

Molesworth Street, Rochdale

Highways Technical Note

Response to Highways Comments from Transport for Greater Manchester

Planning Application Reference: 25/00312/FUL

July 2025

AMA Project Number: 53024/SD/AMM

INTRODUCTION

This Highways Technical Note (HTN) has been prepared by Andrew Moseley Associates (AMA) in response to comments received from Transport for Greater Manchester (TfGM) in relation to the Transport Assessment (TA) and Travel Plan (TP) submitted for the proposed erection of a McDonald's drive thru restaurant at Molesworth Street, Rochdale.

TFGM AND APPLICANT'S RESPONSES

For ease of reference, this Note provides responses to each comment in the same order as the TfGM Consultation Response, a copy is attached at [Appendix A](#).

TFGM COMMENT 1 – TRIP GENERATION

The TA states that existing surveys have been used to establish trip generation and trip types which is acceptable.

AMA RESPONSE 1

Please note TRICS trip rates have been used to establish the trip generation of the proposed site, not existing McDonald's surveys.

As noted in the TA, a comparison between the average trip rates of three similar existing McDonald's restaurants and TRICS was undertaken. This comparison exercise found that the TRICS trip rates were higher than the existing McDonald's restaurant surveys, and, therefore, to ensure a robust assessment, the TRICS trip rates were adopted as the trip generation methodology used in the TA.

The proposed trips by type, however, are based on the existing restaurant surveys. Based on these surveys, the following trips by type were adopted in the TA:

- ▶ Friday AM Peak Hour –
 - Additional (new) trips 19%
 - Pass-by (existing) trips 81%
- ▶ Friday PM Peak Hour –
 - Additional (new) trips 19%
 - Pass-by (existing) trips 81%
- ▶ Saturday Inter-peak Hour –
 - Additional (new) trips 21%
 - Pass-by (existing) trips 79%

It is noted neither TfGM or the LHA commented upon the trip type proportions presented in the TA, which are based on three existing surveyed restaurants, and, therefore, it is considered both consultees have reviewed and accepted these figures.

Based on the clarifications provided above and given no further comments have been received in relation to the trip generation methodology used in the TA, it is considered the above approach is robust and

acceptable for assessing the impact of the proposed site on the highway network. No further consideration to trip generation is considered necessary.

TFGM COMMENT 2 – TRIP DISTRIBUTION

It is not clear how the trip distribution has been calculated particularly with reference to paragraphs 5.7.2 and 5.7.3. TfGM HFAS would suggest traffic counts are used throughout the trip distribution calculations.

AMA RESPONSE 2

A population-based gravity model reflecting a 10-minute driving time catchment was used to determine the trip distribution for the proposed development, however, AMA have taken TfGM's suggestion on board and the trip distribution has been recalculated using the 2024 traffic surveys (i.e. the existing proportional split at each surveyed junction expressed as a percentage).

The proposed additional (new) trip distribution and the proposed pass-by (existing) trip distribution diagrams and the resulting trip generation diagrams are presented at [Appendix B](#).

TFGM COMMENT 3 – JUNCTION MODELLING

In respect of Paragraph 6.2.3, the modelling predicts that there will be RFCs over 1.0 in 2030. This means that the junction would be overcapacity, however, within the TA this is justified a 'worst-case' scenario. The modelling should be repeated to be as realistic as possible – otherwise the figures supplied indicate that the junction would need to be signalised.

AMA RESPONSE 3

The Water Street / Molesworth Street Junction model has been updated to reflect the following:

- ▶ Change in trip distribution methodology as per AMA Response 2; and
- ▶ Validation against the 2024 queue length survey.

The queue data which the model has been validated against is presented in full at [Appendix C](#). The results are shown in [Table 1](#) and attached in full at [Appendix D](#).

Table 1: Water Street / A671 Molesworth Street T-junction

Arms	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
2024 Base						
Water Street (W)	0.65	1.8	1.03	14.5	0.73	2.5
Molesworth Street (S)	0.56	0.1	0.67	2.0	0.55	1.2
2025 'Uplifted' Base						
Water Street (W)	0.66	1.8	1.04	15.3	0.73	2.5
Molesworth Street (S)	0.56	1.3	0.67	2.0	0.55	1.2
2030 Future						
Water Street (W)	0.72	2.4	1.16	29.2	0.81	3.6
Molesworth Street (S)	0.61	1.6	0.73	2.8	0.60	1.5
2030 Future + Development Traffic						
Water Street (W)	0.83	4.2	1.43	63.9	1.03	14.8
Molesworth Street (S)	0.57	1.3	0.85	2.0	0.53	1.1

As can be seen, the model demonstrates the junction is currently operating over capacity in the PM peak hour with an RFC of 1.04 and a queue of 15.3 vehicles.

It should be noted that once the RFC value increases above 1.00, the formula within the TRL software results in the queues increasing exponentially within the model and the predicted queues in the future year scenarios are therefore unrealistic.

The instability of flows through over-capacity approach arms results is an inherent difficulty in calibrating modelled outputs to observed conditions and for that reason the modelling results are not considered wholly representative of the junctions performance in the future.

The proposed development is anticipated to generate just 36 additional (new) trips to the network in the PM peak hour, with only 18 of these trips passing through the junction. This equates to one 'new' movement through the junction every 2 minutes which is of negligible change.

Whilst the model demonstrates the Water Street arm currently exceeds its theoretical capacity in the PM peak hour, it is inevitable that, on arterial roads, delays will occur on side roads at priority junctions during network peak hours.

However, at the majority of these locations, queues quickly disperse after the peak period. The modelling shows a delay of up to 3 minutes in the PM peak hour which is not considered significant in the context of the wider road network, especially when delay is limited outside of peak network times.

In addition to the points made above, AMA engaged with RBC Highways on 03/07/2025 via a Teams Call to discuss the comments raised, including the junction capacity of Water Street / Molesworth Street and Molesworth Street / Entwisle Road Crossroads. During this meeting it was agreed that AMA review the Molesworth Street / Entwisle Road Crossroads modelling to determine whether any optimisation can be achieved to alleviate queueing on Molesworth Street (south), in turn allowing the Water Street / Molesworth Street junction to operate more efficiently. This work is ongoing.

In terms of the operation of the drive-thru lane, it has been designed to accommodate 7 vehicles from the customer order displays, and a total of 17 vehicles from entering the drive-thru lane to the collection booth (not including the two grill bays). As demonstrated in the TA, the average surveyed queues of three similar McDonald's restaurants were interrogated to understand the potential minimum and maximum queues of the proposed site. This data is summarised in **Table 2**. This includes all vehicles waiting in the drive-thru lane back from the collection booth.

Table 2: Drive Thru Queue - Average

	Friday PM Peak	Saturday Peak
Min Q	0	0
Max Q	7	9
Average	4	4

The proposed drive-thru lane has the capacity to accommodate approximately double the maximum recorded vehicles and is clearly more than suitable to meet anticipated demand during peak times. At times where demand may exceed the capacity of the drive thru lane (i.e. more than 17 vehicles), the internal site has been designed with a one-way loop system to ensure that any queueing can be accommodated within the site without impacting upon the free flow of traffic along Water Street.

TFGM COMMENT 4 – JUNCTION MODELLING

With reference to Paragraph 6.2.9 of the TA, for the signalised junction of Molesworth Street / Entwistle Street the LINSIG model is not representative of the actual operation of the junction. This is because it does not include the pedestrian phases running at the junction. However, the increase in traffic flows at this junction is not significant and therefore unlikely to have a noticeable impact on the operation of the junction – especially given it is running under SCOOT control.

AMA RESPONSE 4

Noted.

TFGM COMMENT 5 – INTERNAL ACCESS ARRANGEMENTS

The TA confirms that existing vehicle access arrangements from Water Street will be retained and modified to serve the proposed development. The access point should be designed to ensure the provision of tactile paving and dropped kerbs, with appropriate white lining.

Any redundant access points which served the former site should be reinstated accordingly. These works should be ensured by way of planning condition.

The TA confirms that visibility splays in line with standards contained within Manual for Streets will be achievable from the site access point. In terms of car parking provision, a total of 35 car parking bays, (including 2 accessible bays and 2 Electric Vehicle (EV) charging bays) are proposed within the onsite car park. The TA confirms that the car parking provision accords with adopted car parking standards.

A swept-path assessment is contained within Appendix D of the TA, which demonstrates the manoeuvres associated with the intended service vehicles requiring access to the site. TfGM would refer to the Local Highway Authority (LHA) to determine whether the proposed access, car parking and servicing arrangements are acceptable.

AMA RESPONSE 5

All comments have been noted.

The proposed access will comprise dropped kerbs and tactile paving as requested. Detailed drawings will be provided at the appropriate stage in the planning process.

TFGM COMMENT 6 – TRAFFIC REGULATION ORDERS

TfGM would suggest that a review of the Traffic Regulation Orders in the vicinity of the development is undertaken. This should confirm whether additional parking restrictions are required, as well as ensuring adequate parking restrictions remain in place, and are refreshed accordingly. This will help to discourage pavement parking associated with the development and therefore assist in improving the quality of the surrounding public realm.

The TA confirms that double yellow lines are proposed along Water Street either side of the site access, to protect sightline visibility.

AMA RESPONSE 6

As noted in the TA, a Traffic Regulation Order comprising double yellow lines is in place on both sides of the carriageway for the majority of Water Street. Located immediately south of the proposed access are three on street parking bays with parking restrictions from Monday - Saturday 8am - 6pm.

As part of the proposals, the existing on street parking bays will be removed. Removing these bays ensures visibility at the proposed site access can be achieved.

AMA have looked at options to relocate the parking bays in a standard 2 x 5, 2 x 6, 2 x 5m formation that would require parallel parking to enter / exit the middle bay, however, whilst the minimum dimensions are met, the tracking shows the manoeuvre is difficult and when taking into account the volume of traffic along this road in the PM peak hour, it is not considered suitable, hence why it is proposed to remove the bays.

TfGM should be aware that the existing on street parking bays were discussed with RBC Highways in a meeting on 03/07/2025. This point will be discussed with RBC Highways following the submission of further information if required.

TFGM COMMENT 7 – OTHER

A robust Construction Traffic Management Plan should be employed as part of the development.

AMA RESPONSE 7

Noted and agreed. This document will be prepared at the appropriate stage in the planning process for review by TfGM and the LHA.

TFGM COMMENT 8 – SITE ACCESSIBILITY

The site is located within Rochdale Town Centre and therefore benefits from excellent public transport links. Rochdale Bus Interchange and Rochdale Town Centre Metrolink stop are both located a 6-minute walk from the site, providing frequent services to a range of destinations within Greater Manchester and beyond.

In order to encourage walking and cycling, it should be ensured that the pedestrian and cycling environment, within and around the site, is designed to be as safe, attractive and convenient as possible, including natural surveillance where possible. This should provide sufficient links to the surrounding pedestrian and cycle networks.

With reference to Paragraph 3.5 of the TA, the evidence regarding the cycle accessibility to the site is insufficient. Simply providing an isochrone and stating that there are National cycle routes nearby does not provide any evidence of the attractiveness of cycling to and from the site.

In respect of Paragraph 3.6 of the TA, the GMAL score for the site should be provided to give an objective understanding of the public transport accessibility of the site. TfGM do not agree with the conclusions within Paragraph 3.4.4 of the TA, which relate to pedestrian provision in the vicinity of the proposed location because:

- *There is no tactile paving for the crossing across Water Street.*
- *There are guardrails across which block the crossing points.*
- *There is no pedestrian island across the mouth of Water Street or any other point on Water Street.*
- *There are no pedestrian facilities across Molesworth Street.*
- *There are no dropped crossings or tactile paving shown on the access to the site.*

TfGM would refer to the Local Authority, to query whether the above observations could be included as a mitigation package as part of the development.

AMA RESPONSE 8

Comments regarding sustainability and accessibility have been taken on board and pedestrian improvements will be provided within the vicinity of the proposed site. However, TfGM should be aware the exact details of these improvements are to be confirmed whilst further modelling work is undertaken by AMA in liaison with RBC Highways.

The provision of a crossing along Molesworth Street to the north of the site is not considered necessary given signalised crossing points with dropped kerbs, tactile paving and push button facilities are available on each approach to the Molesworth Street Crossroads Junction. Those accessing the site from the north will use this junction to cross Molesworth Street, and then continue along the existing footpath before crossing at the newly proposed uncontrolled crossing on Water Street to access the site.

The site has a GMAL score of 27 which is GMAL 8. The site is therefore considered to be highly accessible by public transport, with 8 being the highest level of accessibility.

In terms of cycle infrastructure, the site is situated within Rochdale town centre with good access to Greater Manchester's Bee Network and National Cycle Routes 92 and 66. In addition to the cycle routes and mapping reviewed in the TA, the Rochdale cycle map (June 2024) has been reviewed and the following is noted:

- ▶ John Street – on road cycle route
- ▶ Smith Street – good surface traffic free route
- ▶ Oldham Road – on road cycle route
- ▶ Toucan crossings are present on John Street, Smith Street, George Street and Yorkshire Street
- ▶ A cycle hub is available at Rochdale Railway Station

The site is considered to be located in a highly sustainable location with a large residential catchment nearby. It is clear future staff and customers have opportunities to travel by bike.

TFGM COMMENT 9 – TRAVEL PATTERNS / RECOMMENDATIONS

To establish travel patterns at the beginning of occupation and encourage modal shift to sustainable modes of travel, it is important to ensure the facilities are in place to support sustainability. Therefore, improvements to the pedestrian environment are required to help encourage the uptake of active travel modes by future staff and customers, as follows:

Recommendations:

- Any redundant vehicle access points should be reinstated as continuous footway to adoptable standards (as confirmed within the TA).
- The access point serving the site should be designed to ensure the provision of tactile paving and dropped kerbs.
- The internal layout should ensure provision of a safe walkway through the car park, with appropriate lighting surrounding the building.
- Given the speed and volume of vehicles on Molesworth Street (A671) it would be beneficial for the implementation of pedestrian facilities to be considered to make it safe and easier to cross for future users of the site.

AMA RESPONSE 9

As stated in the TA, any redundant vehicle access points will be reinstated as continuous footway to adoptable standards.

As previously noted in this HTN, the site access will comprise dropped kerbs and tactile paving. In response to the comment regarding pedestrian facilities, please see AMA Response 8.

TFGM COMMENT 10 – CYCLE PARKING

It is important to ensure that adequate infrastructure and facilities are provided to encourage staff members and customers to travel by sustainable modes. The TA confirms that 3 Sheffield cycle stands (accommodating 6 cycles) will be provided near the entrance for both staff and customer use. However, these would only be suitable for short-stay customer use and are not suitable for long-stay staff use. Cycle parking should be provided in accordance with the Council's standards and where possible spaces in excess of the minimum provided. Additionally, there should be onsite lockers, showers and changing room facilities available for staff. The staff cycle store should be lockable and covered, located within a central accessible location, with sufficient lighting and CCTV.

AMA RESPONSE 10

A secure, sheltered cycle store will be provided for staff as shown on the revised site layout included at [Appendix E](#).

