	0.8	A	355	533

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	374	94	313	0.00	1007	0.372	372	237	0.0	0.6	5.651	A
2	310	78	400	0.00	962	0.323	308	284	0.0	0.5	5.494	A
3	279	70	271	0.00	1028	0.271	277	438	0.0	0.4	4.785	A
4	291	73	260	0.00	1034	0.282	290	288	0.0	0.4	4.828	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	447	112	375	0.00	975	0.458	446	284	0.6	0.8	6.795	A
2	370	93	480	0.00	921	0.402	370	341	0.5	0.7	6.522	A
3	333	83	325	0.00	1001	0.332	332	525	0.4	0.5	5.382	A
4	348	87	311	0.00	1007	0.345	347	345	0.4	0.5	5.449	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	547	137	459	0.00	931	0.587	545	347	0.8	1.4	9.260	A
2	454	113	587	0.00	866	0.524	452	417	0.7	1.1	8.665	A
3	407	102	397	0.00	963	0.423	406	642	0.5	0.7	6.453	A
4	426	107	381	0.00	972	0.439	425	422	0.5	0.8	6.575	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	547	137	460	0.00	931	0.588	547	348	1.4	1.4	9.375	A
2	454	113	589	0.00	865	0.525	454	418	1.1	1.1	8.753	A
3	407	102	399	0.00	963	0.423	407	644	0.7	0.7	6.482	A
4	426	107	382	0.00	971	0.439	426	424	0.8	0.8	6.604	A

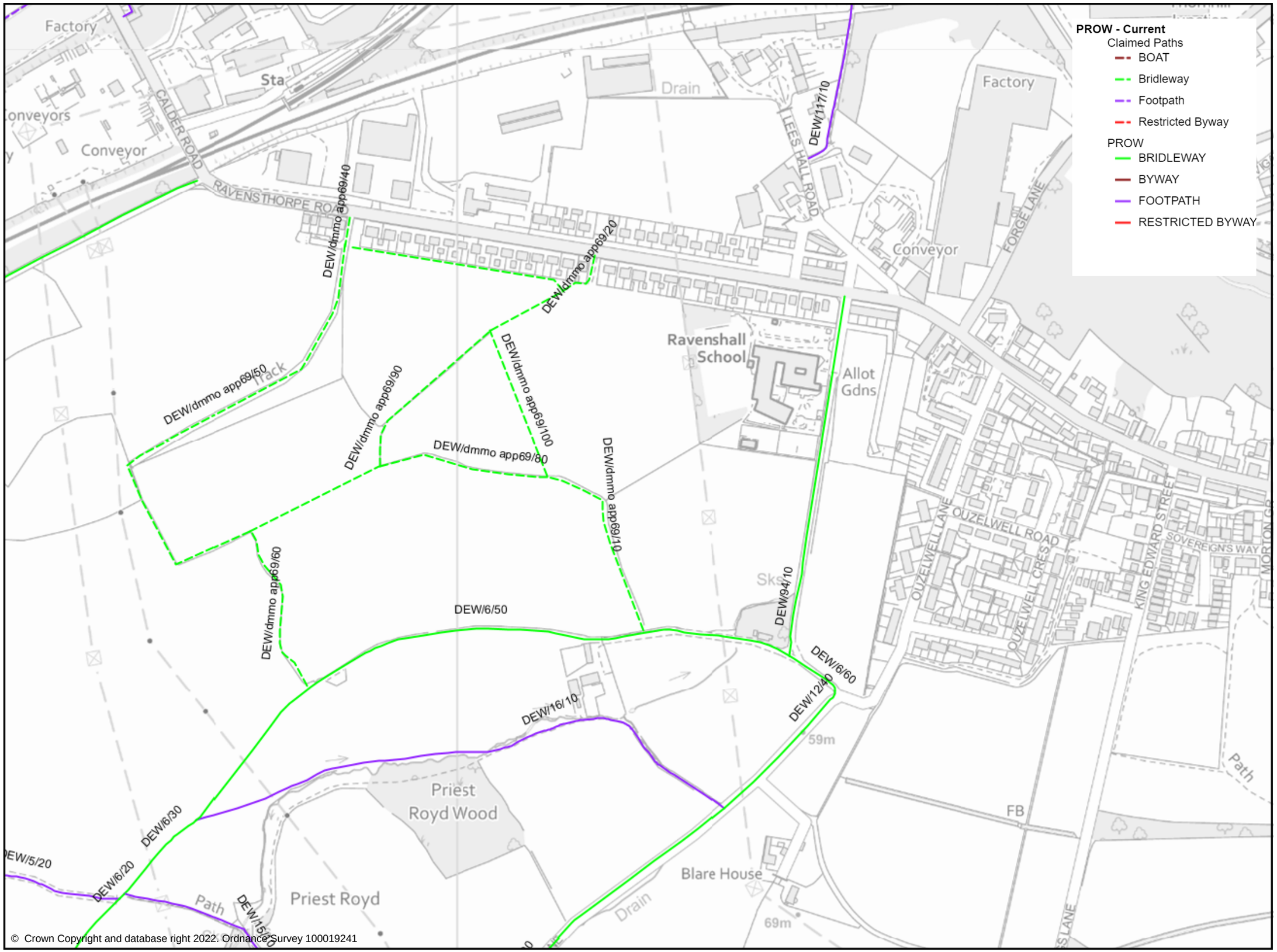
18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	447	112	377	0.00	974	0.459	449	285	1.4	0.9	6.887	A
2	370	93	483	0.00	919	0.403	372	343	1.1	0.7	6.600	A
3	333	83	327	0.00	999	0.333	334	528	0.7	0.5	5.414	A
4	348	87	313	0.00	1007	0.346	349	348	0.8	0.5	5.480	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	374	94	315	0.00	1005	0.372	375	238	0.9	0.6	5.723	A
2	310	78	404	0.00	960	0.323	311	287	0.7	0.5	5.555	A
3	279	70	273	0.00	1027	0.271	279	442	0.5	0.4	4.817	A
4	291	73	262	0.00	1033	0.282	292	291	0.5	0.4	4.861	A

APPENDIX I



Kirklees COUNCIL

Kompass
Kirklees Mapping Service

Scale = 1:5000

maps@kirklees.gov.uk

N

APPENDIX J

DSL - Received 19-10-22

		Approach Road Half Width	Min. approach road half-width	Entry Width	Effective flare length	Distance to next arm	Entry corner kerb line distance	Gradient	Kerbed central island
J1-Arm 1	B6409 - Station Road (ne)	3.6	3	4.2	2	20	20	0	N
J1-Arm 2	Internal Link (s)	7.6	7.6	8	2	10	7	0	Y
J1-Arm 3	B6117 - Thornhill Road (nw)	3	3	6	3.6	13.6	9.6	0	N
J2-Arm 1	B6117 - Station Road (s)	4.5	4.5	6.4	10	12	8	0	N
J2-Arm 2	Forge Lane	3.8	3.8	4.6	2	12.4	8.4	0	N
J2-Arm 3	Internal Link (n)	7	7	7	0	19	19	0	Y

LidI (DSL Version, but is same as BGH model as checked by HDM) - Received 19-10-22

		Approach Road Half Width	Min. approach road half-width	Entry Width	Effective flare length	Distance to next arm	Entry corner kerb line distance	Gradient	Kerbed central island
J1-Arm 1	B6409 - Station Road (ne)	3.11	3.11	3.85	2.5	20	20	0	N
J1-Arm 2	Internal Link (s)	8	8	8	0	10.8	7	0	Y
J1-Arm 3	B6117 - Thornhill Road (nw)	3	3	6.9	3	13	9.91	0	N
J2-Arm 1	B6117 - Station Road (s)	4.41	4.41	5.07	2.6	11.24	6.01	0	N
J2-Arm 2	Forge Lane	3.42	3.42	4.94	1.8	13.26	11.32	0	N
J2-Arm 3	Internal Link (n)	8	8	8	0	19	20	0	Y

HDM Check 20-10-22

		Approach Road Half Width	Min. approach road half-width	Entry Width	Effective flare length	Distance to next arm	Entry corner kerb line distance	Gradient	Kerbed central island
J1-Arm 1	B6409 - Station Road (ne)/Savile Road	3.3	3.1	3.8	2	20	18	0	N
J1-Arm 2	Internal Link (s)	8	8	8	0	10	7	0	Y
J1-Arm 3	B6117 - Thornhill Road (nw)	3.3	3.3	7	4	13.5	9	0	N
J2-Arm 1	B6117 - Station Road (s)	3.7	3.7	5.6	15	12	7	0	N
J2-Arm 2	Forge Lane	3.7	3.6	5	2	12.4	8	0	N
J2-Arm 3	Internal Link (n)	7.5	7.5	7.5	0	19	18	0	Y

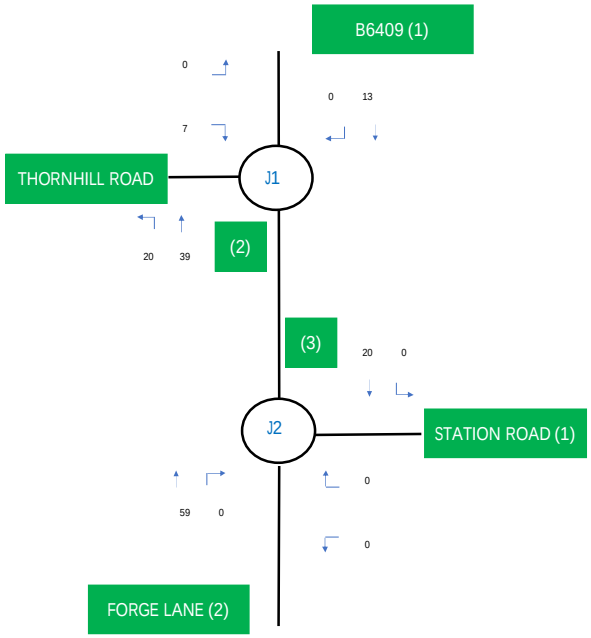
Difference between DSL and HDM model parameters

		Approach Road Half Width	Min. approach road half-width	Entry Width	Effective flare length	Distance to next arm	Entry corner kerb line distance	Gradient	Kerbed central island
J1-Arm 1	B6409 - Station Road (ne)/Savile Road	-0.3	0.1	-0.4	0	0	-2	0	N
J1-Arm 2	Internal Link (s)	0.4	0.4	0	-2	0	0	0	Y
J1-Arm 3	B6117 - Thornhill Road (nw)	0.3	0.3	1	0.4	-0.1	-0.6	0	N
J2-Arm 1	B6117 - Station Road (s)	-0.8	-0.8	-0.8	5	0	-1	0	N
J2-Arm 2	Forge Lane	-0.1	-0.2	0.4	0	0	-0.4	0	N
J2-Arm 3	Internal Link (n)	0.5	0.5	0.5	0	0	-1	0	Y

Difference between DSL and HDM model parameters

		Approach Road Half Width	Min. approach road half-width	Entry Width	Effective flare length	Distance to next arm	Entry corner kerb line distance	Gradient	Kerbed central island
J1-Arm 1	B6409 - Station Road (ne)/Savile Road	0.19	-0.01	-0.05	-0.5	0	-2	0	N
J1-Arm 2	Internal Link (s)	0	0	0	0	-0.8	0	0	Y
J1-Arm 3	B6117 - Thornhill Road (nw)	0.3	0.3	0.1	1	0.5	-0.91	0	N
J2-Arm 1	B6117 - Station Road (s)	-0.71	-0.71	0.53	12.4	0.76	0.99	0	N
J2-Arm 2	Forge Lane	0.28	0.18	0.06	0.2	-0.86	-3.32	0	N
J2-Arm 3	Internal Link (n)	-0.5	-0.5	-0.5	0	0	-2	0	Y

