

Proposed residential development, former Chadwicks site, Greenhills Road, Walkinstown, Dublin 12

Traffic and Transport Assessment

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1.0 INTRODUCTION

1.1 GENERAL DESCRIPTION

Dr Martin Rogers has been commissioned to complete a Traffic and Transport Assessment for a proposed 633-unit apartment development at the former Chadwicks site, Greenhills Road, Walkinstown, Dublin 12.

The development comprises the following:

- 633 No. apartments,
- 1330 m2 GFA commercial space, and
- 360 m2 GFA crèche (excluding external play area).

The apartment breakdown is as follows:

- 1-Bedroom units 292 No.
- 2-Bedroom units 280 No.
- 3-Bedroom units 61 No.

It is proposed to provide 419 No. car parking spaces, including 21 No. disabled, with 15 No allocated to the commercial component and 5 No. dedicated GoCar spaces.

It is assumed that the proposed development will open in 2024.

Appendix 1 contains a ground floor plan of the revised development indicating the location of the entrance onto Greenhills Road.

On 7 January 2021, Martin Rogers proposed the following scope for the traffic and transport assessment to South Dublin County Council:

- The Walkinstown Roundabout (the nearest major junction to the site of the proposed development);
- The Greenhills Road / L4006 (Ballymount Road Upper) capturing both the flows along Greenhills Road and the flows going to the M50 access via the Noyek's roundabout; and
- The Noyek's roundabout (the main access route from Greenhills Road onto the M50 northbound and southbound).

The volumes from the Greenhills Road / L4006 and Noyek's Roundabout junctions would be seen as indicative of the flows along Calmount Road towards the M50 once the completed link is in place.

South Dublin County Council responded on 7 January 2021 requesting that the applicant proceed with the submissions proposed, on the basis that SDCC would assess this information and would advise if further information would be required at a later stage.

Existing surveys from 2018 / 2019 period are available to the applicant for all three junctions, and this information is utilized within this report as most representative of pre-Covid volumes in the study area and thus seen as both normal and representative.

The traffic survey at the Walkinstown Roundabout was carried out on Thursday 28th November 2019, with the other two surveys carried out on Tuesday 12th February 2019. This survey data will be used within this analysis.

These two surveys will be taken as current 2021 traffic flows.

The analysis within this report is undertaken based on 1.62% annual growth in network traffic over the period 2021 to 2030 period, decreasing to 0.51% in the 2030 to 2038 period. These rates are consistent with the 'medium sensitivity' assumption for the four planning authorities within the Dublin metropolitan area as detailed within the 2019 Transport Infrastructure Ireland document 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections', PE-PAG-02017-2, May 2019.

1.2 PURPOSE OF THE TRAFFIC AND TRANSPORT ASSESSMENT

The purpose of this Traffic and Transport Assessment is to assess the current operational efficiency of the existing transport environment and provide details of the assessment undertaken to identify the level of transport impact resulting from the proposed residential development. The scope of the assessment covers both transport and related sustainability issues, including means of vehicular access, pedestrian, cyclist and local public transport connections. The principal objective of the report is to quantify any level of impact across the local road network and subsequently ascertain both the existing and future operational performance of the local road network.

1.3 METHODOLOGY USED WITHIN THE TRAFFIC AND TRANSPORT ASSESSMENT

This report was developed with guidance from the documents listed below;

- 'Traffic and Transport Assessment Guidelines' (May 2014) National Road Authority;
- 'Traffic Management Guidelines' Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
- 'Guidelines for Traffic Impact Assessments' The Institution of Highways and Transportation; and
- South Dublin County Development Plan 2016-2022; and
- Draft South Dublin County Development Plan 2022-2028.

The methodology utilised can be divided into the following 5 No. phases, in compliance with the Traffic and Transport Assessment Guidelines referenced above:

Audit of existing network

The report establishes the existing level of accessibility at present pertaining to the subject site in terms of the level of access available by walking, cycling and public transport.

Completion of Traffic Counts

The report details Junction traffic counts undertaken at the locations relevant to the proposed development, and analysed in order to assess existing operating efficiencies in the vicinity of the proposed development.

Estimation of Trip Generation Volumes

A trip generation exercise has been carried out to establish an estimate for the level of vehicle trips generated by the proposed residential development.

Distribution of Generated Trips

Based upon both the existing observed flow patterns in the local road network at the identified relevant junctions, the trips predicted to be generated by the proposed development are distributed / assigned onto the local road network.

Network Analysis detailing Impact of Generated Volumes

Junction analysis models are utilised to analyse the impact of the estimated trip generation volumes on the operational efficiency of the junctions selected for detailed analysis.

This analysis of the Concorde Industrial Estate / Naas Road signalised intersection is undertaken for both the year of opening of the proposed development and the 'design years' five and fifteen years thereafter.

This methodology is consistent with the following sections required within a basic Traffic and Transport Assessment for compliance with the 2014 TTA Guidelines:

- Introduction / Existing conditions
- Extent of proposed development (including existing and future public transport and walking / cycling facilities)
- Vehicular Trip Generation
- Vehicular Trip Distribution / Assignment to network
- Impact on road network of trips generated by proposed development

1.4 SITE ACCESS TO ROAD NETWORK

The site plan within Appendix 1 indicates the location of the site access onto Greenhills Road.

Traffic will exit the development left southwards or right northwards onto Greenhills Road.

Traffic turning left proceeds southwards towards the Tallaght area, or turns right at the Greenhills Road / L4006 and northwards towards Noyak's Roundabout and then westwards towards the M50 slip road.

Traffic turning right proceeds northwards towards the Walkinstown Roundabout and onwards towards the south city centre.

Figure 1-1 details the available access point from the development onto the Greenhills Road.

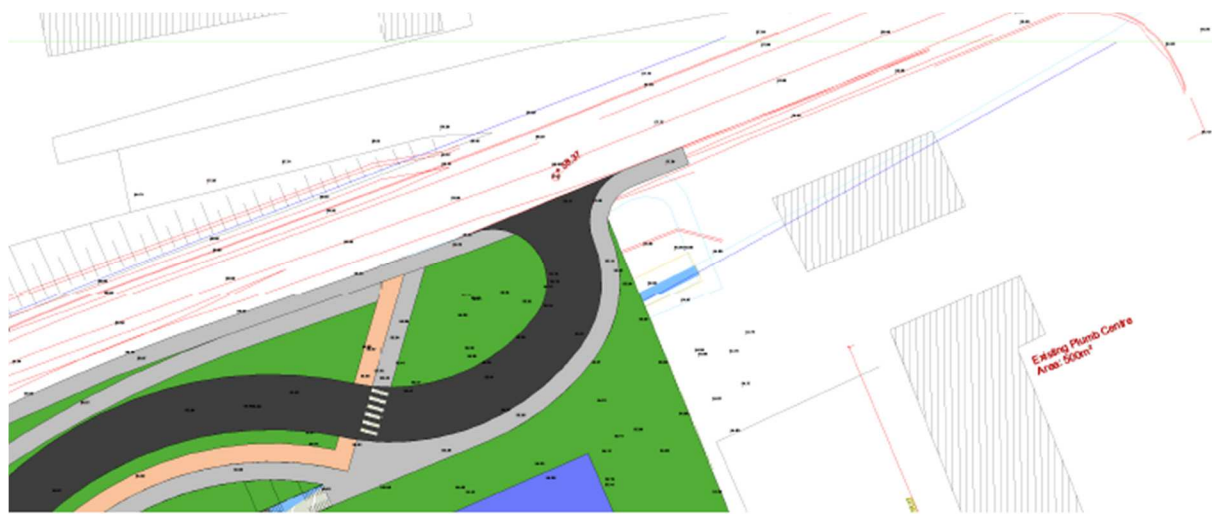


Figure 1-1: Site access onto Greenhills Road

1.5 SCOPE OF THE REPORT

Section 2 provides details of the receiving environment.

Section 3 details the traffic predicted to be generated by the proposed development.

Section 4 details the need for a traffic assessment based on the criteria within the 2014 Traffic and Transport Assessment Guidelines.

Section 5 provides an analysis of the post-development impact of the proposed development on the 3 No. nearby junctions.

Section 6 makes some concluding comments regarding the sustainability of the proposed project in traffic impact terms.

The site location is contained within Figure 1-2 below, together with the location of the 3 No. surveys.

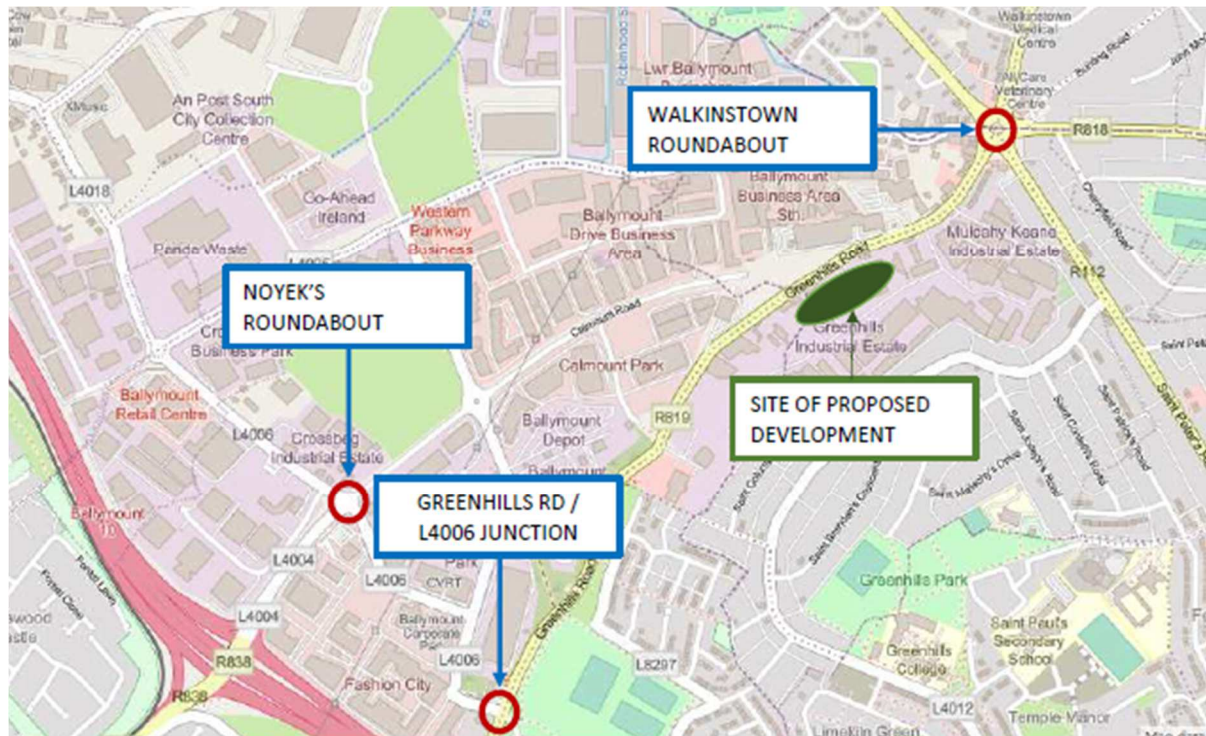


Figure 1-2: Site location map also indicating location of 3 No. traffic surveys

2.0 RECEIVING ENVIRONMENT

2.1 LOCATION OF PROPOSED DEVELOPMENT

The site is located on the south side of Greenhills Road, adjacent to its junction with Belgard Road, 350 metres south-west of the Walkinstown Roundabout.