TFGM COMMENT 11 – TRAVEL PLAN

A Staff Travel Plan should be produced for the development. The Travel Plan should feature a range of measures and initiatives promoting a choice of transport mode, and a clear monitoring regime with agreed targets. The offer of personalised journey planning for staff is a further measure that could be included in the full Travel Plan for the site. The marketing and communication strategy should communicate the Travel Plan objectives and benefits to potential future business or commercial occupiers of the development, prior to them occupying the development. This should ensure potential business and commercial organisations are able to make informed choices and are more likely to commit to and adopt the Travel Plan. In order to encourage sustainable journeys to mitigate the traffic impact of the development, through the Travel Plan, incentives should be offered to encourage staff to use public transport and active travel modes through measures such as concessionary bus fares, discounted cycles, journey planning etc.

AMA RESPONSE 11

A Travel Plan was submitted as part of the planning application. This included staff travel data collected from similar McDonald's restaurants, journey times and distances travelled to work and attitudes towards sustainable travel. The Travel Plan sets out measures to encourage sustainable travel as well as a strategy for monitoring the Travel Plan which is in line with the Travel Plan implementation across all McDonald's sites.

CONCLUSION

This Highways Technical Note provides responses to the comments received from TfGM along with additional information where appropriate. Further modelling of the Molesworth Street / Entwisle Road Crossroads is being undertaken to determine whether any optimisation can be achieved as agreed with RBC Highways.

APPENDICES

Appendix A Transport for Greater Manchester Consultation Response

Appendix B Traffic Flow Diagrams

Appendix C Queue Length Data

Appendix D Modelling Output

Appendix E Site Plan

Appendix A
Transport for Greater Manchester
Consultation Response

Your ref: 25/00312/FUL

Our ref: ROC/25/110

Rochdale Council, Economy Directorate
Planning and Development
Number One Riverside
Smith Street
Rochdale
OL16 1XU

6th May 2025

Location: **Land at Junction of Water Street and Molesworth Street, Rochdale**

Development: **Development of a drive-thru restaurant (Use Class E / Sui Generis) with associated access, servicing, car parking, hard and soft landscaping, substation, engineering works and other associated works**

Dear Ryan Kileen

Thank you for consulting Transport for Greater Manchester (TfGM) on the above planning application. The following comments are offered as advice on transport issues for you to balance against other factors and are made in the context of TfGM's role in the planning process, as set out in the footnote below.

Background

The application seeks approval for the erection of a 422sqm drive-thru restaurant, located at the junction of Water Street and Molesworth Street in Rochdale. The operational hours will be 24 hours per day Monday to Sunday.

¹TfGM does not have any planning powers and is not a statutory consultee in the planning process. The purpose of the advice offered is to suggest the best way to improve land use / transport integration through the development proposals. Advice is based on the information provided by the applicant, and it is not TfGM's role to undertake detailed verification unless specifically commissioned to do so. ²TfGM control and manage the traffic signals in Greater Manchester, as such any schemes that alter signalised junctions need to be agreed with TfGM. Additionally, where developments impact on signalised junctions, TfGM have a duty of care to ensure that these impacts are satisfactorily mitigated as part of the planning process.



Highways Overview

Colleagues from within TfGM HFAS (Highways Forecasting Analytical Services) and UTC (Urban Traffic Control) have reviewed the Transport Assessment (TA) issued in support of the proposed Drive-Thru development and have provided comments in respect of the relevant sections.

I. Trip Generation

The TA states that existing surveys have been used to establish trip generation and trip types which is acceptable.

II. Trip Distribution

It is not clear how the trip distribution has been calculated particularly with reference to paragraphs 5.7.2 and 5.7.3. TfGM HFAS would suggest traffic counts are used throughout the trip distribution calculations.

III. Junction Modelling

In respect of Paragraph 6.2.3, the modelling predicts that there will be RFCs over 1.0 in 2030. This means that the junction would be overcapacity, however, within the TA this is justified a 'worst-case' scenario. The modelling should be repeated to be as realistic as possible – otherwise the figures supplied indicate that the junction would need to be signalised.

junction.

Table 6-2 Water Street / A671 Molesworth Street T-Junction

Arms	AM Peak		PM Peak		SAT Peak	
	RFC	Queue	RFC	Queue	RFC	Queue
2024 Base						
Water Street (W)	0.49	1	0.49	1	0.54	1
Molesworth Street (S)	0.56	1	0.56	1	0.55	1
2025 'Uplifted' Base						
Water Street (W)	0.49	1	0.75	3	0.54	1
Molesworth Street (S)	0.56	1	0.67	2	0.55	1
2030 Future						
Water Street (W)	0.53	1	0.83	4	0.59	1
Molesworth Street (S)	0.61	2	0.73	3	0.60	2
2030 Future + Development Traffic						
Water Street (W)	0.64	2 (+1)	1.19	36 (+32)	0.84	4 (+3)
Molesworth Street (S)	0.68	2	0.85	6 (+3)	0.73	3 (+1)



Every journey. Every day.

With reference to Paragraph 6.2.9 of the TA, for the signalised junction of Molesworth Street / Entwistle Street the LINSIG model is not representative of the actual operation of the junction. This is because it does not include the pedestrian phases running at the junction. However, the increase in traffic flows at this junction is not significant and therefore unlikely to have a noticeable impact on the operation of the junction – especially given it is running under SCOOT control.

IV. Internal Access Arrangements

The TA confirms that existing vehicle access arrangements from Water Street will be retained and modified to serve the proposed development. The access point should be designed to ensure the provision of tactile paving and dropped kerbs, with appropriate white lining. Any redundant access points which served the former site should be reinstated accordingly. These works should be ensured by way of planning condition.

The TA confirms that visibility splays in line with standards contained within Manual for Streets will be achievable from the site access point.

In terms of car parking provision, a total of 35 car parking bays, (including 2 accessible bays and 2 Electric Vehicle (EV) charging bays) are proposed within the onsite car park. The TA confirms that the car parking provision accords with adopted car parking standards.

A swept-path assessment is contained within Appendix D of the TA, which demonstrates the manoeuvres associated with the intended service vehicles requiring access to the site.

TfGM would refer to the Local Highway Authority (LHA) to determine whether the proposed access, car parking and servicing arrangements are acceptable.

V. Traffic Regulation Orders

TfGM would suggest that a review of the Traffic Regulation Orders in the vicinity of the development is undertaken. This should confirm whether additional parking restrictions are required, as well as ensuring adequate parking restrictions remain in place, and are refreshed accordingly. This will help to discourage pavement parking associated with the development and therefore assist in improving the quality of the surrounding public realm.



Every journey. Every day.

The TA confirms that double yellow lines are proposed along Water Street either side of the site access, to protect sightline visibility.

VI. Other

A robust Construction Traffic Management Plan should be employed as part of the development.

Site Accessibility

I. Public Transport

The site is located within Rochdale Town Centre and therefore benefits from excellent public transport links. Rochdale Bus Interchange and Rochdale Town Centre Metrolink stop are both located a 6-minute walk from the site, providing frequent services to a range of destinations within Greater Manchester and beyond.

II. Active Travel

In order to encourage walking and cycling, it should be ensured that the pedestrian and cycling environment, within and around the site, is designed to be as safe, attractive and convenient as possible, including natural surveillance where possible. This should provide sufficient links to the surrounding pedestrian and cycle networks.

With reference to Paragraph 3.5 of the TA, the evidence regarding the cycle accessibility to the site is insufficient. Simply providing an isochrone and stating that there are National cycle routes nearby does not provide any evidence of the attractiveness of cycling to and from the site.

In respect of Paragraph 3.6 of the TA, the GMAL score for the site should be provided to give an objective understanding of the public transport accessibility of the site.

TfGM do not agree with the conclusions within Paragraph 3.4.4 of the TA, which relate to pedestrian provision in the vicinity of the proposed location because:

- There is no tactile paving for the crossing across Water Street.
- There are guardrails across which block the crossing points.
- There is no pedestrian island across the mouth of Water Street or any other point on Water Street.
- There are no pedestrian facilities across Molesworth Street.
- There are no dropped crossings or tactile paving shown on the access to the site.



Every journey. Every day.

TfGM would refer to the Local Authority, to query whether the above observations could be included as a mitigation package as part of the development.

To establish travel patterns at the beginning of occupation and encourage modal shift to sustainable modes of travel, it is important to ensure the facilities are in place to support sustainability. Therefore, improvements to the pedestrian environment are required to help encourage the uptake of active travel modes by future staff and customers, as follows:

Recommendations:

- Any redundant vehicle access points should be reinstated as continuous footway to adoptable standards (as confirmed within the TA).
- The access point serving the site should be designed to ensure the provision of tactile paving and dropped kerbs.
- The internal layout should ensure provision of a safe walkway through the car park, with appropriate lighting surrounding the building.
- Given the speed and volume of vehicles on Molesworth Street (A671) it would be beneficial for the implementation of pedestrian facilities to be considered to make it safe and easier to cross for future users of the site.

III. Cycle Parking

It is important to ensure that adequate infrastructure and facilities are provided to encourage staff members and customers to travel by sustainable modes.

The TA confirms that 3 Sheffield cycle stands (accommodating 6 cycles) will be provided near the entrance for both staff and customer use. However, these would only be suitable for short-stay customer use and are not suitable for long-stay staff use.

Cycle parking should be provided in accordance with the Council's standards and where possible spaces in excess of the minimum provided. Additionally, there should be onsite lockers, showers and changing room facilities available for staff.

The staff cycle store should be lockable and covered, located within a central accessible location, with sufficient lighting and CCTV.



IV. Travel Plan

A Staff Travel Plan should be produced for the development. The Travel Plan should feature a range of measures and initiatives promoting a choice of transport mode, and a clear monitoring regime with agreed targets.

The offer of personalised journey planning for staff is a further measure that could be included in the full Travel Plan for the site. The marketing and communication strategy should communicate the Travel Plan objectives and benefits to potential future business or commercial occupiers of the development, prior to them occupying the development. This should ensure potential business and commercial organisations are able to make informed choices and are more likely to commit to and adopt the Travel Plan.

In order to encourage sustainable journeys to mitigate the traffic impact of the development, through the Travel Plan, incentives should be offered to encourage staff to use public transport and active travel modes through measures such as concessionary bus fares, discounted cycles, journey planning etc.

I hope you find these comments useful in the determination of this planning application. Should you wish to discuss any matter further please do not hesitate to contact the Landuse team via the details below.

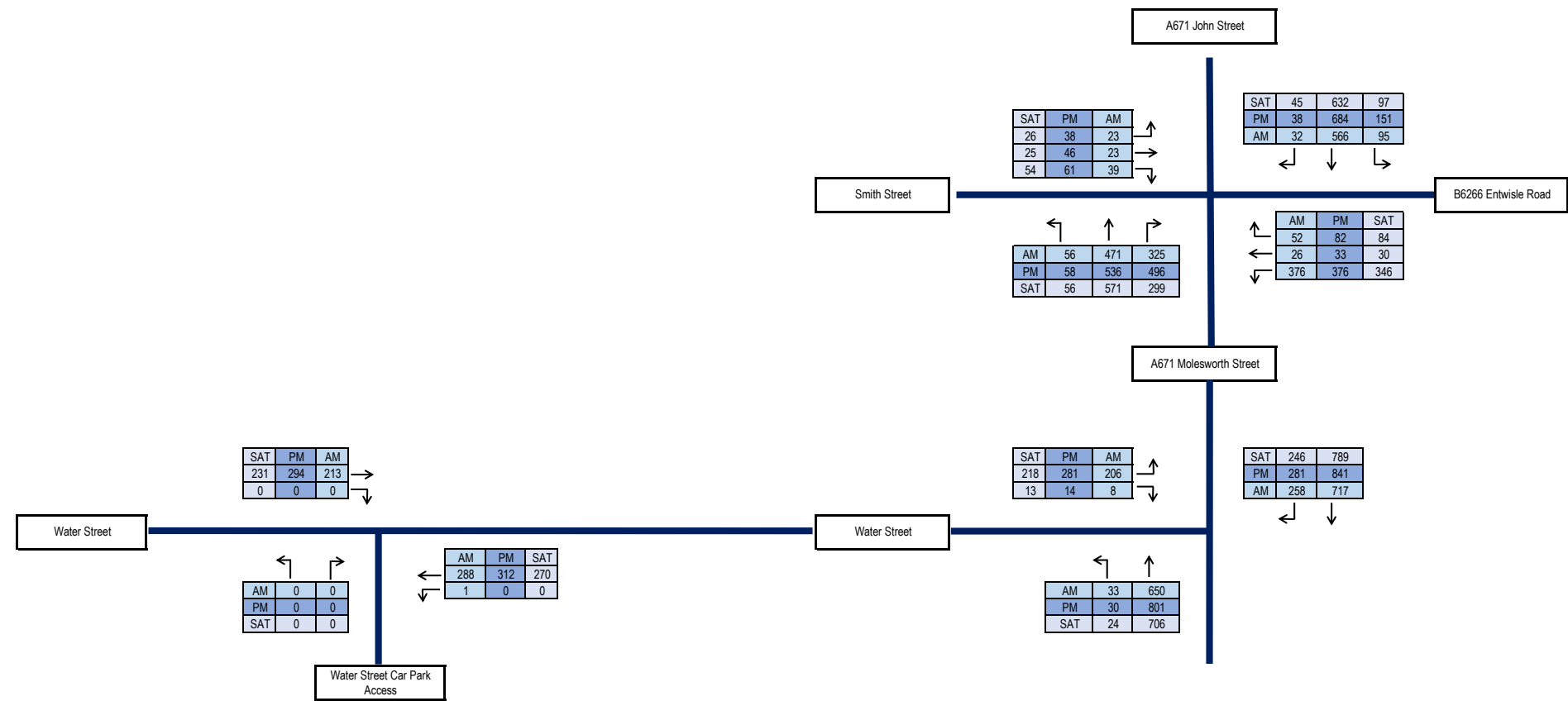
Yours faithfully

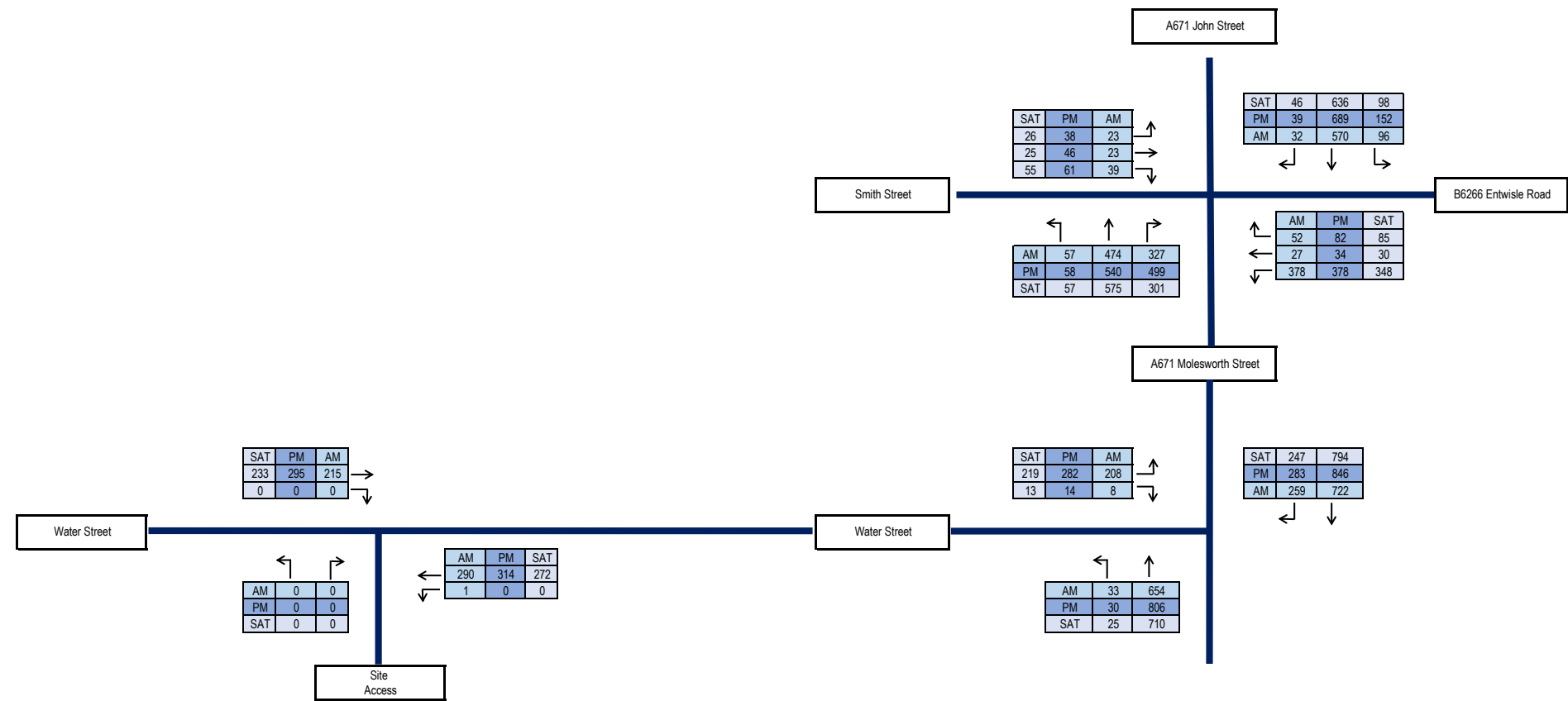
Landuse Team
Highways Department
Transport for Greater Manchester
Email: landuse@tfgm.com