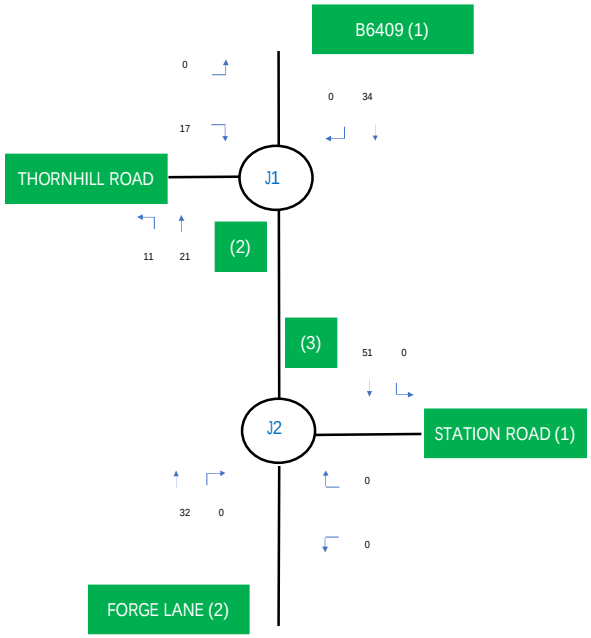
APPENDIX K



J1	1	2	3	TOT
1	0	13	0	13
2	39	0	20	59
3	0	7	0	7
TOT	39	20	20	79

J2	1	2	3	TOT
1	0	0	0	0
2	0	0	59	59
3	0	20	0	20
TOT	0	20	59	79

FORGE LANE



J1	1	2	3	TOT
1	0	34	0	34
2	21	0	11	32
3	0	17	0	17
TOT	21	51	11	83

J2	1	2	3	TOT
1	0	0	0	0
2	0	0	32	32
3	0	51	0	51
TOT	0	51	32	83

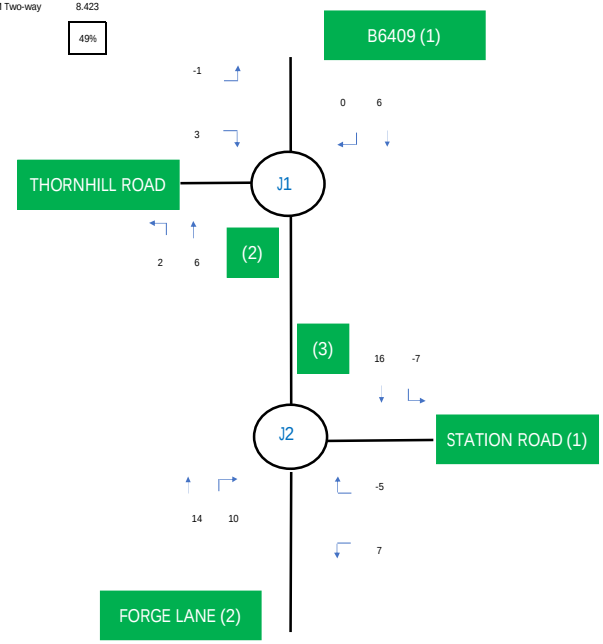
FORGE LANE

AM LIDL

AM Two-way 4.155

PM Two-way 8.423

49%

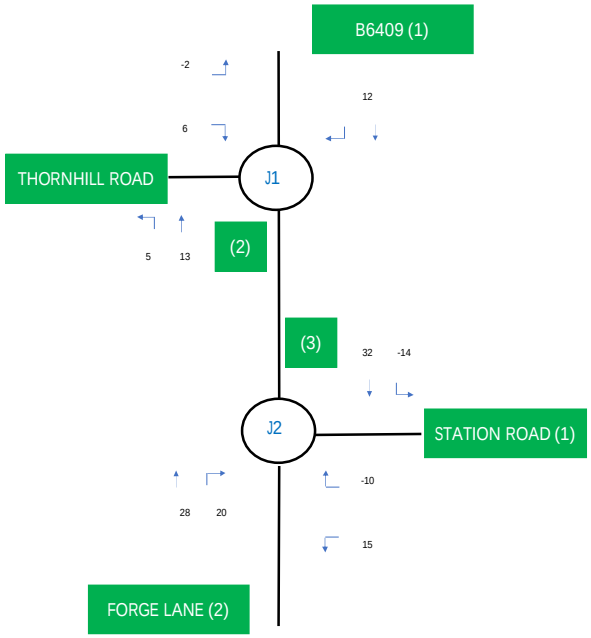


J1	1	2	3	TOT
1	0	6	0	6
2	6	0	2	9
3	-1	3	0	2
TOT	5	9	2	17

J2	1	2	3	TOT
1	0	7	-5	2
2	10	0	14	24
3	-7	16	0	9
TOT	3	23	9	35

FORGE LANE

PM LIDL

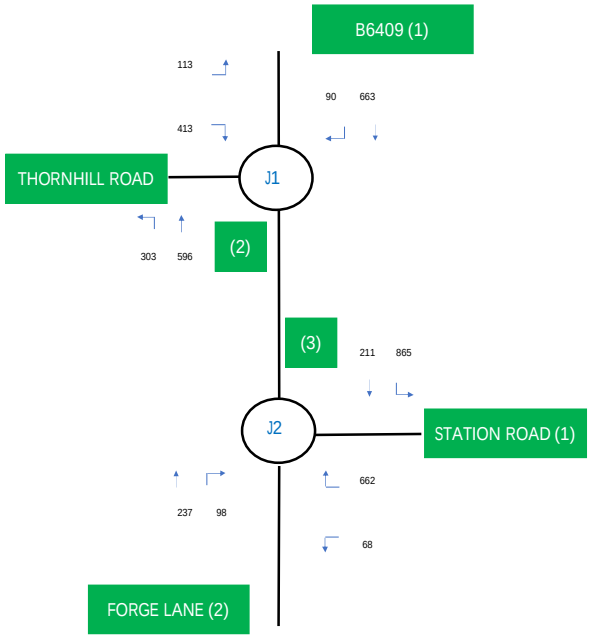


J1	1	2	3	TOT
1	0	12	0	12
2	13	0	5	18
3	-2	6	0	4
TOT	11	18	5	34

J2	1	2	3	TOT
1	0	15	-10	5
2	20	0	28	48
3	-14	32	0	18
TOT	6	47	18	71

FORGE LANE

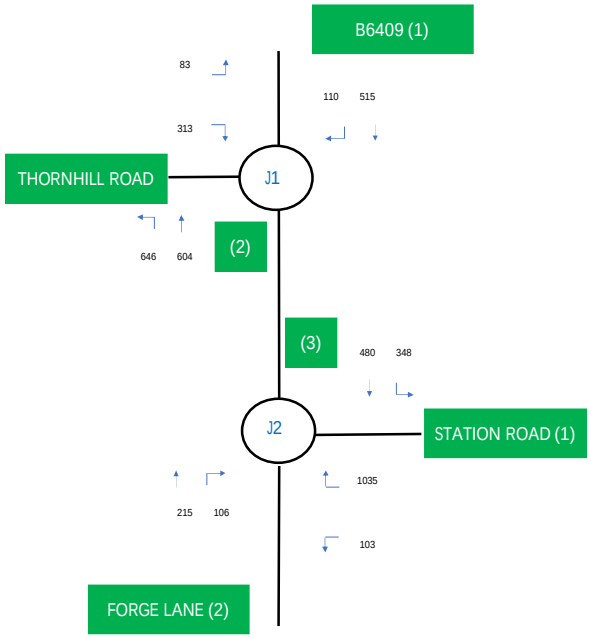
PM 22 LIDL



J1	1	2	3	TOT
1	0	663	90	753
2	596	0	303	899
3	113	413	0	526
TOT	709	1076	393	2178

J2	1	2	3	TOT
1	0	68	662	730
2	98	0	237	335
3	865	211	0	1076
TOT	963	279	899	2141

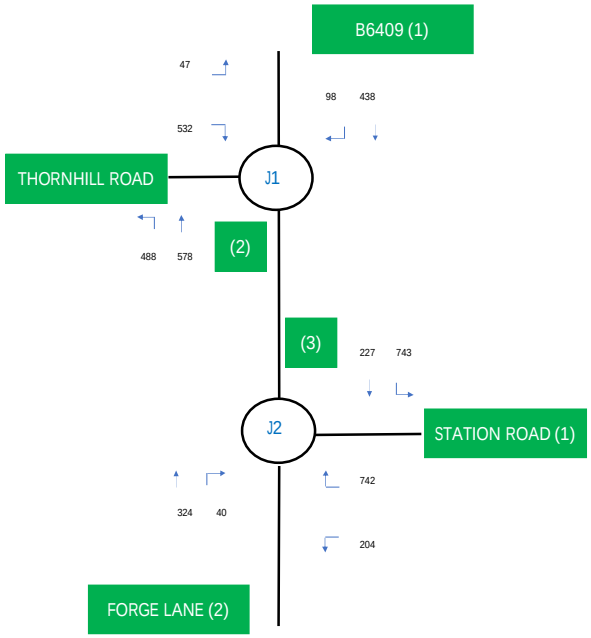
FORGE LANE



J1	1	2	3	TOT
1	0	515	110	625
2	604	0	646	1250
3	83	313	0	396
TOT	687	828	756	2271

J2	1	2	3	TOT
1	0	103	1035	1138
2	106	0	215	321
3	348	480	0	828
TOT	454	583	1250	2287

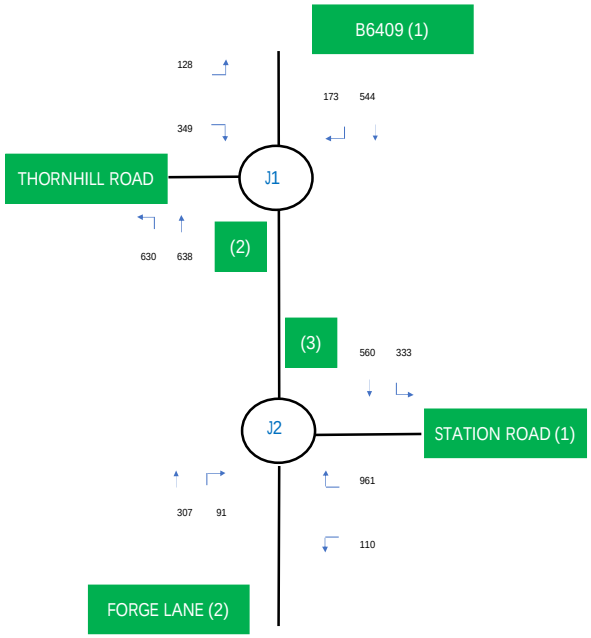
FORGE LANE



J1	1	2	3	TOT
1	0	438	98	536
2	578	0	488	1066
3	47	532	0	579
TOT	625	970	586	2181

J2	1	2	3	TOT
1	0	204	742	946
2	40	0	324	364
3	743	227	0	970
TOT	783	431	1066	2280

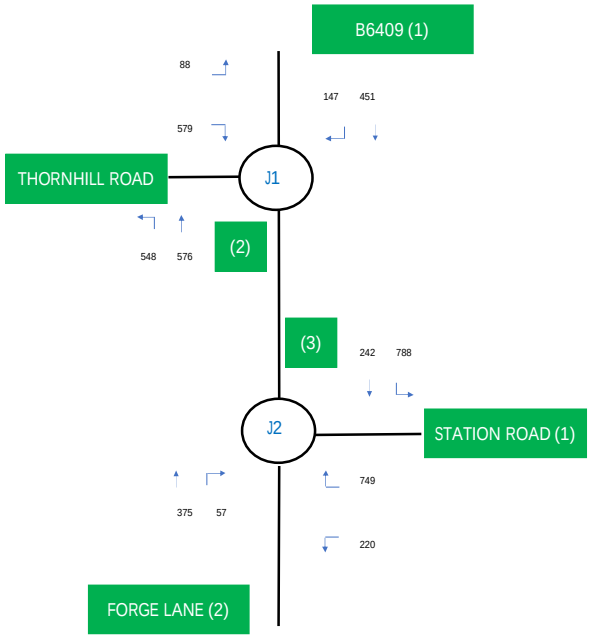
FORGE LANE



J1	1	2	3	TOT
1	0	544	173	717
2	638	0	630	1268
3	128	349	0	477
TOT	766	893	803	2462

J2	1	2	3	TOT
1	0	110	961	1071
2	91	0	307	398
3	333	560	0	893
TOT	424	670	1268	2362

FORGE LANE

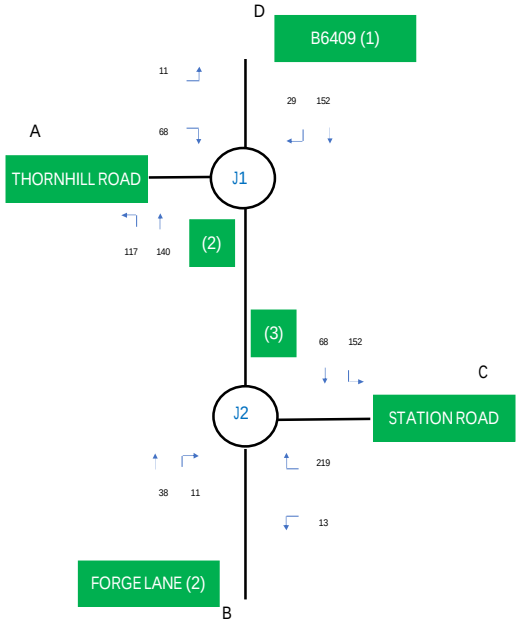


J1	1	2	3	TOT
1	0	451	147	598
2	576	0	548	1124
3	88	579	0	667
TOT	664	1030	695	2389

J2	1	2	3	TOT
1	0	220	749	969
2	57	0	375	432
3	788	242	0	1030
TOT	845	462	1124	2431

FORGE LANE

AM 22 QHR 1



Quarter Hour

J1	1	2	3	TOT
1	0	152	29	181
2	140	0	117	257
3	11	68	0	79
TOT	151	220	146	517

Quarter Hour

J2	1	2	3	TOT
1	0	13	219	232
2	11	0	38	49
3	152	68	0	220
TOT	163	81	257	501

Hour

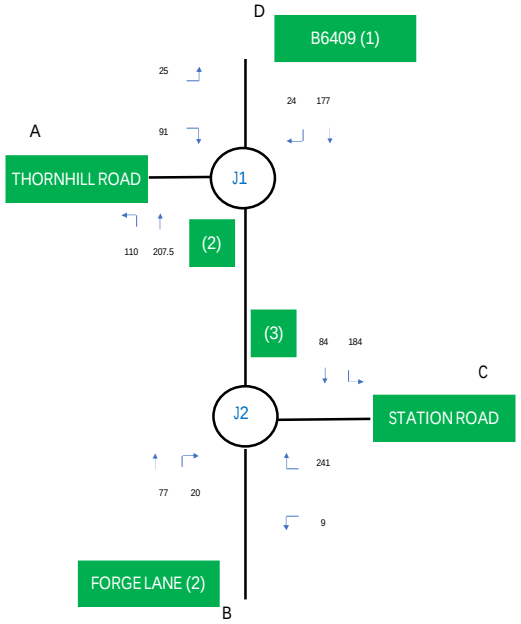
J1	1	2	3	TOT
1	0	608	116	724
2	560	0	468	1028
3	44	272	0	316
TOT	604	880	584	2068

Hour

J2	1	2	3	TOT
1	0	52	876	928
2	44	0	152	196
3	608	272	0	880
TOT	652	324	1028	2004

0800	A	B	C	D	Tot
A	0	20	48	11	79
B	10	0	11	28	49
C	107	13	0	112	232
D	29	48	104	0	181
Tot	146	81	163	151	541

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	177	24	201
2	207.5	0	110	317.5
3	25	91	0	116
TOT	232.5	268	134	634.5

Quarter Hour

J2	1	2	3	TOT
1	0	9	241	250
2	20	0	77	97
3	184	84	0	268
TOT	204	93	317.5	614.5

Hour

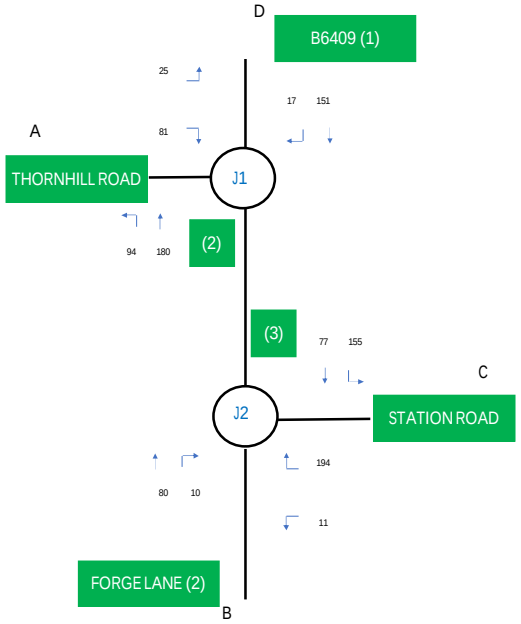
J1	1	2	3	TOT
1	0	708	96	804
2	830	0	440	1270
3	100	364	0	464
TOT	930	1072	536	2538

Hour

J2	1	2	3	TOT
1	0	36	964	1000
2	80	0	306	386
3	736	336	0	1072
TOT	816	372	1270	2458

0815	A	B	C	D	Tot
A	0	27	64	25	116
B	19	0	20	58	97
C	91	9	0	150	250
D	24	57	120	0	201
Tot	134	93	204	232.5	663.5

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	151	17	168
2	180	0	94	274
3	25	81	0	106
TOT	205	232	111	548

Quarter Hour

J2	1	2	3	TOT
1	0	11	194	204.5
2	10	0	80	90
3	155	77	0	232
TOT	165	88	274	526.5

Hour

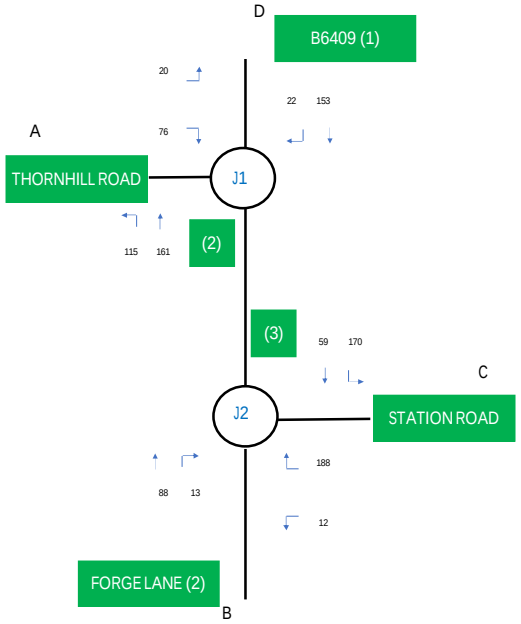
J1	1	2	3	TOT
1	0	604	68	672
2	720	0	376	1096
3	100	324	0	424
TOT	820	928	444	2192

Hour

J2	1	2	3	TOT
1	0	42	776	818
2	40	0	320	360
3	620	308	0	928
TOT	660	350	1096	2106

0830	A	B	C	D	Tot
A	0	34	47	25	106
B	29	0	10	51	90
C	65	11	0	129	204.5
D	17	43	108	0	168
Tot	111	87.5	165	205	568.5

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	153	22	175
2	161	0	115	276
3	20	76	0	96
TOT	181	229	137	547

Quarter Hour

J2	1	2	3	TOT
1	0	12	188	200
2	13	0	88	101
3	170	59	0	229
TOT	183	71	276	530

Hour

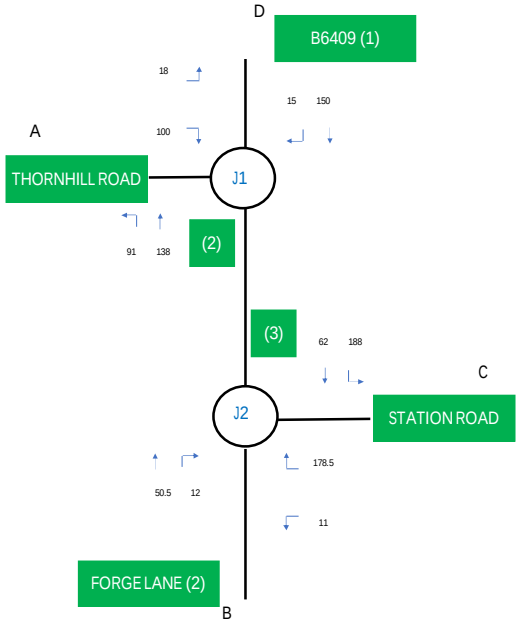
J1	1	2	3	TOT
1	0	612	88	700
2	644	0	460	1104
3	80	304	0	384
TOT	724	916	548	2188

Hour

J2	1	2	3	TOT
1	0	48	752	800
2	52	0	352	404
3	680	236	0	916
TOT	732	284	1104	2120

0845	A	B	C	D	Tot
A	0	13	63	20	96
B	31	0	13	57	101
C	84	12	0	104	200
D	22	46	107	0	175
Tot	137	71	183	181	572

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	150	15	165
2	138	0	91	229
3	18	100	0	118
TOT	156	250	106	512

Quarter Hour

J2	1	2	3	TOT
1	0	11	178.5	189.5
2	12	0	51	63
3	188	62	0	250
TOT	200	73	229	502

Hour

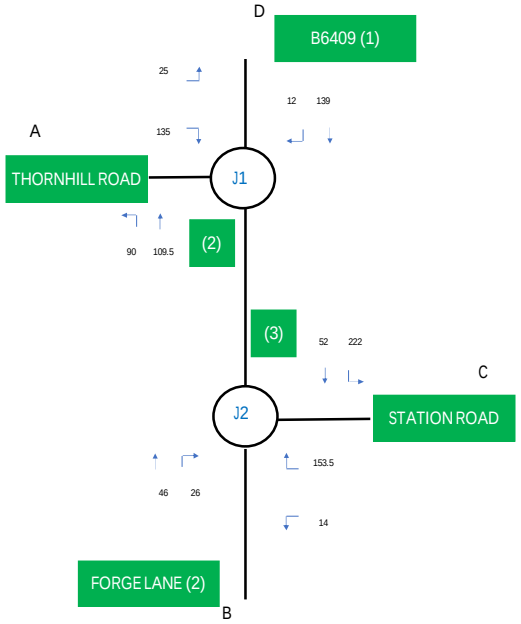
J1	1	2	3	TOT
1	0	600	60	660
2	552	0	364	916
3	72	400	0	472
TOT	624	1000	424	2048

Hour

J2	1	2	3	TOT
1	0	44	714	758
2	48	0	202	250
3	752	248	0	1000
TOT	800	292	916	2008

1615	A	B	C	D	Tot
A	0	19	81	18	118
B	19	0	12	32	63
C	72	11	0	106.5	189.5
D	15	43	107	0	165
Tot	106	73	200	156	535

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	139	12	151
2	109.5	0	90	199.5
3	25	135	0	160
TOT	134.5	274	102	510.5

Quarter Hour

J2	1	2	3	TOT
1	0	14	153.5	167.5
2	26	0	46	72
3	222	52	0	274
TOT	248	66	199.5	513.5

Hour

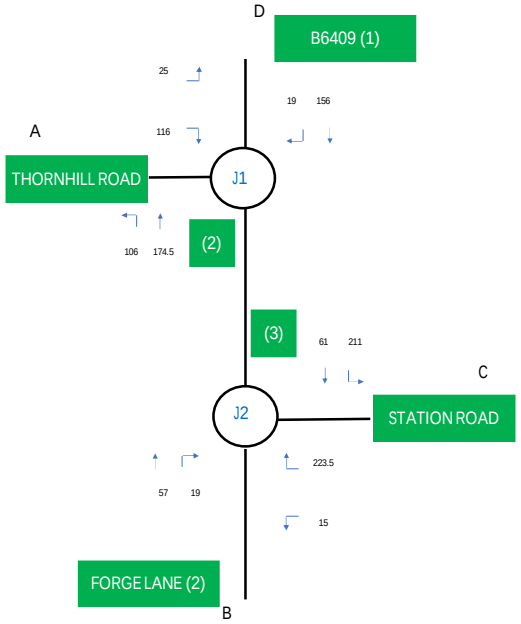
J1	1	2	3	TOT
1	0	556	48	604
2	438	0	360	798
3	100	540	0	640
TOT	538	1096	408	2042

Hour

J2	1	2	3	TOT
1	0	56	614	670
2	104	0	184	288
3	888	208	0	1096
TOT	992	264	798	2054

1630	A	B	C	D	Tot
A	0	18	117	25	160
B	16	0	26	30	72
C	74	14	0	80	167.5
D	12	34	105	0	151
Tot	102	66	248	134.5	550.5

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	156	19	175
2	174.5	0	106	280.5
3	25	116	0	141
TOT	199.5	272	125	596.5

Quarter Hour

J2	1	2	3	TOT
1	0	15	223.5	238.5
2	19	0	57	76
3	211	61	0	272
TOT	230	76	280.5	586.5

Hour

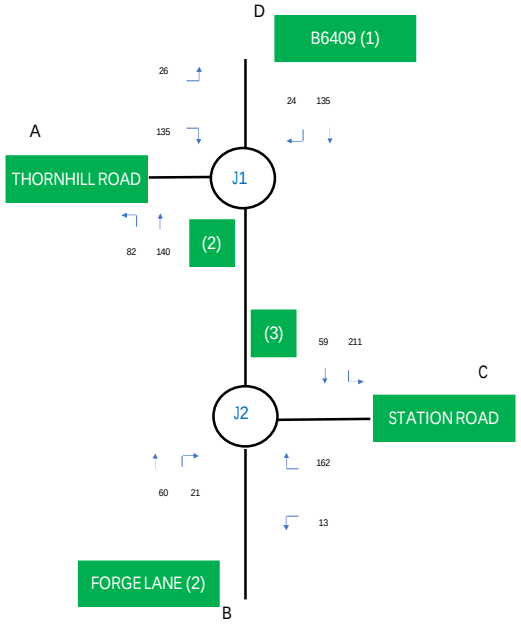
J1	1	2	3	TOT
1	0	624	76	700
2	698	0	424	1122
3	100	464	0	564
TOT	798	1088	500	2386

Hour

J2	1	2	3	TOT
1	0	60	894	954
2	76	0	228	304
3	844	244	0	1088
TOT	920	304	1122	2346

1645	A	B	C	D	Tot
A	0	16	100	25	141
B	16	0	19	41	76
C	90	15	0	133.5	238.5
D	19	45	111	0	175
Tot	125	76	230	199.5	630.5

FORGE LANE



Quarter Hour

J1	1	2	3	TOT
1	0	135	24	159
2	140	0	82	222
3	26	135	0	160.5
TOT	166	269	106	541

Quarter Hour

J2	1	2	3	TOT
1	0	13	162	175
2	21	0	60	81
3	210.5	59	0	269
TOT	231.5	72	222	525

Hour

J1	1	2	3	TOT
1	0	538	96	634
2	560	0	328	888
3	104	538	0	642
TOT	664	1076	424	2164

Hour

J2	1	2	3	TOT
1	0	52	648	700
2	84	0	240	324
3	842	234	0	1076
TOT	926	286	888	2100

1700	A	B	C	D	Tot
A	0	19	116	26	161
B	16	0	21	44	81
C	66	13	0	96	175
D	24	40	95	0	159
Tot	106	72	232	166	575

FORGE LANE

APPENDIX L

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.3.1598

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

Filename: 221019 Thornhill Double Mini - HDM Measurements - Flat Profile.j10
Path: C:\Users\AdamDarwin\Desktop\My HDM Response Info\Applications\Dewsbury Riverside\Modelling\Forge Lane
Report generation date: 20/10/2022 16:39:33

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	Existing Layout DPL - 2022 Count											
Junction 1 - Arm 1	D2	2.8	12.80	0.73	B	-27 % [Junction 2 - Arm 2]	D3	2.1	10.86	0.66	B	-19 % [Junction 1 - Arm 3]
Junction 1 - Arm 2		4.0	13.43	0.79	B			3.3	11.27	0.76	B	
Junction 1 - Arm 3		25.5	216.70	1.13	F			92.6	555.38	1.32	F	
Junction 2 - Arm 1		26.0	82.86	1.04	F			9.7	33.73	0.94	D	
Junction 2 - Arm 2		68.5	656.77	1.50	F			12.7	125.50	1.09	F	
Junction 2 - Arm 3		2.0	7.07	0.65	A			2.3	7.96	0.68	A	
	Existing Layout DPL - 2022 LIDL COUNT Flat											
Junction 1 - Arm 1							D5	2.7	13.10	0.71	B	-13 % [Junction 1 - Arm 3]
Junction 1 - Arm 2								2.0	8.09	0.65	A	
Junction 1 - Arm 3								49.4	343.40	1.08	F	
Junction 2 - Arm 1								2.6	13.08	0.71	B	
Junction 2 - Arm 2								4.7	53.26	0.82	F	
Junction 2 - Arm 3								2.3	8.06	0.68	A	
	Existing Layout DPL - 2023 Model Base Flat											
Junction 1 - Arm 1	D7	1.4	8.30	0.57	A	-27 % [Junction 2 - Arm 2]	D9	1.9	10.99	0.64	B	-16 % [Junction 1 - Arm 3]
Junction 1 - Arm 2		2.7	10.11	0.72	B			3.4	11.90	0.76	B	
Junction 1 - Arm 3		2.6	23.77	0.70	C			79.3	513.36	1.15	F	
Junction 2 - Arm 1		291.4	1089.65	1.34	F			12.9	51.75	0.93	F	
Junction 2 - Arm 2		11.7	140.35	0.95	F			21.3	219.00	1.02	F	
Junction 2 - Arm 3		1.3	5.66	0.54	A			1.9	6.83	0.63	A	
	Existing Layout DPL - 2030 Model Base Flat											
Junction 1 - Arm 1	D11	2.2	11.00	0.67	B	-29 % [Junction 2 - Arm 2]	D13	1.6	9.80	0.60	A	-21 % [Junction 1 - Arm 3]
Junction 1 - Arm 2		3.2	11.87	0.75	B			3.8	13.31	0.78	B	
Junction 1 - Arm 3		6.9	54.96	0.88	F			146.4	896.75	1.28	F	
Junction 2 - Arm 1		276.2	1101.52	1.35	F			14.4	56.80	0.94	F	
Junction 2 - Arm 2		35.0	324.56	1.06	F			78.7	718.64	1.22	F	
Junction 2 - Arm 3		1.5	6.09	0.58	A			1.5	5.93	0.58	A	
	Existing Layout DPL - 2023 Model Base Flat + DR											
Junction 1 - Arm 1		1.5	8.62	0.58	A			2.2	12.06	0.67	B	
Junction 1 - Arm 2		3.0	10.76	0.73	B			3.5	12.18	0.77	B	