The location of the site relative to the 3 No. nearby surveyed junctions is detailed within Figure 1-2.

Given that the proposed development is residential, peak flows will typically occur on weekdays, with peak flows typically occurring between 7am and 9am in the morning and between 4pm and 6pm in the evening.

Accordingly, traffic surveys were carried out in February and November 2019 at the 3 No. junctions.

The survey data is provided within Appendix 2.

The survey was carried out over a 12-hour period between 0700 and 1900 in order to ascertain the peak hour flows for all traffic movements at the 3 No. junctions.

The survey indicated that the weekday morning peak occurred between 0800 and 1000 with the evening peak occurring between 1600 and 1800 – these were observed to be the timeframes during which the junctions were most heavily loaded. The following analysis is based on these peak periods.

On the basis of the results of both the surveys and assumptions regarding when peak flows from the generated traffic will occur, the morning peak hour has been taken as 0800 to 0900, with the evening peak taken to occur between 1700 and 1800.

The existing (2019) flows at the 3 No. junctions for the morning and evening peak hours are detailed within Diagrams 1 and 2 respectively within Appendix 3.

2.2 EXISTING AND PROPOSED BUS INFRASTRUCTURE

The Greenhills Road area is currently connected via the 27 and 77A bus routes, providing good links both to the city centre and the western suburbs. Route 9 is also readily accessible and is routed around the Walkinstown Roundabout located directly east of the site

The frequency of each bus can be seen in Table 2-1:

ROUTE	ORIGIN	DESTINATION	FREQUENCY AM PEAK
Route 27	JOBSTOWN	CLARE HALL VIA CITY CENTRE	6 per hour
Route 77A	CITYWEST	RINGSEND	2 per hour
Route 9	LIMEKILN AVE	CHARLESTOWN	6 per hour
TOTAL			14 PER HOUR

Table 2-1– Dublin Bus Route Frequencies close to proposed development



Figure 2-1: Existing bus routes 9, 27 and 77A

Figure 2-1 details the routes taken by the 27 and 77A in close proximity to the site of the proposed development.

In addition, the 123 route, with its terminus west of Walkinstown Road within 1km of the site, runs into the city centre 6 times per hour during the morning peak.

Figure 2-2 details the Bus Connects proposals, indicating that the core Greenhills to City Centre route running along Greenhills Road.

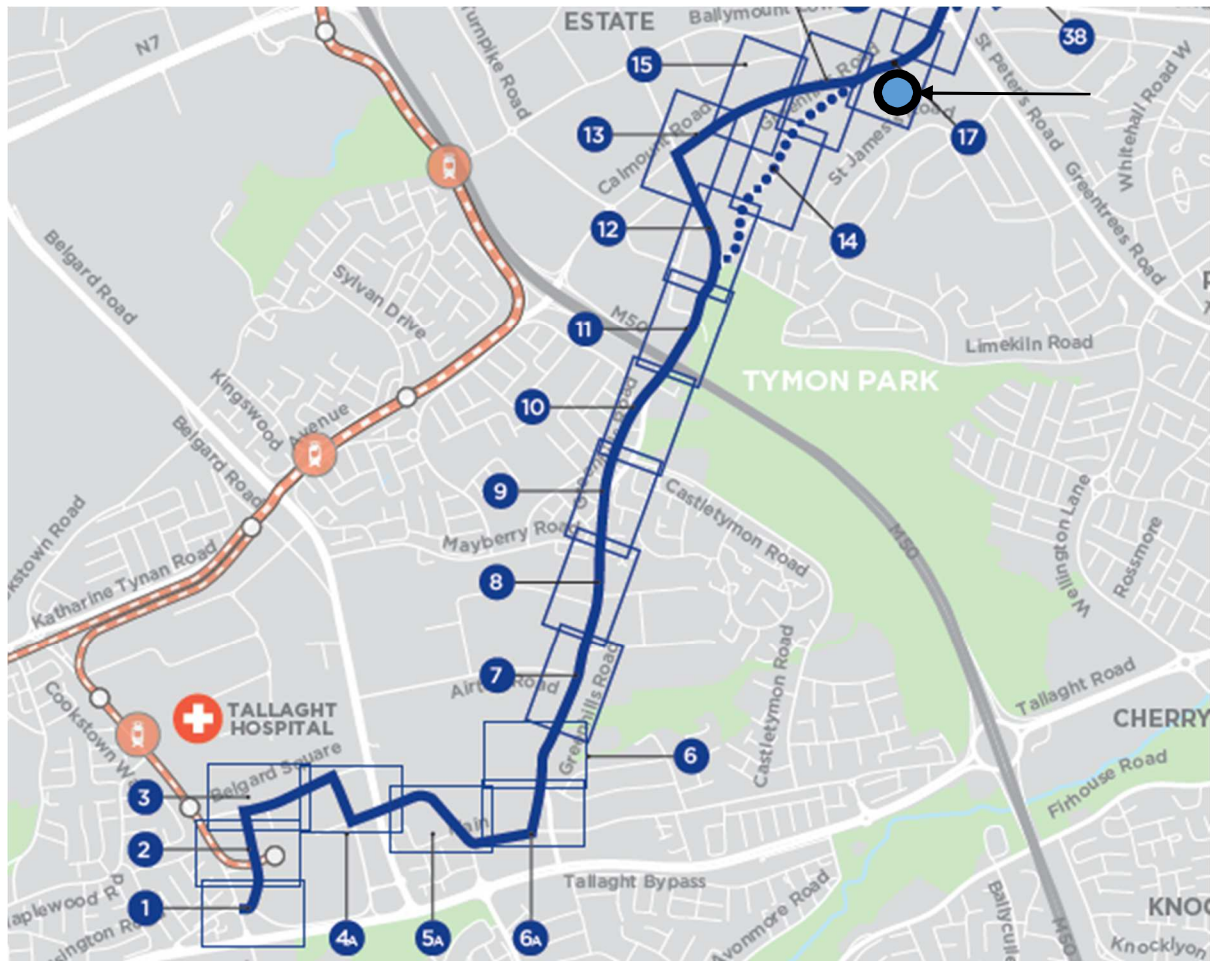


Figure 2-2: Proposed Greenhills to City Centre spine running along Greenhills Road

With the present bus system along Greenhills Road yielding 14 No. buses per hour during the morning peak, and assuming a maximum capacity of 80 No. passengers, an overall hourly capacity towards town of 1120 No. passengers is derived.

Assuming the D spine on the Bus Connects route contains the D2, D4 and D5 routes, extending to Tallaght along the Walkinstown Road and Greenhills Road. In Tallaght, D2 would extend past The Square to Jobstown and Citywest, with some similarity to existing Route 27, D4 would extent past The Square to Killinarden Heights and Kiltipper Way, and D5 would split off at Castletymon Road to serve Tymon North and Seskin View on the way to The Square in Tallaght.

In addition, the F spine will be accessible to commuters living at the proposed development, as the F3 route passes through Walkinstown Roundabout immediately east of the site.

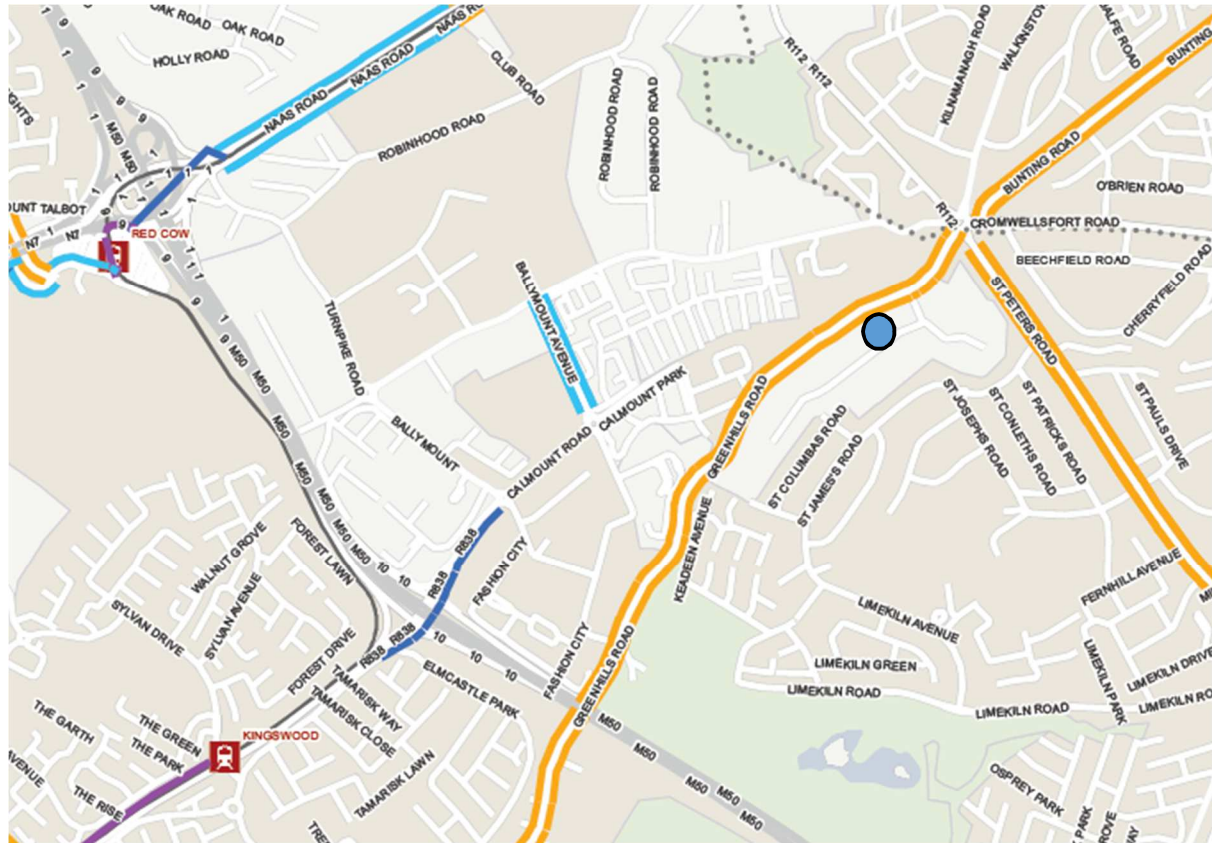
These proposed routes will provide capacity commensurate with the existing network, but with significantly reduced journey times, providing uplift to the desirability of the bus as a preferred modal choice for commuters. In order to estimate the level of demand the proposed development will place on the existing / proposed bus network, we can assume a figure of 2.7 persons per apartment unit of a suitable age to travel to school / college or work. This is a robust figure given the development has an average of 1.6 bedrooms per unit, and is based on 2016 Census figures derived for a standard household of 2.7 persons per household in total. It yields a population for the proposed residential component of the development at 1709.

If we assume 21% travelling by bus (as detailed within Mobility Management Plan document), this translates into 359 No. bus commuters. If one assumes these journeys are spread over 3 hours in the morning, this translates into an hourly demand on the bus network of 120 No. commuters per hour.