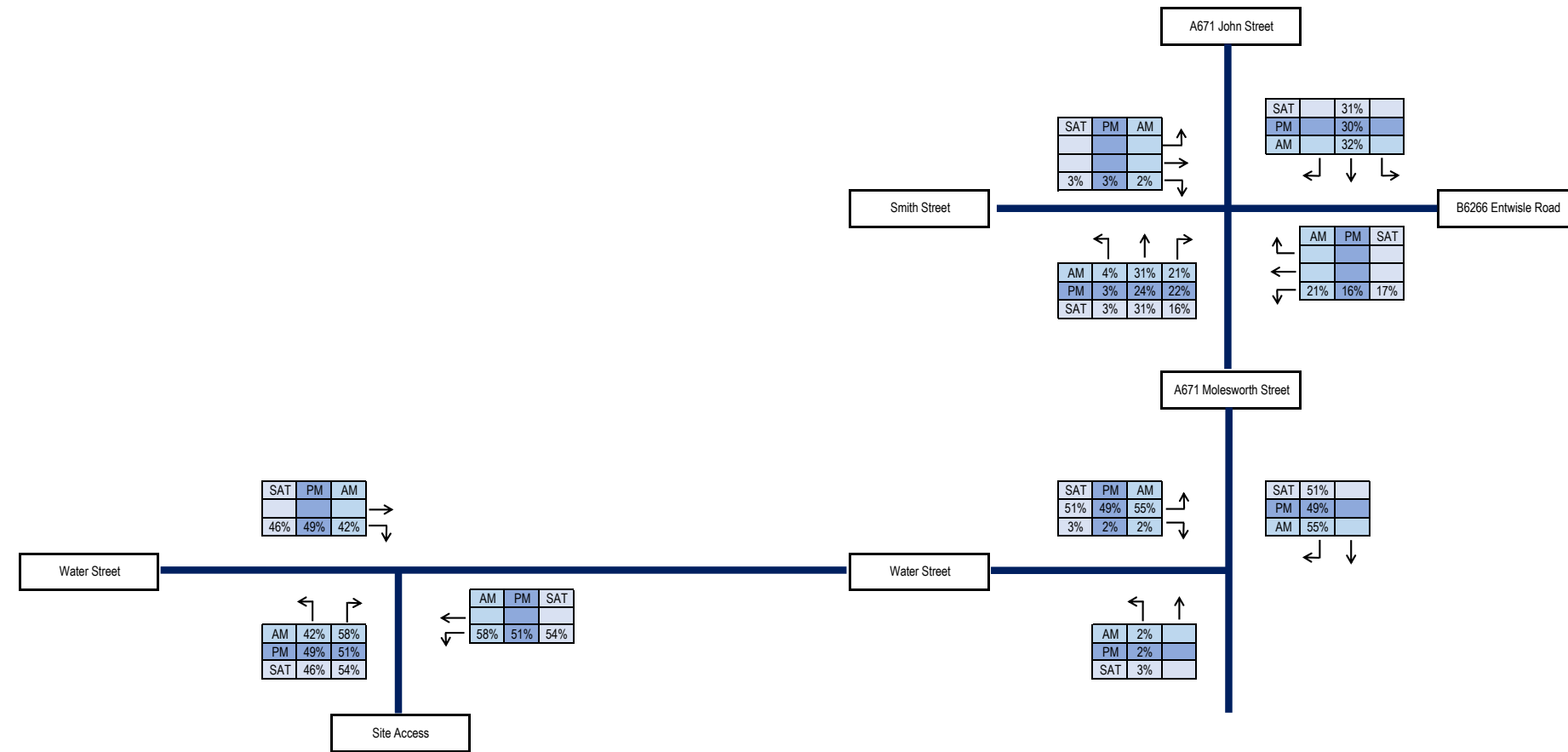


Every journey. Every day.