Junction 1 - Arm 3	D28	2.9	26.87	0.73	D	-31 % [Junction 2 - Arm 2]	D32	99.9	646.88	1.20	F	-18 % [Junction 1 - Arm 3]
Junction 2 - Arm 1		304.4	1155.77	1.36	F			18.7	75.00	0.96	F	
Junction 2 - Arm 2		42.7	418.61	1.10	F			41.5	388.49	1.10	F	
Junction 2 - Arm 3		1.4	5.77	0.55	A			2.0	7.20	0.65	A	
	Existing Layout DPL - 2023 Model Base Flat + DR + LIDL											
Junction 1 - Arm 1	D29	1.6	8.78	0.59	A	-33 % [Junction 2 - Arm 2]	D33	2.4	12.67	0.69	B	-22 % [Junction 2 - Arm 2]
Junction 1 - Arm 2		2.9	10.47	0.73	B			3.3	11.55	0.75	B	
Junction 1 - Arm 3		2.9	26.83	0.73	D			100.4	644.95	1.20	F	
Junction 2 - Arm 1		316.9	1218.17	1.38	F			27.4	107.43	0.99	F	
Junction 2 - Arm 2		55.7	520.93	1.14	F			74.4	651.39	1.20	F	
Junction 2 - Arm 3		1.4	5.88	0.56	A			2.2	7.58	0.67	A	
	Existing Layout DPL - 2030 Model Base Flat + DR											
Junction 1 - Arm 1	D36	2.3	11.57	0.68	B	-33 % [Junction 2 - Arm 2]	D40	1.9	10.68	0.63	B	-24 % [Junction 2 - Arm 2]
Junction 1 - Arm 2		3.3	12.15	0.76	B			3.8	13.40	0.78	B	
Junction 1 - Arm 3		8.4	66.25	0.90	F			166.3	1022.73	1.32	F	
Junction 2 - Arm 1		288.8	1170.35	1.37	F			20.4	79.88	0.97	F	
Junction 2 - Arm 2		80.5	686.16	1.20	F			106.3	955.46	1.31	F	
Junction 2 - Arm 3		1.6	6.21	0.59	A			1.6	6.21	0.60	A	
	Existing Layout DPL - 2030 Model Base Flat + DR + LIDL											
Junction 1 - Arm 1	D37	2.4	11.85	0.69	B	-35 % [Junction 2 - Arm 2]	D41	2.0	11.14	0.64	B	-27 % [Junction 2 - Arm 2]
Junction 1 - Arm 2		3.2	11.74	0.75	B			3.6	12.67	0.77	B	
Junction 1 - Arm 3		8.3	65.57	0.90	F			167.0	1020.37	1.32	F	
Junction 2 - Arm 1		301.2	1237.04	1.39	F			29.0	110.47	0.99	F	
Junction 2 - Arm 2		94.8	784.65	1.23	F			143.1	1244.01	1.40	F	
Junction 2 - Arm 3		1.6	6.35	0.60	A			1.7	6.47	0.61	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. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

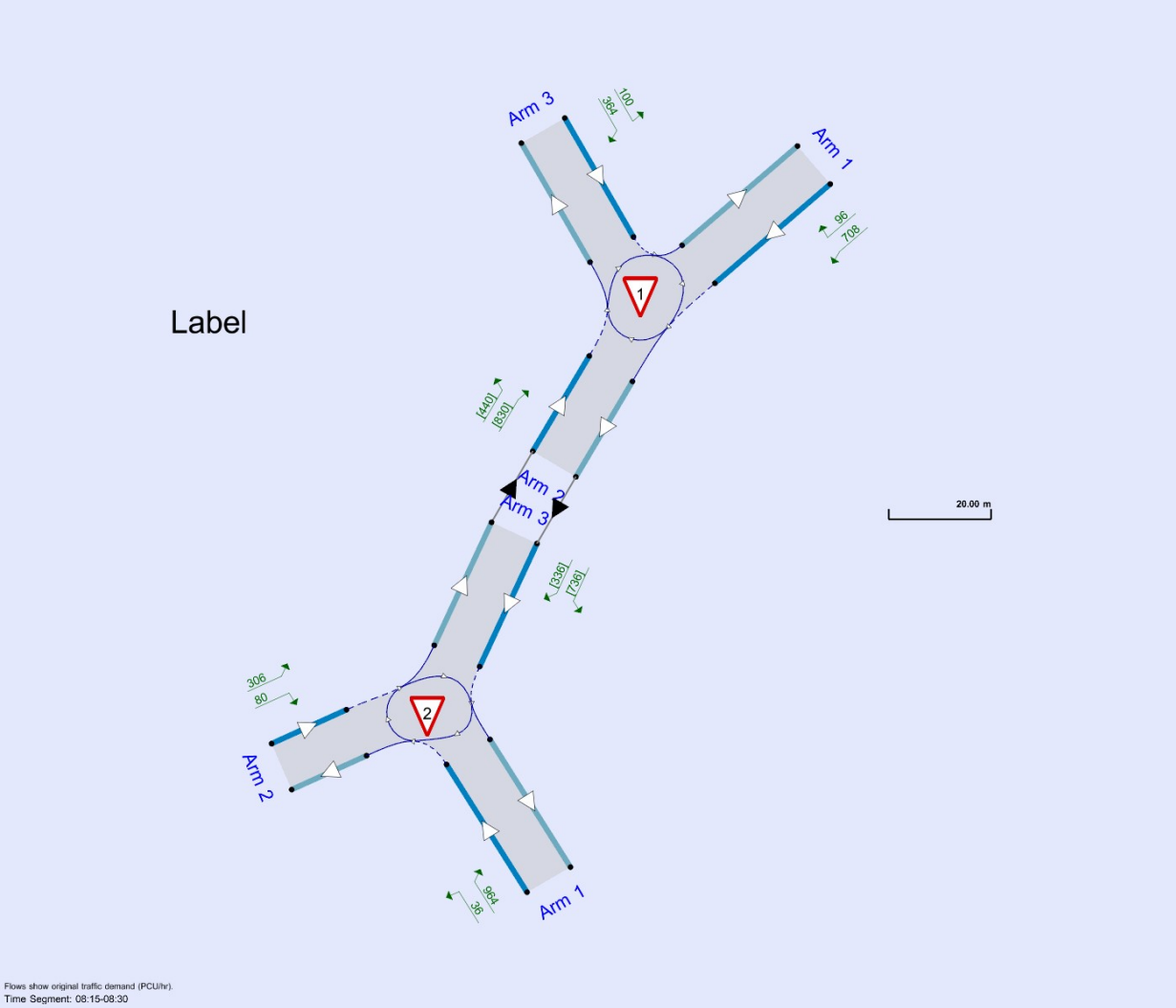
File summary

File Description

Title	
Location	
Site number	
Date	31/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\DavidSagstad
Description	

Units

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



The junction diagram reflects the last run of Junctions.

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	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
JUNCTIONS 9	5.75					✓	Delay	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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D2	2022 Count	AM	DIRECT	08:00	09:00	60	15	✓		
D3	2022 Count	PM	DIRECT	16:15	17:15	60	15	✓		
D5	2022 LIDL COUNT Flat	PM	FLAT	16:15	17:15	60	15	✓		
D7	2023 Model Base Flat	AM	FLAT	08:00	09:00	60	15	✓		
D9	2023 Model Base Flat	PM	FLAT	16:15	17:15	60	15	✓		
D11	2030 Model Base Flat	AM	FLAT	08:00	09:00	60	15	✓		
D13	2030 Model Base Flat	PM	FLAT	16:15	17:15	60	15	✓		
D14	Dewbusry Riverside	AM	FLAT	08:00	09:00	60	15			
D15	Dewbusry Riverside	PM	FLAT	16:15	17:15	60	15			
D16	LIDL Development	AM	FLAT	08:00	09:00	60	15			
D17	LIDL Development	PM	FLAT	16:15	17:15	60	15			
D28	2023 Model Base Flat + DR	AM	FLAT	08:00	09:00	60	15	✓	Simple	D7+D14
D29	2023 Model Base Flat + DR + LIDL	AM	FLAT	08:00	09:00	60	15	✓	Simple	D28+D16
D32	2023 Model Base Flat + DR	PM	FLAT	16:15	17:15	60	15	✓	Simple	D9+D15
D33	2023 Model Base Flat + DR + LIDL	PM	FLAT	16:15	17:15	60	15	✓	Simple	D32+D17
D36	2030 Model Base Flat + DR	AM	FLAT	08:00	09:00	60	15	✓	Simple	D11+D14
D37	2030 Model Base Flat + DR + LIDL	AM	FLAT	08:00	09:00	60	15	✓	Simple	D36+D16

D40	2030 Model Base Flat + DR	PM	FLAT	16:15	17:15	60	15	✓	Simple	D13+D15
D41	2030 Model Base Flat + DR + LIDL	PM	FLAT	16:15	17:15	60	15	✓	Simple	D40+D17

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout DPL	✓	100.000	100.000

Existing Layout DPL - 2022 Count, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 1	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 2 have 84% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 90% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	50.20	F
2	Southern	Mini-roundabout		1, 2, 3	139.19	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-27	Junction 2 - Arm 2	94.50	F

Arms

Arms

Junction	Arm	Name	Description
1	1	Station Road N Northern Junction	
	2	Internal Link Northern	
	3	Thornhill Road	
2	1	Station Road S Southern Junction	
	2	Forge Lane	
	3	Internal Link Southern	

Mini Roundabout Geometry

Junction	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	1	3.30	3.10	3.80	2.0	20.00	18.00	0.0	
	2	8.00	8.00	8.00	0.0	10.00	7.00	0.0	✓
	3	3.30	3.30	7.00	4.0	13.50	9.00	0.0	
2	1	3.70	3.70	5.60	15.0	12.00	7.00	0.0	
	2	3.70	3.60	5.00	2.0	12.40	8.00	0.0	
	3	7.50	7.50	7.50	0.0	19.00	18.00	0.0	✓

Slope / Intercept / Capacity

Arm Intercept Adjustments

Junction	Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1	1	Direct		200
	2	None		
	3	None		
2	1	None		
	2	None		
	3	None		

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1	1	0.718	1327
	2	0.669	1448
	3	0.638	865
2	1	0.668	1169
	2	0.630	824
	3	0.762	1607

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 period length (min)	Time segment length (min)	Run automatically
D2	2022 Count	AM	DIRECT	08:00	09:00	60	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1	1		DIRECT	✓	100.000
	2	✓			
	3		DIRECT	✓	100.000
2	1		DIRECT	✓	100.000
	2		DIRECT	✓	100.000
	3	✓			

Origin-Destination Data

Junction 1 08:00 - 08:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	608	116
	2	560	0	468
	3	44	272	0

Proportions

		To		
		1	2	3
From	1	0.00	0.84	0.16
	2	0.54	0.00	0.46
	3	0.14	0.86	0.00

Junction 1 08:15 - 08:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	708	96
	2	830	0	440
	3	100	364	0

Proportions

		To		
		1	2	3
From	1	0.00	0.88	0.12
	2	0.65	0.00	0.35
	3	0.22	0.78	0.00

Junction 1 08:30 - 08:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	604	68
	2	720	0	376
	3	100	324	0

Proportions

		To		
		1	2	3
From	1	0.00	0.90	0.10
	2	0.66	0.00	0.34
	3	0.24	0.76	0.00

Junction 1 08:45 - 09:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	612	88
	2	644	0	460
	3	80	304	0

Proportions

		To		
		1	2	3
From	1	0.00	0.87	0.13
	2	0.58	0.00	0.42
	3	0.21	0.79	0.00

Junction 2 08:00 - 08:15

Demand (PCU/hr)

From \ To	1	2	3
1	0	52	876
2	44	0	152
3	608	272	0

Proportions

From \ To	1	2	3
1	0.00	0.06	0.94
2	0.22	0.00	0.78
3	0.69	0.31	0.00

Junction 2 08:15 - 08:30

Demand (PCU/hr)

From \ To	1	2	3
1	0	36	964
2	80	0	306
3	736	336	0

Proportions

From \ To	1	2	3
1	0.00	0.04	0.96
2	0.21	0.00	0.79
3	0.69	0.31	0.00

Junction 2 08:30 - 08:45

Demand (PCU/hr)

From \ To	1	2	3
1	0	42	776
2	40	0	320
3	620	308	0

Proportions

From \ To	1	2	3
1	0.00	0.05	0.95
2	0.11	0.00	0.89
3	0.67	0.33	0.00

Junction 2 08:45 - 09:00

Demand (PCU/hr)

From \ To	1	2	3
1	0	48	752
2	52	0	352
3	680	236	0

Proportions

From \ To	1	2	3
1	0.00	0.06	0.94
2	0.13	0.00	0.87
3	0.74	0.26	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	724	724
		2	1028	1028
		3	316	316
	2	1	928	928
		2	196	196
		3	880	880
08:15-08:30	1	1	804	804
		2	1270	1270
		3	464	464
	2	1	1000	1000
		2	386	386
		3	1072	1072
08:30-08:45	1	1	672	672
		2	1096	1096
		3	424	424
	2	1	818	818
		2	360	360
		3	928	928
		1	700	700

08:45-09:00	1	2	1104	1104
		3	384	384
	2	1	800	800
		2	404	404
		3	916	916

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.73	12.80	2.8	B	725	725
	2	0.79	13.43	4.0	B	1060	1060
	3	1.13	216.70	25.5	F	397	397
2	1	1.04	82.86	26.0	F	887	887
	2	1.50	656.77	68.5	F	337	337
	3	0.65	7.07	2.0	A	940	940

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	724	181	267	1135	0.638	716	574	0.0	1.9	9.278	A
	2	986	246	115	1371	0.719	975	868	0.0	2.7	9.739	A
	3	316	79	531	526	0.600	310	559	0.0	1.6	17.809	C
2	1	928	232	267	991	0.937	889	638	0.0	9.7	31.908	D
	2	196	49	840	295	0.665	188	317	0.0	1.9	35.016	E
	3	868	217	42	1575	0.551	863	986	0.0	1.3	5.522	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	804	201	308	1106	0.727	800	798	1.9	2.8	12.797	B
	2	1100	275	96	1384	0.795	1095	1012	2.7	4.0	13.427	B
	3	464	116	714	409	1.134	392	476	1.6	19.6	119.962	F
2	1	1000	250	316	957	1.044	935	746	9.7	26.0	82.859	F
	2	386	97	900	257	1.504	252	351	1.9	35.5	281.897	F
	3	1012	253	52	1567	0.646	1010	1100	1.3	2.0	7.070	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	672	168	308	1106	0.608	676	810	2.8	1.7	9.304	A
	2	1091	273	69	1402	0.778	1091	915	4.0	3.9	12.761	B
	3	424	106	717	408	1.040	401	443	19.6	25.5	216.702	F
2	1	818	205	304	966	0.847	892	659	26.0	7.6	61.937	F
	2	360	90	847	290	1.242	289	348	35.5	53.2	541.272	F
	3	915	229	46	1572	0.582	917	1091	2.0	1.6	6.058	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	700	175	354	1073	0.653	699	720	1.7	2.0	10.561	B
	2	1065	266	88	1389	0.767	1066	965	3.9	3.7	12.303	B
	3	384	96	623	468	0.821	451	531	25.5	8.7	149.470	F
2	1	800	200	249	1002	0.798	811	756	7.6	4.7	21.786	C
	2	404	101	763	343	1.177	343	297	53.2	68.5	656.769	F
	3	965	241	40	1576	0.612	965	1065	1.6	1.7	6.467	A

Existing Layout DPL - 2022 Count, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 87% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	157.58	F
2	Southern	Mini-roundabout		1, 2, 3	34.39	D

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-19	Junction 1 - Arm 3	97.53	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2022 Count	PM	DIRECT	16:15	17:15	60	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1	1		DIRECT	✓	100.000
	2	✓			
	3		DIRECT	✓	100.000
2	1		DIRECT	✓	100.000
	2		DIRECT	✓	100.000
	3	✓			

Origin-Destination Data

Junction 1 16:15 - 16:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	600	60
	2	552	0	364

Proportions

		To		
		1	2	3
From	1	0.00	0.91	0.09
	2	0.60	0.00	0.40

	3	72	400	0

	3	0.15	0.85	0.00

Junction 1 16:30 - 16:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	556	48
	2	438	0	360
	3	100	540	0

Proportions

		To		
		1	2	3
From	1	0.00	0.92	0.08
	2	0.55	0.00	0.45
	3	0.16	0.84	0.00

Junction 1 16:45 - 17:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	624	76
	2	698	0	424
	3	100	464	0

Proportions

		To		
		1	2	3
From	1	0.00	0.89	0.11
	2	0.62	0.00	0.38
	3	0.18	0.82	0.00

Junction 1 17:00 - 17:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	538	96
	2	560	0	328
	3	104	538	0

Proportions

		To		
		1	2	3
From	1	0.00	0.85	0.15
	2	0.63	0.00	0.37
	3	0.16	0.84	0.00

Junction 2 16:15 - 16:30

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	44	714
	2	48	0	202
	3	752	248	0

Proportions

		To		
		1	2	3
From	1	0.00	0.06	0.94
	2	0.19	0.00	0.81
	3	0.75	0.25	0.00

Junction 2 16:30 - 16:45

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	56	614
	2	104	0	184
	3	888	208	0

Proportions

		To		
		1	2	3
From	1	0.00	0.08	0.92
	2	0.36	0.00	0.64
	3	0.81	0.19	0.00

Junction 2 16:45 - 17:00

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	60	894
	2	76	0	228
	3	844	244	0

Proportions

		To		
		1	2	3
From	1	0.00	0.06	0.94
	2	0.25	0.00	0.75
	3	0.78	0.22	0.00

Junction 2 17:00 - 17:15

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	52	648
	2	84	0	240
	3	842	234	0

Proportions

		To		
		1	2	3
From	1	0.00	0.07	0.93
	2	0.26	0.00	0.74
	3	0.78	0.22	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Average PCU Per Veh

		To		
		1	2	3
From	1	1.100	1.100	1.100
	2	1.100	1.100	1.100
	3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Average PCU Per Veh

		To		
		1	2	3
From	1	1.100	1.100	1.100
	2	1.100	1.100	1.100
	3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	660	660
		2	916	916
		3	472	472
	2	1	758	758
		2	250	250
		3	1000	1000
16:30-16:45	1	1	604	604
		2	798	798
		3	640	640
	2	1	670	670
		2	288	288
		3	1096	1096
16:45-17:00	1	1	700	700
		2	1122	1122
		3	564	564
	2	1	954	954
		2	304	304
		3	1088	1088
17:00-17:15	1	1	634	634
		2	888	888
		3	642	642
	2	1	700	700
		2	324	324
		3	1076	1076

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.66	10.86	2.1	B	650	650
	2	0.76	11.27	3.3	B	924	924
	3	1.32	555.38	92.6	F	580	580
2	1	0.94	33.73	9.7	D	771	771
	2	1.09	125.50	12.7	F	292	292
	3	0.68	7.96	2.3	A	986	986