This figure is only 11% of the computed maximum capacity of the existing bus network. Thus, based on frequency and capacity, it can be assumed that the bus network in place will cope more than adequately with the demand induced by the residential component of the proposed development.

2.3 EXISTING AND PROPOSED CYCLING INFRASTRUCTURE

Figure 2-3 details the existing cycle facilities close to the site:



Legend:

— B1 - Bus Lane (no cycle lane)	— G1 - Cycle Trail or Greenway	Greenline Tram Stops
— C1 - Cycle Track - separated from road	— S2 - Shared Walking & Cycling	Redline Tram Stops
— C2 - Cycle Track - immediately adjacent	— Study Area	Stations
— C3 - Cycle Lane (even within Bus Lane)	— County Council Boundaries	

Figure 2-3: cycling facilities in proximity to Chadwicks site

One can see that there are limited cycle lanes in the vicinity of the development, with the main link being along the Greenhills Road within the bus lane.

Figure 2-6 details the facilities planned within the GDA Cycle Network Plan.



Figure 2-4: Cycle lane improvements detailed within Draft 2021 GDA Cycle Plan

The primary route along Greenhills Road mirrors the proposed Greenhills to City Centre Core bus corridor route detailed above.

3.0 PARKING REQUIREMENTS AND PROVISION

3.1 CAR AND CYCLE PARKING REQUIREMENTS AS PER SOUTH DUBLIN COUNTY DEVELOPMENT PLAN 2016 - 2022

Tables 3-1 and 3-2 below detail the maximum car and bicycle parking standards for South Dublin County Council based on the rates contained within their 2016 - 2022 Development Plan Written Statement for the residential commercial and crèche components of the proposed development:

Development type	Area / units	Maximum car parking standards	Maximum parking required
Apartments 1-bed	292 No.	0.75 per unit	219
Apartments 2-bed	280 No.	1.00 per unit	280
Apartments 3-bed	61 No.	1.25 per unit	76
TOTAL			575
		Bike parking standards	Parking required
Apartments	633 No.	1 private secure bicycle space per 5 No. apartments + 1 visitor bicycle space per 10 No. apartments	127 + 63 = 190

Table 3-1: Parking required under South Dublin County Development Plan Standards for residential component (assuming Zone 2 allocation due to location of site within 400 metres of high frequency bus route (Route 27))

Development type	Area / units	Maximum car parking standards	Parking required
Commercial	1330 m ²	1 per 75 m ²	18
Crèche	360 m ²	0.5 per classroom (10 No. classrooms assumed)	5
TOTAL			23
		Bike parking standards	Parking required
Commercial	1330 m ²	1 per 200 m ²	7
Crèche	360 m ²	None specified	-
TOTAL			7

Table 3-2: Parking required under South Dublin County Development Plan Standards for commercial / crèche component (Zone 2 (non-residential) classification for commercial and crèche)

3.2 PROPOSED CAR AND CYCLE PARKING PROVISION

It is proposed to provide 398 No. car parking spaces plus 21 No. disabled spaces for the residential component, equating to 0.66 car spaces per residential unit.

This level of provision is 73% of the quantum required under the South Dublin County Development Plan 2016 - 2022 maximum standards, which are identical to those in the Draft 2022-2028 document. This provision must also be viewed in relation to the New Apartment Guidelines, the level of compliance with which is detailed within the mobility management plan in a separate submitted report. The basis for this argument for reduced parking provision is based on the reasonable assumption that the subject site comes within the 'central location'

category detailed within the New Apartment Guidelines. A site can be designated within this category under the Guidelines if it is adjacent to a high frequency public transport facility. As the high frequency runs along Greenhills Road past the site – Route 27 - the site's designation within the 'central location' classification is judged to be entirely appropriate. Based on this classification, the Guidelines conclude that a provision of between 0 and 0.5 parking spaces in total would be appropriate for such a classification. The actual car parking provision, at 404 No. spaces, equates to 0.64 No. car parking spaces per residential unit, consistent with the designation assumed.

The limited parking provision proposed together with the increased emphasis on a non-car-based mode such as bus transport is consistent with the objective of a Traffic and Transport Assessment to assess and promote a balanced set of viable modes rather than concentrating solely on one dominant mode – the private car.

It is proposed to provide 15 No. car parking spaces for the commercial component, 65% of the maximum requirement as detailed within the Development Plan.

In terms of cycle parking provision, it is intended to provide 1363 No. cycle parking spaces (1035 No. for residents and 316 No. for visitors plus 7 No. cargo and 5 No. accessible spaces), significantly in excess of the 197 No. spaces required under the Development Plan.

The Draft Development Plan 2022 to 2028 has a more onerous requirement for bicycle parking (1 No. long term place plus 0.5 No. short terms spaces per apartment). This would yield a required quantum of 950 No. bicycle spaces. The provision is thus 142% of this more onerous Development Plan requirement.

4.0 TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT ANALYSIS FOR PROPOSED DEVELOPMENT

4.1 INTRODUCTION

The traffic impact of the proposed development is derived by assessing the trips generated by both the proposal and planned development on lands west of the subject site. It takes the existing, day of opening and design year flows on the network, gauging the extent to which the superimposed flows from the proposed and adjacent developments will affect the efficiency of future network flows.

4.2 TRIPS GENERATED BY CANDIDATE SITE

4.2.1 INTRODUCTION

The subject site consists of the following development types:

- 633 No. apartments,
- 1330 m2 GFA retail / commercial / café space, and
- 360 m2 GFA crèche.

Appendix 4 contains details of the baseline TRICS output used to derive the trip rates outlined directly below.

Note: The TRICS Database plays a central role in the process of trip estimation within both the UK and Ireland. It utilizes traffic survey information from 121 separate land use categories of land use in the database system, and allows its users to establish potential levels of trip generation for a wide range of development and location scenarios. The TRICS Database contains trip generation data from over 7,150 transport surveys.

4.2.2 RESIDENTIAL COMPONENT

TRICS typically gives the following weekday morning and evening peak trip rates for apartments in general urban areas:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Apartments	Trips/Unit	0.058	0.19	0.161	0.085

Table 4-1: Peak hour trip rates for apartments within development site

The above TRICS trip rates give rise to the following weekday morning and evening peak trip rates for apartments:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Apartments	No. of units	37	120	102	54

Table 4-2: Peak hour flows generated by proposed apartments within development site

4.2.3 COMMERCIAL / CRÈCHE COMPONENT

TRICS typically gives the following weekday morning and weekday evening peak trip rates for commercial / business park development types:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Commercial / Business Park	Trips/100m ² GFA	1.227	0.204	0.297	1.493

Table 4-3: Typical peak hour trip rates for the commercial component within development site

The above TRICS trip rates give rise to the following weekday morning and evening peak trip rates for the commercial component:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Commercial / Business Park	GFA m ²	16	3	4	20

Table 4-4: Peak hour flows generated by general retail component within development site

TRICS typically gives the following weekday morning and evening peak trip rates for the crèche component:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Crèche component	Trips/100m ² GFA	4.3	3.3	2.7	3.5

Table 4-5: Peak hour trip rates for crèche component within development site

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Crèche component	GFA (m ²)	15	12	10	12

Table 4-6: Peak hour flows generated for crèche component within development site

In terms of the crèche component, this report will assume that 50% of the trips detailed within Table 4-6 are generated by residents and do not give rise to additional external trips.

4.2.4 TOTAL TRIPS GENERATED BY PROPOSED DEVELOPMENT

Combining the residential trips with the commercial and amended crèche volumes, Table 4-7 below details the total flows predicted to be generated by the total proposed development:

	Weekday AM		Weekday PM	
	IN	OUT	IN	OUT
Residential	37	120	102	54
Commercial / Business Park	16	3	4	20
Crèche	8	6	5	6
Total generated flows	61	129	111	80

Table 4-7: Total flows generated by proposed development

4.3 DISTRIBUTION OF GENERATED FLOWS FROM PROPOSED DEVELOPMENTS

The distribution of generated flows from both the subject site and the adjacent lands will be based on the pattern of existing traffic movements in the vicinity, as observed in the 2018 traffic surveys:

MORNING PEAK

From the traffic survey results, it is observed that eastbound and westbound flows along Greenhills Road are split 50:50.

50% of traffic exiting the subject site will do so towards the Walkinstown Roundabout junction, with 50% exiting towards the Greenhills Road / Ballymount Road Upper priority junction.

50% of traffic entering the subject site (non-peak direction) will do so from the Walkinstown Roundabout junction, with 50% entering from the Greenhills Road / Ballymount Road Upper priority junction.

Of the 50% exiting the subject site towards the Walkinstown Roundabout junction, it can be assumed that 40% will exit left onto Walkinstown Road, with 40% exiting onto Cromwellsfort Road and 20% onto Walkinstown Avenue

Of the 50% of traffic entering the subject site from the Walkinstown Roundabout junction, it can be assumed that 50% will enter from Walkinstown Road, while 25% will enter from Cromwellsfort Road and 25% from Walkinstown Avenue.

Of the 50% exiting the subject site towards the Greenhills Road / Ballymount Road Upper junction, it can be assumed that 75% will continue southwards along Greenhills Road and 25% will turn left onto Ballymount Road Upper.

Of the 50% entering the subject site from the Greenhills Road / Ballymount Road Upper junction, it can be assumed that 70% will have travelled northwards along Greenhills Road and 30% will turn arrived from Ballymount Road Upper, tuning left onto Greenhills Road.

All traffic exiting from Greenhills onto the Noyek's Roundabout are assumed to proceed onto the M50.

All traffic entering the site from Noyek's Roundabout are assumed to proceed through the roundabout from the M50 towards Ballymount Road Upper.

EVENING PEAK

From the traffic survey results, it is observed that eastbound and westbound flows along Greenhills Road are split 50:50.

50% of traffic exiting the subject site will do so towards the Walkinstown Roundabout junction, with 50% exiting towards the Greenhills Road / Ballymount Road Upper priority junction.

50% of traffic entering the subject site (non-peak direction) will do so from the Walkinstown Roundabout junction, with 50% entering from the Greenhills Road / Ballymount Road Upper priority junction.

Of the 50% exiting the subject site towards the Walkinstown Roundabout junction, it can be assumed that 40% will exit left onto Walkinstown Road, with 40% exiting onto Cromwellsfort Road and 20% onto Walkinstown Avenue

Of the 50% of traffic entering the subject site from the Walkinstown Roundabout junction, it can be assumed that 50% will enter from Walkinstown Road, while 25% will enter from Cromwellsfort Road and 25% from Walkinstown Avenue.

Of the 50% exiting the subject site towards the Greenhills Road / Ballymount Road Upper junction, it can be assumed that 80% will continue southwards along Greenhills Road and 20% will turn left onto Ballymount Road Upper.

Of the 50% entering the subject site from the Greenhills Road / Ballymount Road Upper junction, it can be assumed that 60% will have travelled northwards along Greenhills Road and 40% will turn arrived from Ballymount Road Upper, tuning left onto Greenhills Road.

All traffic exiting from Greenhills onto the Noyek's Roundabout are assumed to proceed onto the M50.

All traffic entering the site from Noyek's Roundabout are assumed to proceed through the roundabout from the M50 towards Ballymount Road Upper.

4.4 TRIP ASSIGNMENT

The 2014 Traffic and Transport Assessment Guidelines published by the NRA requires that the relevant junctions be analysed for the existing situation, the year of opening (2024) with the proposed and adjacent developments in place, the design year 1 (year of opening plus 5) with the proposed and adjacent developments in place, and the design year 2 (year of opening plus 15) with the proposed and adjacent developments in place.