Appendix B
Traffic Flow Diagrams





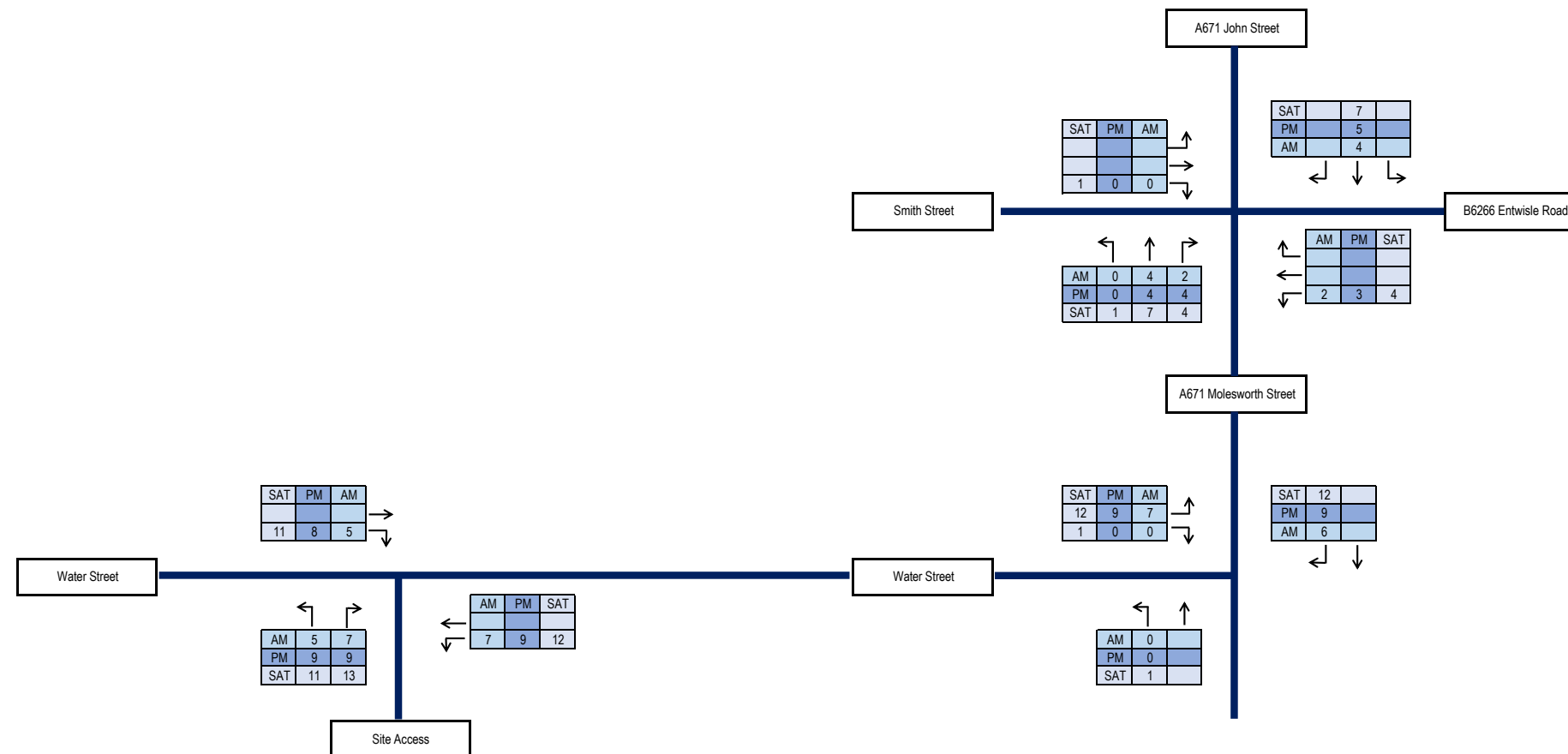


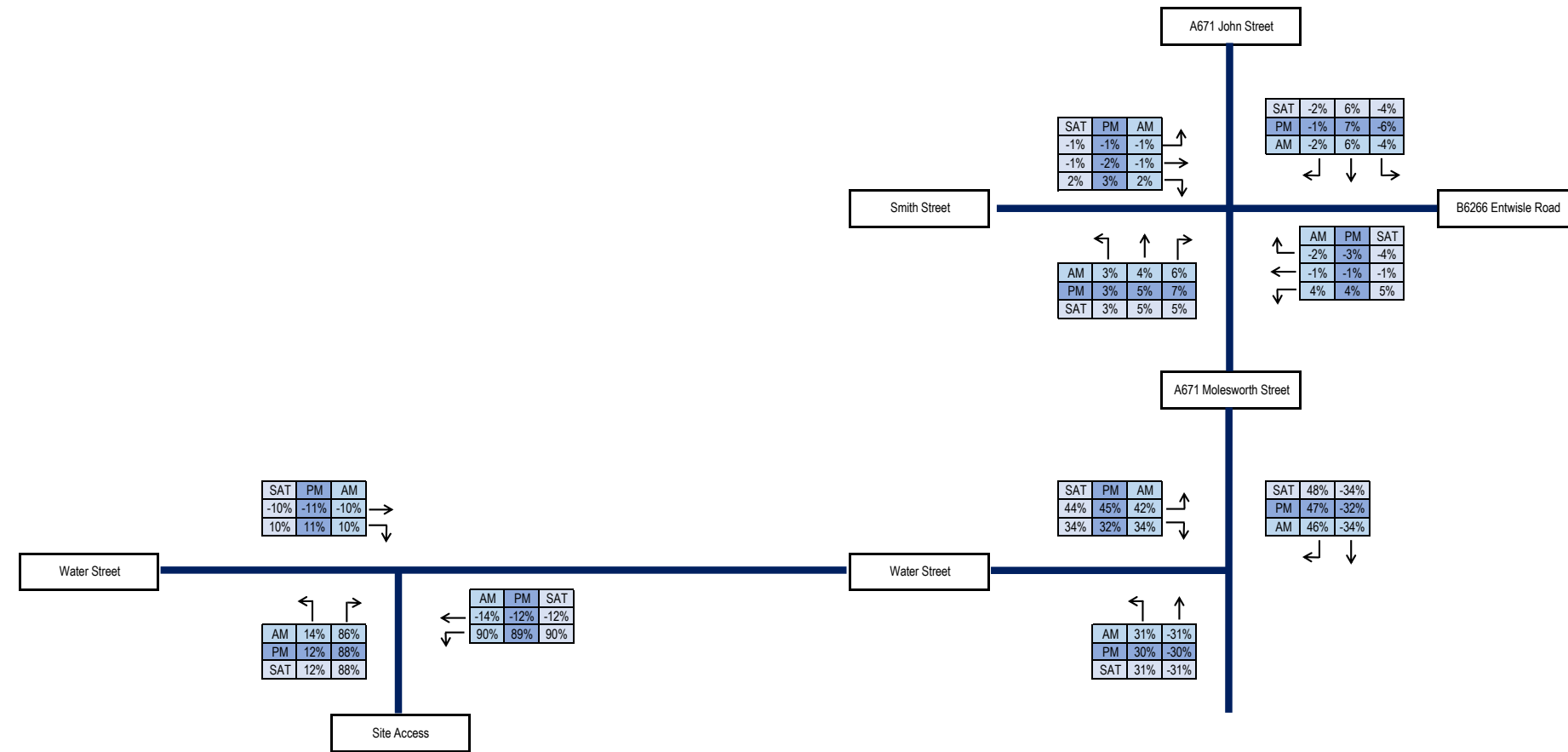
Molesworth Street, Rochdale

Additional (new) Trip Distribution %

10/07/2025

Job Number - AMA/53024



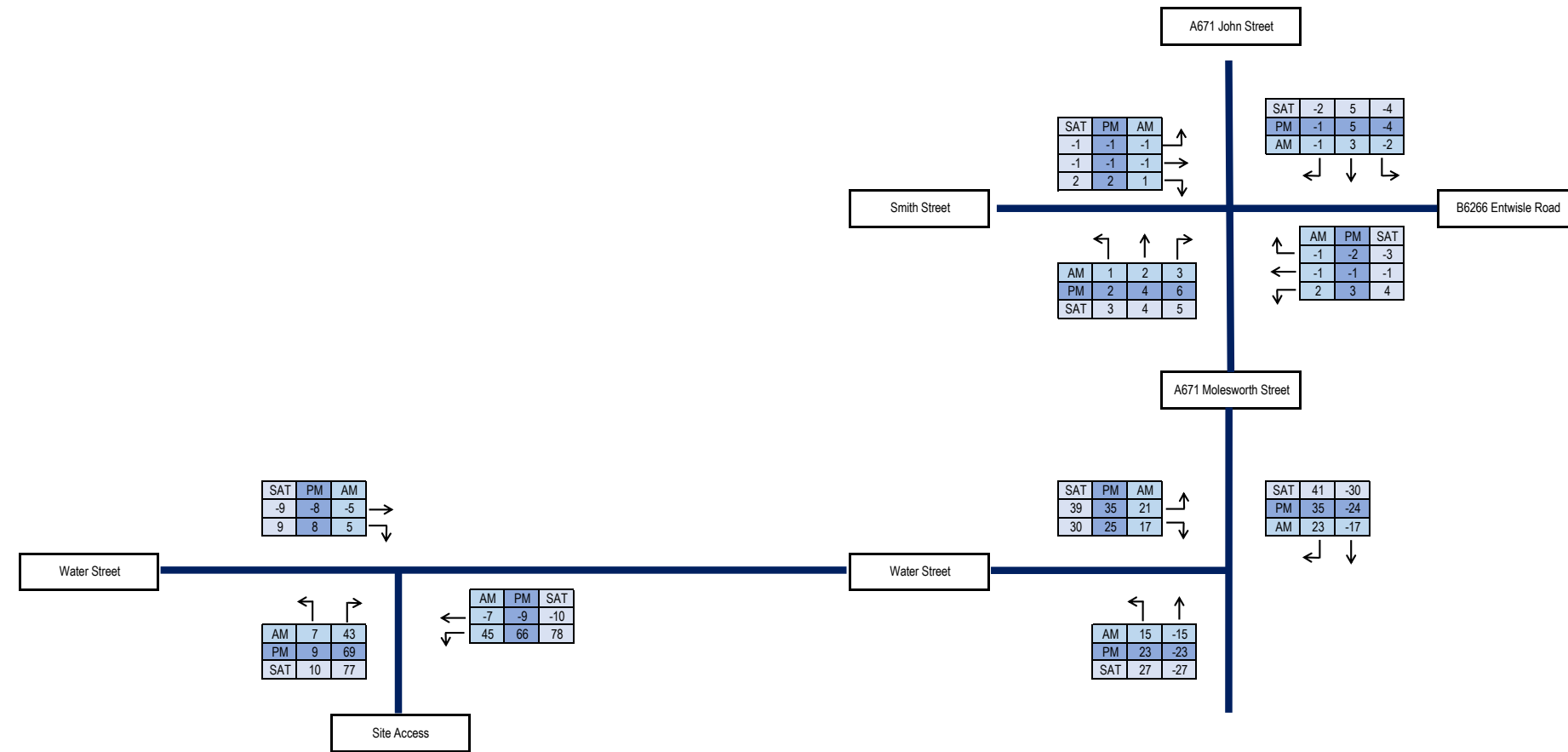


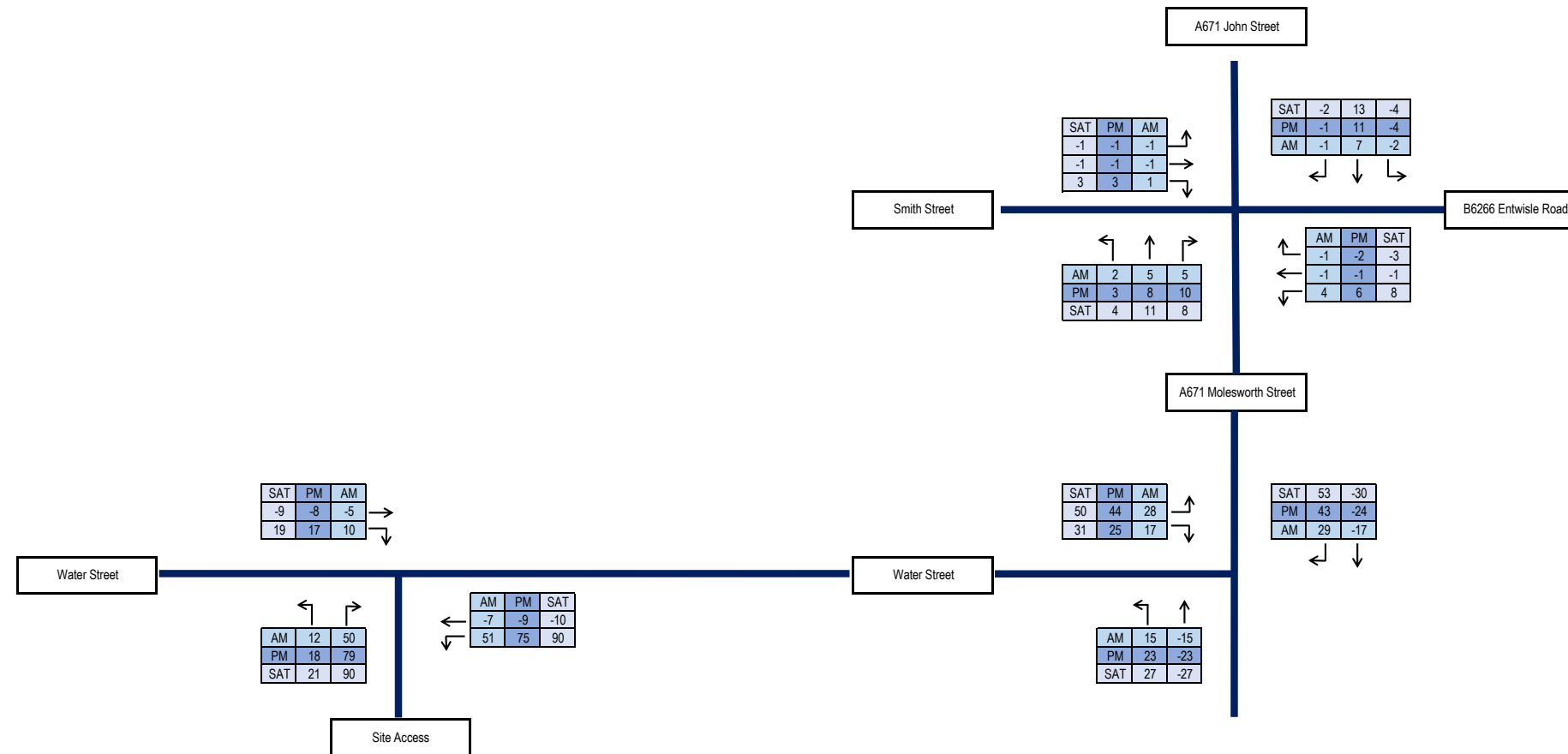
Molesworth Street, Rochdale

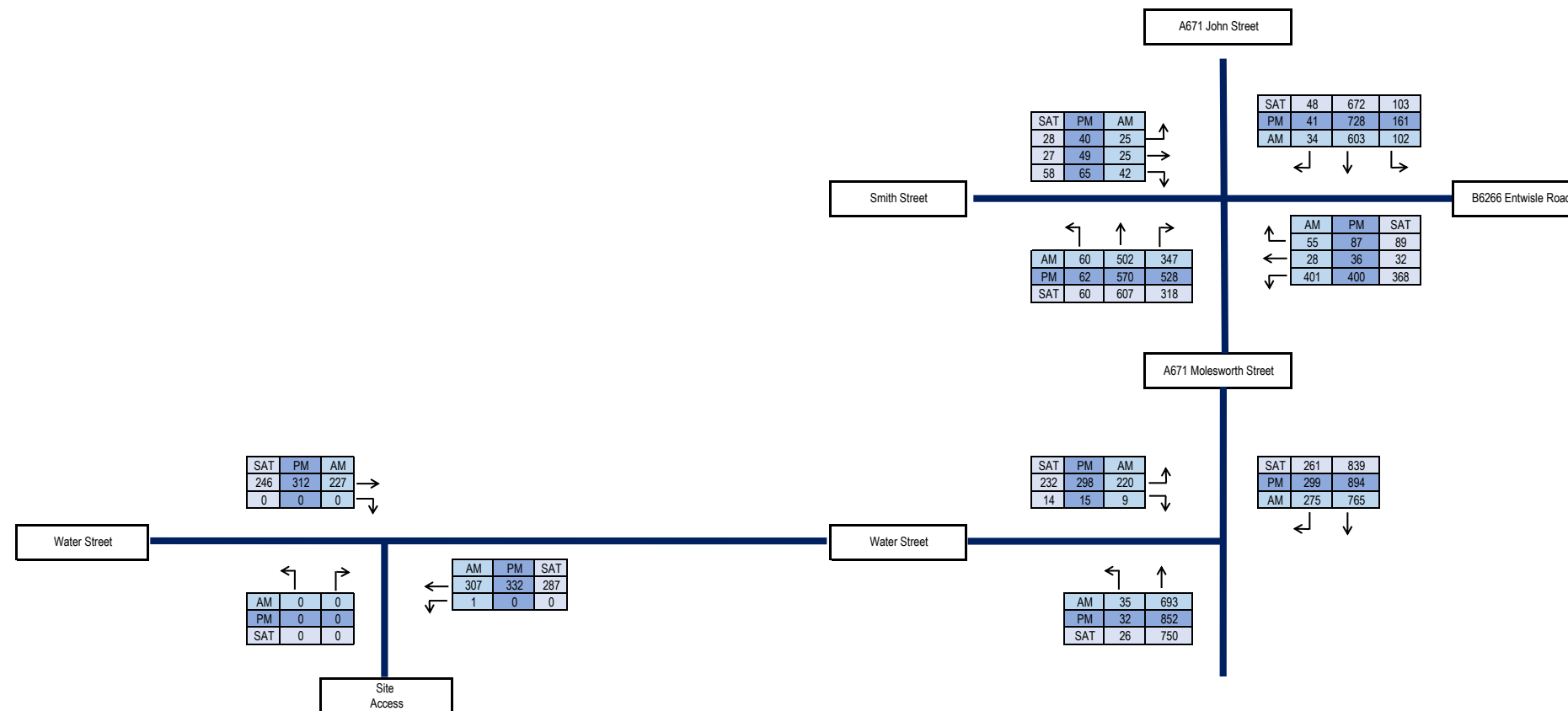
Pass-by (existing) Trip Distribution %

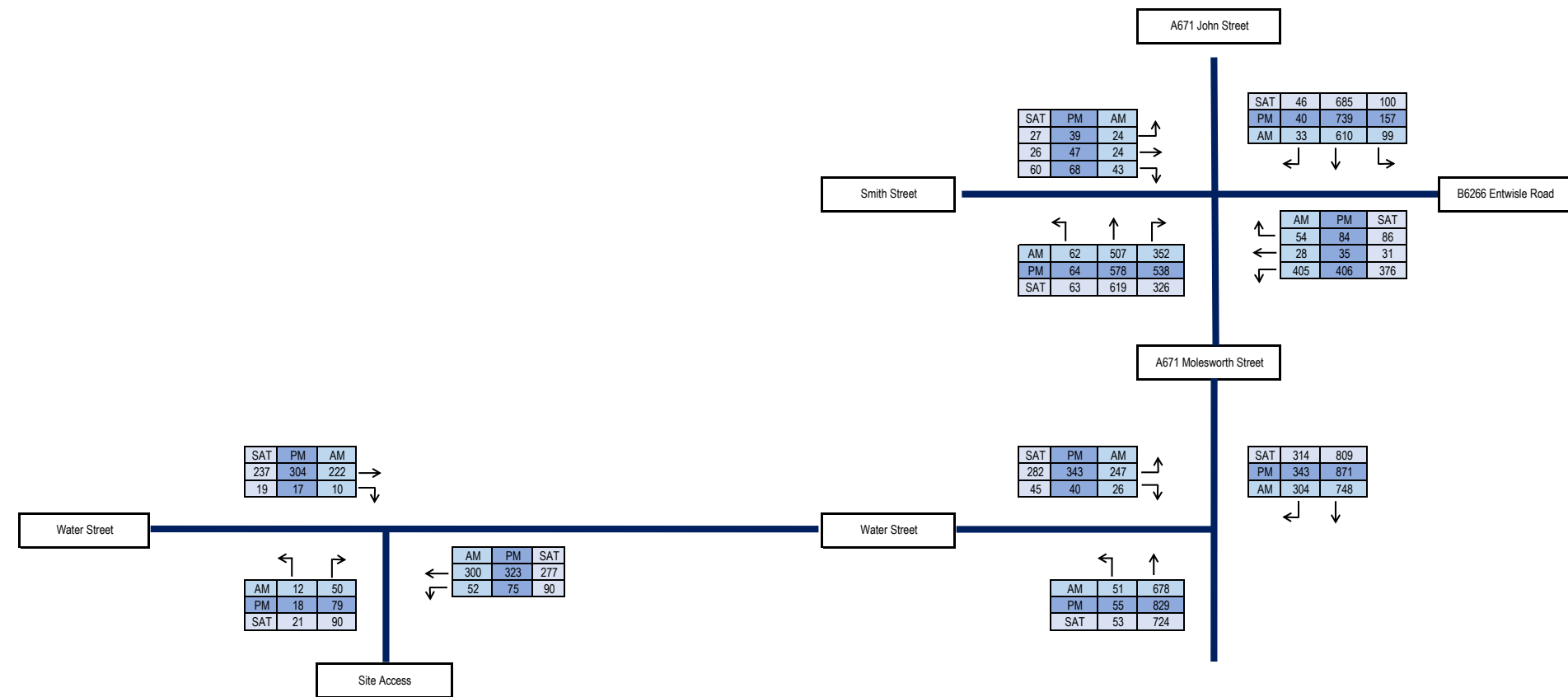
10/07/2025

Job Number - AMA/53024











Appendix C

Queue Length Data

Rochdale
Queue Length Survey

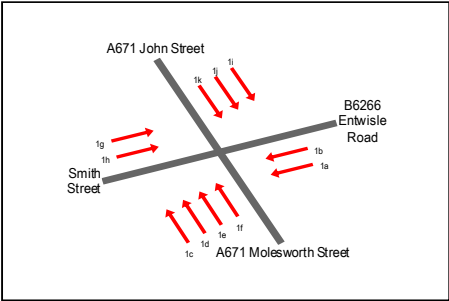
Site 1 of 3
B6266 Entwisle Road
A671 Molesworth Street
Smith Street
A671 John Street

Lat/Long
lat 53.617909° lon -2.151439°

Date
Friday 28 June 2024

Weather
Cloudy
Temp: 11°C

0700 - 1000 (Friday AM Peak)



TIME	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k
0700 - 0705	2	0	0	6	3	2	1	2	10	4	1
0705 - 0710	2	1	0	3	4	2	1	2	12	6	3
0710 - 0715	3	2	0	5	3	4	0	2	10	5	0
0715 - 0720	6	1	0	4	3	2	1	0	9	4	1
0720 - 0725	4	2	0	3	7	3	1	1	11	6	0
0725 - 0730	4	1	0	9	8	4	1	1	15	5	1
0730 - 0735	2	3	0	3	5	5	1	2	12	14	1
0735 - 0740	3	1	0	8	7	5	0	1	13	7	0
0740 - 0745	7	2	0	6	12	3	1	1	12	7	3
0745 - 0750	7	4	0	10	8	4	1	2	15	8	1
0750 - 0755	7	1	0	7	11	3	1	5	14	9	2
0755 - 0800	15	4	0	7	12	3	1	5	16	10	2
Hourly Average	5.17	1.83	0.00	5.92	6.92	3.33	0.83	2.00	12.42	7.08	1.25
0800 - 0805	10	1	0	8	5	4	0	2	16	6	2
0805 - 0810	6	1	0	10	5	7	0	4	14	7	3
0810 - 0815	15	3	0	10	12	4	1	2	16	7	3
0815 - 0820	9	5	0	6	6	7	1	4	15	9	3
0820 - 0825	4	1	0	9	9	4	1	3	14	8	2
0825 - 0830	11	2	0	11	5	5	0	3	16	8	2
0830 - 0835	8	1	0	7	11	4	1	4	16	10	2
0835 - 0840	7	2	0	9	6	6	1	4	16	7	2
0840 - 0845	9	2	0	9	9	7	1	6	13	7	3
0845 - 0850	10	4	0	6	4	7	0	3	14	8	0
0850 - 0855	8	4	0	6	6	7	1	2	15	10	1
0855 - 0900	8	2	0	11	9	7	1	2	16	13	0
Hourly Average	8.75	2.33	0.00	8.50	7.25	5.75	0.67	3.25	15.08	8.33	1.92
0900 - 0905	8	6	0	8	9	7	0	5	14	6	3
0905 - 0910	7	3	0	9	14	7	0	2	12	7	2
0910 - 0915	10	3	0	9	4	7	1	2	13	7	1
0915 - 0920	8	4	0	11	3	7	1	3	11	9	1
0920 - 0925	8	3	0	11	6	7	1	3	14	9	1
0925 - 0930	6	3	0	10	11	7	1	4	16	6	1
0930 - 0935	5	2	0	6	12	6	0	2	14	6	1
0935 - 0940	5	2	0	6	10	5	1	2	16	7	0
0940 - 0945	5	4	0	8	8	5	1	1	15	8	1
0945 - 0950	16	8	0	7	5	5	1	4	15	5	1
0950 - 0955	6	4	0	11	9	7	0	2	9	6	3
0955 - 1000	6	6	0	9	4	7	1	2	13	6	1
Hourly Average	7.50	4.00	0.00	8.92	7.92	6.42	0.67	2.67	13.50	6.83	1.33
Session Total	7.14	2.72	0.00	7.78	7.36	5.17	0.72	2.64	13.67	7.42	1.50