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	660	165	378	1055	0.625	653	605	0.0	1.8	9.678	A
	2	898	225	59	1408	0.638	891	972	0.0	1.9	7.541	A
	3	472	118	537	523	0.903	446	413	0.0	6.4	43.077	E
2	1	758	190	239	1009	0.751	746	772	0.0	3.1	14.423	B
	2	250	63	702	381	0.655	242	283	0.0	1.9	27.187	D
	3	972	243	47	1572	0.618	965	898	0.0	1.7	6.452	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	604	151	480	982	0.615	604	531	1.8	1.8	10.474	B
	2	803	201	48	1416	0.567	805	1036	1.9	1.5	6.500	A
	3	640	160	442	583	1.098	569	411	6.4	24.3	120.778	F
2	1	670	168	197	1038	0.646	674	940	3.1	2.1	11.024	B
	2	288	72	618	434	0.663	287	253	1.9	2.1	26.740	D
	3	1036	259	103	1529	0.677	1034	803	1.7	2.3	7.960	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	700	175	369	1062	0.659	699	732	1.8	2.1	10.860	B
	2	1060	265	76	1397	0.759	1053	992	1.5	3.3	11.267	B
	3	564	141	655	447	1.261	446	474	24.3	53.8	326.275	F
2	1	954	239	222	1020	0.935	923	837	2.1	9.7	33.727	D
	2	304	76	865	279	1.091	262	281	2.1	12.7	125.504	F
	3	992	248	66	1557	0.637	993	1060	2.3	2.0	7.042	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	634	159	405	1036	0.612	635	674	2.1	1.8	9.906	A
	2	936	234	96	1384	0.676	939	944	3.3	2.4	8.981	A
	3	642	161	592	487	1.318	487	443	53.8	92.6	555.382	F
2	1	700	175	206	1032	0.679	729	830	9.7	2.4	14.251	B
	2	324	81	675	398	0.813	351	259	12.7	6.0	90.134	F
	3	944	236	90	1538	0.614	945	936	2.0	1.8	6.684	A

Existing Layout DPL - 2022 LIDL COUNT Flat, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 84% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	91.02	F
2	Southern	Mini-roundabout		1, 2, 3	17.02	C

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-13	Junction 1 - Arm 3	54.65	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2022 LIDL COUNT Flat	PM	FLAT	16:15	17:15	60	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	753	100.000
	2	✓				
	3		FLAT	✓	526	100.000
2	1		FLAT	✓	730	100.000
	2		FLAT	✓	335	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	663	90
	2	596	0	303
	3	113	413	0

Proportions

		To		
		1	2	3
From	1	0.00	0.88	0.12
	2	0.66	0.00	0.34
	3	0.21	0.79	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	68	662
2	98	0	237
3	865	211	0

Proportions

From \ To	1	2	3
1	0.00	0.09	0.91
2	0.29	0.00	0.71
3	0.80	0.20	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	753	753
		2	899	899
		3	526	526
	2	1	730	730
		2	335	335
		3	1076	1076
16:30-16:45	1	1	753	753
		2	899	899
		3	526	526
	2	1	730	730
		2	335	335
		3	1076	1076
16:45-17:00	1	1	753	753
		2	899	899
		3	526	526
	2	1	730	730
		2	335	335
		3	1076	1076
17:00-17:15	1	1	753	753
		2	899	899
		3	526	526
	2	1	730	730
		2	335	335
		3	1076	1076

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.71	13.10	2.7	B	753	753
	2	0.65	8.09	2.0	A	893	893
	3	1.08	343.40	49.4	F	526	526
2	1	0.71	13.08	2.6	B	730	730
	2	0.82	53.26	4.7	F	335	335
	3	0.68	8.06	2.3	A	1035	1035

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	753	188	364	1065	0.707	743	678	0.0	2.5	11.935	B
	2	879	220	89	1389	0.633	872	1018	0.0	1.9	7.557	A
	3	526	132	578	496	1.060	464	383	0.0	15.6	79.996	F
2	1	730	183	198	1037	0.704	720	905	0.0	2.5	12.155	B
	2	335	84	653	412	0.812	320	265	0.0	3.8	38.185	E
	3	1018	255	94	1536	0.663	1010	879	0.0	2.1	7.411	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	753	188	376	1057	0.712	753	697	2.5	2.6	12.964	B
	2	897	224	90	1388	0.646	897	1038	1.9	2.0	8.048	A
	3	526	132	594	486	1.083	479	392	15.6	27.4	181.194	F
2	1	730	183	204	1033	0.707	730	932	2.5	2.6	13.025	B
	2	335	84	662	407	0.823	333	271	3.8	4.4	50.480	F
	3	1038	260	97	1533	0.677	1038	897	2.1	2.3	7.982	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	753	188	378	1055	0.713	753	699	2.6	2.7	13.063	B
	2	898	225	90	1388	0.647	898	1041	2.0	2.0	8.082	A
	3	526	132	595	485	1.084	481	393	27.4	38.6	263.648	F
2	1	730	183	204	1033	0.707	730	934	2.6	2.6	13.065	B
	2	335	84	662	407	0.823	334	272	4.4	4.6	52.461	F
	3	1041	260	98	1533	0.679	1041	898	2.3	2.3	8.043	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	753	188	379	1055	0.714	753	699	2.7	2.7	13.103	B
	2	899	225	90	1388	0.647	899	1042	2.0	2.0	8.090	A
	3	526	132	596	485	1.085	483	393	38.6	49.4	343.404	F
2	1	730	183	204	1032	0.707	730	935	2.6	2.6	13.081	B
	2	335	84	662	407	0.823	335	272	4.6	4.7	53.258	F
	3	1042	260	98	1533	0.680	1042	899	2.3	2.3	8.064	A

Existing Layout DPL - 2023 Model Base Flat, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 1	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 2 have 82% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	12.25	B
2	Southern	Mini-roundabout		1, 2, 3	564.74	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-27	Junction 2 - Arm 2	306.93	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2023 Model Base Flat	AM	FLAT	08:00	09:00	60	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	625	100.000
	2	✓				
	3		FLAT	✓	396	100.000
2	1		FLAT	✓	1138	100.000
	2		FLAT	✓	321	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

	To			
		1	2	3

Proportions

	To			
		1	2	3

From	1	0	515	110
	2	604	0	646
	3	83	313	0

From	1	0.00	0.82	0.18
	2	0.48	0.00	0.52
	3	0.21	0.79	0.00

Junction 2

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	103	1035
	2	106	0	215
	3	348	480	0

Proportions

		To		
		1	2	3
From	1	0.00	0.09	0.91
	2	0.33	0.00	0.67
	3	0.42	0.58	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Average PCU Per Veh

		To		
		1	2	3
From	1	1.100	1.100	1.100
	2	1.100	1.100	1.100
	3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Average PCU Per Veh

		To		
		1	2	3
From	1	1.100	1.100	1.100
	2	1.100	1.100	1.100
	3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	625	625
		2	1250	1250
		3	396	396
	2	1	1138	1138
		2	321	321
		3	828	828
08:15-08:30	1	1	625	625
		2	1250	1250
		3	396	396
	2	1	1138	1138
		2	321	321
		3	828	828
08:30-08:45	1	1	625	625
		2	1250	1250
		3	396	396
	2	1	1138	1138
		2	321	321
		3	828	828
08:45-09:00	1	1	625	625
		2	1250	1250
		3	396	396
	2	1	1138	1138
		2	321	321
		3	828	828

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.57	8.30	1.4	A	625	625
	2	0.72	10.11	2.7	B	977	977

	3	0.70	23.77	2.6	C	396	396
2	1	1.34	1089.65	291.4	F	1138	1138
	2	0.95	140.35	11.7	F	321	321
	3	0.54	5.66	1.3	A	825	825

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	625	156	306	1107	0.564	619	541	0.0	1.4	8.028	A
	2	963	241	109	1375	0.700	953	816	0.0	2.5	9.172	A
	3	396	99	460	571	0.693	387	601	0.0	2.3	20.554	C
2	1	1138	285	470	855	1.332	842	438	0.0	74.0	166.672	F
	2	321	80	766	341	0.940	294	546	0.0	6.8	65.049	F
	3	816	204	97	1533	0.532	811	963	0.0	1.2	5.448	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	625	156	312	1103	0.567	625	556	1.4	1.4	8.287	A
	2	980	245	110	1375	0.713	979	827	2.5	2.7	9.989	A
	3	396	99	473	563	0.703	395	616	2.3	2.5	23.400	C
2	1	1138	285	480	848	1.341	848	451	74.0	146.5	476.590	F
	2	321	80	771	338	0.950	312	556	6.8	9.2	109.704	F
	3	827	207	103	1529	0.541	827	980	1.2	1.3	5.643	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	625	156	313	1102	0.567	625	558	1.4	1.4	8.295	A
	2	982	246	110	1374	0.715	982	828	2.7	2.7	10.079	B
	3	396	99	475	562	0.704	396	618	2.5	2.5	23.677	C
2	1	1138	285	480	848	1.342	848	452	146.5	218.9	782.713	F
	2	321	80	771	338	0.950	315	557	9.2	10.7	128.064	F
	3	828	207	104	1528	0.542	828	982	1.3	1.3	5.655	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	625	156	313	1102	0.567	625	558	1.4	1.4	8.298	A
	2	983	246	110	1374	0.715	983	828	2.7	2.7	10.114	B
	3	396	99	475	562	0.705	396	618	2.5	2.6	23.773	C
2	1	1138	285	480	848	1.342	848	453	218.9	291.4	1089.649	F
	2	321	80	771	338	0.950	317	557	10.7	11.7	140.353	F
	3	828	207	105	1527	0.542	828	983	1.3	1.3	5.659	A

Existing Layout DPL - 2023 Model Base Flat, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 84% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	140.57	F
2	Southern	Mini-roundabout		1, 2, 3	58.76	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-16	Junction 1 - Arm 3	99.19	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D9	2023 Model Base Flat	PM	FLAT	16:15	17:15	60	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	636	100.000
	2	✓				
	3		FLAT	✓	579	100.000
2	1		FLAT	✓	946	100.000
	2		FLAT	✓	364	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	538	98
	2	578	0	488
	3	47	532	0

Proportions

		To		
		1	2	3
From	1	0.00	0.85	0.15
	2	0.54	0.00	0.46
	3	0.08	0.92	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	204	742
2	40	0	324
3	743	227	0

Proportions

From \ To	1	2	3
1	0.00	0.22	0.78
2	0.11	0.00	0.89
3	0.77	0.23	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	636	636
		2	1066	1066
		3	579	579
	2	1	946	946
		2	364	364
		3	970	970
16:30-16:45	1	1	636	636
		2	1066	1066
		3	579	579
	2	1	946	946
		2	364	364
		3	970	970
16:45-17:00	1	1	636	636
		2	1066	1066
		3	579	579
	2	1	946	946
		2	364	364
		3	970	970
17:00-17:15	1	1	636	636
		2	1066	1066
		3	579	579
	2	1	946	946
		2	364	364
		3	970	970

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.64	10.99	1.9	B	636	636
	2	0.76	11.90	3.4	B	1037	1037
	3	1.15	513.36	79.3	F	579	579
2	1	0.93	51.75	12.9	F	946	946
	2	1.02	219.00	21.3	F	364	364
	3	0.63	6.83	1.9	A	995	995

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	636	159	455	1000	0.636	629	580	0.0	1.9	10.450	B
	2	1007	252	97	1383	0.728	996	986	0.0	2.8	9.954	A
	3	579	145	540	521	1.112	495	553	0.0	21.1	94.737	F
2	1	946	237	229	1016	0.931	909	786	0.0	9.3	30.499	D
	2	364	91	713	375	0.971	331	425	0.0	8.3	67.746	F
	3	986	247	36	1579	0.624	979	1007	0.0	1.8	6.521	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	636	159	461	996	0.639	636	605	1.9	1.9	10.986	B
	2	1042	260	98	1383	0.754	1040	999	2.8	3.2	11.489	B
	3	579	145	564	505	1.146	502	574	21.1	40.4	238.678	F
2	1	946	237	234	1013	0.934	938	803	9.3	11.3	45.821	E
	2	364	91	736	360	1.011	344	436	8.3	13.4	135.170	F
	3	999	250	38	1578	0.633	999	1042	1.8	1.9	6.824	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	636	159	461	996	0.638	636	609	1.9	1.9	10.988	B
	2	1048	262	98	1383	0.758	1048	999	3.2	3.3	11.782	B
	3	579	145	568	503	1.152	501	578	40.4	59.8	374.951	F
2	1	946	237	234	1013	0.934	942	803	11.3	12.2	49.700	E
	2	364	91	739	358	1.016	347	437	13.4	17.6	180.314	F
	3	999	250	38	1578	0.633	999	1048	1.9	1.9	6.832	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	636	159	460	996	0.638	636	610	1.9	1.9	10.982	B
	2	1051	263	98	1383	0.760	1051	998	3.3	3.4	11.901	B
	3	579	145	570	502	1.154	501	579	59.8	79.3	513.361	F
2	1	946	237	234	1013	0.934	944	803	12.2	12.9	51.753	F
	2	364	91	740	358	1.018	349	437	17.6	21.3	218.999	F
	3	998	250	38	1578	0.633	998	1051	1.9	1.9	6.829	A

Existing Layout DPL - 2030 Model Base Flat, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	20.98	C
2	Southern	Mini-roundabout		1, 2, 3	558.01	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-29	Junction 2 - Arm 2	299.44	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D11	2030 Model Base Flat	AM	FLAT	08:00	09:00	60	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	717	100.000
	2	✓				
	3		FLAT	✓	477	100.000
2	1		FLAT	✓	1071	100.000
	2		FLAT	✓	398	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	544	173
	2	638	0	630
	3	128	349	0

Proportions

		To		
		1	2	3
From	1	0.00	0.76	0.24
	2	0.50	0.00	0.50
	3	0.27	0.73	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	110	961
2	91	0	307
3	333	560	0

Proportions

From \ To	1	2	3
1	0.00	0.10	0.90
2	0.23	0.00	0.77
3	0.37	0.63	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	10	10	10
2	10	10	10
3	10	10	10

Average PCU Per Veh

From \ To	1	2	3
1	1.100	1.100	1.100
2	1.100	1.100	1.100
3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	717	717
		2	1268	1268
		3	477	477
	2	1	1071	1071
		2	398	398
		3	893	893
08:15-08:30	1	1	717	717
		2	1268	1268
		3	477	477
	2	1	1071	1071
		2	398	398
		3	893	893
08:30-08:45	1	1	717	717
		2	1268	1268
		3	477	477
	2	1	1071	1071
		2	398	398
		3	893	893
08:45-09:00	1	1	717	717
		2	1268	1268
		3	477	477
	2	1	1071	1071
		2	398	398
		3	893	893

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.67	11.00	2.2	B	717	717
	2	0.75	11.87	3.2	B	993	993
	3	0.88	54.96	6.9	F	477	477
2	1	1.35	1101.52	276.2	F	1071	1071
	2	1.06	324.56	35.0	F	398	398
	3	0.58	6.09	1.5	A	886	886

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	717	179	334	1087	0.660	709	609	0.0	2.1	10.259	B
	2	979	245	171	1334	0.734	967	872	0.0	2.9	10.500	B
	3	477	119	487	555	0.860	457	652	0.0	5.1	35.270	E
2	1	1071	268	543	806	1.329	793	402	0.0	69.4	166.752	F
	2	398	100	712	375	1.060	346	625	0.0	13.0	90.285	F
	3	872	218	79	1547	0.564	866	979	0.0	1.4	5.771	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	717	179	346	1078	0.665	717	628	2.1	2.1	10.929	B
	2	996	249	173	1332	0.748	995	890	2.9	3.1	11.689	B
	3	477	119	501	546	0.874	473	667	5.1	6.1	49.908	E
2	1	1071	268	558	796	1.345	796	415	69.4	138.2	479.119	F
	2	398	100	714	374	1.064	366	640	13.0	21.0	189.543	F
	3	890	222	84	1543	0.576	889	996	1.4	1.5	6.052	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	717	179	348	1077	0.666	717	630	2.1	2.2	10.980	B
	2	998	250	173	1332	0.749	998	892	3.1	3.2	11.822	B
	3	477	119	502	545	0.876	475	669	6.1	6.6	53.346	F
2	1	1071	268	559	795	1.347	795	417	138.2	207.2	789.723	F
	2	398	100	713	374	1.063	369	641	21.0	28.2	259.605	F
	3	892	223	84	1543	0.578	892	998	1.5	1.5	6.080	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	717	179	348	1077	0.666	717	631	2.2	2.2	10.997	B
	2	999	250	173	1332	0.750	999	892	3.2	3.2	11.871	B
	3	477	119	503	544	0.876	476	669	6.6	6.9	54.957	F
2	1	1071	268	559	795	1.347	795	418	207.2	276.2	1101.523	F
	2	398	100	713	374	1.063	371	641	28.2	35.0	324.560	F
	3	892	223	85	1543	0.578	892	999	1.5	1.5	6.088	A

Existing Layout DPL - 2030 Model Base Flat, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 82% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	267.54	F
2	Southern	Mini-roundabout		1, 2, 3	161.04	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-21	Junction 1 - Arm 3	214.37	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D13	2030 Model Base Flat	PM	FLAT	16:15	17:15	60	15	✓

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	598	100.000
	2	✓				
	3		FLAT	✓	667	100.000
2	1		FLAT	✓	969	100.000
	2		FLAT	✓	432	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	451	147
	2	576	0	548
	3	88	579	0

Proportions

		To		
		1	2	3
From	1	0.00	0.75	0.25
	2	0.51	0.00	0.49
	3	0.13	0.87	0.00

Junction 2

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	220	749
	2	57	0	375
	3	788	242	0

Proportions

		To		
		1	2	3
From	1	0.00	0.23	0.77
	2	0.13	0.00	0.87
	3	0.77	0.23	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Average PCU Per Veh

		To		
		1	2	3
From	1	1.100	1.100	1.100
	2	1.100	1.100	1.100
	3	1.100	1.100	1.100

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Average PCU Per Veh

		To		
		1	2	3
From	1	1.100	1.100	1.100
	2	1.100	1.100	1.100
	3	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	598	598
		2	1124	1124
		3	667	667
	2	1	969	969
		2	432	432
		3	1030	1030
16:30-16:45	1	1	598	598
		2	1124	1124
		3	667	667
	2	1	969	969
		2	432	432
		3	1030	1030
16:45-17:00	1	1	598	598
		2	1124	1124
		3	667	667
	2	1	969	969
		2	432	432
		3	1030	1030
17:00-17:15	1	1	598	598
		2	1124	1124
		3	667	667
	2	1	969	969
		2	432	432
		3	1030	1030

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.60	9.80	1.6	A	598	598
	2	0.78	13.31	3.8	B	1045	1045
	3	1.28	896.75	146.4	F	667	667
2	1	0.94	56.80	14.4	F	969	969
	2	1.22	718.64	78.7	F	432	432
	3	0.58	5.93	1.5	A	902	902

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	598	150	451	1003	0.596	592	586	0.0	1.6	9.484	A
	2	1023	256	145	1351	0.758	1010	897	0.0	3.3	11.241	B
	3	667	167	518	535	1.247	519	638	0.0	36.9	142.814	F
2	1	969	242	209	1029	0.942	928	728	0.0	10.2	31.902	D
	2	432	108	718	372	1.162	352	420	0.0	19.9	123.464	F
	3	897	224	46	1572	0.571	891	1023	0.0	1.4	5.771	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	598	150	453	1002	0.597	598	606	1.6	1.6	9.799	A
	2	1049	262	147	1350	0.778	1048	904	3.3	3.7	13.010	B
	3	667	167	537	522	1.277	522	658	36.9	73.3	395.453	F
2	1	969	242	212	1027	0.943	960	738	10.2	12.4	49.241	E
	2	432	108	742	356	1.212	354	430	19.9	39.3	323.709	F
	3	904	226	47	1572	0.575	904	1049	1.4	1.5	5.926	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	598	150	452	1002	0.597	598	608	1.6	1.6	9.792	A
	2	1052	263	147	1350	0.780	1052	903	3.7	3.8	13.237	B
	3	667	167	539	521	1.280	521	660	73.3	109.8	645.152	F
2	1	969	242	212	1027	0.943	964	738	12.4	13.7	54.073	F
	2	432	108	745	354	1.219	354	431	39.3	59.0	519.641	F
	3	903	226	47	1572	0.575	903	1052	1.5	1.5	5.923	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	598	150	452	1002	0.597	598	608	1.6	1.6	9.791	A
	2	1053	263	147	1350	0.780	1053	903	3.8	3.8	13.306	B
	3	667	167	540	521	1.281	521	660	109.8	146.4	896.754	F
2	1	969	242	212	1027	0.943	966	737	13.7	14.4	56.797	F
	2	432	108	747	353	1.222	353	431	59.0	78.7	718.637	F
	3	903	226	47	1572	0.575	903	1053	1.5	1.5	5.921	A