The 2019 survey results will be assumed to be post-Covid 2021 volumes.

An annual growth rate of 1.62% has been assumed for the period 2021 to 2030, decreasing to 0.51% for 2031 to 2039, based on the low growth estimate for the Dublin Metropolitan Region, containing SDCC, published by TII in 2019 (PE-PAG-02017-2).

The 2024 Do-Nothing ('without development') scenario is derived by factoring the survey results in Diagrams 1 and 2 up by 4.9% $((1.0162)^3 - 1 = 0.049)$. The 2024 Do-Something ('with development') scenario is derived by adding the development flows detailed within Diagrams 3 and 4 to these factored network flows.

The 2029 Do-Nothing ('without development') scenario is derived by factoring the survey results in Diagrams 1 and 2 up by 13.7% $((1.0162)^8 - 1 = 0.137)$. The 2028 Do-Something ('with development') scenario is derived by adding the development flows detailed within Diagrams 3 and 4 to these factored network flows.

The 2039 Do-Nothing ('without development') scenario is derived by factoring the survey results in Diagrams 1 and 2 up by 21.3% $((1.0162^9 \times (1.005)^9) - 1 = 0.209)$. The 2039 Do-Something ('with development') scenario is derived by adding the development flows detailed within Diagrams 3 and 4 to these factored network flows.

Table 3-8 below details the network and development (proposed plus adjacent) incident on the 3 No. roundabout locations on the projected day of opening in 2024, within 2028, 5 years after opening and within 2039, 15 years after opening:

WALKINSTOWN ROUNABOUT	Network Flows		Development flows		Total flows		Development flows as % of total flows	
	AM	PM	AM	PM	AM	PM	AM	PM
Day of opening (2024)	4148	4079	95	95	4243	4174	2.2	2.3
Design Year 1 (2029)	4495	4421	95	95	4590	4516	2.1	2.1
Design Year 2 (2039)	4794	4714	95	95	4889	4809	1.9	2.0
GREENHILLS ROAD / BALYMOUNT ROAD UPPER	Network Flows		Development flows		Total flows		Development flows as % of total flows	
	AM	PM	AM	PM	AM	PM	AM	PM
Day of opening (2024)	2100	1956	95	95	2195	2051	4.3	4.6
Design Year 1 (2029)	2276	2120	95	95	2371	2215	4.0	4.3
Design Year 2 (2039)	2427	2260	95	95	2522	2355	3.8	4.0
NOYEK'S ROUNABOUT	Network Flows		Development flows		Total flows		Development flows as % of total flows	
	AM	PM	AM	PM	AM	PM	AM	PM
Day of opening (2024)	3210	2773	25	24	3235	2799	0.8	0.9
Design Year 1 (2029)	3478	3005	25	24	3503	3031	0.7	0.9
Design Year 2 (2039)	3709	3205	25	24	3734	3231	0.7	0.8

Table 4-8: Network and development flows at 3 No. roundabouts on day of opening (2024), Design Year 1 (2029) and Design Year 2 (2039)

The 2014 Traffic and Transport Assessment Guidelines requires the impact of the additional traffic volumes on the critical nearby junctions to be assessed in detail if:

- Development flows exceed 10% of existing turning movements at the two relevant junctions;

- Development flows exceed 5% of turning movements if the location has the potential to become congested.

It is noted that the generated flows from the subject site are below the 5% threshold at all three surveyed junctions, with values reducing to less than 1% at Noyek's Roundabout. No further detailed analysis of this junction will be undertaken.

The Walkinstown Roundabout will experience an increase of 2%, less than half the lowest threshold under the Guidelines, with the Greenhills Road / Ballymount Road Upper junction experiencing a 4% increase.

In traffic impact terms, therefore, the impact of the proposed development will be very low.

Notwithstanding that all of the 3 No. junctions relating to the AM and PM peaks are below the 5% threshold, the 2 No. junctions closest to the proposed development (Walkinstown Roundabout and Greenhills Road / Ballymount Road Upper) will be analysed in detail to provide a robust assessment of the proposed development.

5.0 TRAFFIC IMPACT ASSESSMENT OF WALKINSTOWN ROUNDABOUT AND GREENHILLS ROAD / BALLYMOUNT ROAD UPPER PRIORITY INTERSECTION

5.1 INTRODUCTION

The traffic analysis will analyse the performance of the following 2 No. intersections for the following 7 No. scenarios:

- Existing flows (2019 surveys)
- 2024 flows without proposed development in place (AM and PM peak) - 2024 WOD
- 2024 flows with proposed development in place (AM and PM peak) - 2024 WDEV
- 2029 flows without proposed development in place (AM and PM peak) - 2029 WOD
- 2029 flows with proposed development in place (AM and PM peak) - 2029 WDEV
- 2039 flows without proposed development in place (AM and PM peak) - 2039 WOD
- 2039 flows with proposed development in place (AM and PM peak) - 2039 WDEV

The ARCADY programme will be used to analyse the Walkinstown Roundabout for all scenarios.

The PICADY programme will be used to analyse the Greenhills Road / Ballymount Road Upper priority junction for all scenarios.

Note: ARCADY and PICADY are computer programmes devised by the UK Transport Research Laboratory for modelling the traffic behaviour at roundabouts and priority junctions respectively. They are accepted as valid tools for use within the Traffic Impact Assessment process within both the UK and Ireland.

5.2 ANALYSIS OF WALKINSTOWN ROUNDABOUT INTERSECTION

Analysis of AM and PM peak hour flows for 7 No. scenarios

Full details of the analysis of the Walkinstown Roundabout junction are contained within Appendix 5.

Table 5-1 immediately below summarises the critical flows, capacities, RFC's and queue lengths for the morning and evening peaks for each of the 7 No. scenarios for the Walkinstown Roundabout junction:

Scenario No.1	2019 AM PEAK FLOWS (Existing Flows)				2023 PM PEAK FLOWS (Existing Flows)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Walkinstown Road	186	234.05	0.79	4	201	224.65	0.89	7
Cromwellsfort Road	219	240.70	0.91	8	192	229.25	0.84	5
St. Peters Road	182	192.88	0.94	11	157	220.18	0.71	3
Greenhills Road	146	160.00	0.91	7	184	215.18	0.86	5
Ballymount Road	137	228.56	0.60	2	162	278.75	0.58	2
Walkinstown Avenue	193	268.28	0.72	3	178	263.08	0.68	2
Scenario No.2	2024 AM PEAK FLOWS (Do-Nothing)				2023 PM PEAK FLOWS (Do-Nothing)			
Walkinstown Road	183	221.84	0.82	4	195	200.76	0.97	13
Cromwellsfort Road	228	239.25	0.95	12	200	212.06	0.94	9
St. Peters Road	230	221.28	1.04	27	163	211.51	0.77	3
Greenhills Road	154	152.80	1.01	16	193	216.12	0.89	6
Ballymount Road	144	224.67	0.64	2	170	262.71	0.65	2
Walkinstown Avenue	201	263.26	0.76	3	187	244.98	0.76	3
Scenario No.3	2024 AM PEAK FLOWS (Do-Something)				2024 PM PEAK FLOWS (Do-Something)			
Walkinstown Road	188	221.03	0.85	5	202	197.95	1.02	22
Cromwellsfort Road	230	235.99	0.97	15	204	208.96	0.98	12
St. Peters Road	230	215.21	1.07	34	163	202.58	0.80	4
Greenhills Road	170	154.13	1.10	46	200	216.88	0.94	9
Ballymount Road	144	221.42	0.65	2	170	255.96	0.66	2
Walkinstown Avenue	203	261.48	0.78	4	190	241.12	0.79	4
Scenario No.4	2029 AM PEAK FLOWS (Do-Nothing)				2029 PM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Walkinstown Road	199	210.56	0.95	10	212	184.96	1.15	50+
Cromwellsfort Road	248	226.47	1.10	50+	218	208.10	1.05	22
St. Peters Road	249	187.58	1.33	50+	176	200.94	0.88	6
Greenhills Road	167	143.59	1.16	50+	208	204.02	1.02	18
Ballymount Road	155	228.31	0.68	2	183	249.38	0.73	3
Walkinstown Avenue	220	258.40	0.85	5	202	229.99	0.88	6
Scenario No.5	2029 AM PEAK FLOWS (Do-Something)				2029 PM PEAK FLOWS (Do-Something)			
Walkinstown Road	203	209.67	0.97	12	219	182.42	1.20	50+
Cromwellsfort Road	250	224.32	1.11	57	221	207.33	1.07	30
St. Peters Road	249	185.37	1.34	50+	176	197.23	0.89	7
Greenhills Road	183	147.43	1.24	50+	208	205.52	1.06	32
Ballymount Road	155	227.12	0.68	3	183	245.10	0.75	3
Walkinstown Avenue	222	258.75	0.86	6	206	226.67	0.91	8
Scenario No.6	2039 AM PEAK FLOWS (Do-Nothing)				2039 PM PEAK FLOWS (Do-Nothing)			
Walkinstown Road	212	197.50	1.07	36	226	174.43	1.30	50+
Cromwellsfort Road	264	219.48	1.20	50+	233	209.08	1.11	50+
St. Peters Road	265	184.56	1.44	50+	189	207.43	0.91	7
Greenhills Road	233	189.92	1.23	50+	223	196.97	1.13	39
Ballymount Road	166	232.95	0.71	13	196	242.55	0.81	4
Walkinstown Avenue	233	254.57	0.92	33	215	220.57	0.97	15
Scenario No.7	2039 AM PEAK FLOWS (Do-Something)				2038 PM PEAK FLOWS (Do-Something)			
Walkinstown Road	216	197.76	1.10	43	233	173.50	1.34	50+
Cromwellsfort Road	266	218.37	1.22	50+	236	208.43	1.13	50+
St. Peters Road	265	181.88	1.46	50+	189	203.62	0.93	8
Greenhills Road	250	191.34	1.31	50+	233	198.86	1.17	62
Ballymount Road	166	232.21	0.71	3	196	238.72	0.82	5
Walkinstown Avenue	235	254.48	0.92	9	219	218.35	1.00	20

Table 5-1: Critical flows, capacities, ratios of flow to capacity and queue lengths for each 15-minute interval during the morning and evening peak hours for each scenario

The above analysis indicates that the Walkinstown Roundabout intersection at present operates within capacity during both peak hours. In 2024, with network flow increases only allowed for and no development in place, the intersection will operate at or near capacity on some approaches, with maximum degree of saturation at 104%

in the morning peak. With the proposed development in place, the maximum degree of saturation increases to 110% in the morning peak, mirroring the small additional incident flows from the development.

By 2029, with network flow increases only allowed for, the intersection will be over capacity during both peaks, with maximum degree of saturation at 133%. With the proposed development in place, the maximum degree of saturation increases marginally to 134%.

By 2039, with network flow increases only allowed for, the intersection will be over capacity during both peaks, with maximum degree of saturation at 144%. With the proposed development in place, the maximum degree of saturation increases marginally to 146%.

5.3 ANALYSIS OF GREENHILLS ROAD / BALLYMOUNT ROAD UPPER PRIORITY INTERSECTION

Analysis of AM and PM peaks for the 7 No. scenarios

Full details of the analysis of the Greenhills Road / Airton Road signalised junction are contained within Appendix 5.