Date
Friday 28 June 2024

Weather
Cloudy
Temp: 16°C

1600 - 1900 (Friday PM Peak)

TIME	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k
1600 - 1605	3	6	0	12	7	6	1	6	16	15	0
1605 - 1610	4	4	0	12	10	7	1	6	15	14	0
1610 - 1615	9	7	0	9	11	7	1	7	16	14	1
1615 - 1620	8	3	0	9	10	6	0	6	15	11	2
1620 - 1625	11	5	0	10	11	7	1	7	16	14	1
1625 - 1630	10	6	0	9	10	6	1	8	16	16	1
1630 - 1635	8	5	0	12	11	7	1	4	15	13	1
1635 - 1640	9	5	0	7	13	7	1	6	16	14	1
1640 - 1645	8	2	0	12	13	6	1	5	16	15	0
1645 - 1650	5	5	0	13	12	7	1	9	15	13	1
1650 - 1655	5	4	0	10	16	7	1	13	16	11	2
1655 - 1700	5	6	0	10	10	7	1	12	16	13	2
Hourly Average	7.08	4.83	0.00	10.42	11.17	6.67	0.92	7.50	15.67	13.58	1.00
1700 - 1705	6	6	0	4	12	6	1	10	15	14	2
1705 - 1710	15	7	0	9	13	7	1	7	16	13	1
1710 - 1715	11	3	0	7	11	7	1	6	14	9	1
1715 - 1720	10	5	0	5	13	7	0	4	16	12	0
1720 - 1725	5	3	0	6	13	7	1	3	16	14	1
1725 - 1730	12	5	0	7	7	6	1	3	16	12	0
1730 - 1735	5	2	0	7	11	7	0	5	12	6	2
1735 - 1740	7	5	0	7	11	6	1	2	14	9	2
1740 - 1745	8	4	0	10	12	7	1	6	16	12	0
1745 - 1750	6	4	0	8	10	7	1	4	15	11	2
1750 - 1755	7	3	0	8	11	6	1	2	14	5	0
1755 - 1800	7	3	0	8	12	7	1	8	16	11	1
Hourly Average	8.25	4.17	0.00	7.17	11.33	6.67	0.83	5.08	15.00	10.67	1.00
1800 - 1805	5	2	0	8	12	7	1	6	12	8	3
1805 - 1810	7	4	0	6	12	7	1	8	15	9	0
1810 - 1815	8	3	0	6	13	4	1	8	16	14	2
1815 - 1820	11	2	0	7	13	7	1	5	16	11	2
1820 - 1825	11	2	0	9	12	7	0	4	14	7	1
1825 - 1830	12	2	0	7	7	7	1	13	13	6	1
1830 - 1835	11	5	0	7	13	6	1	3	14	9	1
1835 - 1840	5	4	0	8	12	7	1	11	11	7	1
1840 - 1845	9	4	0	6	11	6	1	2	10	9	2
1845 - 1850	8	4	0	3	11	7	0	2	12	9	1
1850 - 1855	4	4	0	8	12	7	1	0	14	8	1
1855 - 1900	4	2	0	7	7	5	1	1	10	6	1
Hourly Average	7.92	3.17	0.00	6.83	11.25	6.42	0.83	3.42	13.08	8.58	1.33
Session Total	7.75	4.06	0.00	8.14	11.25	6.58	0.86	5.33	14.58	10.94	1.11

Date
Saturday 29 June 2024

Weather
Cloudy
Temp: 16°C

1100 - 1300 (Saturday 2H Session)

TIME	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	1k
1100 - 1105	7	4	0	11	14	5	1	2	16	9	1
1105 - 1110	4	6	0	8	4	5	1	7	14	4	1
1110 - 1115	8	4	0	11	9	7	1	6	13	6	1
1115 - 1120	6	4	0	11	9	6	1	4	16	6	0
1120 - 1125	11	4	0	12	7	7	1	5	15	11	0
1125 - 1130	5	3	0	10	8	7	1	4	16	14	0
1130 - 1135	10	9	0	9	9	7	0	4	15	8	1
1135 - 1140	8	4	0	10	5	4	1	1	7	5	1
1140 - 1145	10	5	0	11	12	7	1	5	13	5	3
1145 - 1150	10	3	0	12	12	7	1	5	16	9	0
1150 - 1155	5	4	0	11	6	7	1	3	12	10	2
1155 - 1200	4	4	0	14	9	7	1	3	14	7	1
Hourly Average	7.33	4.50	0.00	10.83	8.67	6.33	0.92	4.08	13.92	7.83	0.92
1200 - 1205	10	3	0	13	5	7	0	4	16	8	1
1205 - 1210	6	5	0	9	6	7	1	7	15	11	1
1210 - 1215	12	6	0	9	5	7	1	10	16	8	1
1215 - 1220	2	6	0	8	10	7	1	4	16	11	0
1220 - 1225	8	6	0	7	3	7	1	4	16	11	2
1225 - 1230	5	5	0	13	16	7	1	8	13	8	2
1230 - 1235	6	5	0	9	7	7	1	2	16	11	3
1235 - 1240	8	6	0	6	11	3	1	2	15	9	1
1240 - 1245	6	9	0	9	12	6	1	12	11	7	3
1245 - 1250	9	2	0	7	4	6	1	6	16	11	3
1250 - 1255	9	11	0	7	11	6	0	3	16	8	2
1255 - 1300	9	6	0	12	14	7	1	4	14	9	1
Hourly Average	7.50	5.83	0.00	9.08	8.67	6.42	0.83	5.50	15.00	9.33	1.67
Session Total	7.42	5.17	0.00	9.96	8.67	6.38	0.88	4.79	14.46	8.58	1.29

Rochdale
Queue Length Survey

Site 2 of 3
A671 Molesworth Street (South)
Water Street
A671 Molesworth Street (North)

Lat/Long
lat 53.617102° lon -2.150697°

Date
Friday 28 June 2024

Weather
Cloudy
Temp: 11°C

0700 - 1000 (Friday AM Peak)

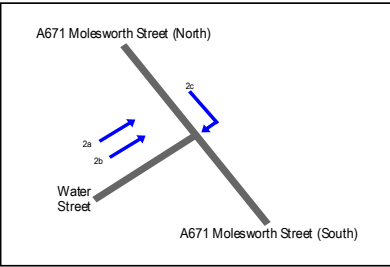
TIME	2a	2b	2c
0700 - 0705	1	1	0
0705 - 0710	2	0	0
0710 - 0715	1	0	0
0715 - 0720	1	0	4
0720 - 0725	0	0	2
0725 - 0730	2	0	2
0730 - 0735	1	0	2
0735 - 0740	1	0	5
0740 - 0745	2	0	2
0745 - 0750	1	0	4
0750 - 0755	2	0	3
0755 - 0800	5	0	1
Hourly Average	1.58	0.08	2.08
0800 - 0805	2	0	3
0805 - 0810	3	0	4
0810 - 0815	3	0	2
0815 - 0820	3	0	3
0820 - 0825	2	0	3
0825 - 0830	4	0	5
0830 - 0835	3	0	2
0835 - 0840	4	0	4
0840 - 0845	3	0	3
0845 - 0850	2	2	3
0850 - 0855	6	0	2
0855 - 0900	6	0	3
Hourly Average	3.42	0.17	3.08
0900 - 0905	3	0	7
0905 - 0910	7	1	3
0910 - 0915	4	1	1
0915 - 0920	4	1	5
0920 - 0925	2	0	3
0925 - 0930	4	2	4
0930 - 0935	3	0	4
0935 - 0940	3	1	1
0940 - 0945	1	1	1
0945 - 0950	2	0	5
0950 - 0955	2	1	2
0955 - 1000	3	1	4
Hourly Average	3.17	0.75	3.33
Session Total	2.72	0.33	2.83

Date
Friday 28 June 2024

Weather
Cloudy
Temp: 16°C

1600 - 1900 (Friday PM Peak)

TIME	2a	2b	2c
1600 - 1605	22	1	4
1605 - 1610	21	1	3
1610 - 1615	22	0	3
1615 - 1620	21	0	5
1620 - 1625	15	0	4
1625 - 1630	17	0	5
1630 - 1635	13	1	7
1635 - 1640	7	1	5
1640 - 1645	15	0	4
1645 - 1650	13	1	8
1650 - 1655	6	0	5
1655 - 1700	7	0	3
Hourly Average	14.92	0.42	4.67
1700 - 1705	5	0	3
1705 - 1710	8	1	3
1710 - 1715	14	1	6
1715 - 1720	18	1	3
1720 - 1725	15	2	3
1725 - 1730	5	0	7
1730 - 1735	11	1	5
1735 - 1740	9	1	3
1740 - 1745	5	0	3
1745 - 1750	6	0	4
1750 - 1755	4	1	2
1755 - 1800	7	1	4
Hourly Average	8.92	0.75	3.83
1800 - 1805	4	0	6
1805 - 1810	16	0	4
1810 - 1815	17	0	6
1815 - 1820	4	1	5
1820 - 1825	8	1	4
1825 - 1830	4	0	3
1830 - 1835	6	0	6
1835 - 1840	12	1	5
1840 - 1845	9	0	3
1845 - 1850	4	0	5
1850 - 1855	4	0	2
1855 - 1900	2	0	5
Hourly Average	7.50	0.25	4.50
Session Total	10.44	0.47	4.33



Date
Saturday 29 June 2024

Weather
Cloudy
Temp: 16°C

1100 - 1300 (Saturday 2H Session)

TIME	2a	2b	2c
1100 - 1105	2	1	3
1105 - 1110	3	1	3
1110 - 1115	3	0	2
1115 - 1120	7	0	2
1120 - 1125	5	0	8
1125 - 1130	6	1	2
1130 - 1135	5	0	4
1135 - 1140	3	1	2
1140 - 1145	3	1	5
1145 - 1150	5	1	2
1150 - 1155	4	1	6
1155 - 1200	7	0	6
Hourly Average	4.42	0.58	3.75
1200 - 1205	3	2	4
1205 - 1210	4	2	5
1210 - 1215	3	1	3
1215 - 1220	4	0	2
1220 - 1225	4	1	2
1225 - 1230	13	0	8
1230 - 1235	3	0	5
1235 - 1240	5	0	4
1240 - 1245	3	1	3
1245 - 1250	3	0	4
1250 - 1255	6	0	2
1255 - 1300	10	0	6
Hourly Average	5.08	0.58	4.00
Session Total	4.75	0.58	3.88

Rochdale
Queue Length Survey

Site 3 of 3
Water Street (North)
Water Street Car Park Access
Water Street (South)

Lat/Long
lat 53.616723° lon -2.151220°

Date
Friday 28 June 2024

Weather
Cloudy
Temp: 11°C

0700 - 1000 (Friday AM Peak)

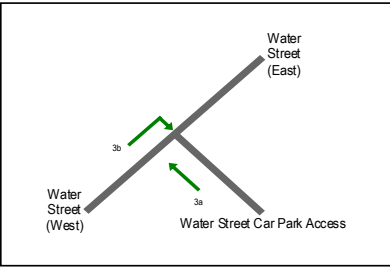
TIME	3a	3b
0700 - 0705	0	0
0705 - 0710	0	0
0710 - 0715	0	0
0715 - 0720	0	0
0720 - 0725	0	0
0725 - 0730	0	0
0730 - 0735	0	0
0735 - 0740	0	0
0740 - 0745	0	0
0745 - 0750	0	0
0750 - 0755	0	0
0755 - 0800	0	0
Hourly Average	0.00	0.00
0800 - 0805	0	0
0805 - 0810	0	0
0810 - 0815	0	0
0815 - 0820	0	0
0820 - 0825	0	0
0825 - 0830	0	0
0830 - 0835	0	0
0835 - 0840	0	0
0840 - 0845	0	0
0845 - 0850	0	0
0850 - 0855	0	0
0855 - 0900	0	0
Hourly Average	0.00	0.00
0900 - 0905	0	0
0905 - 0910	0	0
0910 - 0915	0	0
0915 - 0920	0	0
0920 - 0925	0	0
0925 - 0930	0	0
0930 - 0935	0	0
0935 - 0940	0	0
0940 - 0945	0	0
0945 - 0950	0	0
0950 - 0955	0	0
0955 - 1000	0	0
Hourly Average	0.00	0.00
Session Total	0.00	0.00

Date
Friday 28 June 2024

Weather
Cloudy
Temp: 16°C

1600 - 1900 (Friday PM Peak)

TIME	3a	3b
1600 - 1605	0	0
1605 - 1610	0	0
1610 - 1615	0	0
1615 - 1620	0	0
1620 - 1625	0	0
1625 - 1630	0	0
1630 - 1635	0	0
1635 - 1640	0	0
1640 - 1645	0	0
1645 - 1650	0	0
1650 - 1655	0	0
1655 - 1700	0	0
Hourly Average	0.00	0.00
1700 - 1705	0	0
1705 - 1710	0	0
1710 - 1715	0	0
1715 - 1720	0	0
1720 - 1725	0	0
1725 - 1730	1	1
1730 - 1735	0	0
1735 - 1740	0	0
1740 - 1745	0	0
1745 - 1750	0	0
1750 - 1755	1	0
1755 - 1800	0	0
Hourly Average	0.17	0.08
1800 - 1805	0	0
1805 - 1810	0	0
1810 - 1815	0	0
1815 - 1820	0	0
1820 - 1825	0	0
1825 - 1830	0	0
1830 - 1835	0	0
1835 - 1840	0	0
1840 - 1845	0	0
1845 - 1850	0	0
1850 - 1855	0	0
1855 - 1900	0	1
Hourly Average	0.00	0.08
Session Total	0.06	0.06



Date
Saturday 29 June 2024

Weather
Cloudy
Temp: 16°C

1100 - 1300 (Saturday 2H Session)

TIME	3a	3b
1100 - 1105	0	0
1105 - 1110	0	0
1110 - 1115	0	0
1115 - 1120	0	0
1120 - 1125	0	0
1125 - 1130	0	1
1130 - 1135	0	0
1135 - 1140	0	0
1140 - 1145	0	0
1145 - 1150	0	0
1150 - 1155	0	0
1155 - 1200	0	0
Hourly Average	0.00	0.08
1200 - 1205	0	0
1205 - 1210	0	0
1210 - 1215	0	0
1215 - 1220	0	0
1220 - 1225	0	0
1225 - 1230	0	0
1230 - 1235	0	0
1235 - 1240	0	0
1240 - 1245	0	0
1245 - 1250	0	0
1250 - 1255	0	0
1255 - 1300	0	0
Hourly Average	0.00	0.00
Session Total	0.00	0.04