Existing Layout DPL - 2023 Model Base Flat + DR, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 1	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 2 have 82% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	13.27	B
2	Southern	Mini-roundabout		1, 2, 3	626.14	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-31	Junction 2 - Arm 2	341.97	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D28	2023 Model Base Flat + DR	AM	FLAT	08:00	09:00	60	15	✓	Simple	D7+D14

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	638	100.000
	2	✓				
	3		FLAT	✓	403	100.000
2	1		FLAT	✓	1138	100.000
	2		FLAT	✓	380	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	528	110
	2	643	0	666
	3	83	320	0

Proportions

		To		
		1	2	3
From	1	0.00	0.83	0.17
	2	0.49	0.00	0.51
	3	0.21	0.79	0.00

Junction 2

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	103	1035
	2	106	0	274
	3	348	500	0

Proportions

		To		
		1	2	3
From	1	0.00	0.09	0.91
	2	0.28	0.00	0.72
	3	0.41	0.59	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	638	638
		2	1309	1309
		3	403	403
	2	1	1138	1138
		2	380	380
		3	848	848
08:15-08:30	1	1	638	638
		2	1309	1309
		3	403	403
	2	1	1138	1138
		2	380	380
		3	848	848
08:30-08:45	1	1	638	638
		2	1309	1309
		3	403	403
	2	1	1138	1138
		2	380	380
		3	848	848
08:45-09:00	1	1	638	638
		2	1309	1309
		3	403	403
	2	1	1138	1138
		2	380	380
		3	848	848

Results

Results Summary for whole modelled period

						Average Demand	Total Junction

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1	1	0.58	8.62	1.5	A	638	638
	2	0.73	10.76	3.0	B	1001	1001
	3	0.73	26.87	2.9	D	403	403
2	1	1.36	1155.77	304.4	F	1138	1138
	2	1.10	418.61	42.7	F	380	380
	3	0.55	5.77	1.4	A	844	844

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	638	160	312	1103	0.578	632	561	0.0	1.5	8.308	A
	2	988	247	109	1375	0.718	977	835	0.0	2.7	9.705	A
	3	403	101	480	559	0.721	393	606	0.0	2.6	22.614	C
2	1	1138	285	489	842	1.352	830	431	0.0	77.0	175.395	F
	2	380	95	755	348	1.091	323	564	0.0	14.2	102.499	F
	3	835	209	90	1538	0.543	830	988	0.0	1.3	5.548	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	638	160	319	1098	0.581	638	576	1.5	1.5	8.608	A
	2	1004	251	110	1375	0.731	1004	847	2.7	2.9	10.639	B
	3	403	101	493	551	0.732	402	621	2.6	2.8	26.362	D
2	1	1138	285	499	835	1.363	835	442	77.0	152.8	504.055	F
	2	380	95	759	345	1.100	340	575	14.2	24.2	227.089	F
	3	847	212	95	1535	0.552	847	1004	1.3	1.3	5.755	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	638	160	320	1097	0.581	638	577	1.5	1.5	8.620	A
	2	1006	252	110	1374	0.732	1006	848	2.9	2.9	10.728	B
	3	403	101	494	550	0.733	403	622	2.8	2.9	26.739	D
2	1	1138	285	500	835	1.363	835	443	152.8	228.6	829.500	F
	2	380	95	759	346	1.100	343	575	24.2	33.6	324.606	F
	3	848	212	96	1534	0.553	848	1006	1.3	1.3	5.766	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	638	160	320	1097	0.581	638	578	1.5	1.5	8.621	A
	2	1007	252	110	1374	0.733	1007	848	2.9	3.0	10.759	B
	3	403	101	495	550	0.733	403	622	2.9	2.9	26.868	D
2	1	1138	285	500	835	1.363	835	444	228.6	304.4	1155.772	F
	2	380	95	759	346	1.100	344	575	33.6	42.7	418.613	F
	3	848	212	96	1534	0.553	848	1007	1.3	1.4	5.769	A

Existing Layout DPL - 2023 Model Base Flat + DR + LIDL, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 1	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 2 have 82% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	13.18	B
2	Southern	Mini-roundabout		1, 2, 3	669.15	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-33	Junction 2 - Arm 2	367.50	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D29	2023 Model Base Flat + DR + LIDL	AM	FLAT	08:00	09:00	60	15	✓	Simple	D28+D16

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	644	100.000
	2	✓				
	3		FLAT	✓	405	100.000
2	1		FLAT	✓	1140	100.000
	2		FLAT	✓	404	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	534	110
	2	649	0	668
	3	82	323	0

Proportions

		To		
		1	2	3
From	1	0.00	0.83	0.17
	2	0.49	0.00	0.51
	3	0.20	0.80	0.00

Junction 2

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	110	1030
	2	116	0	288
	3	341	516	0

Proportions

		To		
		1	2	3
From	1	0.00	0.10	0.90
	2	0.29	0.00	0.71
	3	0.40	0.60	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	644	644
		2	1317	1317
		3	405	405
	2	1	1140	1140
		2	404	404
		3	857	857
08:15-08:30	1	1	644	644
		2	1317	1317
		3	405	405
	2	1	1140	1140
		2	404	404
		3	857	857
08:30-08:45	1	1	644	644
		2	1317	1317
		3	405	405
	2	1	1140	1140
		2	404	404
		3	857	857
08:45-09:00	1	1	644	644
		2	1317	1317
		3	405	405
	2	1	1140	1140
		2	404	404
		3	857	857

Results

Results Summary for whole modelled period

						Average Demand	Total Junction

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1	1	0.59	8.78	1.6	A	644	644
	2	0.73	10.47	2.9	B	992	992
	3	0.73	26.83	2.9	D	405	405
2	1	1.38	1218.17	316.9	F	1140	1140
	2	1.14	520.93	55.7	F	404	404
	3	0.56	5.88	1.4	A	853	853

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	315	1101	0.585	638	558	0.0	1.5	8.447	A
	2	980	245	109	1375	0.713	970	844	0.0	2.6	9.536	A
	3	405	101	478	560	0.723	395	601	0.0	2.6	22.676	C
2	1	1140	285	505	832	1.371	820	430	0.0	79.9	183.780	F
	2	404	101	741	357	1.132	335	584	0.0	17.1	114.260	F
	3	844	211	96	1534	0.550	838	980	0.0	1.3	5.652	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	322	1095	0.588	644	572	1.5	1.5	8.764	A
	2	995	249	110	1375	0.724	994	856	2.6	2.8	10.380	B
	3	405	101	490	552	0.733	404	614	2.6	2.8	26.378	D
2	1	1140	285	515	824	1.383	824	441	79.9	158.9	530.199	F
	2	404	101	745	355	1.139	351	595	17.1	30.4	266.558	F
	3	856	214	101	1530	0.559	856	995	1.3	1.4	5.868	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	323	1095	0.588	644	573	1.5	1.6	8.773	A
	2	996	249	110	1374	0.725	996	857	2.8	2.8	10.449	B
	3	405	101	491	552	0.734	405	615	2.8	2.9	26.722	D
2	1	1140	285	516	824	1.383	824	442	158.9	237.9	873.776	F
	2	404	101	745	355	1.139	353	595	30.4	43.1	394.661	F
	3	857	214	101	1530	0.560	857	996	1.4	1.4	5.881	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	323	1095	0.588	644	573	1.6	1.6	8.777	A
	2	997	249	110	1374	0.725	997	857	2.8	2.9	10.471	B
	3	405	101	491	552	0.734	405	615	2.9	2.9	26.835	D
2	1	1140	285	516	824	1.383	824	443	237.9	316.9	1218.170	F
	2	404	101	745	355	1.139	354	595	43.1	55.7	520.932	F
	3	857	214	102	1530	0.560	857	997	1.4	1.4	5.884	A

Existing Layout DPL - 2023 Model Base Flat + DR, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	175.76	F
2	Southern	Mini-roundabout		1, 2, 3	98.01	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-18	Junction 1 - Arm 3	136.41	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D32	2023 Model Base Flat + DR	PM	FLAT	16:15	17:15	60	15	✓	Simple	D9+D15

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	670	100.000
	2	✓				
	3		FLAT	✓	596	100.000
2	1		FLAT	✓	946	100.000
	2		FLAT	✓	396	100.000
	3	✓				

Origin-Destination Data

Demand (PCU/hr)

	To				

Proportions

	To				

Junction 1

From	1	2	3
1	0	572	98
2	599	0	499
3	47	549	0

From	1	2	3
1	0.00	0.85	0.15
2	0.55	0.00	0.45
3	0.08	0.92	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	204	742
2	40	0	356
3	743	278	0

Proportions

From \ To	1	2	3
1	0.00	0.22	0.78
2	0.10	0.00	0.90
3	0.73	0.27	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	670	670
		2	1098	1098
		3	596	596
	2	1	946	946
		2	396	396
		3	1021	1021
16:30-16:45	1	1	670	670
		2	1098	1098
		3	596	596
	2	1	946	946
		2	396	396
		3	1021	1021
16:45-17:00	1	1	670	670
		2	1098	1098
		3	596	596
	2	1	946	946
		2	396	396
		3	1021	1021
17:00-17:15	1	1	670	670
		2	1098	1098
		3	596	596
	2	1	946	946
		2	396	396
		3	1021	1021

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
	1	0.67	12.06	2.2	B	670	670

1	2	0.77	12.18	3.5	B	1046	1046
	3	1.20	646.88	99.9	F	596	596
2	1	0.96	75.00	18.7	F	946	946
	2	1.10	388.49	41.5	F	396	396
	3	0.65	7.20	2.0	A	1027	1027

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	670	168	455	1000	0.670	661	588	0.0	2.1	11.413	B
	2	1018	255	97	1383	0.736	1006	1019	0.0	2.9	10.211	B
	3	596	149	549	515	1.158	494	554	0.0	25.6	110.597	F
2	1	946	237	275	985	0.961	900	771	0.0	11.6	36.221	E
	2	396	99	706	379	1.044	348	469	0.0	12.1	85.628	F
	3	1019	255	35	1580	0.645	1012	1018	0.0	2.0	6.869	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	670	168	458	998	0.672	670	612	2.1	2.2	12.058	B
	2	1051	263	98	1383	0.760	1049	1030	2.9	3.3	11.808	B
	3	596	149	573	500	1.193	498	575	25.6	50.2	291.528	F
2	1	946	237	280	981	0.964	932	786	11.6	15.1	60.389	F
	2	396	99	731	363	1.090	356	481	12.1	22.1	196.386	F
	3	1030	258	36	1580	0.652	1030	1051	2.0	2.0	7.197	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	670	168	458	998	0.671	670	615	2.2	2.2	12.050	B
	2	1056	264	98	1383	0.764	1056	1030	3.3	3.5	12.082	B
	3	596	149	576	498	1.198	497	578	50.2	75.0	467.930	F
2	1	946	237	280	982	0.964	938	785	15.1	17.2	69.290	F
	2	396	99	735	361	1.098	357	482	22.1	31.8	292.658	F
	3	1030	257	36	1580	0.652	1029	1056	2.0	2.0	7.194	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	670	168	457	999	0.671	670	616	2.2	2.2	12.043	B
	2	1058	265	98	1383	0.766	1058	1029	3.5	3.5	12.183	B
	3	596	149	577	497	1.200	496	579	75.0	99.9	646.878	F
2	1	946	237	280	982	0.964	940	785	17.2	18.7	75.005	F
	2	396	99	737	359	1.102	357	483	31.8	41.5	388.486	F
	3	1029	257	36	1580	0.652	1029	1058	2.0	2.0	7.192	A

Existing Layout DPL - 2023 Model Base Flat + DR + LIDL, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 81% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	176.22	F
2	Southern	Mini-roundabout		1, 2, 3	163.71	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-22	Junction 2 - Arm 2	169.80	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D33	2023 Model Base Flat + DR + LIDL	PM	FLAT	16:15	17:15	60	15	✓	Simple	D32+D17

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	682	100.000
	2	✓				
	3		FLAT	✓	600	100.000
2	1		FLAT	✓	951	100.000
	2		FLAT	✓	444	100.000
	3	✓				

Origin-Destination Data

Demand (PCU/hr)

	To				

Proportions

	To				

Junction 1

From	1	2	3
1	0	584	98
2	612	0	504
3	45	555	0

From	1	2	3
1	0.00	0.86	0.14
2	0.55	0.00	0.45
3	0.08	0.93	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	219	732
2	60	0	384
3	729	310	0

Proportions

From \ To	1	2	3
1	0.00	0.23	0.77
2	0.14	0.00	0.86
3	0.70	0.30	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	682	682
		2	1116	1116
		3	600	600
	2	1	951	951
		2	444	444
		3	1039	1039
16:30-16:45	1	1	682	682
		2	1116	1116
		3	600	600
	2	1	951	951
		2	444	444
		3	1039	1039
16:45-17:00	1	1	682	682
		2	1116	1116
		3	600	600
	2	1	951	951
		2	444	444
		3	1039	1039
17:00-17:15	1	1	682	682
		2	1116	1116
		3	600	600
	2	1	951	951
		2	444	444
		3	1039	1039

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
	1	0.69	12.67	2.4	B	682	682

1	2	0.75	11.55	3.3	B	1031	1031
	3	1.20	644.95	100.4	F	600	600
2	1	0.99	107.43	27.4	F	951	951
	2	1.20	651.39	74.4	F	444	444
	3	0.67	7.58	2.2	A	1044	1044

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	682	171	459	998	0.684	673	583	0.0	2.3	11.886	B
	2	1007	252	97	1383	0.728	996	1035	0.0	2.8	9.952	A
	3	600	150	546	517	1.161	496	546	0.0	26.1	111.736	F
2	1	951	238	306	964	0.986	895	770	0.0	14.1	41.961	E
	2	444	111	689	390	1.138	369	512	0.0	18.9	113.526	F
	3	1035	259	50	1569	0.659	1026	1007	0.0	2.1	7.190	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	682	171	464	994	0.686	682	605	2.3	2.3	12.657	B
	2	1035	259	98	1383	0.749	1034	1047	2.8	3.2	11.298	B
	3	600	150	567	503	1.192	501	565	26.1	50.8	293.142	F
2	1	951	238	312	960	0.990	928	785	14.1	19.9	76.903	F
	2	444	111	714	374	1.187	371	526	18.9	37.0	293.324	F
	3	1047	262	50	1569	0.668	1047	1035	2.1	2.2	7.581	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	682	171	463	994	0.686	682	607	2.3	2.4	12.669	B
	2	1039	260	98	1383	0.751	1039	1047	3.2	3.2	11.484	B
	3	600	150	570	502	1.196	501	567	50.8	75.5	468.086	F
2	1	951	238	312	960	0.991	934	785	19.9	24.1	94.221	F
	2	444	111	719	371	1.197	370	528	37.0	55.6	469.945	F
	3	1047	262	50	1569	0.667	1047	1039	2.2	2.2	7.584	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	682	171	463	994	0.686	682	608	2.4	2.4	12.668	B
	2	1041	260	98	1383	0.753	1040	1047	3.2	3.3	11.553	B
	3	600	150	571	501	1.197	501	568	75.5	100.4	644.955	F
2	1	951	238	312	960	0.990	938	784	24.1	27.4	107.435	F
	2	444	111	722	369	1.203	369	528	55.6	74.4	651.390	F
	3	1047	262	50	1569	0.667	1047	1041	2.2	2.2	7.583	A

Existing Layout DPL - 2030 Model Base Flat + DR, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 1	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 2 have 80% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 81% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	23.77	C
2	Southern	Mini-roundabout		1, 2, 3	646.36	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-33	Junction 2 - Arm 2	349.50	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D36	2030 Model Base Flat + DR	AM	FLAT	08:00	09:00	60	15	✓	Simple	D11+D14

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	730	100.000
	2	✓				
	3		FLAT	✓	484	100.000
2	1		FLAT	✓	1071	100.000
	2		FLAT	✓	457	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	557	173
	2	677	0	650
	3	128	356	0

Proportions

		To		
		1	2	3
From	1	0.00	0.76	0.24
	2	0.51	0.00	0.49
	3	0.26	0.74	0.00

Junction 2

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	110	961
	2	91	0	366
	3	333	580	0

Proportions

		To		
		1	2	3
From	1	0.00	0.10	0.90
	2	0.20	0.00	0.80
	3	0.36	0.64	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	730	730
		2	1327	1327
		3	484	484
	2	1	1071	1071
		2	457	457
		3	913	913
08:15-08:30	1	1	730	730
		2	1327	1327
		3	484	484
	2	1	1071	1071
		2	457	457
		3	913	913
08:30-08:45	1	1	730	730
		2	1327	1327
		3	484	484
	2	1	1071	1071
		2	457	457
		3	913	913
08:45-09:00	1	1	730	730
		2	1327	1327
		3	484	484
	2	1	1071	1071
		2	457	457
		3	913	913

Results

Results Summary for whole modelled period

						Average Demand	Total Junction

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1	1	0.68	11.57	2.3	B	730	730
	2	0.76	12.15	3.3	B	1003	1003
	3	0.90	66.25	8.4	F	484	484
2	1	1.37	1170.35	288.8	F	1071	1071
	2	1.20	686.16	80.5	F	457	457
	3	0.59	6.21	1.6	A	905	905

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	730	183	339	1084	0.674	721	622	0.0	2.2	10.683	B
	2	994	248	171	1334	0.745	981	889	0.0	3.1	10.892	B
	3	484	121	501	546	0.887	460	652	0.0	5.9	39.367	E
2	1	1071	268	561	794	1.349	782	395	0.0	72.2	175.444	F
	2	457	114	702	382	1.197	364	641	0.0	23.1	133.967	F
	3	889	222	73	1552	0.573	883	994	0.0	1.5	5.871	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	730	183	352	1074	0.680	730	639	2.2	2.3	11.470	B
	2	1006	252	173	1332	0.755	1005	909	3.1	3.3	12.056	B
	3	484	121	513	538	0.900	478	665	5.9	7.3	58.592	F
2	1	1071	268	577	783	1.367	783	407	72.2	144.2	507.109	F
	2	457	114	703	381	1.199	379	657	23.1	42.6	332.297	F
	3	909	227	76	1550	0.586	908	1006	1.5	1.5	6.170	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	730	183	354	1073	0.681	730	641	2.3	2.3	11.540	B
	2	1007	252	173	1332	0.756	1007	911	3.3	3.3	12.130	B
	3	484	121	514	537	0.901	481	666	7.3	8.0	63.713	F
2	1	1071	268	579	782	1.369	782	408	144.2	216.5	838.064	F
	2	457	114	702	382	1.197	381	659	42.6	61.6	509.590	F
	3	911	228	76	1549	0.588	911	1007	1.5	1.6	6.202	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	730	183	355	1072	0.681	730	641	2.3	2.3	11.566	B
	2	1007	252	173	1332	0.756	1007	912	3.3	3.3	12.149	B
	3	484	121	514	537	0.901	482	666	8.0	8.4	66.248	F
2	1	1071	268	579	782	1.370	782	409	216.5	288.8	1170.348	F
	2	457	114	701	382	1.197	381	660	61.6	80.5	686.162	F
	3	912	228	76	1549	0.589	912	1007	1.6	1.6	6.211	A

Existing Layout DPL - 2030 Model Base Flat + DR + LIDL, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 1	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 2 have 80% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	23.59	C
2	Southern	Mini-roundabout		1, 2, 3	693.09	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-35	Junction 2 - Arm 2	376.45	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D37	2030 Model Base Flat + DR + LIDL	AM	FLAT	08:00	09:00	60	15	✓	Simple	D36+D16

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	736	100.000
	2	✓				
	3		FLAT	✓	486	100.000
2	1		FLAT	✓	1073	100.000
	2		FLAT	✓	481	100.000
	3	✓				

Origin-Destination Data

Demand (PCU/hr)

	To				

Proportions

	To				

Junction 1

From	1	2	3
1	0	563	173
2	683	0	652
3	127	359	0

From	1	2	3
1	0.00	0.76	0.24
2	0.51	0.00	0.49
3	0.26	0.74	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	117	956
2	101	0	380
3	326	596	0

Proportions

From \ To	1	2	3
1	0.00	0.11	0.89
2	0.21	0.00	0.79
3	0.35	0.65	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	1	736	736
		2	1335	1335
		3	486	486
	2	1	1073	1073
		2	481	481
		3	922	922
08:15-08:30	1	1	736	736
		2	1335	1335
		3	486	486
	2	1	1073	1073
		2	481	481
		3	922	922
08:30-08:45	1	1	736	736
		2	1335	1335
		3	486	486
	2	1	1073	1073
		2	481	481
		3	922	922
08:45-09:00	1	1	736	736
		2	1335	1335
		3	486	486
	2	1	1073	1073
		2	481	481
		3	922	922