Table 5-2 immediately below summarises the critical flows, capacities, RFC's and queue lengths for the morning and evening peaks for each of the 7 No. scenarios for the Greenhills Road / Ballymount Road Upper Priority junction:

Scenario No.1	2019 AM PEAK FLOWS (Existing Flows)				2023 PM PEAK FLOWS (Existing Flows)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Greenhills Rd Nth S+R	180	204.15	0.88	9	132	218.69	0.61	3
Ballymount Rd Upr L+R	63	59.19	1.06	11	75	77.28	0.97	9
Scenario No.2	2024 AM PEAK FLOWS (Do-Nothing)				2023 PM PEAK FLOWS (Do-Nothing)			
Greenhills Rd Nth S+R	198	207.81	0.95	16	146	222.69	0.66	4
Ballymount Rd Upr L+R	63	58.5	1.08	17	79	73.89	1.07	17
Scenario No.3	2024 AM PEAK FLOWS (Do-Something)				2024 PM PEAK FLOWS (Do-Something)			
Greenhills Rd Nth S+R	218	210.50	1.04	32	164	227.38	0.72	6
Ballymount Rd Upr L+R	62	50.39	1.23	32	82	70.12	1.17	32
Scenario No.4	2029 AM PEAK FLOWS (Do-Nothing)				2029 PM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Greenhills Rd Nth S+R	201	190.96	1.08	45	176	230.10	0.78	6
Ballymount Rd Upr L+R	64	42.97	1.50	50+	85	66.27	1.28	50+
Scenario No.5	2029 AM PEAK FLOWS (Do-Something)				2029 PM PEAK FLOWS (Do-Something)			
Greenhills Rd Nth S+R	236	204.69	1.15	50+	233	272.74	0.86	11
Ballymount Rd Upr L+R	66	32.32	2.04	50+	88	62.65	1.40	50+
Scenario No.6	2039 AM PEAK FLOWS (Do-Nothing)				2039 PM PEAK FLOWS (Do-Nothing)			
Greenhills Rd Nth S+R	234	199.69	1.17	50+	255	253.45	1.01	26
Ballymount Rd Upr L+R	68	27.16	2.50	50+	77	47.90	1.61	50+
Scenario No.7	2039 AM PEAK FLOWS (Do-Something)				2038 PM PEAK FLOWS (Do-Something)			
Greenhills Rd Nth S+R	231	183.00	1.26	50+	277	281.92	0.98	24
Ballymount Rd Upr L+R	71	10.85	6.5	50+	80	44.50	1.80	50+

Table 5-2: Critical flows, capacities, ratios of flow to capacity and queue lengths for each 15-minute interval during the morning and evening peak hours for each scenario

The above analysis indicates that the Greenhills Road / Ballymount Road Upper Priority intersection at present operates at or near capacity during both peak hours. In 2024, with network flow increases only allowed for and no development in place, the intersection will operate at or just over capacity, with maximum degree of saturation at 108%. With the proposed development in place, the maximum degree of saturation increases to 123%.

By 2029, with network flow increases only allowed for, the intersection will be over capacity during both peaks, with maximum degree of saturation at 150%. With the proposed development in place, the maximum degree of saturation increases marginally to 204%.

By 2039, with network flow increases only allowed for, the intersection will be significantly over capacity during both peaks, with the situation worsened with the proposed development in place.

6.0 OVERALL CONCLUSIONS

6.1 SUMMARY OF ANALYSIS

This document contains a Traffic and Transport Assessment for a proposed development located on Greenhills Road, adjacent to the Walkinstown Roundabout. The development consists of 633 No. apartments plus associated commercial and crèche facilities. It is proposed to provide 419 No. car parking spaces.

The function of this TTA is to quantify the existing transport environment in terms of the vehicular flows incident on it and to identify and assess the level of transport impact generated by the vehicular trips generated by both the proposed residential development and adjacent permitted developments as required by SDCC.

This TTA has carried out a range of assessments for the existing situation, within the year of opening in 2024, and within 2029 and 2039 design years (year of opening plus 5 and 15).

6.2 CONCLUSIONS FROM ANALYSIS

Based on the data and evaluations within this TTA, the following conclusions can be made:

1. The subject site is highly accessible to pedestrians and cyclists in the vicinity of Greenhills Road and its environs, with excellent pedestrian connectivity from the proposed development eastwards towards the Walkinstown Roundabout junction.
2. Future proposals as stated within the GDA Cycle Network Plan include a primary cycle route planned along Greenhills Road.
3. The site is well served by public transport, with the 27 and 77A bus services nearby along Greenhills Road.
4. The network analysis within the TTA indicates that the 2 No. existing junctions in the vicinity of the proposed development presently work within / at capacity.
5. It is demonstrated that in 2024, the projected year of opening of the proposal, the junctions analysed will be at or just over capacity during certain time intervals during the peak periods, predominantly due to predicted network increases.

6.3 MITIGATION

In the context of the overall volume of flows generated by all proposed development in the area, the importance of implementing a coherent parking and mobility policy for the area becomes of significant importance. Such policies will minimise the impact of private car traffic and will also be in keeping with the sustainable transport policy presently advocated for the Greater Dublin Area – please also refer to MRCL mobility management document which accompanies this SHD application.

A significant instrument in mitigating the traffic impacts of the proposed development is centred on the Mobility Management (MMP) that is contained within this submission and compiled with the aim of guiding the delivery and management of coordinated initiatives by the applicant. The MMP ultimately seeks to encourage sustainable travel practices for all journeys to and from the proposed development.

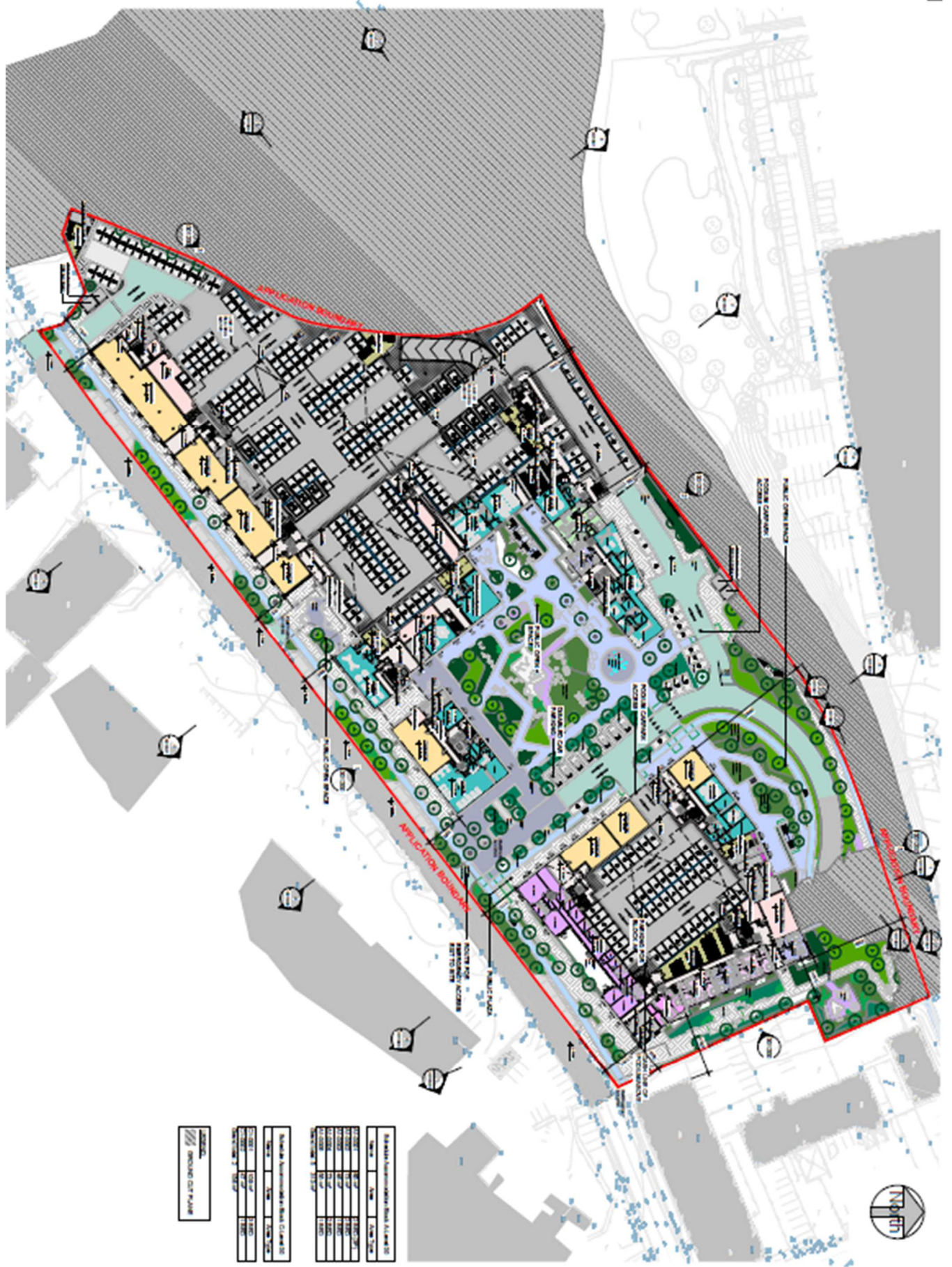
MRCCL

**TRANSPORT
PLANNING PROFESSIONAL**

APPENDIX

1

**GROUND
FLOOR PLAN**



MRCCL

**TRANSPORT
PLANNING PROFESSIONAL**

APPENDIX

2

**TRAFFIC
SURVEY
RESULTS**



TIME	A → E										A → F										B → A										B → B									
	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
00:00	0	0	1	2	0	1	1	2	7	10.8	0	0	4	1	0	0	0	0	5	5	0	0	0	3	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
00:05	0	0	0	2	0	0	0	2	4	6	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
00:30	0	0	3	1	0	0	1	0	5	6.3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
00:45	0	0	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
HTOT	0	0	5	5	1	1	2	4	18	25.1	0	0	5	1	0	0	0	0	6	6	0	0	6	3	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0
01:00	0	0	1	2	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	3	2	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
01:30	0	0	2	2	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	1	0	0	1	1.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
HTOT	0	0	6	6	0	1	0	0	13	13.5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	1	1	0	2	0	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
02:30	0	0	1	1	0	0	0	0	2	2	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	1	0	0	1	0	0	2	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HTOT	0	0	3	4	0	3	0	0	10	11.5	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
03:00	0	0	1	1	0	1	0	0	3	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HTOT	0	0	4	2	0	1	0	0	7	7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	1	0	1	0	1	0	0	0	3	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
HTOT	1	0	2	0	1	0	0	0	4	3.2	0	0	1	1	0	0	0	0	2	2	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
05:00	0	0	2	0	0	0	0	0	2	2	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
05:15	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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05:45	0	1	5	1	2	0	0	0	9	9.4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
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06:00	0	1	9	1	1	0	0	0	13	12.4	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
06:15	0	0	2	1	1	0	0	0	4	4	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	0	0	1	2	0	0	0	3	3	0	0	0	0	1	0	0	0	1	1	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
06:45	0	0	2	1	1	0	0	0	6	6	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
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07:00	0	0	23	0	3	0	0	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	17	1	6	2	0	0	26	27	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
07:30	0	2	22	0	9	0	0	0	33	31.6	0	0	1	0	0	0	0	0	1	1	0	0	4	0	3	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0
07:45	1	0	25	0	4	0	0	0	30	29.2	0	0	0	0	0	1	0	0	1	1.5	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
HTOT	1	2	87	1	22	2	0	0	115	114	0	0	1	0	0	0	0	0	2	2.5	0	0	8	0	3	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0
08:00	0	0	40	0	9	2	1	0	52	54.3	0	0	2	0	1	0	0	0	3	3	0	0	4	0	2	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
08:15	0	0	34	3	8	0	0	0	45	45	0	0	2	0	0	0	0	0	2	2	0	0	2	0	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
08:30	0	0	52	0	4	3	0	0	59	60.5	0	0	3	0	1	1	0	0	5	5.5	0	0	4	1	2	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0
08:45	1	0	26	1	8	0	0	0	36	35.2	0	0	4	0	0	0	0	0	4	4	0	1	3	1	3	1	0	0	9	8.9	0	0	0	0	0	0	0	0	0	0
HTOT	1	0	152	4	29	5	1	0	182	195	0	0	11	0	2	1	0	0	14	14.5	0	1	13	2	8	1	0	0	25	24.9	0	0	0	0	0	0	0	0	0	0
09:00	0	0	35	1	4	0	0																																	