Appendix D
Modelling Outputs

Junctions 9															
PICADY 9 - Priority Intersection Module															
Version: 9.5.1.7462															
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk															
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution															

Filename: Water Street - Molesworth Street T-Junction SD Edits.j9

Path: C:\AMA\AMA\AMA - McDonald's\004 - West\53024 - Molesworth Street, Rochdale\D Models and Drawings\PICADY

Report generation date: 09/06/2025 16:05:04

»2024 Base, AM
 »2024 Base, PM
 »2024 Base, SAT
 »2025 Base, AM
 »2025 Base, PM
 »2025 Base, SAT
 »2030 Base , AM
 »2030 Base, PM
 »2030 Base, SAT
 »2030 Base + Dev, AM
 »2030 Base + Dev, PM
 »2030 Base + Dev, SAT

Summary of junction performance

	AM					PM					SAT				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024 Base														
Stream B-C	D1	1.8	29.36	0.65	D	D2	14.5	170.31	1.03	F	D3	2.5	38.82	0.73	E
Stream B-A		0.1	22.54	0.05	C		0.2	41.08	0.15	E		0.1	26.80	0.10	D
Stream C-AB		1.3	16.04	0.56	C		2.0	22.37	0.67	C		1.2	16.07	0.55	C
	2025 Base														
Stream B-C	D4	1.8	30.16	0.66	D	D5	15.3	178.63	1.04	F	D6	2.5	39.79	0.73	E
Stream B-A		0.1	22.85	0.05	C		0.2	42.43	0.15	E		0.1	27.26	0.10	D
Stream C-AB		1.3	16.20	0.56	C		2.0	22.82	0.67	C		1.2	16.25	0.55	C
	2030 Base														
Stream B-C	D7	2.4	37.86	0.72	E	D8	29.2	309.86	1.16	F	D9	3.6	54.88	0.81	F
Stream B-A		0.1	26.89	0.07	D		0.3	61.72	0.22	F		0.1	33.13	0.12	D
Stream C-AB		1.6	18.54	0.61	C		2.8	27.19	0.73	D		1.5	18.42	0.60	C
	2030 Base + Dev														
Stream B-C	D10	4.2	59.28	0.83	F	D11	63.9	676.31	1.43	F	D12	14.8	172.83	1.03	F
Stream B-A		0.2	28.39	0.18	D		0.9	74.48	0.48	F		0.5	38.31	0.35	E
Stream C-AB		1.3	16.91	0.57	C		2.0	23.25	0.67	C		1.1	15.88	0.53	C

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

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

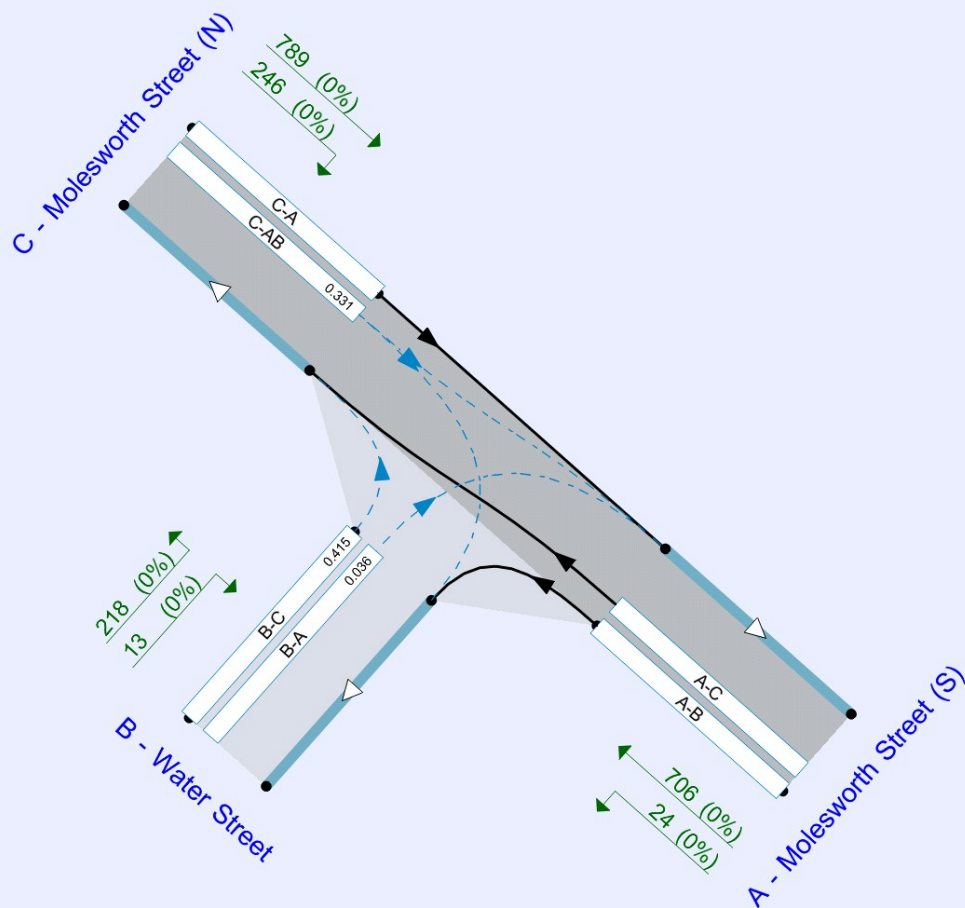
File summary

File Description

Title	
Location	
Site number	
Date	08/08/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\Modellinglaptop
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



Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC (l)

The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	ONE HOUR	08:15	09:45	15	✓
D2	2024 Base	PM	ONE HOUR	15:45	17:15	15	✓
D3	2024 Base	SAT	ONE HOUR	11:30	13:00	15	✓
D4	2025 Base	AM	ONE HOUR	08:15	09:45	15	✓
D5	2025 Base	PM	ONE HOUR	15:45	17:15	15	✓
D6	2025 Base	SAT	ONE HOUR	11:30	13:00	15	✓
D7	2030 Base	AM	ONE HOUR	08:15	09:45	15	✓
D8	2030 Base	PM	ONE HOUR	15:45	17:15	15	✓
D9	2030 Base	SAT	ONE HOUR	11:30	13:00	15	✓
D10	2030 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓
D11	2030 Base + Dev	PM	ONE HOUR	15:45	17:15	15	✓
D12	2030 Base + Dev	SAT	ONE HOUR	11:30	13:00	15	✓

Analysis Set Details

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

2024 Base, 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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Molesworth Street (S)		Major
B	Water Street		Minor
C	Molesworth Street (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Molesworth Street (N)	6.90	✓	2.50	✓	3.30	95.0	✓	10.00

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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Water Street	Two lanes	3.00	3.00	37	41

Slope / Intercept / Capacity

Stream Intercept Adjustments

Stream intercept adjustment	Use adjustment	Reason	Direct intercept adjustment (PCU/hr)
B-A	✓		0
B-C	✓	To replicate observed queueing	-120

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	538	0.089	0.225	0.142	0.322
B-C	650	0.096	0.242	-	-
C-B	704	0.262	0.262	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Base	AM	ONE HOUR	08:15	09:45	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 - Molesworth Street (S)		ONE HOUR	✓	683	100.000
B - Water Street		ONE HOUR	✓	214	100.000
C - Molesworth Street (N)		ONE HOUR	✓	975	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	33	650
	B - Water Street	8	0	206
	C - Molesworth Street (N)	717	258	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.65	29.36	1.8	D	189	284
B-A	0.05	22.54	0.1	C	7	11
C-AB	0.56	16.04	1.3	C	237	356
C-A					657	986
A-B					30	45
A-C					596	895

Main Results for each time segment

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-C	155	39	407	0.381	153	0.0	0.6	14.038	B
B-A	6	2	287	0.021	6	0.0	0.0	12.826	B
C-AB	194	49	569	0.341	192	0.0	0.5	9.492	A
C-A	540	135			540				
A-B	25	6			25				
A-C	489	122			489				

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-C	185	46	383	0.484	184	0.6	0.9	18.007	C
B-A	7	2	237	0.030	7	0.0	0.0	15.660	C
C-AB	232	58	543	0.427	231	0.5	0.7	11.493	B
C-A	645	161			645				
A-B	30	7			30				
A-C	584	146			584				

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-C	227	57	348	0.651	224	0.9	1.7	28.083	D
B-A	9	2	169	0.052	9	0.0	0.1	22.425	C
C-AB	285	71	510	0.560	283	0.7	1.2	15.781	C
C-A	788	197			788				
A-B	36	9			36				
A-C	716	179			716				

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-C	227	57	348	0.651	227	1.7	1.8	29.361	D
B-A	9	2	169	0.052	9	0.1	0.1	22.539	C
C-AB	285	71	510	0.560	285	1.2	1.3	16.041	C
C-A	788	197			788				
A-B	36	9			36				
A-C	716	179			716				

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-C	185	46	383	0.484	188	1.8	1.0	18.839	C
B-A	7	2	236	0.030	7	0.1	0.0	15.744	C
C-AB	232	58	543	0.427	234	1.3	0.8	11.707	B
C-A	645	161			645				
A-B	30	7			30				
A-C	584	146			584				

09:30 - 09:45

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-C	155	39	407	0.381	156	1.0	0.6	14.457	B
B-A	6	2	286	0.021	6	0.0	0.0	12.885	B
C-AB	194	49	569	0.341	195	0.8	0.5	9.643	A
C-A	540	135			540				
A-B	25	6			25				
A-C	489	122			489				

2024 Base, PM

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		24.38	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2024 Base	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		ONE HOUR	✓	831	100.000
B - Water Street		ONE HOUR	✓	295	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1122	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	30	801
	B - Water Street	14	0	281
	C - Molesworth Street (N)	841	281	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	1.03	170.31	14.5	F	258	387
B-A	0.15	41.08	0.2	E	13	19
C-AB	0.67	22.37	2.0	C	262	392
C-A					768	1152
A-B					28	41
A-C					735	1103

Main Results for each time segment

15:45 - 16:00

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-C	212	53	378	0.560	207	0.0	1.2	20.542	C
B-A	11	3	242	0.044	10	0.0	0.0	15.513	C
C-AB	212	53	540	0.392	209	0.0	0.6	10.784	B
C-A	633	158			633				
A-B	23	6			23				
A-C	603	151			603				

16:00 - 16:15

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-C	253	63	347	0.728	248	1.2	2.4	34.813	D
B-A	13	3	184	0.068	12	0.0	0.1	20.974	C
C-AB	253	63	509	0.497	252	0.6	1.0	13.908	B
C-A	756	189			756				
A-B	27	7			27				
A-C	720	180			720				

16:15 - 16:30

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-C	309	77	301	1.026	280	2.4	9.8	103.824	F
B-A	15	4	104	0.148	15	0.1	0.2	40.234	E
C-AB	320	80	480	0.666	316	1.0	1.9	21.484	C
C-A	915	229			915				
A-B	33	8			33				
A-C	882	220			882				

16:30 - 16:45

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-C	309	77	301	1.028	291	9.8	14.5	170.312	F
B-A	15	4	103	0.150	15	0.2	0.2	41.078	E
C-AB	320	80	480	0.666	320	1.9	2.0	22.372	C
C-A	915	229			915				
A-B	33	8			33				
A-C	882	220			882				

16:45 - 17:00

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-C	253	63	347	0.729	298	14.5	3.3	90.533	F
B-A	13	3	182	0.069	13	0.2	0.1	21.303	C
C-AB	253	63	509	0.497	257	2.0	1.0	14.478	B
C-A	756	189			756				
A-B	27	7			27				
A-C	720	180			720				

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-C	212	53	377	0.561	219	3.3	1.3	23.732	C
B-A	11	3	241	0.044	11	0.1	0.0	15.641	C
C-AB	212	53	540	0.392	213	1.0	0.7	11.047	B
C-A	633	158			633				
A-B	23	6			23				
A-C	603	151			603				

2024 Base, SAT

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.40	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2024 Base	SAT	ONE HOUR	11:30	13:00	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 - Molesworth Street (S)		ONE HOUR	✓	730	100.000
B - Water Street		ONE HOUR	✓	231	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1035	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	24	706
	B - Water Street	13	0	218
	C - Molesworth Street (N)	789	246	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.73	38.82	2.5	E	200	300
B-A	0.10	26.80	0.1	D	12	18
C-AB	0.55	16.07	1.2	C	226	339
C-A					724	1085
A-B					22	33
A-C					648	972

Main Results for each time segment

11:30 - 11:45

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-C	164	41	396	0.415	161	0.0	0.7	15.183	C
B-A	10	2	273	0.036	10	0.0	0.0	13.671	B
C-AB	185	46	560	0.331	183	0.0	0.5	9.504	A
C-A	594	148			594				
A-B	18	5			18				
A-C	532	133			532				

11:45 - 12:00

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-C	196	49	369	0.531	194	0.7	1.1	20.408	C
B-A	12	3	221	0.053	12	0.0	0.1	17.212	C
C-AB	221	55	532	0.416	220	0.5	0.7	11.506	B
C-A	709	177			709				
A-B	22	5			22				
A-C	635	159			635				

12:00 - 12:15

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-C	240	60	331	0.725	235	1.1	2.3	35.795	E
B-A	14	4	149	0.096	14	0.1	0.1	26.612	D
C-AB	272	68	496	0.549	270	0.7	1.2	15.823	C
C-A	868	217			868				
A-B	26	7			26				
A-C	777	194			777				

12:15 - 12:30

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-C	240	60	331	0.726	239	2.3	2.5	38.820	E
B-A	14	4	149	0.096	14	0.1	0.1	26.803	D
C-AB	272	68	496	0.549	272	1.2	1.2	16.074	C
C-A	868	217			868				
A-B	26	7			26				
A-C	777	194			777				

12:30 - 12:45

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-C	196	49	369	0.531	201	2.5	1.2	22.032	C
B-A	12	3	220	0.053	12	0.1	0.1	17.332	C
C-AB	221	55	532	0.416	223	1.2	0.7	11.710	B
C-A	709	177			709				
A-B	22	5			22				
A-C	635	159			635				

12:45 - 13:00

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-C	164	41	396	0.415	166	1.2	0.7	15.785	C
B-A	10	2	272	0.036	10	0.1	0.0	13.742	B
C-AB	185	46	560	0.331	186	0.7	0.5	9.648	A
C-A	594	148			594				
A-B	18	5			18				
A-C	532	133			532				

2025 Base, 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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2025 Base	AM	ONE HOUR	08:15	09:45	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 - Molesworth Street (S)		ONE HOUR	✓	687	100.000
B - Water Street		ONE HOUR	✓	216	100.000
C - Molesworth Street (N)		ONE HOUR	✓	981	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	33	654
	B - Water Street	8	0	208
	C - Molesworth Street (N)	722	259	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.66	30.16	1.8	D	191	286
B-A	0.05	22.85	0.1	C	7	11
C-AB	0.56	16.20	1.3	C	238	357
C-A					662	993
A-B					30	45
A-C					600	900