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
	1	0.69	11.85	2.4	B	736	736

1	2	0.75	11.74	3.2	B	993	993
	3	0.90	65.57	8.3	F	486	486
2	1	1.39	1237.04	301.2	F	1073	1073
	2	1.23	784.65	94.8	F	481	481
	3	0.60	6.35	1.6	A	914	914

Main Results for each time segment

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	736	184	341	1082	0.680	727	618	0.0	2.3	10.905	B
	2	984	246	171	1334	0.738	972	898	0.0	3.0	10.640	B
	3	486	122	498	548	0.887	462	646	0.0	5.9	39.318	E
2	1	1073	268	576	784	1.369	772	394	0.0	75.1	184.238	F
	2	481	120	688	390	1.232	375	661	0.0	26.6	146.017	F
	3	898	224	79	1547	0.580	892	984	0.0	1.5	5.987	A

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	736	184	355	1072	0.687	736	634	2.3	2.3	11.746	B
	2	995	249	173	1332	0.747	995	918	3.0	3.1	11.678	B
	3	486	122	509	540	0.899	481	659	5.9	7.3	58.258	F
2	1	1073	268	593	773	1.389	772	406	75.1	150.3	534.858	F
	2	481	120	688	390	1.232	389	677	26.6	49.6	371.763	F
	3	918	229	82	1545	0.594	917	995	1.5	1.6	6.305	A

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	736	184	357	1070	0.688	736	636	2.3	2.4	11.820	B
	2	996	249	173	1332	0.747	995	920	3.1	3.2	11.728	B
	3	486	122	509	540	0.900	483	659	7.3	8.0	63.154	F
2	1	1073	268	595	771	1.391	771	407	150.3	225.7	885.294	F
	2	481	120	687	391	1.231	390	679	49.6	72.3	578.325	F
	3	920	230	82	1545	0.596	920	996	1.6	1.6	6.335	A

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	736	184	358	1070	0.688	736	636	2.4	2.4	11.847	B
	2	996	249	173	1332	0.747	996	921	3.2	3.2	11.744	B
	3	486	122	509	540	0.900	484	659	8.0	8.3	65.567	F
2	1	1073	268	595	771	1.392	771	408	225.7	301.2	1237.037	F
	2	481	120	687	391	1.230	391	679	72.3	94.8	784.651	F
	3	921	230	82	1545	0.596	921	996	1.6	1.6	6.347	A

Existing Layout DPL - 2030 Model Base Flat + DR, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	Junction 2	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 81% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	304.84	F
2	Southern	Mini-roundabout		1, 2, 3	222.39	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-24	Junction 2 - Arm 2	263.57	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D40	2030 Model Base Flat + DR	PM	FLAT	16:15	17:15	60	15	✓	Simple	D13+D15

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	632	100.000
	2	✓				
	3		FLAT	✓	684	100.000
2	1		FLAT	✓	969	100.000
	2		FLAT	✓	464	100.000
	3	✓				

Origin-Destination Data

Demand (PCU/hr)

	To				

Proportions

	To				

Junction 1

From	1	2	3
1	0	485	147
2	597	0	559
3	88	596	0

From	1	2	3
1	0.00	0.77	0.23
2	0.52	0.00	0.48
3	0.13	0.87	0.00

Junction 2

Demand (PCU/hr)

From \ To	1	2	3
1	0	220	749
2	57	0	407
3	788	293	0

Proportions

From \ To	1	2	3
1	0.00	0.23	0.77
2	0.12	0.00	0.88
3	0.73	0.27	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

From \ To	1	2	3
1	0	10	10
2	10	0	10
3	10	10	0

Average PCU Per Veh

From \ To	1	2	3
1	1.000	1.100	1.100
2	1.100	1.000	1.100
3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	632	632
		2	1156	1156
		3	684	684
	2	1	969	969
		2	464	464
		3	1081	1081
16:30-16:45	1	1	632	632
		2	1156	1156
		3	684	684
	2	1	969	969
		2	464	464
		3	1081	1081
16:45-17:00	1	1	632	632
		2	1156	1156
		3	684	684
	2	1	969	969
		2	464	464
		3	1081	1081
17:00-17:15	1	1	632	632
		2	1156	1156
		3	684	684
	2	1	969	969
		2	464	464
		3	1081	1081

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
	1	0.63	10.68	1.9	B	632	632

1	2	0.78	13.40	3.8	B	1047	1047
	3	1.32	1022.73	166.3	F	684	684
2	1	0.97	79.88	20.4	F	969	969
	2	1.31	955.46	106.3	F	464	464
	3	0.60	6.21	1.6	A	935	935

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	632	158	451	1003	0.630	625	590	0.0	1.8	10.278	B
	2	1027	257	145	1351	0.760	1014	930	0.0	3.3	11.350	B
	3	684	171	524	531	1.288	517	636	0.0	41.7	159.126	F
2	1	969	242	250	1002	0.967	920	718	0.0	12.3	37.180	E
	2	464	116	711	376	1.234	361	459	0.0	25.8	149.170	F
	3	930	233	44	1573	0.591	924	1027	0.0	1.6	6.040	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	632	158	452	1002	0.630	632	609	1.8	1.8	10.676	B
	2	1051	263	147	1350	0.779	1050	937	3.3	3.7	13.098	B
	3	684	171	542	519	1.318	519	655	41.7	83.0	447.459	F
2	1	969	242	254	999	0.970	953	727	12.3	16.2	63.078	F
	2	464	116	737	360	1.291	358	470	25.8	52.2	413.420	F
	3	937	234	44	1574	0.595	937	1051	1.6	1.6	6.214	A

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	632	158	451	1003	0.630	632	611	1.8	1.9	10.670	B
	2	1054	264	147	1350	0.781	1054	936	3.7	3.8	13.322	B
	3	684	171	544	518	1.321	518	656	83.0	124.6	734.091	F
2	1	969	242	254	999	0.970	959	726	16.2	18.7	73.145	F
	2	464	116	741	357	1.301	356	471	52.2	79.1	681.815	F
	3	936	234	44	1574	0.595	936	1054	1.6	1.6	6.208	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	632	158	451	1003	0.630	632	611	1.9	1.9	10.666	B
	2	1055	264	147	1350	0.782	1055	936	3.8	3.8	13.396	B
	3	684	171	545	517	1.322	517	657	124.6	166.3	1022.733	F
2	1	969	242	254	999	0.970	962	726	18.7	20.4	79.880	F
	2	464	116	744	355	1.306	355	472	79.1	106.3	955.457	F
	3	936	234	44	1574	0.595	936	1055	1.6	1.6	6.205	A

Existing Layout DPL - 2030 Model Base Flat + DR + LIDL, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 2	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Demand Set Relationship	D29 - 2023 Model Base Flat + DR + LIDL, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Northern	Mini-roundabout		1, 2, 3	305.72	F
2	Southern	Mini-roundabout		1, 2, 3	307.99	F

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-27	Junction 2 - Arm 2	306.88	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D41	2030 Model Base Flat + DR + LIDL	PM	FLAT	16:15	17:15	60	15	✓	Simple	D40+D17

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

Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (PCU/hr)	Flow multiplier (%)	Internal storage space (PCU)
1	2	2	3	Simple (vertical queueing)	Normal	0	100.00	
2	3	1	2	Simple (vertical queueing)	Normal	0	100.00	

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	1		FLAT	✓	644	100.000
	2	✓				
	3		FLAT	✓	688	100.000
2	1		FLAT	✓	974	100.000
	2		FLAT	✓	512	100.000
	3	✓				

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	497	147

Proportions

		To		
		1	2	3
From	1	0.00	0.77	0.23

	2	610	0	564
	3	86	602	0

	2	0.52	0.00	0.48
	3	0.13	0.88	0.00

Junction 2

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	235	739
	2	77	0	435
	3	774	325	0

Proportions

		To		
		1	2	3
From	1	0.00	0.24	0.76
	2	0.15	0.00	0.85
	3	0.70	0.30	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Junction 2

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	10	10
	2	10	0	10
	3	10	10	0

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.100	1.100
	2	1.100	1.000	1.100
	3	1.100	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	1	1	644	644
		2	1174	1174
		3	688	688
	2	1	974	974
		2	512	512
		3	1099	1099
16:30-16:45	1	1	644	644
		2	1174	1174
		3	688	688
	2	1	974	974
		2	512	512
		3	1099	1099
16:45-17:00	1	1	644	644
		2	1174	1174
		3	688	688
	2	1	974	974
		2	512	512
		3	1099	1099
17:00-17:15	1	1	644	644
		2	1174	1174
		3	688	688
	2	1	974	974
		2	512	512
		3	1099	1099

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1	0.64	11.14	2.0	B	644	644
	2	0.77	12.67	3.6	B	1030	1030
	3	1.32	1020.37	167.0	F	688	688

2	1	0.99	110.47	29.0	F	974	974
	2	1.40	1244.01	143.1	F	512	512
	3	0.61	6.47	1.7	A	951	951

Main Results for each time segment

16:15 - 16:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	455	1000	0.644	636	585	0.0	1.9	10.672	B
	2	1012	253	145	1351	0.749	1000	946	0.0	3.1	10.926	B
	3	688	172	520	534	1.289	520	626	0.0	42.0	159.405	F
2	1	974	244	278	983	0.991	915	718	0.0	14.7	42.467	E
	2	512	128	694	386	1.325	374	499	0.0	34.4	183.739	F
	3	946	237	56	1564	0.605	939	1012	0.0	1.7	6.274	A

16:30 - 16:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	457	999	0.645	644	602	1.9	2.0	11.142	B
	2	1034	259	147	1350	0.766	1033	954	3.1	3.5	12.419	B
	3	688	172	537	523	1.316	522	643	42.0	83.5	447.233	F
2	1	974	244	282	980	0.993	950	727	14.7	20.9	78.396	F
	2	512	128	720	370	1.384	369	511	34.4	70.0	528.786	F
	3	954	238	56	1565	0.609	953	1034	1.7	1.7	6.472	A

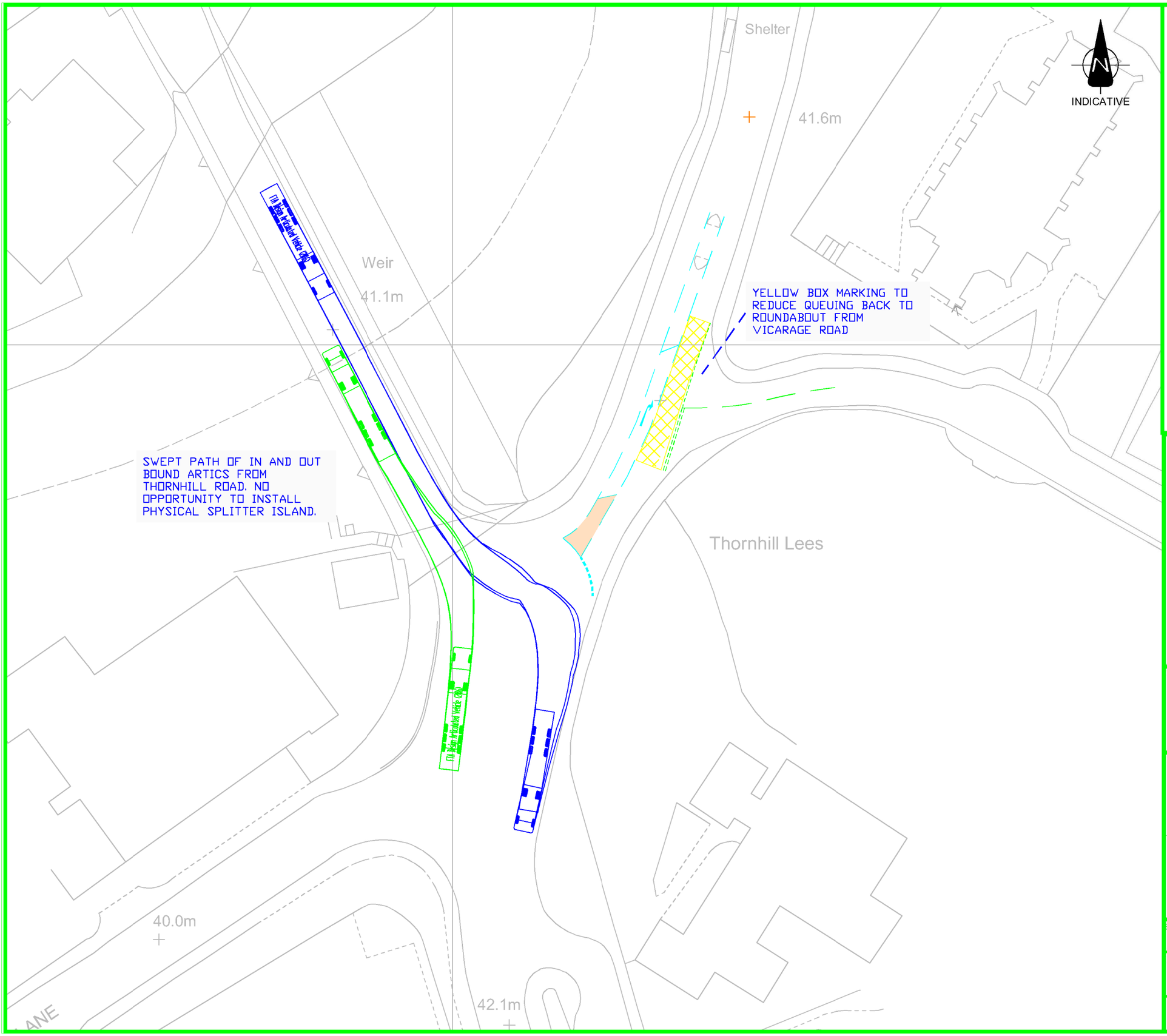
16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	456	999	0.644	644	604	2.0	2.0	11.135	B
	2	1037	259	147	1350	0.768	1037	953	3.5	3.5	12.606	B
	3	688	172	539	521	1.319	521	645	83.5	125.2	732.783	F
2	1	974	244	282	981	0.993	956	726	20.9	25.3	96.460	F
	2	512	128	725	367	1.396	367	513	70.0	106.4	883.568	F
	3	953	238	55	1565	0.609	953	1037	1.7	1.7	6.468	A

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1	644	161	456	1000	0.644	644	604	2.0	2.0	11.130	B
	2	1038	260	147	1350	0.769	1038	953	3.5	3.6	12.675	B
	3	688	172	539	521	1.321	521	646	125.2	167.0	1020.374	F
2	1	974	244	282	981	0.993	959	726	25.3	29.0	110.475	F
	2	512	128	728	365	1.402	365	513	106.4	143.1	1244.014	F
	3	953	238	55	1565	0.609	953	1038	1.7	1.7	6.463	A

APPENDIX M



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http://www.devplanning.co.uk

CLIENT:
KMBC

PROJECT:
DEWSBURY RIVERSIDE

TITLE:
THORNHILL ROAD/ FORGE LANE/ STATION ROAD
DOUBLE MINI-ROUNDABOUT
HIGHWAY IMPROVEMENT SCHEME

SCALE @ A3:	APPROVED:	DATE:
NTS	DRS	26/10/2022

PROJECT No:	DRAWING No:	REV:
2020213	DPL SK009	A

APPENDIX N

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 221027 Brewery.j10
Path: C:\Users\DavidSagstad\Dropbox\Working Back Up\Projects\2020213 Dewsbury Riverside\Analysis\Junction Assessment
Report generation date: 27/10/2022 16:32:02

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023 Base											
Arm 1	D1	0.3	4.52	0.20	A	66 %	D2	0.3	4.69	0.21	A	194 %
Arm 2		1.1	7.46	0.52	A	[Arm 2]		0.3	4.72	0.24	A	[Arm 3]
Arm 3		0.1	5.05	0.11	A			0.3	5.50	0.25	A	
	2030 Base											
Arm 1	D3	0.3	4.78	0.22	A	67 %	D4	0.3	5.31	0.26	A	99 %
Arm 2		1.0	7.39	0.51	A	[Arm 2]		0.5	5.26	0.32	A	[Arm 3]
Arm 3		0.2	5.46	0.19	A			0.7	6.97	0.40	A	
	2023 Plus Dev Manual											
Arm 1	D11	0.3	4.64	0.21	A	63 %	D12	0.3	4.83	0.22	A	172 %
Arm 2		1.1	7.66	0.53	A	[Arm 2]		0.4	4.97	0.27	A	[Arm 3]
Arm 3		0.2	5.52	0.16	A			0.4	5.75	0.28	A	
	2030 Plus Dev Manual											
Arm 1	D13	0.3	4.92	0.23	A	64 %	D14	0.4	5.48	0.27	A	88 %
Arm 2		1.1	7.59	0.52	A	[Arm 2]		0.5	5.57	0.35	A	[Arm 3]
Arm 3		0.3	5.94	0.24	A			0.8	7.34	0.43	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. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	31/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\DavidSagstad
Description	

Units

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

Analysis Options

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	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
JUNCTIONS 9	5.75					✓	Delay	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	Relationship type	Relationship
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15	✓		
D2	2023 Base	PM	ONE HOUR	17:00	18:30	15	✓		
D3	2030 Base	AM	ONE HOUR	08:00	09:30	15	✓		
D4	2030 Base	PM	ONE HOUR	17:00	18:30	15	✓		
D5	2023 Base Plus Dev	AM	ONE HOUR	08:00	09:30	15			
D6	2023 Base Plus Dev	PM	ONE HOUR	17:00	18:30	15			
D7	2030 Base Plus Dev	AM	ONE HOUR	08:00	09:30	15			
D8	2030 Base Plus Dev	PM	ONE HOUR	17:00	18:30	15			
D9	Development (Manual	AM	ONE HOUR	08:00	09:30	15			
D10	Development (Manual)	PM	ONE HOUR	17:00	18:30	15			
D11	2023 Plus Dev Manual	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D1+D9
D12	2023 Plus Dev Manual	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D2+D10
D13	2030 Plus Dev Manual	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D3+D9
D14	2030 Plus Dev Manual	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D4+D10

Analysis Set Details

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

2023 Base, AM

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 1 and 2 have 89% 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	6.46	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		66	Arm 2	6.46	A

Arms

Arms

Arm	Name	Description
1	Brewery Lane	
2	Lees Hall Road E	
3	Lees Hall Road W	

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	3.70	3.70	4.90	15.0	9.70	6.10	0.0	✓
2	3.40	3.40	3.70	1.0	15.40	15.40	0.0	
3	3.50	3.50	3.50	0.0	7.00	3.20	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.542	1024
2	0.642	1073
3	0.609	944

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	2023 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	182	100.000
2		ONE HOUR	✓	468	100.000
3		ONE HOUR	✓	79	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	75	107
	2	215	0	253
	3	33	46	0

Proportions

		To		
		1	2	3
From	1	0.00	0.41	0.59
	2	0.46	0.00	0.54
	3	0.42	0.58	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.010	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	137	137
	2	352	352
	3	59	59
08:15-08:30	1	164	164
	2	421	421
	3	71	71
08:30-08:45	1	200	200
	2	515	515
	3	87	87
08:45-09:00	1	200	200
	2	515	515
	3	87	87
09:00-09:15	1	164	164
	2	421	421
	3	71	71
09:15-09:30	1	137	137
	2	352	352
	3	59	59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.20	4.52	0.3	A	167	251
2	0.52	7.46	1.1	A	429	644
3	0.11	5.05	0.1	A	72	109

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	137	34	34	1006	0.136	136	186	0.0	0.2	4.138	A
2	352	88	80	1022	0.345	350	91	0.0	0.5	5.344	A
3	59	15	161	846	0.070	59	270	0.0	0.1	4.576	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	164	41	41	1002	0.163	163	223	0.2	0.2	4.293	A
2	421	105	96	1012	0.416	420	109	0.5	0.7	6.076	A
3	71	18	193	826	0.086	71	323	0.1	0.1	4.766	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	200	50	51	997	0.201	200	272	0.2	0.3	4.516	A
2	515	129	118	998	0.516	514	133	0.7	1.1	7.417	A
3	87	22	236	800	0.109	87	395	0.1	0.1	5.048	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	200	50	51	997	0.201	200	273	0.3	0.3	4.518	A
2	515	129	118	998	0.516	515	133	1.1	1.1	7.460	A
3	87	22	237	800	0.109	87	396	0.1	0.1	5.051	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	164	41	41	1002	0.163	164	224	0.3	0.2	4.297	A
2	421	105	96	1012	0.416	422	109	1.1	0.7	6.120	A
3	71	18	194	826	0.086	71	324	0.1	0.1	4.771	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	137	34	35	1006	0.136	137	187	0.2	0.2	4.145	A
2	352	88	81	1022	0.345	353	91	0.7	0.5	5.392	A
3	59	15	162	845	0.070	60	272	0.1	0.1	4.583	A