TIME	B->C										B->D										B->E										B->F											
	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU		
00:00	0	0	3	1	0	0	0	0	4	4	0	0	7	0	0	0	0	0	7	7	0	0	3	0	0	0	0	1	4	5	0	0	4	1	2	1	0	0	8	8.5		
00:15	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	1	0	0	8	8.5	0	0	9	0	1	0	0	1	11	12	0	0	8	0	0	1	0	0	9	9.5		
00:30	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3	3	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4			
00:45	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	5	5	0	0	0	2	0	0	0	0	12	12	0	0	2	1	0	1	0	0	4	4.5		
HTOT	0	0	3	1	0	0	0	0	4	4	0	0	20	2	0	1	0	0	23	23.5	0	0	29	3	1	0	0	2	35	37	0	0	19	2	2	3	0	0	25	26.5		
01:00	0	0	1	0	0	0	0	0	1	1	0	0	3	0	1	0	0	0	4	4	0	0	3	1	1	0	0	5	5	0	0	1	2	1	0	0	0	4	4			
01:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	3	3	0	0	0	1	0	0	0	0	1	1	1	1	
01:30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		
01:45	0	0	1	2	0	0	0	0	3	3	0	0	2	0	0	0	0	0	2	2	0	0	2	0	0	0	0	0	2	2	0	1	1	1	1	0	0	0	4	3.4		
HTOT	0	0	2	2	0	0	0	0	4	4	0	0	7	1	1	0	0	0	9	9	0	0	7	1	2	0	0	0	10	10	0	1	3	4	2	0	0	0	10	9.4		
02:00	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	2	0	0	0	0	2	2	0	0	1	1	0	0	0	0	2	2	2		
02:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	1		
02:30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	3	3.5	1	0	0	0	1	0	0	0	2	12	0	0	0	0	0	1	0	0	1	1		
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2	2		
HTOT	0	0	1	0	0	0	0	0	1	1	0	0	2	3	1	1	0	0	7	7.5	1	0	3	1	1	0	0	0	6	5.2	0	0	1	2	1	2	0	0	6	7		
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1		
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	0	0	2	0	0	0	0	0	3	3.5		
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	2	1	1	0	0	0	0	4	4		
HTOT	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	2	1	1	0	0	0	4	4	0	0	5	1	1	2	0	0	0	0		
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	0	0	4	4.5		
04:15	0	0	0	2	0	0	0	0	2	2	0	0	1	0	1	0	0	0	2	2	0	0	1	0	0	0	0	0	2	2	0	0	1	0	1	0	0	0	2	2		
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3	0	0	1	0	0	4	4.5	0	0	1	0	1	0	0	0	2	2		
04:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	4	0	1	0	0	0	5.2	0	0	1	0	1	0	0	0	3	3.5			
HTOT	0	0	0	2	0	0	0	0	2	2	0	0	2	0	2	0	0	0	4	4	1	0	9	0	2	1	0	0	13	12.7	0	0	4	2	3	2	0	0	11	12		
05:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	12	0	0	2	0	2	0	0	4	4	1	0	0	1	0	0	0	0	0	2	12		
05:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	12	0	0	5	1	1	0	0	0	7	7	1	0	2	0	0	0	1	0	0	4	3.7	
05:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0.4	1	0	7	1	0	0	0	0	9	8.2	1	0	2	1	3	0	0	0	7	6.2		
05:45	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	2	0	0	2	2	0	0	0	0	4	4	0	0	4	0	0	0	0	0	0	4	4	
HTOT	0	0	1	0	0	0	0	0	1	1	4	0	3	0	1	0	0	0	8	4.8	1	0	15	4	3	0	0	0	24	23.2	3	0	8	2	3	1	0	0	17	15.1		
06:00	0	0	2	1	1	0	0	0	4	4	1	0	2	0	0	0	0	0	3	2.2	2	0	0	0	1	0	0	0	13	11.4	0	0	4	0	0	2	1	0	0	7	9.3	
06:15	0	0	2	0	1	0	0	0	1	1	5	0	4	0	0	0	0	0	6	7	1	0	0	0	6	0	0	0	17	15.2	0	0	6	1	0	0	0	0	0	7	7	
06:30	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	9	9	0	0	0	0	6	0	1	0	23	24.3	0	0	6	1	0	1	0	0	0	8	8.5	
06:45	0	0	2	0	0	0	0	0	2	2	1	0	9	0	3	1	0	0	14	13.7	0	0	31	0	3	0	0	0	34	34	0	0	14	0	0	3	0	0	0	17	17	
HTOT	0	0	6	2	2	0	0	0	11	11	2	0	23	0	4	3	0	0	32	31.9	3	0	67	0	15	0	1	0	87	85.9	0	0	30	2	3	3	1	0	0	39	41.8	
07:00	0	0	3	0	2	0	0	0	5	5	0	0	15	0	2	0	0	0	17	17	3	0	31	0	11	0	0	0	45	42.6	2	0	0	5	0	1	1	0	0	17	17.9	
07:15	0	0	4	1	1	0	0	0	6	6	0	0	17	0	2	0	0	0	19	19	3	0	42	0	19	1	2	1	59	60.7	1	0	19	0	3	0	1	0	0	24	24.5	
07:30	1	0	5	1	0	0	0	0	7	7	0	0	29	1	1	2	0	0	33	34	1	1	40	0	7	2	0	0	51	50.6	1	0	23	0	2	1	0	0	0	27	26.7	
07:45	0	0	6	0	3	0	0	0	2	13	2	0	34	0	2	0	0	0	1	39	38.4	2	1	70	0	12	3	1	1	90	91.6	0	0	30	0	1	0	0	0	0	31	31
HTOT	1	0	9	2	6	0	0	0	29	30.2	2	0	95	1	7	2	0	1	100	104.4	9	2	163	0	49	6	3	2	245	245.5	4	0	87	0	7	2	1	0	0	91	100.1	
08:00	1	0	9	1	0	0	0	0	11	10.2	1	0	34	1	3	1	0	0	40	39.7	3	1	75	0	11	4	1	1	96	97.3	0	0	26	0	5	0	0	0	0	31	31	
08:15	4	0	9	1	3	1	0	0	19	17.3	2	0	39	1	5	0	0	0	47	45.4	3	0	97	1	10	1	0	0	112	110.1	1	0	37	0	5	0	0	0	0	43	42.2	
08:30	1	0	12	0	0	0	0	0	3	18.2	3	0	29	1	6	1	0	0	40	38.1	0	0	95	0	5	7	0	0	117	120.5	1	1	29	1	4	0	0	0	0	36	34.6	
08:45	1	0	7	0	3	0	0	0	1	12	1	0	17	1	0	1	0	0	20	19.7	3	0	76	1	5	3	1	0	110	100.4	1	0	37	1	4	0	2	0	0	45	46.8	
HTOT	7	0	37	2	6	1	0	0	58	57.9	7	0	119	4	14	3	0	0	147	142.9	9	1	343	2																		