Main Results for each time segment

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-C	157	39	406	0.386	154	0.0	0.6	14.156	B
B-A	6	2	285	0.021	6	0.0	0.0	12.893	B
C-AB	195	49	569	0.343	193	0.0	0.5	9.531	A
C-A	544	136			544				
A-B	25	6			25				
A-C	492	123			492				

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-C	187	47	382	0.490	186	0.6	0.9	18.243	C
B-A	7	2	235	0.031	7	0.0	0.0	15.780	C
C-AB	233	58	542	0.429	232	0.5	0.7	11.558	B
C-A	649	162			649				
A-B	30	7			30				
A-C	588	147			588				

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-C	229	57	347	0.659	226	0.9	1.8	28.755	D
B-A	9	2	167	0.053	9	0.0	0.1	22.722	C
C-AB	287	72	509	0.564	285	0.7	1.2	15.926	C
C-A	793	198			793				
A-B	36	9			36				
A-C	720	180			720				

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-C	229	57	347	0.659	229	1.8	1.8	30.160	D
B-A	9	2	166	0.053	9	0.1	0.1	22.847	C
C-AB	287	72	509	0.564	287	1.2	1.3	16.199	C
C-A	793	198			793				
A-B	36	9			36				
A-C	720	180			720				

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-C	187	47	382	0.490	190	1.8	1.0	19.139	C
B-A	7	2	234	0.031	7	0.1	0.0	15.866	C
C-AB	233	58	542	0.429	235	1.3	0.8	11.778	B
C-A	649	162			649				
A-B	30	7			30				
A-C	588	147			588				

09:30 - 09:45

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-C	157	39	406	0.386	158	1.0	0.6	14.596	B
B-A	6	2	284	0.021	6	0.0	0.0	12.953	B
C-AB	195	49	569	0.343	196	0.8	0.5	9.684	A
C-A	544	136			544				
A-B	25	6			25				
A-C	492	123			492				

2025 Base, PM

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		25.44	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2025 Base	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		ONE HOUR	✓	836	100.000
B - Water Street		ONE HOUR	✓	296	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1129	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	30	806
	B - Water Street	14	0	282
	C - Molesworth Street (N)	846	283	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	1.04	178.63	15.3	F	259	388
B-A	0.15	42.43	0.2	E	13	19
C-AB	0.67	22.82	2.0	C	264	396
C-A					772	1158
A-B					28	41
A-C					740	1109

Main Results for each time segment

15:45 - 16:00

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-C	212	53	377	0.564	207	0.0	1.2	20.727	C
B-A	11	3	240	0.044	10	0.0	0.0	15.639	C
C-AB	213	53	539	0.395	211	0.0	0.6	10.868	B
C-A	637	159			637				
A-B	23	6			23				
A-C	607	152			607				

16:00 - 16:15

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-C	254	63	346	0.733	249	1.2	2.4	35.427	E
B-A	13	3	182	0.069	12	0.0	0.1	21.252	C
C-AB	255	64	508	0.502	253	0.6	1.0	14.064	B
C-A	760	190			760				
A-B	27	7			27				
A-C	725	181			725				

16:15 - 16:30

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-C	310	78	300	1.035	279	2.4	10.2	107.341	F
B-A	15	4	101	0.152	15	0.1	0.2	41.499	E
C-AB	324	81	481	0.673	320	1.0	2.0	21.860	C
C-A	920	230			920				
A-B	33	8			33				
A-C	887	222			887				

16:30 - 16:45

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-C	310	78	299	1.037	290	10.2	15.3	178.630	F
B-A	15	4	100	0.154	15	0.2	0.2	42.429	E
C-AB	324	81	481	0.673	323	2.0	2.0	22.817	C
C-A	920	230			920				
A-B	33	8			33				
A-C	887	222			887				

16:45 - 17:00

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-C	254	63	345	0.734	301	15.3	3.4	98.302	F
B-A	13	3	180	0.070	13	0.2	0.1	21.604	C
C-AB	255	64	508	0.502	259	2.0	1.0	14.672	B
C-A	760	190			760				
A-B	27	7			27				
A-C	725	181			725				

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-C	212	53	376	0.564	220	3.4	1.4	24.138	C
B-A	11	3	239	0.044	11	0.1	0.0	15.770	C
C-AB	213	53	539	0.395	215	1.0	0.7	11.137	B
C-A	637	159			637				
A-B	23	6			23				
A-C	607	152			607				

2025 Base, SAT

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.52	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2025 Base	SAT	ONE HOUR	11:30	13:00	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 - Molesworth Street (S)		ONE HOUR	✓	735	100.000
B - Water Street		ONE HOUR	✓	232	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1041	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	25	710
	B - Water Street	13	0	219
	C - Molesworth Street (N)	794	247	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.73	39.79	2.5	E	201	301
B-A	0.10	27.26	0.1	D	12	18
C-AB	0.55	16.25	1.2	C	227	341
C-A					728	1092
A-B					23	34
A-C					652	977

Main Results for each time segment

11:30 - 11:45

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-C	165	41	395	0.417	162	0.0	0.7	15.280	C
B-A	10	2	271	0.036	10	0.0	0.0	13.751	B
C-AB	186	46	559	0.333	184	0.0	0.5	9.546	A
C-A	598	149			598				
A-B	19	5			19				
A-C	535	134			535				

11:45 - 12:00

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-C	197	49	368	0.535	195	0.7	1.1	20.621	C
B-A	12	3	219	0.053	12	0.0	0.1	17.363	C
C-AB	222	56	531	0.418	221	0.5	0.7	11.584	B
C-A	714	178			714				
A-B	22	6			22				
A-C	638	160			638				

12:00 - 12:15

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-C	241	60	330	0.731	236	1.1	2.4	36.540	E
B-A	14	4	147	0.097	14	0.1	0.1	27.058	D
C-AB	273	68	494	0.553	271	0.7	1.2	15.990	C
C-A	873	218			873				
A-B	28	7			28				
A-C	782	195			782				

12:15 - 12:30

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-C	241	60	330	0.732	241	2.4	2.5	39.790	E
B-A	14	4	146	0.098	14	0.1	0.1	27.261	D
C-AB	273	68	494	0.553	273	1.2	1.2	16.252	C
C-A	873	218			873				
A-B	28	7			28				
A-C	782	195			782				

12:30 - 12:45

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-C	197	49	368	0.535	202	2.5	1.2	22.339	C
B-A	12	3	218	0.054	12	0.1	0.1	17.486	C
C-AB	222	56	531	0.418	224	1.2	0.7	11.795	B
C-A	714	178			714				
A-B	22	6			22				
A-C	638	160			638				

12:45 - 13:00

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-C	165	41	395	0.417	167	1.2	0.7	15.902	C
B-A	10	2	270	0.036	10	0.1	0.0	13.825	B
C-AB	186	46	559	0.333	187	0.7	0.5	9.692	A
C-A	598	149			598				
A-B	19	5			19				
A-C	535	134			535				

2030 Base , 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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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
D7	2030 Base	AM	ONE HOUR	08:15	09:45	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 - Molesworth Street (S)		ONE HOUR	✓	728	100.000
B - Water Street		ONE HOUR	✓	229	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1040	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	35	693
	B - Water Street	9	0	220
	C - Molesworth Street (N)	765	275	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.72	37.86	2.4	E	202	303
B-A	0.07	26.89	0.1	D	8	12
C-AB	0.61	18.54	1.6	C	254	381
C-A					701	1051
A-B					32	48
A-C					636	954

Main Results for each time segment

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-C	166	41	399	0.416	163	0.0	0.7	15.109	C
B-A	7	2	270	0.025	7	0.0	0.0	13.676	B
C-AB	207	52	561	0.369	205	0.0	0.6	10.054	B
C-A	576	144			576				
A-B	26	7			26				
A-C	522	130			522				

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-C	198	49	372	0.531	196	0.7	1.1	20.232	C
B-A	8	2	217	0.037	8	0.0	0.0	17.224	C
C-AB	247	62	533	0.464	246	0.6	0.8	12.506	B
C-A	688	172			688				
A-B	31	8			31				
A-C	623	156			623				

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-C	242	61	336	0.722	237	1.1	2.3	35.024	E
B-A	10	2	145	0.069	10	0.0	0.1	26.671	D
C-AB	307	77	500	0.613	304	0.8	1.5	18.080	C
C-A	838	210			838				
A-B	39	10			39				
A-C	763	191			763				

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-C	242	61	335	0.722	242	2.3	2.4	37.855	E
B-A	10	2	144	0.069	10	0.1	0.1	26.892	D
C-AB	307	77	500	0.613	306	1.5	1.6	18.536	C
C-A	838	210			838				
A-B	39	10			39				
A-C	763	191			763				

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-C	198	49	372	0.531	203	2.4	1.2	21.787	C
B-A	8	2	216	0.038	8	0.1	0.0	17.360	C
C-AB	247	62	533	0.464	250	1.6	0.9	12.841	B
C-A	688	172			688				
A-B	31	8			31				
A-C	623	156			623				

09:30 - 09:45

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-C	166	41	398	0.416	167	1.2	0.7	15.703	C
B-A	7	2	269	0.025	7	0.0	0.0	13.752	B
C-AB	207	52	561	0.369	208	0.9	0.6	10.249	B
C-A	576	144			576				
A-B	26	7			26				
A-C	522	130			522				

2030 Base, PM

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		42.56	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2030 Base	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		ONE HOUR	✓	884	100.000
B - Water Street		ONE HOUR	✓	313	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1193	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	32	852
	B - Water Street	15	0	298
	C - Molesworth Street (N)	894	299	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	1.16	309.86	29.2	F	273	410
B-A	0.22	61.72	0.3	F	14	21
C-AB	0.73	27.19	2.8	D	285	428
C-A					809	1214
A-B					29	44
A-C					782	1173

Main Results for each time segment

15:45 - 16:00

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-C	224	56	368	0.610	218	0.0	1.5	23.335	C
B-A	11	3	223	0.051	11	0.0	0.1	16.937	C
C-AB	225	56	530	0.425	222	0.0	0.7	11.597	B
C-A	673	168			673				
A-B	24	6			24				
A-C	641	160			641				

16:00 - 16:15

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-C	268	67	334	0.801	261	1.5	3.3	44.878	E
B-A	13	3	161	0.084	13	0.1	0.1	24.288	C
C-AB	270	67	498	0.542	268	0.7	1.1	15.561	C
C-A	803	201			803				
A-B	29	7			29				
A-C	766	191			766				

16:15 - 16:30

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-C	328	82	283	1.160	273	3.3	17.0	161.557	F
B-A	17	4	76	0.216	16	0.1	0.3	58.861	F
C-AB	362	90	493	0.733	356	1.1	2.6	25.310	D
C-A	952	238			952				
A-B	35	9			35				
A-C	938	235			938				

16:30 - 16:45

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-C	328	82	282	1.164	279	17.0	29.2	309.862	F
B-A	17	4	75	0.221	16	0.3	0.3	61.716	F
C-AB	362	90	493	0.733	361	2.6	2.8	27.188	D
C-A	952	238			952				
A-B	35	9			35				
A-C	938	235			938				

16:45 - 17:00

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-C	268	67	334	0.802	323	29.2	15.4	253.290	F
B-A	13	3	159	0.085	14	0.3	0.1	24.985	C
C-AB	270	67	498	0.542	276	2.8	1.2	16.667	C
C-A	803	201			803				
A-B	29	7			29				
A-C	766	191			766				

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-C	224	56	367	0.611	279	15.4	1.7	59.660	F
B-A	11	3	222	0.051	11	0.1	0.1	17.124	C
C-AB	225	56	530	0.425	227	1.2	0.8	11.960	B
C-A	673	168			673				
A-B	24	6			24				
A-C	641	160			641				

2030 Base, SAT

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		8.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 Base	SAT	ONE HOUR	11:30	13:00	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 - Molesworth Street (S)		ONE HOUR	✓	776	100.000
B - Water Street		ONE HOUR	✓	246	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1100	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	26	750
	B - Water Street	14	0	232
	C - Molesworth Street (N)	839	261	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
	From			
	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.81	54.88	3.6	F	213	319
B-A	0.12	33.13	0.1	D	13	19
C-AB	0.60	18.42	1.5	C	241	361
C-A					769	1153
A-B					24	36
A-C					688	1032

Main Results for each time segment

11:30 - 11:45

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-C	175	44	387	0.451	171	0.0	0.8	16.455	C
B-A	11	3	256	0.041	10	0.0	0.0	14.633	B
C-AB	197	49	551	0.357	194	0.0	0.5	10.030	B
C-A	632	158			632				
A-B	20	5			20				
A-C	565	141			565				

11:45 - 12:00

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-C	209	52	359	0.582	206	0.8	1.3	23.329	C
B-A	13	3	201	0.063	12	0.0	0.1	19.106	C
C-AB	235	59	522	0.450	234	0.5	0.8	12.459	B
C-A	754	189			754				
A-B	23	6			23				
A-C	674	169			674				

12:00 - 12:15

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-C	255	64	317	0.806	248	1.3	3.3	47.191	E
B-A	15	4	125	0.123	15	0.1	0.1	32.745	D
C-AB	291	73	486	0.598	288	0.8	1.4	17.990	C
C-A	921	230			921				
A-B	29	7			29				
A-C	826	206			826				

12:15 - 12:30

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-C	255	64	317	0.806	254	3.3	3.6	54.880	F
B-A	15	4	124	0.124	15	0.1	0.1	33.135	D
C-AB	291	73	486	0.598	290	1.4	1.5	18.415	C
C-A	921	230			921				
A-B	29	7			29				
A-C	826	206			826				

12:30 - 12:45

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-C	209	52	358	0.582	217	3.6	1.5	26.832	D
B-A	13	3	200	0.063	13	0.1	0.1	19.301	C
C-AB	235	59	522	0.450	237	1.5	0.8	12.768	B
C-A	754	189			754				
A-B	23	6			23				
A-C	674	169			674				

12:45 - 13:00

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-C	175	44	387	0.451	177	1.5	0.8	17.342	C
B-A	11	3	255	0.041	11	0.1	0.0	14.727	B
C-AB	197	49	551	0.357	198	0.8	0.6	10.214	B
C-A	632	158			632				
A-B	20	5			20				
A-C	565	141			565				

2030 Base + Dev, 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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		9.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2030 Base + Dev	AM	ONE HOUR	08:15	09:45	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 - Molesworth Street (S)		ONE HOUR	✓	728	100.000
B - Water Street		ONE HOUR	✓	273	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1003	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	48	680
	B - Water Street	26	0	247
	C - Molesworth Street (N)	746	257	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	0.83	59.28	4.2	F	227	340
B-A	0.18	28.39	0.2	D	24	36
C-AB	0.57	16.91	1.3	C	236	355
C-A					684	1026
A-B					44	66
A-C					624	936

Main Results for each time segment

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-C	186	46	395	0.470	183	0.0	0.9	16.663	C
B-A	20	5	278	0.071	19	0.0	0.1	13.923	B
C-AB	193	48	561	0.345	191	0.0	0.5	9.698	A
C-A	562	140			562				
A-B	36	9			36				
A-C	512	128			512				

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-C	222	56	368	0.604	220	0.9	1.4	23.917	C
B-A	23	6	226	0.103	23	0.1	0.1	17.714	C
C-AB	231	58	533	0.434	230	0.5	0.7	11.857	B
C-A	671	168			671				
A-B	43	11			43				
A-C	611	153			611				