2023 Base, 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	4.97	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		194	Arm 3	4.97	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	2023 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	182	100.000
2		ONE HOUR	✓	223	100.000
3		ONE HOUR	✓	199	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	90	92
	2	105	0	118
	3	105	94	0

Proportions

		To		
		1	2	3
From	1	0.00	0.49	0.51
	2	0.47	0.00	0.53
	3	0.53	0.47	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.010	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	1	137	137
	2	168	168
	3	150	150
17:15-17:30	1	164	164
	2	200	200
	3	179	179
17:30-17:45	1	200	200
	2	246	246
	3	219	219
17:45-18:00	1	200	200
	2	246	246
	3	219	219
18:00-18:15	1	164	164
	2	200	200
	3	179	179
18:15-18:30	1	137	137
	2	168	168
	3	150	150

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.21	4.69	0.3	A	167	251
2	0.24	4.72	0.3	A	205	307
3	0.25	5.50	0.3	A	183	274

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	137	34	70	986	0.139	136	157	0.0	0.2	4.233	A
2	168	42	69	1029	0.163	167	138	0.0	0.2	4.173	A
3	150	37	79	896	0.167	149	157	0.0	0.2	4.815	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	164	41	84	979	0.167	163	189	0.2	0.2	4.416	A
2	200	50	83	1020	0.196	200	165	0.2	0.2	4.388	A
3	179	45	94	886	0.202	179	189	0.2	0.3	5.086	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	200	50	103	968	0.207	200	231	0.2	0.3	4.685	A
2	246	61	101	1008	0.243	245	202	0.2	0.3	4.714	A
3	219	55	115	873	0.251	219	231	0.3	0.3	5.496	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	200	50	103	968	0.207	200	231	0.3	0.3	4.687	A
2	246	61	101	1008	0.243	246	203	0.3	0.3	4.718	A
3	219	55	116	873	0.251	219	231	0.3	0.3	5.501	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	164	41	85	979	0.167	164	189	0.3	0.2	4.419	A
2	200	50	83	1020	0.197	201	166	0.3	0.2	4.396	A
3	179	45	95	886	0.202	179	189	0.3	0.3	5.095	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	137	34	71	986	0.139	137	158	0.2	0.2	4.243	A
2	168	42	69	1029	0.163	168	139	0.2	0.2	4.182	A
3	150	37	79	896	0.167	150	158	0.3	0.2	4.829	A

2030 Base, AM

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 1 and 2 have 82% 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	6.41	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		67	Arm 2	6.41	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	2030 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	197	100.000
2		ONE HOUR	✓	460	100.000
3		ONE HOUR	✓	137	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	84	113
	2	200	0	260
	3	45	92	0

Proportions

		To		
		1	2	3
From	1	0.00	0.43	0.57
	2	0.43	0.00	0.57
	3	0.33	0.67	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.010	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	148	148
	2	346	346
	3	103	103
08:15-08:30	1	177	177
	2	414	414
	3	123	123
08:30-08:45	1	217	217
	2	506	506
	3	151	151
08:45-09:00	1	217	217
	2	506	506
	3	151	151
09:00-09:15	1	177	177
	2	414	414
	3	123	123
09:15-09:30	1	148	148
	2	346	346
	3	103	103

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.22	4.78	0.3	A	181	271
2	0.51	7.39	1.0	A	422	633
3	0.19	5.46	0.2	A	126	189

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	148	37	69	987	0.150	148	183	0.0	0.2	4.285	A
2	346	87	85	1019	0.340	344	132	0.0	0.5	5.319	A
3	103	26	150	853	0.121	103	279	0.0	0.1	4.797	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	177	44	83	980	0.181	177	220	0.2	0.2	4.483	A
2	414	103	101	1008	0.410	413	158	0.5	0.7	6.038	A
3	123	31	179	834	0.148	123	335	0.1	0.2	5.058	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	217	54	101	970	0.224	217	269	0.2	0.3	4.780	A
2	506	127	124	994	0.510	505	194	0.7	1.0	7.348	A
3	151	38	220	810	0.186	151	410	0.2	0.2	5.458	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	217	54	101	970	0.224	217	270	0.3	0.3	4.782	A
2	506	127	124	994	0.510	506	194	1.0	1.0	7.390	A
3	151	38	220	810	0.186	151	411	0.2	0.2	5.463	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	177	44	83	980	0.181	177	221	0.3	0.2	4.490	A
2	414	103	102	1008	0.410	415	158	1.0	0.7	6.083	A
3	123	31	180	834	0.148	123	336	0.2	0.2	5.067	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	148	37	69	987	0.150	148	185	0.2	0.2	4.296	A
2	346	87	85	1019	0.340	347	133	0.7	0.5	5.367	A
3	103	26	151	852	0.121	103	281	0.2	0.1	4.809	A

2030 Base, 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	5.94	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		99	Arm 3	5.94	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	2030 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	212	100.000
2		ONE HOUR	✓	289	100.000
3		ONE HOUR	✓	319	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	111	101
	2	114	0	175
	3	129	190	0

Proportions

		To		
		1	2	3
From	1	0.00	0.52	0.48
	2	0.39	0.00	0.61
	3	0.40	0.60	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.010	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	1	160	160
	2	218	218
	3	240	240
17:15-17:30	1	191	191
	2	260	260
	3	287	287
17:30-17:45	1	233	233
	2	318	318
	3	351	351
17:45-18:00	1	233	233
	2	318	318
	3	351	351
18:00-18:15	1	191	191
	2	260	260
	3	287	287
18:15-18:30	1	160	160
	2	218	218
	3	240	240

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.26	5.31	0.3	A	195	292
2	0.32	5.26	0.5	A	265	398
3	0.40	6.97	0.7	A	293	439

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	160	40	142	947	0.168	159	182	0.0	0.2	4.560	A
2	218	54	76	1025	0.212	217	225	0.0	0.3	4.448	A
3	240	60	85	892	0.269	239	207	0.0	0.4	5.500	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	191	48	171	932	0.205	190	218	0.2	0.3	4.853	A
2	260	65	91	1015	0.256	260	270	0.3	0.3	4.760	A
3	287	72	102	881	0.325	286	248	0.4	0.5	6.046	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	233	58	209	911	0.256	233	267	0.3	0.3	5.306	A
2	318	80	111	1002	0.318	318	331	0.3	0.5	5.256	A
3	351	88	125	867	0.405	350	303	0.5	0.7	6.953	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	233	58	209	911	0.256	233	268	0.3	0.3	5.312	A
2	318	80	111	1002	0.318	318	331	0.5	0.5	5.263	A
3	351	88	126	867	0.405	351	304	0.7	0.7	6.974	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	191	48	171	932	0.205	191	219	0.3	0.3	4.862	A
2	260	65	91	1015	0.256	260	271	0.5	0.3	4.774	A
3	287	72	103	881	0.325	288	249	0.7	0.5	6.070	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	160	40	143	947	0.169	160	183	0.3	0.2	4.577	A
2	218	54	76	1025	0.212	218	227	0.3	0.3	4.464	A
3	240	60	86	891	0.269	241	208	0.5	0.4	5.534	A

2023 Plus Dev Manual, AM

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 1 and 2 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	6.62	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		63	Arm 2	6.62	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	Relationship type	Relationship
D11	2023 Plus Dev Manual	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D1+D9

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	185	100.000
2		ONE HOUR	✓	477	100.000
3		ONE HOUR	✓	116	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	75	110
	2	215	0	262
	3	43	73	0

Proportions

		To		
		1	2	3
From	1	0.00	0.41	0.59
	2	0.45	0.00	0.55
	3	0.37	0.63	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.000	1.002
	2	1.000	1.000	1.003
	3	1.022	1.035	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	139	139
	2	359	359
	3	87	87
08:15-08:30	1	166	166
	2	429	429
	3	104	104
08:30-08:45	1	204	204
	2	525	525
	3	128	128
08:45-09:00	1	204	204
	2	525	525
	3	128	128
09:00-09:15	1	166	166
	2	429	429
	3	104	104
09:15-09:30	1	139	139
	2	359	359
	3	87	87

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.21	4.64	0.3	A	170	255
2	0.53	7.66	1.1	A	438	657
3	0.16	5.52	0.2	A	106	160

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	139	35	55	995	0.140	139	193	0.0	0.2	4.208	A
2	359	90	82	1020	0.352	357	111	0.0	0.5	5.417	A
3	87	22	161	846	0.103	87	278	0.0	0.1	4.882	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	166	42	66	989	0.168	166	232	0.2	0.2	4.382	A
2	429	107	99	1010	0.425	428	133	0.5	0.7	6.189	A
3	104	26	193	826	0.126	104	334	0.1	0.1	5.134	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	204	51	80	981	0.208	203	283	0.2	0.3	4.636	A
2	525	131	121	996	0.527	524	163	0.7	1.1	7.614	A
3	128	32	236	800	0.160	128	409	0.1	0.2	5.512	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	204	51	80	981	0.208	204	284	0.3	0.3	4.638	A
2	525	131	121	996	0.527	525	163	1.1	1.1	7.663	A
3	128	32	237	800	0.160	128	410	0.2	0.2	5.517	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	166	42	66	989	0.168	167	233	0.3	0.2	4.385	A
2	429	107	99	1010	0.425	430	133	1.1	0.7	6.236	A
3	104	26	194	826	0.126	104	335	0.2	0.1	5.141	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	139	35	55	995	0.140	139	195	0.2	0.2	4.218	A
2	359	90	83	1020	0.352	360	112	0.7	0.5	5.469	A
3	87	22	162	845	0.103	87	281	0.1	0.1	4.896	A

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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	5.19	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		172	Arm 3	5.19	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	Relationship type	Relationship
D12	2023 Plus Dev Manual	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D2+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	191	100.000
2		ONE HOUR	✓	247	100.000
3		ONE HOUR	✓	220	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	90	101
	2	105	0	142
	3	111	109	0

Proportions

		To		
		1	2	3
From	1	0.00	0.47	0.53
	2	0.43	0.00	0.57
	3	0.50	0.50	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.000	1.008
	2	1.000	1.000	1.016
	3	1.005	1.013	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	1	144	144
	2	186	186
	3	166	166
17:15-17:30	1	172	172
	2	222	222
	3	198	198
17:30-17:45	1	210	210
	2	272	272
	3	242	242
17:45-18:00	1	210	210
	2	272	272
	3	242	242
18:00-18:15	1	172	172
	2	222	222
	3	198	198
18:15-18:30	1	144	144
	2	186	186
	3	166	166

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.22	4.83	0.3	A	175	263
2	0.27	4.97	0.4	A	227	340
3	0.28	5.75	0.4	A	202	303

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	144	36	82	980	0.147	143	162	0.0	0.2	4.315	A
2	186	46	76	1025	0.181	185	149	0.0	0.2	4.320	A
3	166	41	79	896	0.185	165	182	0.0	0.2	4.960	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	172	43	98	971	0.177	172	194	0.2	0.2	4.519	A
2	222	56	91	1015	0.219	222	179	0.2	0.3	4.577	A
3	198	49	94	886	0.223	198	218	0.2	0.3	5.271	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	210	53	120	959	0.219	210	237	0.2	0.3	4.823	A
2	272	68	111	1002	0.271	272	219	0.3	0.4	4.969	A
3	242	61	115	873	0.277	242	267	0.3	0.4	5.745	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	210	53	120	959	0.219	210	238	0.3	0.3	4.826	A
2	272	68	111	1002	0.271	272	219	0.4	0.4	4.974	A
3	242	61	116	873	0.277	242	268	0.4	0.4	5.753	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	172	43	98	971	0.177	172	195	0.3	0.2	4.524	A
2	222	56	91	1015	0.219	222	179	0.4	0.3	4.584	A
3	198	49	95	886	0.223	198	219	0.4	0.3	5.280	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	144	36	82	980	0.147	144	163	0.2	0.2	4.325	A
2	186	46	76	1025	0.182	186	150	0.3	0.2	4.335	A
3	166	41	79	896	0.185	166	183	0.3	0.2	4.979	A

2030 Plus Dev Manual, 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	6.61	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		64	Arm 2	6.61	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	Relationship type	Relationship
D13	2030 Plus Dev Manual	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D3+D9

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	200	100.000
2		ONE HOUR	✓	469	100.000
3		ONE HOUR	✓	174	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	84	116
	2	200	0	269
	3	55	119	0

Proportions

		To		
		1	2	3
From	1	0.00	0.42	0.58
	2	0.43	0.00	0.57
	3	0.32	0.68	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.000	1.002
	2	1.000	1.000	1.003
	3	1.017	1.021	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	151	151
	2	353	353
	3	131	131
08:15-08:30	1	180	180
	2	422	422
	3	156	156
08:30-08:45	1	220	220
	2	516	516
	3	192	192
08:45-09:00	1	220	220
	2	516	516
	3	192	192
09:00-09:15	1	180	180
	2	422	422
	3	156	156
09:15-09:30	1	151	151
	2	353	353
	3	131	131

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.23	4.92	0.3	A	184	275
2	0.52	7.59	1.1	A	430	646
3	0.24	5.94	0.3	A	160	239

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	151	38	89	976	0.154	150	191	0.0	0.2	4.359	A
2	353	88	87	1018	0.347	351	152	0.0	0.5	5.376	A
3	131	33	150	853	0.154	130	288	0.0	0.2	5.076	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	180	45	107	966	0.186	180	229	0.2	0.2	4.580	A
2	422	105	104	1007	0.419	421	182	0.5	0.7	6.150	A
3	156	39	179	834	0.187	156	346	0.2	0.2	5.411	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	220	55	131	954	0.231	220	280	0.2	0.3	4.910	A
2	516	129	128	992	0.521	515	223	0.7	1.1	7.544	A
3	192	48	220	810	0.237	191	423	0.2	0.3	5.930	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	220	55	131	953	0.231	220	281	0.3	0.3	4.916	A
2	516	129	128	991	0.521	516	224	1.1	1.1	7.590	A
3	192	48	220	810	0.237	192	424	0.3	0.3	5.938	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	180	45	107	966	0.186	180	230	0.3	0.2	4.586	A
2	422	105	104	1006	0.419	423	183	1.1	0.7	6.198	A
3	156	39	180	834	0.188	157	347	0.3	0.2	5.425	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	151	38	90	976	0.154	151	192	0.2	0.2	4.370	A
2	353	88	87	1017	0.347	354	153	0.7	0.5	5.443	A
3	131	33	151	852	0.154	131	290	0.2	0.2	5.096	A

2030 Plus Dev Manual, 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	6.24	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		88	Arm 3	6.24	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	Relationship type	Relationship
D14	2030 Plus Dev Manual	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D4+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	221	100.000
2		ONE HOUR	✓	313	100.000
3		ONE HOUR	✓	340	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	0	111	110
	2	114	0	199
	3	135	205	0

Proportions

		To		
		1	2	3
From	1	0.00	0.50	0.50
	2	0.36	0.00	0.64
	3	0.40	0.60	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Average PCU Per Veh

		To		
		1	2	3
From	1	1.000	1.000	1.007
	2	1.000	1.000	1.011
	3	1.004	1.007	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	1	166	166
	2	236	236
	3	256	256
17:15-17:30	1	199	199
	2	281	281
	3	306	306
17:30-17:45	1	243	243
	2	345	345
	3	374	374
17:45-18:00	1	243	243
	2	345	345
	3	374	374
18:00-18:15	1	199	199
	2	281	281
	3	306	306
18:15-18:30	1	166	166
	2	236	236
	3	256	256

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.27	5.48	0.4	A	203	304
2	0.35	5.57	0.5	A	287	431
3	0.43	7.34	0.8	A	312	468

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	166	42	153	941	0.177	166	186	0.0	0.2	4.653	A
2	236	59	82	1021	0.231	234	237	0.0	0.3	4.605	A
3	256	64	85	892	0.287	254	231	0.0	0.4	5.666	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	199	50	184	925	0.215	198	224	0.2	0.3	4.974	A
2	281	70	99	1010	0.279	281	284	0.3	0.4	4.971	A
3	306	76	102	881	0.347	305	277	0.4	0.5	6.277	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	243	61	225	902	0.270	243	274	0.3	0.4	5.478	A
2	345	86	121	996	0.346	344	347	0.4	0.5	5.558	A
3	374	94	125	867	0.432	373	340	0.5	0.8	7.315	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	243	61	226	902	0.270	243	274	0.4	0.4	5.484	A
2	345	86	121	996	0.346	345	348	0.5	0.5	5.567	A
3	374	94	126	867	0.432	374	340	0.8	0.8	7.342	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	199	50	185	924	0.215	199	224	0.4	0.3	4.986	A
2	281	70	99	1010	0.279	282	285	0.5	0.4	4.985	A
3	306	76	103	881	0.347	307	278	0.8	0.5	6.308	A

18:15 - 18:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	166	42	155	941	0.177	167	188	0.3	0.2	4.671	A
2	236	59	83	1020	0.231	236	238	0.4	0.3	4.624	A
3	256	64	86	891	0.287	256	233	0.5	0.4	5.706	A

APPENDIX O

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: 221027 Ingham.j10
Path: C:\Users\DavidSagstad\Dropbox\Working Back Up\Projects\2020213 Dewsbury Riverside\Analysis\Junction Assessment
Report generation date: 27/10/2022 17:02:06

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2023 Base											
Stream B-AC	D1	1.0	13.73	0.50	B	56 %	D2	0.5	9.89	0.32	A	141 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2030 Base											
Stream B-AC	D3	1.0	13.95	0.50	B	55 %	D4	0.8	11.83	0.44	B	81 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2023 Plus Dev (Manual)											
Stream B-AC	D11	1.0	13.82	0.51	B	56 %	D12	0.6	10.70	0.37	B	112 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]
	2030 Plus Dev (Manual)											
Stream B-AC	D13	1.0	14.05	0.50	B	54 %	D14	1.0	12.99	0.49	B	65 %
Stream C-AB		0.0	0.00	0.00	A	[Stream B-AC]		0.0	0.00	0.00	A	[Stream B-AC]

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

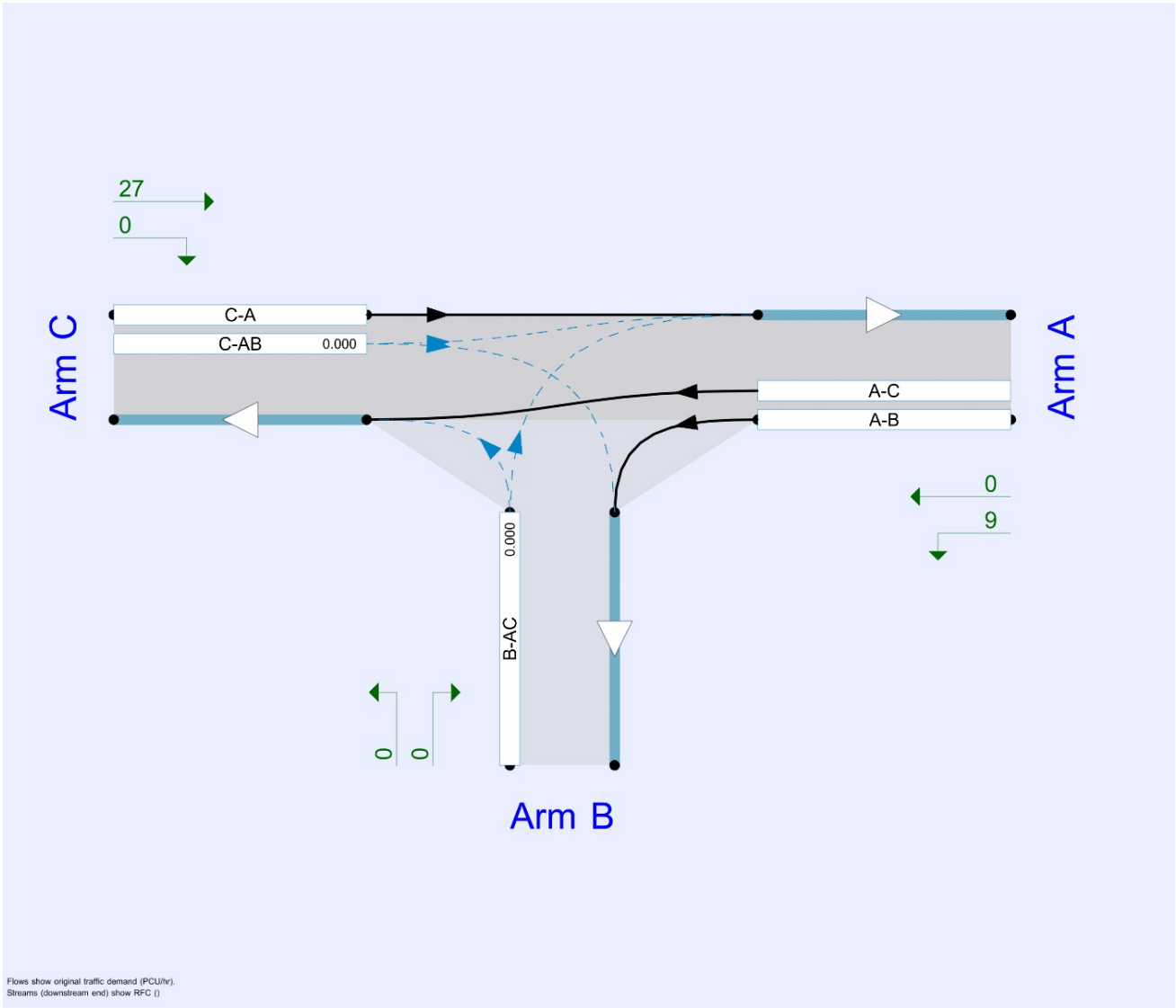
File summary

File Description

Title	
Location	
Site number	
Date	31/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\DavidSagstad
Description	