TIME	C->E										C->F										D->A										D->B										PCU
	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	PIC	MIC	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	
00:00	0	0	0	0	0	0	0	1	1	2	0	0	2	1	0	0	0	0	3	3	0	0	2	4	5	0	0	1	10	11	0	0	2	1	0	0	0	3	3		
00:05	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	0	0	9	9	0	0	2	2	1	0	0	0	5	5	0	0	2	1	0	0	0	6	6	
00:30	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	2	0	0	3	3	0	0	0	0	6	6	1	0	3	1	1	0	0	6	6		
00:45	0	0	1	1	0	0	0	0	2	2	0	0	1	4	0	0	0	0	5	5	0	0	6	6	0	0	0	0	13	14	0	0	3	1	0	0	0	4	4		
H/TOT	0	0	2	1	0	0	0	2	5	7	0	0	3	5	1	0	0	0	19	19	0	0	5	5	1	0	0	2	34	36	1	0	2	5	1	0	0	19	19		
01:00	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	5	5	0	0	1	1	0	0	0	2	2	0	0	1	1	0	0	0	2	2			
01:05	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	4	3	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0		
01:30	0	0	1	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	2	2	0	0	3	2	0	0	0	0	5	5	0	0	2	3	0	0	0	5	5		
01:45	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	4	1	0	0	0	0	5	5	0	0	3	1	0	0	0	4	4		
H/TOT	0	0	3	0	0	0	0	0	3	3	0	0	4	5	0	0	0	0	9	9	0	0	2	7	0	0	0	19	19	0	0	6	5	0	0	0	11	11			
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	3	0	0	9	9	0	0	0	0	1	0	0	1	1		
02:05	0	0	0	0	0	1	0	0	1	15	0	0	1	1	0	0	0	0	2	2	0	0	0	2	0	1	0	0	3	3	0	0	0	0	0	0	0	0	0		
02:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0		
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	1	0	0	7	7	0	0	0	0	0	2	0	2	3		
H/TOT	0	0	0	0	0	1	0	0	1	15	0	0	3	1	0	0	0	0	4	4	0	0	5	9	1	6	0	0	21	24	0	0	0	1	2	0	0	3	4		
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	15	0	0	1	4	1	3	0	0	9	9	0	0	2	0	0	0	0	2	2		
03:05	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	2	0	2	1	1	0	6	7	0	0	1	0	0	0	1	1			
03:30	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	1	0	2	1	0	1	0	0	5	4	0	0	0	0	0	0	0	1	0		
03:45	0	0	1	0	0	0	0	0	1	1	1	0	1	0	1	0	0	0	3	2	2	0	1	3	0	0	0	0	4	4	0	0	0	2	0	0	0	2	2		
H/TOT	0	0	1	1	0	0	0	0	2	2	1	0	2	1	1	1	0	0	6	6	1	0	6	8	3	5	1	0	24	27	1	0	1	2	2	0	0	6	5		
04:00	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	2	5	1	1	0	0	9	9	0	0	2	1	0	0	0	3	3		
04:05	1	0	3	0	0	0	0	0	4	3	2	0	2	0	1	0	0	0	3	3	0	0	2	0	0	1	0	0	3	3	0	0	1	1	0	0	0	2	2		
04:30	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	2	2	0	0	3	1	0	2	0	0	6	7	0	0	1	1	0	0	0	2	2		
04:45	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	9	9	0	0	2	1	1	0	0	4	4		
H/TOT	1	0	5	1	0	0	0	0	7	6	2	0	2	2	0	0	0	0	6	7	0	0	9	4	1	6	0	0	26	29	0	0	4	5	2	0	0	11	11		
05:00	1	0	3	0	0	0	0	0	4	3	2	1	0	2	0	0	0	0	3	2	2	0	1	1	1	0	0	5	3	4	0	2	1	1	0	0	4	4			
05:05	0	0	1	0	0	0	0	0	1	2	3	0	0	1	0	0	0	0	1	1	1	0	4	2	1	1	0	0	9	8	0	0	3	1	0	0	0	4	4		
05:30	0	0	2	0	0	0	0	0	2	2	0	0	5	0	0	2	0	0	7	7	0	0	9	0	0	0	0	0	9	9	0	0	3	1	0	0	0	5	4		
05:45	1	0	6	0	0	1	0	0	8	7	1	0	5	0	2	0	0	0	8	8	0	0	5	4	1	1	0	2	13	15	0	0	4	2	1	0	0	7	7		
H/TOT	2	0	12	0	0	1	1	0	16	16	2	0	12	1	2	2	0	0	19	19	4	0	19	7	3	2	0	2	36	38	1	0	12	5	2	0	0	20	19		
06:00	0	0	3	0	0	0	0	0	3	3	2	1	8	0	0	0	0	0	11	11	0	0	9	1	3	1	1	0	15	16	0	0	1	3	0	0	14	14			
06:05	1	0	7	1	4	0	0	0	13	12	0	0	11	0	1	0	0	0	12	12	0	0	15	1	5	1	0	1	25	24	0	0	6	1	3	0	0	11	10		
06:30	0	1	7	0	4	1	0	0	13	12	0	0	11	1	2	1	0	0	17	17	0	0	2	2	0	2	0	1	24	25	1	0	5	2	2	0	1	24	25		
06:45	1	0	12	0	4	1	1	0	19	20	5	0	13	1	2	0	0	0	21	21	0	0	26	3	11	1	0	3	44	47	0	0	7	2	4	2	0	1	26	28	
H/TOT	2	1	29	1	12	2	1	0	48	48	1	1	43	2	5	1	0	0	61	61	0	0	27	7	25	5	1	3	100	104	2	0	19	6	12	4	2	75	77		
07:00	0	0	9	0	4	1	0	0	24	24	4	0	17	1	5	0	0	0	27	23	0	0	31	4	7	2	0	1	50	48	0	0	24	0	1	2	0	27	28		
07:05	0	0	27	0	4	2	0	0	33	34	3	1	26	2	4	0	0	0	36	33	0	0	45	2	9	1	1	2	63	64	2	0	26	1	3	1	0	33	31		
07:30	0	0	41	0	10	0	0	0	51	51	1	1	41	2	8	0	0	0	53	51	0	0	38	5	11	6	0	4	66	71	0	0	36	2	14	0	1	54	56		
07:45	2	1	54	0	9	1	1	0	68	67	3	2	48	1	5	1	0	0	60	58	0	0	41	3	15	2	0	0	95	93	1	1	34	2	12	2	0	52	51		
H/TOT	2	1	111	0	27	4	1	0	116	114	4	0	102	6	22	1	0	0	116	109	0	0	102	14	42	11	1	7	244	247	3	1	69	5	30	5	1	106	107		
08:00	1	0	41	1	7	0	0	1	51	51	7	0	36	0	5	0	0	0	72	68	0	0	45	3	8	0	0	5	63	68	2	0	38	2	15	0	0	1	59	58	
08:05	0	0	52	0	10	1	0	0	63	63	2	2	44	3	7	1	0	0	60	57	0	0	41	4	5	0	0	4	61	68	1	1	0	38	2	15	1	0	58	57	
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H/TOT	1	0	236	2	29	4	0	1	273	275	21	7	267	4	29	1	0	1	321	301	0	0	2	16	5	25	4	1	0	212	212	5	2	131	8	48	4	0	1	189	186
09:00	0	0	51	0	5	1	0	0	57	57	2	1	46	0	4	1	0	0	1	75	74	0	0	25	2	3	0	0	2	33	34	2	0	28	2	13	1	0	46	44	
09:05	1	0	51	0	6	2	0	0	60	60	2	2	48	0	4	0	0	0	68	65	0	0	28																		



TIME	F->C										F->D										F->E										F->F									
	P/C	M/C	CAR	TAXI	LEV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LEV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LEV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LEV	OGV1	OGV2	PSV	TOT	PCU
00:00	0	0	4	2	0	0	0	6	6	0	0	2	0	0	0	0	0	3	3.5	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	1			
00:05	0	0	7	0	1	0	0	8	8	0	0	6	0	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
00:30	0	0	1	0	1	1	0	3	3.5	0	0	2	1	0	1	0	0	4	4.5	0	0	1	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0			
00:45	0	0	3	0	0	1	0	4	4.5	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
HITOT	0	0	15	2	2	2	0	21	22	0	0	12	1	1	2	0	0	15	17	0	0	1	0	0	0	0	2	3	5	0	0	0	1	0	0	1	1			
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HITOT	0	0	5	4	0	0	0	9	9	0	0	4	1	3	1	0	0	9	9.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
02:15	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	1	2.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
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02:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HITOT	0	0	4	1	0	1	0	6	6.5	0	0	1	0	1	0	1	0	3	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
03:00	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	1	0	5	5.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
03:15	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
03:30	0	0	1	0	1	2	0	4	4	0	0	1	0	1	1	0	0	3	4.8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
03:45	1	0	3	0	1	0	0	5	4.2	0	0	0	0	0	0	0	2	2	4.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
HITOT	1	0	4	0	3	2	0	9	10.2	0	0	3	1	1	2	4	0	11	17.2	0	0	1	0	0	0	0	0	2	2.5	0	0	0	1	0	0	0	1	1		
04:00	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
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HITOT	2	0	8	1	0	2	0	1	14	14.4	0	0	4	1	3	3	0	11	12.5	0	0	4	0	1	0	0	0	5	5	0	0	0	1	0	1	0	2	2.5		
06:00	0	0	5	0	0	3	0	8	8.5	0	0	5	0	1	0	0	0	6	6	0	0	6	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0		
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HITOT	0	0	39	3	6	5	0	53	55.5	0	0	13	2	6	2	0	0	42	42.4	0	0	16	0	3	0	0	1	28	21	0	0	0	0	0	0	0	0	0		
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HITOT	2	1	131	12	38	4	0	3	191	193.8	0	0	64	2	11	3	0	4	84	89.5	0	1	24	1	8	1	0	0	35	34.9	0	0	0	0	1	1	0	2	2.5	
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08:45	2	0	28	2	10	0	0	3	45	46.4	1	0	15	1	1	1	0	0	29	19.7	0	0	4	0	1	1	0	0	6	6.5	0	0	0	0	0	0	0	0	0	
HITOT	4	1	147	8	38	3	0	4	205	206.7	1	0	83	5	21	3	0	0	113	113.7	1	0	34	1	14	2	0	1	53	54.2	0	0	2	0	0	0	0	2	2	
09:00	0	0	29	1	6	2	0	0	38	39	0	0	15	0	5	1	0	0	22	22.5	0	0	10	0	0	1	0	1	12	13.5	0	0	0	0	0	0	0	0	0	
09:15	0	0	27	1	4	1	0	2	35	37.5	1	0	15	2	6	2	1	0	31	32.5	0	0	17	0	3	1	0	0	21	21.5	0	0	0	0	0	0	0	0	0	
09:30	0	1	24	3	7	1	0	0																																