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-C	272	68	328	0.830	263	1.4	3.7	49.740	E
B-A	29	7	156	0.183	28	0.1	0.2	28.070	D
C-AB	285	71	497	0.573	283	0.7	1.3	16.602	C
C-A	820	205			820				
A-B	53	13			53				
A-C	749	187			749				

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-C	272	68	327	0.831	270	3.7	4.2	59.280	F
B-A	29	7	155	0.184	29	0.2	0.2	28.393	D
C-AB	285	71	497	0.573	285	1.3	1.3	16.915	C
C-A	820	205			820				
A-B	53	13			53				
A-C	749	187			749				

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-C	222	56	368	0.604	232	4.2	1.6	28.271	D
B-A	23	6	225	0.104	24	0.2	0.1	17.904	C
C-AB	231	58	533	0.434	233	1.3	0.8	12.102	B
C-A	671	168			671				
A-B	43	11			43				
A-C	611	153			611				

09:30 - 09:45

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-C	186	46	395	0.471	189	1.6	0.9	17.671	C
B-A	20	5	277	0.071	20	0.1	0.1	14.026	B
C-AB	193	48	561	0.345	194	0.8	0.5	9.861	A
C-A	562	140			562				
A-B	36	9			36				
A-C	512	128			512				

2030 Base + Dev, PM

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		100.25	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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
D11	2030 Base + Dev	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Molesworth Street (S)		ONE HOUR	✓	884	100.000
B - Water Street		ONE HOUR	✓	383	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1141	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	51	833
	B - Water Street	40	0	343
	C - Molesworth Street (N)	868	273	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	1.43	676.31	63.9	F	315	472
B-A	0.48	74.48	0.9	F	37	55
C-AB	0.67	23.25	2.0	C	254	382
C-A					793	1189
A-B					47	70
A-C					764	1147

Main Results for each time segment

15:45 - 16:00

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-C	258	65	362	0.713	249	0.0	2.2	29.941	D
B-A	30	8	234	0.128	30	0.0	0.1	17.519	C
C-AB	206	51	530	0.388	203	0.0	0.6	10.938	B
C-A	653	163			653				
A-B	38	10			38				
A-C	627	157			627				

16:00 - 16:15

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-C	308	77	326	0.945	290	2.2	6.7	76.045	F
B-A	36	9	175	0.206	36	0.1	0.3	25.787	D
C-AB	246	61	497	0.495	244	0.6	1.0	14.199	B
C-A	780	195			780				
A-B	46	11			46				
A-C	749	187			749				

16:15 - 16:30

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-C	378	94	266	1.421	263	6.7	35.3	314.286	F
B-A	44	11	93	0.475	42	0.3	0.8	68.197	F
C-AB	312	78	466	0.669	308	1.0	1.9	22.267	C
C-A	944	236			944				
A-B	56	14			56				
A-C	917	229			917				

16:30 - 16:45

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-C	378	94	264	1.433	263	35.3	63.9	641.180	F
B-A	44	11	92	0.481	44	0.8	0.9	74.477	F
C-AB	312	78	466	0.669	312	1.9	2.0	23.252	C
C-A	944	236			944				
A-B	56	14			56				
A-C	917	229			917				

16:45 - 17:00

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-C	308	77	325	0.950	320	63.9	61.1	676.310	F
B-A	36	9	173	0.208	38	0.9	0.3	27.146	D
C-AB	246	61	497	0.495	250	2.0	1.0	14.810	B
C-A	780	195			780				
A-B	46	11			46				
A-C	749	187			749				

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-C	258	65	362	0.714	356	61.1	36.6	497.648	F
B-A	30	8	233	0.129	31	0.3	0.2	17.813	C
C-AB	206	51	530	0.388	207	1.0	0.6	11.203	B
C-A	653	163			653				
A-B	38	10			38				
A-C	627	157			627				

2030 Base + Dev, SAT

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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		25.27	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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
D12	2030 Base + Dev	SAT	ONE HOUR	11:30	13:00	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 - Molesworth Street (S)		ONE HOUR	✓	777	100.000
B - Water Street		ONE HOUR	✓	327	100.000
C - Molesworth Street (N)		ONE HOUR	✓	1038	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	49	728
	B - Water Street	45	0	282
	C - Molesworth Street (N)	807	231	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Molesworth Street (S)	B - Water Street	C - Molesworth Street (N)
From	A - Molesworth Street (S)	0	0	0
	B - Water Street	0	0	0
	C - Molesworth Street (N)	0	0	0

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-C	1.03	172.83	14.8	F	259	388
B-A	0.35	38.31	0.5	E	41	62
C-AB	0.53	15.88	1.1	C	212	318
C-A					740	1110
A-B					45	67
A-C					668	1002

Main Results for each time segment

11:30 - 11:45

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-C	212	53	381	0.557	208	0.0	1.2	20.217	C
B-A	34	8	269	0.126	33	0.0	0.1	15.219	C
C-AB	174	43	551	0.316	172	0.0	0.5	9.459	A
C-A	608	152			608				
A-B	37	9			37				
A-C	548	137			548				

11:45 - 12:00

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-C	254	63	350	0.725	249	1.2	2.3	34.181	D
B-A	40	10	216	0.187	40	0.1	0.2	20.392	C
C-AB	208	52	521	0.398	207	0.5	0.6	11.427	B
C-A	725	181			725				
A-B	44	11			44				
A-C	654	164			654				

12:00 - 12:15

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-C	310	78	302	1.029	280	2.3	9.9	104.344	F
B-A	50	12	144	0.344	48	0.2	0.5	37.326	E
C-AB	255	64	482	0.530	253	0.6	1.1	15.657	C
C-A	888	222			888				
A-B	54	13			54				
A-C	802	200			802				

12:15 - 12:30

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-C	310	78	301	1.032	291	9.9	14.8	172.833	F
B-A	50	12	143	0.346	49	0.5	0.5	38.308	E
C-AB	255	64	482	0.530	255	1.1	1.1	15.881	C
C-A	888	222			888				
A-B	54	13			54				
A-C	802	200			802				

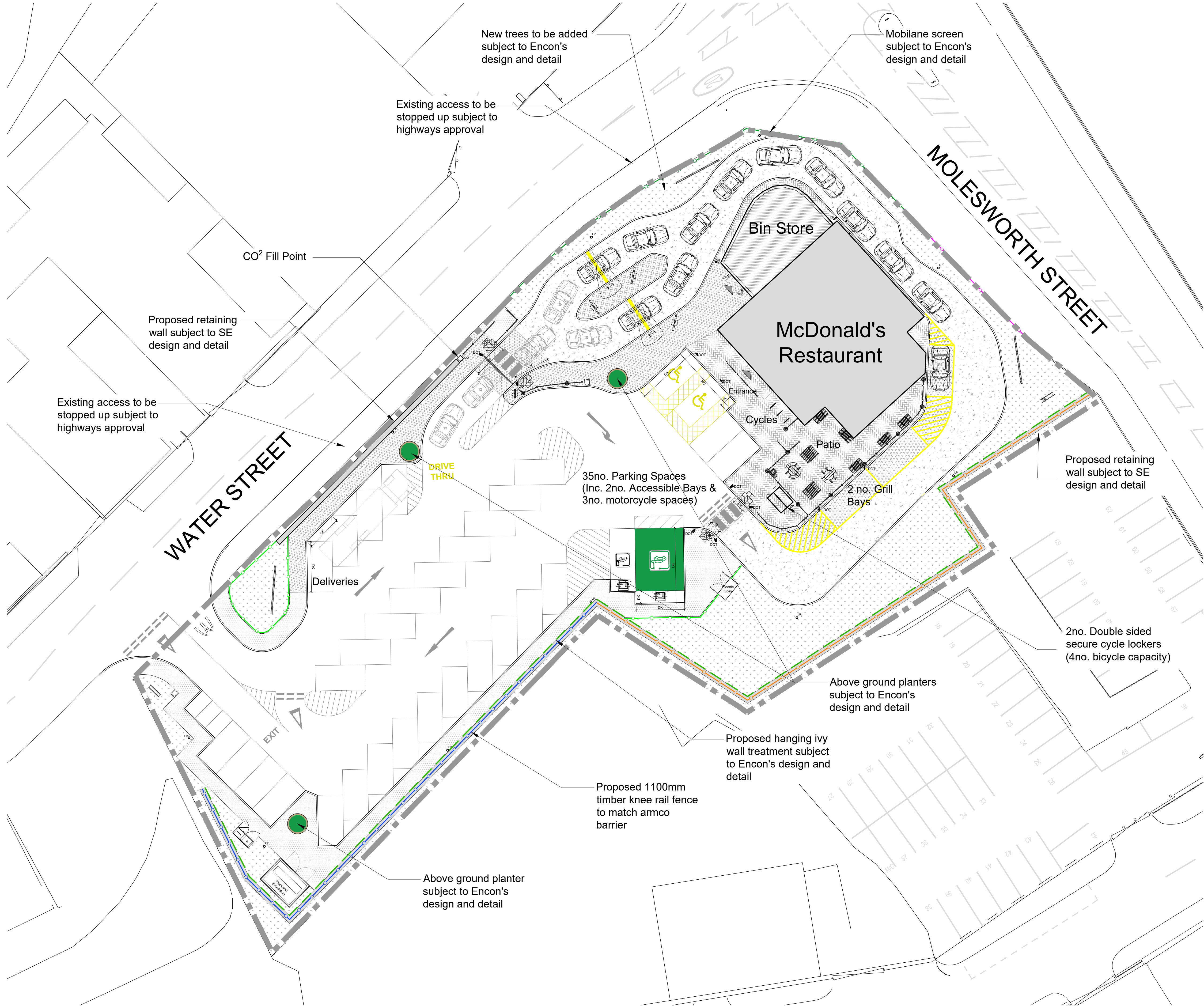
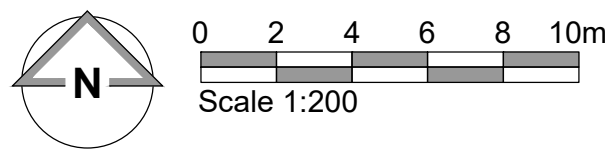
12:30 - 12:45

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-C	254	63	349	0.726	300	14.8	3.2	90.847	F
B-A	40	10	215	0.188	42	0.5	0.2	20.823	C
C-AB	208	52	521	0.398	209	1.1	0.7	11.609	B
C-A	725	181			725				
A-B	44	11			44				
A-C	654	164			654				

12:45 - 13:00

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-C	212	53	381	0.557	220	3.2	1.3	23.288	C
B-A	34	8	268	0.126	34	0.2	0.1	15.407	C
C-AB	174	43	551	0.316	175	0.7	0.5	9.591	A
C-A	608	152			608				
A-B	37	9			37				
A-C	548	137			548				

Appendix E
Site Plan



Patio Aubliam Furniture Schedule	
Circular Table - 4 Seat 1600mm Ø (H 780mm) Galvanised steel frame with laminated timber effect finish	
Rectangular Table - 8 Seat 600mm x 2400mm (H 780mm) Galvanised steel frame with laminated timber effect finish	
Rectangular Table - 4 Seat 1250mm x 1450mm (H 780mm) Galvanised steel frame with laminated timber effect finish	
Rectangular Table - 2 Seat 700mm x 1450mm (H 780mm) Galvanised steel frame with laminated timber effect finish	
Trash Bin 482 x 482mm (H 1217mm). Galvanised steel frame with laminated timber effect finish	
Ash Bin 297 x 297mm (H 891mm) Galvanised steel frame with laminated timber effect finish	
Parasol 2.1 m Octagonal Parasol (black canopy with white McDonald's text)	

General Site Proposal Notes:
DOT denotes Department of Transport Signs. For Signage type refer to AEW drawing no. 13484_AEW_2285_1000
DK denotes drop kerb to be installed
All drive thru related road markings to be in yellow thermoplastic material
Car park related road markings to be in white thermoplastic material
Standard parking bays to be finished in white thermoplastic material
All junction road markings to be finished in white thermoplastic material
Accessible parking bays to be lined in yellow thermoplastic material to current Part M standards with relevant DOT signage and drop kerbs as indicated
Parked order bays to be lined in yellow thermoplastic material with relevant DOT signage
All pedestrian crossings set out in white thermoplastic material. Tactile paving where crossing leads to safe destination
Drop kerbs to be installed along delivery routes

- ### NOTES
- All dimensions and levels are to be checked on site.
 - Any discrepancies are to be reported to the architect before any work commences.
 - This drawing shall not be scaled to ascertain any dimensions. Work to figured dims only.
 - This drawing shall not be reproduced without express written permission from AEW.
 - Title overlay drawings and ownership boundaries are produced using all reasonable endeavours. AEW cannot be responsible for the accuracy or scale discrepancy of base plans supplied to them.
 - All works are to be undertaken in accordance with Building Regulations and the latest British Standards.
 - All proprietary materials and products are to be used strictly in accordance with the manufacturers recommendations.
- CDM 2015
- Client notified of duties: **At Design Workshop**
Principal Designer: **CSS**
Unless noted below, all known hazards have been highlighted on the drawing:

Drawing based on:

- Glanville's Topographical Site Survey, Drawing no. 4230334/4101, Dated: June 2024
- OS Map

McDonald's Demise Boundary Indicated:

Proposed Schedule of Parking	
Accessible Bays	02
Grill Bays	02
EVCP Bays	02
General Bays	29
Total Parking Bays	35
Motorcycles Bays	03

Schedule of Areas	
Proposed Site Area (Hectares)	0.3945
Proposed Building (GEA / m²) (Excluding Corral)	474

Proposed Site Finishes	
Tarmacadam - Car Park	
Imprinted concrete - An-entrained concrete with full layer works, hardening agent and curing system; through-colour concrete grey, random cobble pattern. Drive Thru Lane	
Mastrolite 200x100 Charcoal Keyplok Paving - Patio	
Tarmacadam - Footpaths	
Turf & low level struts - Soft Landscaping	
Brushed concrete - DT lane where road markings and delivery route	
Cranked bollards Painted Black	
Tactile Blister Paving	
Target Bin	
*LP Denotes Lamppost	LP
150mm Diameter stainless steel protective bollard	BOL
Proposed 1100MM Close Boarded Timber Fence	
Proposed 800MM Timber Knee Rail Fence	
Proposed 1100MM Armco Barrier	
Proposed 1100MM Timber Knee Rail Fence	
Proposed Mobilane Screen / Living Wall	
Proposed Retaining Wall	
Proposed Hanging Ivy Wall Treatment	

C	11/06/2025	AK	JJS	Above ground planters indicated, car park lining amended, retaining wall treatments amended, banner sign adjusted
B	23/05/2025	WJB	JJS	Cycle lockers added. Cycle hoops relocated to accommodate.
A	12/12/2024	WJB	TSS	Armco barrier added to retaining wall. Site area updated
-	15/11/2024	HF	TSS	Initial issue
REV	Date	Drawn by -	Checked by -	
Status	Purpose of Issue			
S2	For Information			
drawing stage	Planning			
client	McDonald's Restaurants Ltd			

project	store		
	MOLESWORTH STREET, ROCHDALE 2285		
drawing title	Proposed Site Plan		
date	15/11/2024	drawn	HF
scale@A1	1:200	checked	TSS

Proposed Site Plan

PLANNING