Units

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



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	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75					✓	Delay	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	Relationship type	Relationship
D1	2023 Base	AM	ONE HOUR	08:00	09:30	15	✓		
D2	2023 Base	PM	ONE HOUR	17:00	18:30	15	✓		
D3	2030 Base	AM	ONE HOUR	08:00	09:30	15	✓		
D4	2030 Base	PM	ONE HOUR	17:00	18:30	15	✓		
D5	2023 Base With Dev	AM	ONE HOUR	08:00	09:30	15			
D6	2023 Base With Dev	PM	ONE HOUR	17:00	18:30	15			
D7	2030 Base With Dev	AM	ONE HOUR	08:00	09:30	15			
D8	2030 Base With Dev	PM	ONE HOUR	17:00	18:30	15			
D9	Dev (Manual)	AM	ONE HOUR	08:00	09:30	15			
D10	Dev (Manual)	PM	ONE HOUR	17:00	18:30	15			
D11	2023 Plus Dev (Manual)	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D1+D9
D12	2023 Plus Dev (Manual)	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D2+D10
D13	2030 Plus Dev (Manual)	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D3+D9
D14	2030 Plus Dev (Manual)	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D4+D10

Analysis Set Details

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

2023 Base, AM

Data Errors and Warnings

No errors or warnings

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		7.68	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	56	Stream B-AC	7.68	A

Arms

Arms

Arm	Name	Description	Arm type
A	Ingham Road N		Major
B	Lees Hall Road (E - Minor)		Minor
C	Lees Hall Road (W - Major)		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	6.00			0.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.20	0	0

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	440	0.080	0.202	0.127	0.289
B-C	574	0.088	0.222	-	-
C-B	574	0.222	0.222	-	-

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	2023 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	86	100.000
B		ONE HOUR	✓	242	100.000
C		ONE HOUR	✓	105	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	86
	B	31	0	211
	C	105	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.13	0.00	0.87
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	1	0	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.010	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	65	65
	B	182	182
	C	79	79
08:15-08:30	A	77	77
	B	218	218
	C	94	94
08:30-08:45	A	95	95
	B	266	266
	C	116	116
08:45-09:00	A	95	95
	B	266	266
	C	116	116
09:00-09:15	A	77	77
	B	218	218
	C	94	94
09:15-09:30	A	65	65
	B	182	182
	C	79	79

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.50	13.73	1.0	B	222	333
C-AB	0.00	0.00	0.0	A	0	0
C-A					96	145
A-B					0	0
A-C					79	118

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	182	46	536	0.340	180	0.0	0.5	10.062	B
C-AB	0	0	560	0.000	0	0.0	0.0	0.000	A
C-A	79	20			79				
A-B	0	0			0				
A-C	65	16			65				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	218	54	533	0.408	217	0.5	0.7	11.371	B
C-AB	0	0	557	0.000	0	0.0	0.0	0.000	A
C-A	94	24			94				
A-B	0	0			0				
A-C	77	19			77				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	266	67	528	0.504	265	0.7	1.0	13.613	B
C-AB	0	0	553	0.000	0	0.0	0.0	0.000	A
C-A	116	29			116				
A-B	0	0			0				
A-C	95	24			95				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	266	67	528	0.504	266	1.0	1.0	13.734	B
C-AB	0	0	553	0.000	0	0.0	0.0	0.000	A
C-A	116	29			116				
A-B	0	0			0				
A-C	95	24			95				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	218	54	533	0.408	219	1.0	0.7	11.509	B
C-AB	0	0	557	0.000	0	0.0	0.0	0.000	A
C-A	94	24			94				
A-B	0	0			0				
A-C	77	19			77				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	182	46	536	0.340	183	0.7	0.5	10.219	B
C-AB	0	0	560	0.000	0	0.0	0.0	0.000	A
C-A	79	20			79				
A-B	0	0			0				
A-C	65	16			65				

2023 Base, PM

Data Errors and Warnings

No errors or warnings

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		4.32	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	141	Stream B-AC	4.32	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
D2	2023 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	36	100.000
B		ONE HOUR	✓	159	100.000
C		ONE HOUR	✓	169	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	36
	B	20	0	139
	C	169	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.13	0.00	0.87
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	1	0	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.010	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	27	27
	B	120	120
	C	127	127
17:15-17:30	A	32	32
	B	143	143
	C	152	152
17:30-17:45	A	40	40
	B	175	175
	C	186	186
17:45-18:00	A	40	40
	B	175	175
	C	186	186
18:00-18:15	A	32	32
	B	143	143
	C	152	152
18:15-18:30	A	27	27
	B	120	120
	C	127	127

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.32	9.89	0.5	A	146	219
C-AB	0.00	0.00	0.0	A	0	0
C-A					155	233
A-B					0	0
A-C					33	50

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	30	543	0.220	119	0.0	0.3	8.453	A
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	127	32			127				
A-B	0	0			0				
A-C	27	7			27				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	143	36	542	0.264	143	0.3	0.4	9.024	A
C-AB	0	0	567	0.000	0	0.0	0.0	0.000	A
C-A	152	38			152				
A-B	0	0			0				
A-C	32	8			32				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	175	44	539	0.325	175	0.4	0.5	9.866	A
C-AB	0	0	565	0.000	0	0.0	0.0	0.000	A
C-A	186	47			186				
A-B	0	0			0				
A-C	40	10			40				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	175	44	539	0.325	175	0.5	0.5	9.891	A
C-AB	0	0	565	0.000	0	0.0	0.0	0.000	A
C-A	186	47			186				
A-B	0	0			0				
A-C	40	10			40				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	143	36	542	0.264	143	0.5	0.4	9.053	A
C-AB	0	0	567	0.000	0	0.0	0.0	0.000	A
C-A	152	38			152				
A-B	0	0			0				
A-C	32	8			32				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	30	543	0.220	120	0.4	0.3	8.509	A
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	127	32			127				
A-B	0	0			0				
A-C	27	7			27				

2030 Base, AM

Data Errors and Warnings

No errors or warnings

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		5.78	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	55	Stream B-AC	5.78	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	2030 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	124	100.000
B		ONE HOUR	✓	231	100.000
C		ONE HOUR	✓	203	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	124
	B	34	0	197
	C	203	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.15	0.00	0.85
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	1	0	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.010	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	93	93
	B	174	174
	C	153	153
08:15-08:30	A	111	111
	B	208	208
	C	182	182
08:30-08:45	A	137	137
	B	254	254
	C	224	224
08:45-09:00	A	137	137
	B	254	254
	C	224	224
09:00-09:15	A	111	111
	B	208	208
	C	182	182
09:15-09:30	A	93	93
	B	174	174
	C	153	153

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.50	13.95	1.0	B	212	318
C-AB	0.00	0.00	0.0	A	0	0
C-A					186	279
A-B					0	0
A-C					114	171

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	174	43	524	0.332	172	0.0	0.5	10.172	B
C-AB	0	0	553	0.000	0	0.0	0.0	0.000	A
C-A	153	38			153				
A-B	0	0			0				
A-C	93	23			93				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	208	52	519	0.400	207	0.5	0.7	11.511	B
C-AB	0	0	549	0.000	0	0.0	0.0	0.000	A
C-A	182	46			182				
A-B	0	0			0				
A-C	111	28			111				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	254	64	512	0.497	253	0.7	1.0	13.830	B
C-AB	0	0	544	0.000	0	0.0	0.0	0.000	A
C-A	224	56			224				
A-B	0	0			0				
A-C	137	34			137				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	254	64	512	0.497	254	1.0	1.0	13.952	B
C-AB	0	0	544	0.000	0	0.0	0.0	0.000	A
C-A	224	56			224				
A-B	0	0			0				
A-C	137	34			137				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	208	52	519	0.400	209	1.0	0.7	11.651	B
C-AB	0	0	549	0.000	0	0.0	0.0	0.000	A
C-A	182	46			182				
A-B	0	0			0				
A-C	111	28			111				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	174	43	524	0.332	175	0.7	0.5	10.324	B
C-AB	0	0	553	0.000	0	0.0	0.0	0.000	A
C-A	153	38			153				
A-B	0	0			0				
A-C	93	23			93				

2030 Base, PM

Data Errors and Warnings

No errors or warnings

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		5.35	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	81	Stream B-AC	5.35	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
D4	2030 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	23	100.000
B		ONE HOUR	✓	220	100.000
C		ONE HOUR	✓	243	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	23
	B	21	0	199
	C	243	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.10	0.00	0.90
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	1	0	0
	B	0	0	0
	C	0	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.010	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	17	17
	B	166	166
	C	183	183
17:15-17:30	A	21	21
	B	198	198
	C	218	218
17:30-17:45	A	25	25
	B	242	242
	C	268	268
17:45-18:00	A	25	25
	B	242	242
	C	268	268
18:00-18:15	A	21	21
	B	198	198
	C	218	218
18:15-18:30	A	17	17
	B	166	166
	C	183	183

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.44	11.83	0.8	B	202	303
C-AB	0.00	0.00	0.0	A	0	0
C-A					223	334
A-B					0	0
A-C					21	32

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	41	550	0.301	164	0.0	0.4	9.282	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	183	46			183				
A-B	0	0			0				
A-C	17	4			17				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	198	49	549	0.361	197	0.4	0.6	10.231	B
C-AB	0	0	569	0.000	0	0.0	0.0	0.000	A
C-A	218	55			218				
A-B	0	0			0				
A-C	21	5			21				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	242	61	546	0.443	241	0.6	0.8	11.763	B
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	268	67			268				
A-B	0	0			0				
A-C	25	6			25				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	242	61	546	0.443	242	0.8	0.8	11.827	B
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	268	67			268				
A-B	0	0			0				
A-C	25	6			25				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	198	49	549	0.361	199	0.8	0.6	10.312	B
C-AB	0	0	569	0.000	0	0.0	0.0	0.000	A
C-A	218	55			218				
A-B	0	0			0				
A-C	21	5			21				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	166	41	550	0.301	166	0.6	0.4	9.391	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	183	46			183				
A-B	0	0			0				
A-C	17	4			17				

2023 Plus Dev (Manual), AM

Data Errors and Warnings

No errors or warnings

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		7.13	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	56	Stream B-AC	7.13	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	Relationship type	Relationship
D11	2023 Plus Dev (Manual)	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D1+D9

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	95	100.000
B		ONE HOUR	✓	242	100.000
C		ONE HOUR	✓	132	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	9	86
	B	31	0	211
	C	132	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.09	0.91
	B	0.13	0.00	0.87
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	10	0
	B	0	0	0
	C	2	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.100	1.000
	B	1.000	1.000	1.000
	C	1.019	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	72	72
	B	182	182
	C	99	99
08:15-08:30	A	85	85
	B	218	218
	C	119	119
08:30-08:45	A	105	105
	B	266	266
	C	145	145
08:45-09:00	A	105	105
	B	266	266
	C	145	145
09:00-09:15	A	85	85
	B	218	218
	C	119	119
09:15-09:30	A	72	72
	B	182	182
	C	99	99

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.51	13.82	1.0	B	222	333
C-AB	0.00	0.00	0.0	A	0	0
C-A					121	182
A-B					8	12
A-C					79	118

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	182	46	535	0.341	180	0.0	0.5	10.094	B
C-AB	0	0	558	0.000	0	0.0	0.0	0.000	A
C-A	99	25			99				
A-B	7	2			7				
A-C	65	16			65				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	218	54	531	0.409	217	0.5	0.7	11.418	B
C-AB	0	0	555	0.000	0	0.0	0.0	0.000	A
C-A	119	30			119				
A-B	8	2			8				
A-C	77	19			77				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	266	67	527	0.506	265	0.7	1.0	13.699	B
C-AB	0	0	551	0.000	0	0.0	0.0	0.000	A
C-A	145	36			145				
A-B	10	2			10				
A-C	95	24			95				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	266	67	527	0.506	266	1.0	1.0	13.823	B
C-AB	0	0	551	0.000	0	0.0	0.0	0.000	A
C-A	145	36			145				
A-B	10	2			10				
A-C	95	24			95				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	218	54	531	0.409	219	1.0	0.7	11.559	B
C-AB	0	0	555	0.000	0	0.0	0.0	0.000	A
C-A	119	30			119				
A-B	8	2			8				
A-C	77	19			77				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	182	46	535	0.341	183	0.7	0.5	10.253	B
C-AB	0	0	558	0.000	0	0.0	0.0	0.000	A
C-A	99	25			99				
A-B	7	2			7				
A-C	65	16			65				

2023 Plus Dev (Manual), PM

Data Errors and Warnings

No errors or warnings

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		4.86	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	112	Stream B-AC	4.86	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	Relationship type	Relationship
D12	2023 Plus Dev (Manual)	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D2+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	36	100.000
B		ONE HOUR	✓	183	100.000
C		ONE HOUR	✓	184	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	36
	B	20	0	163
	C	184	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.11	0.00	0.89
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.014
	C	1.007	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	27	27
	B	138	138
	C	139	139
17:15-17:30	A	32	32
	B	165	165
	C	165	165
17:30-17:45	A	40	40
	B	201	201
	C	203	203
17:45-18:00	A	40	40
	B	201	201
	C	203	203
18:00-18:15	A	32	32
	B	165	165
	C	165	165
18:15-18:30	A	27	27
	B	138	138
	C	139	139

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.37	10.70	0.6	B	168	252
C-AB	0.00	0.00	0.0	A	0	0
C-A					169	253
A-B					0	0
A-C					33	50

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	138	34	546	0.252	136	0.0	0.3	8.862	A
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	139	35			139				
A-B	0	0			0				
A-C	27	7			27				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	165	41	544	0.302	164	0.3	0.4	9.571	A
C-AB	0	0	567	0.000	0	0.0	0.0	0.000	A
C-A	165	41			165				
A-B	0	0			0				
A-C	32	8			32				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	201	50	542	0.372	201	0.4	0.6	10.663	B
C-AB	0	0	565	0.000	0	0.0	0.0	0.000	A
C-A	203	51			203				
A-B	0	0			0				
A-C	40	10			40				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	201	50	542	0.372	201	0.6	0.6	10.700	B
C-AB	0	0	565	0.000	0	0.0	0.0	0.000	A
C-A	203	51			203				
A-B	0	0			0				
A-C	40	10			40				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	165	41	544	0.302	165	0.6	0.4	9.622	A
C-AB	0	0	567	0.000	0	0.0	0.0	0.000	A
C-A	165	41			165				
A-B	0	0			0				
A-C	32	8			32				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	138	34	546	0.252	138	0.4	0.3	8.939	A
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	139	35			139				
A-B	0	0			0				
A-C	27	7			27				

2030 Plus Dev (Manual), AM

Data Errors and Warnings

No errors or warnings

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		5.47	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	54	Stream B-AC	5.47	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	Relationship type	Relationship
D13	2030 Plus Dev (Manual)	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D3+D9

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	133	100.000
B		ONE HOUR	✓	231	100.000
C		ONE HOUR	✓	230	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	9	124
	B	34	0	197
	C	230	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.07	0.93
	B	0.15	0.00	0.85
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	10	0
	B	0	0	0
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.100	1.000
	B	1.000	1.000	1.000
	C	1.011	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	100	100
	B	174	174
	C	173	173
08:15-08:30	A	120	120
	B	208	208
	C	207	207
08:30-08:45	A	146	146
	B	254	254
	C	253	253
08:45-09:00	A	146	146
	B	254	254
	C	253	253
09:00-09:15	A	120	120
	B	208	208
	C	207	207
09:15-09:30	A	100	100
	B	174	174
	C	173	173

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.50	14.05	1.0	B	212	318
C-AB	0.00	0.00	0.0	A	0	0
C-A					211	317
A-B					8	12
A-C					114	171

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	174	43	523	0.333	172	0.0	0.5	10.215	B
C-AB	0	0	552	0.000	0	0.0	0.0	0.000	A
C-A	173	43			173				
A-B	7	2			7				
A-C	93	23			93				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	208	52	518	0.401	207	0.5	0.7	11.567	B
C-AB	0	0	547	0.000	0	0.0	0.0	0.000	A
C-A	207	52			207				
A-B	8	2			8				
A-C	111	28			111				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	254	64	510	0.498	253	0.7	1.0	13.928	B
C-AB	0	0	541	0.000	0	0.0	0.0	0.000	A
C-A	253	63			253				
A-B	10	2			10				
A-C	137	34			137				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	254	64	510	0.498	254	1.0	1.0	14.054	B
C-AB	0	0	541	0.000	0	0.0	0.0	0.000	A
C-A	253	63			253				
A-B	10	2			10				
A-C	137	34			137				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	208	52	518	0.401	209	1.0	0.7	11.709	B
C-AB	0	0	547	0.000	0	0.0	0.0	0.000	A
C-A	207	52			207				
A-B	8	2			8				
A-C	111	28			111				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	174	43	523	0.333	175	0.7	0.5	10.364	B
C-AB	0	0	552	0.000	0	0.0	0.0	0.000	A
C-A	173	43			173				
A-B	7	2			7				
A-C	93	23			93				

2030 Plus Dev (Manual), PM

Data Errors and Warnings

No errors or warnings

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		6.04	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	65	Stream B-AC	6.04	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	Relationship type	Relationship
D14	2030 Plus Dev (Manual)	PM	ONE HOUR	17:00	18:30	15	✓	Simple	D4+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	23	100.000
B		ONE HOUR	✓	244	100.000
C		ONE HOUR	✓	258	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	23
	B	21	0	223
	C	258	0	0

Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.09	0.00	0.91
	C	1.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	1
	C	1	0	0

Average PCU Per Veh

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.010
	C	1.005	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	17	17
	B	184	184
	C	194	194
17:15-17:30	A	21	21
	B	219	219
	C	232	232
17:30-17:45	A	25	25
	B	269	269
	C	284	284
17:45-18:00	A	25	25
	B	269	269
	C	284	284
18:00-18:15	A	21	21
	B	219	219
	C	232	232
18:15-18:30	A	17	17
	B	184	184
	C	194	194

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.49	12.99	1.0	B	224	336
C-AB	0.00	0.00	0.0	A	0	0
C-A					237	355
A-B					0	0
A-C					21	32

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	184	46	552	0.333	182	0.0	0.5	9.765	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	194	49			194				
A-B	0	0			0				
A-C	17	4			17				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	219	55	550	0.399	219	0.5	0.7	10.932	B
C-AB	0	0	569	0.000	0	0.0	0.0	0.000	A
C-A	232	58			232				
A-B	0	0			0				
A-C	21	5			21				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	269	67	548	0.490	267	0.7	0.9	12.884	B
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	284	71			284				
A-B	0	0			0				
A-C	25	6			25				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	269	67	548	0.490	269	0.9	1.0	12.986	B
C-AB	0	0	568	0.000	0	0.0	0.0	0.000	A
C-A	284	71			284				
A-B	0	0			0				
A-C	25	6			25				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	219	55	550	0.399	220	1.0	0.7	11.051	B
C-AB	0	0	569	0.000	0	0.0	0.0	0.000	A
C-A	232	58			232				
A-B	0	0			0				
A-C	21	5			21				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	184	46	552	0.333	184	0.7	0.5	9.907	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	194	49			194				
A-B	0	0			0				
A-C	17	4			17				

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FOR THE PLANET AND FOR THE FUTURE