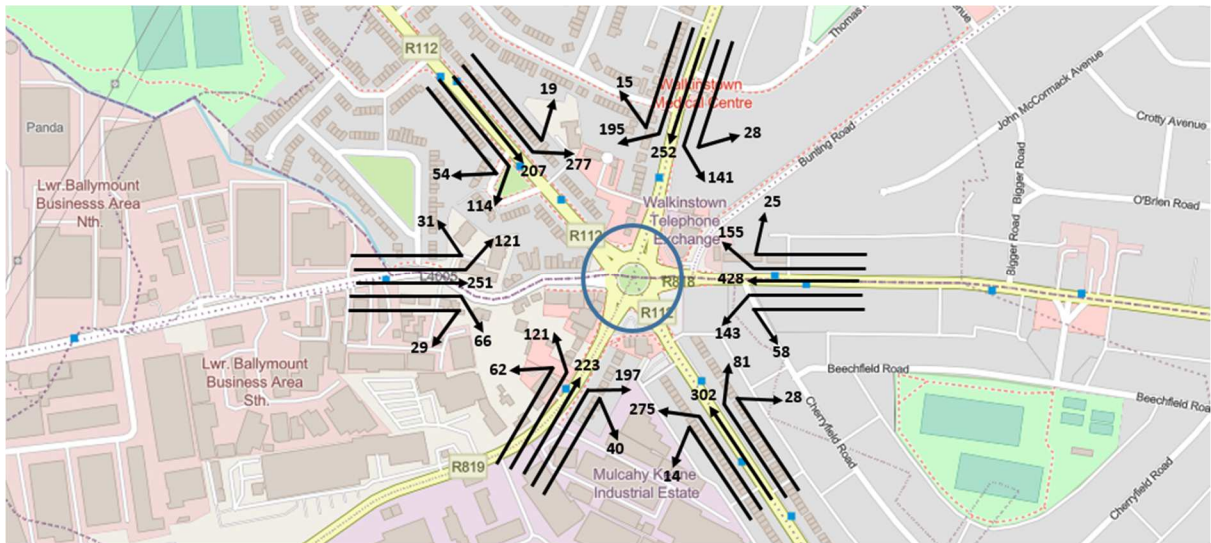
MRCL

**TRANSPORT
PLANNING PROFESSIONAL**

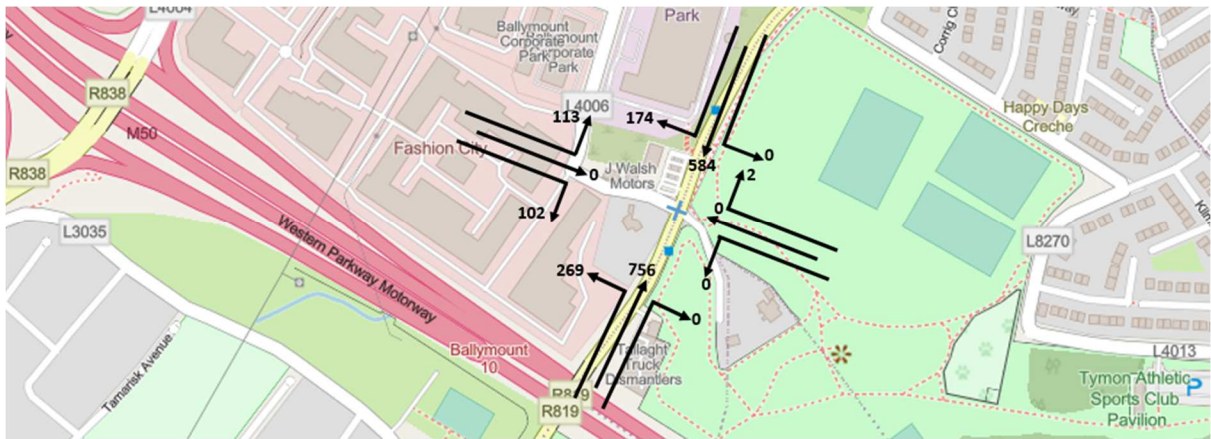
APPENDIX

3

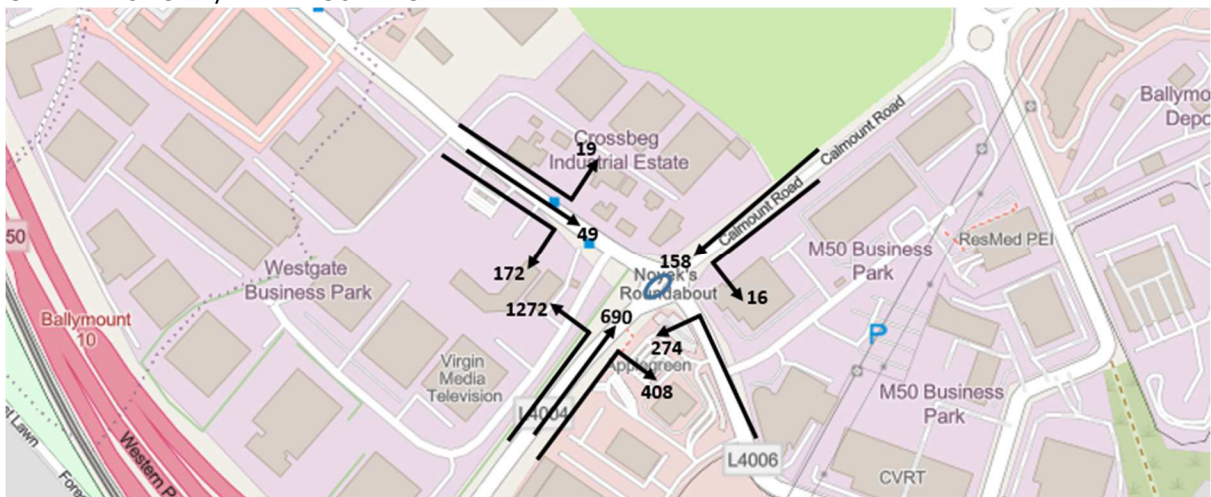
**FLOW
DIAGRAMS**



WALKINSTOWN ROUNDABOUT

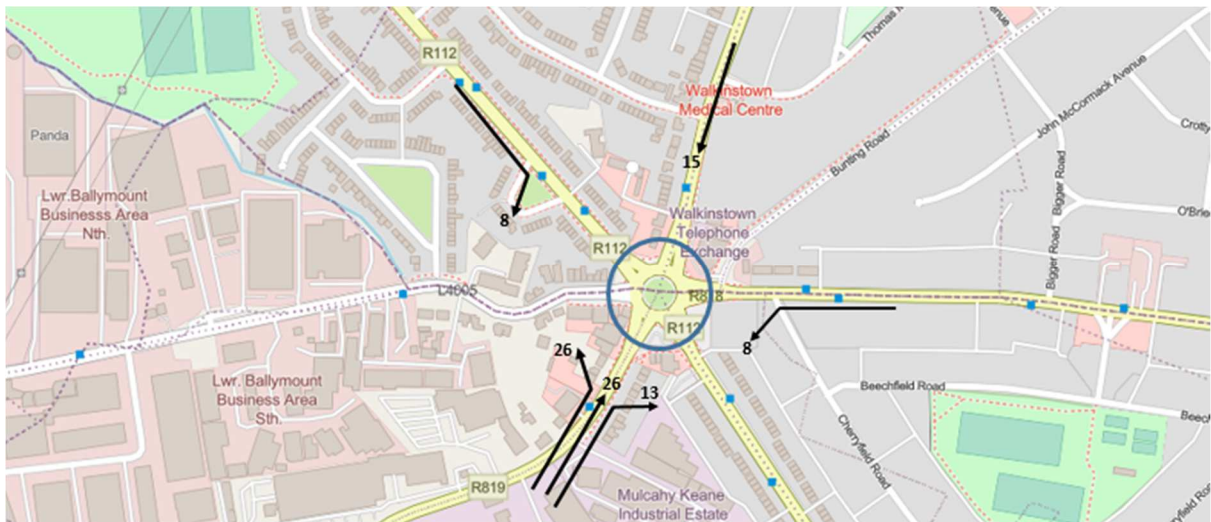


GREENHILLS ROAD / BALLYMOUNT ROAD

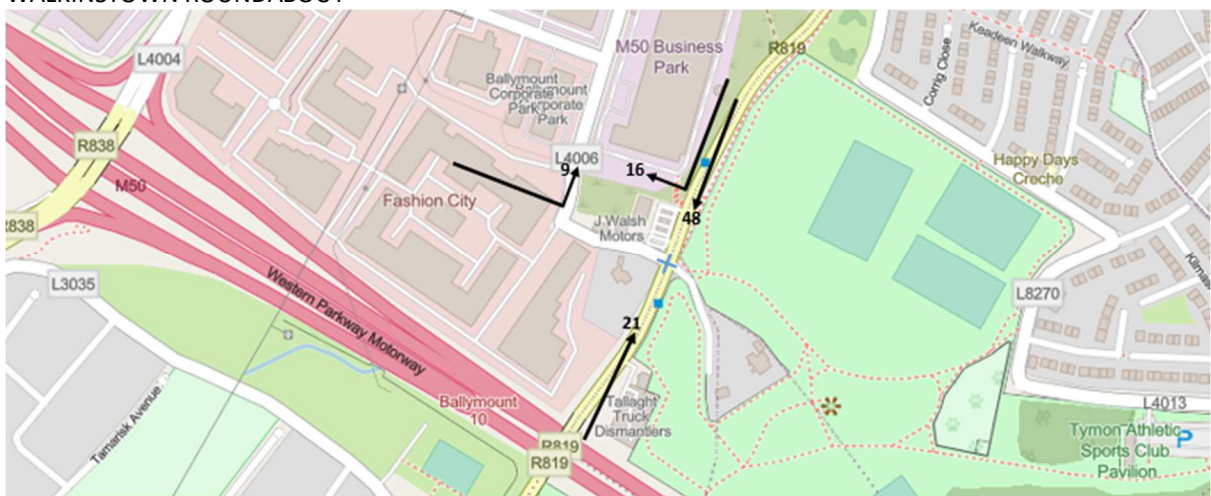


NOYEK'S ROUNDABOUT

Diagram 1 – 2019 AM Peak (0800 to 0900)



WALKINSTOWN ROUNDABOUT



GREENHILLS ROAD / BALLYMOUNT ROAD



NOYEK'S ROUNDABOUT

Diagram 3 – Trips generated by proposed development – AM Peak

MRCL

**TRANSPORT
PLANNING PROFESSIONAL**

APPENDIX

4

**TRICS
OUTPUT**

Calculation Reference: AUDIT-306901-211230-1230

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED

TOTAL VEHICLESSelected regions and areas:

02	SOUTH EAST	
	BD BEDFORDSHIRE	2 days
	ES EAST SUSSEX	1 days
	EX ESSEX	1 days
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
	SF SUFFOLK	2 days
05	EAST MIDLANDS	
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	1 days
11	SCOTLAND	
	SA SOUTH AYSRSHIRE	1 days
	SR STIRLING	2 days
13	MUNSTER	
	WA WATERFORD	1 days
14	LEINSTER	
	LU LOUTH	1 days
15	GREATER DUBLIN	
	DL DUBLIN	3 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
 Actual Range: 51 to 332 (units:)
 Range Selected by User: 50 to 372 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 23/10/20

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

Selected survey days:

Monday	1 days
Tuesday	12 days
Wednesday	3 days
Thursday	4 days
Friday	2 days

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

Selected survey types:

Manual count	22 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	12
Suburban Area (PPS6 Out of Centre)	8
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Development Zone	1
Residential Zone	13
Built-Up Zone	5
No Sub Category	3

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

Secondary Filtering selection:

Use Class:

C3	22 days
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This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days
25,001 to 50,000	10 days
50,001 to 100,000	2 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	6 days
75,001 to 100,000	1 days
125,001 to 250,000	5 days
250,001 to 500,000	5 days
500,001 or More	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	10 days
1.1 to 1.5	12 days

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

Travel Plan:

Yes	2 days
No	20 days

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

PTAL Rating:

No PTAL Present	22 days
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This data displays the number of selected surveys with PTAL Ratings.

11	MS-03-C-02 SOUTH FERRY QUAY LIVERPOOL BRUNSWICK DOCK Suburban Area (PPS6 Out of Centre) Development Zone Total No of Dwellings: 184 Survey date: TUESDAY 13/11/18	BLOCKS OF FLATS	MERSEYSIDE	Survey Type: MANUAL
12	NF-03-C-01 PAGE STAIR LANE KING'S LYNN Edge of Town Centre Built-Up Zone Total No of Dwellings: 51 Survey date: THURSDAY 11/12/14	BLOCKS OF FLATS	NORFOLK	Survey Type: MANUAL
13	NF-03-C-02 HALL ROAD NORWICH LAKENHAM Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 82 Survey date: MONDAY 18/11/19	MIXED FLATS & HOUSES	NORFOLK	Survey Type: MANUAL
14	NT-03-C-02 CASTLE MARINA ROAD NOTTINGHAM Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 135 Survey date: WEDNESDAY 09/11/16	HOUSES (SPLIT INTO FLATS)	NOTTINGHAMSHIRE	Survey Type: MANUAL
15	SA-03-C-01 RACECOURSE ROAD AYR Edge of Town Centre Residential Zone Total No of Dwellings: 51 Survey date: TUESDAY 16/09/14	BLOCK OF FLATS	SOUTH AYRSHIRE	Survey Type: MANUAL
16	SF-03-C-01 STATION HILL BURY ST EDMUNDS Edge of Town Centre Built-Up Zone Total No of Dwellings: 85 Survey date: THURSDAY 18/12/14	BLOCKS OF FLATS	SUFFOLK	Survey Type: MANUAL
17	SF-03-C-04 SAINT MARY'S ROAD IPSWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 56 Survey date: WEDNESDAY 16/09/20	BLOCKS OF FLATS	SUFFOLK	Survey Type: MANUAL
18	SR-03-C-01 FORTHESIDE WAY STIRLING Edge of Town Centre No Sub Category Total No of Dwellings: 80 Survey date: WEDNESDAY 18/06/14	FLATS	STIRLING	Survey Type: MANUAL
19	SR-03-C-03 KERSEBONNY ROAD STIRLING CAMBUSBARRON Edge of Town Residential Zone Total No of Dwellings: 82 Survey date: TUESDAY 01/09/20	BLOCK OF FLATS & TERRACED	STIRLING	Survey Type: MANUAL

20	SY-03-C-01 HELLIS STREET BARNSELEY	BLOCKS OF FLATS		SOUTH YORKSHIRE
	Edge of Town Centre Built-Up Zone Total No of Dwellings: 112			
	Survey date: TUESDAY		08/09/20	Survey Type: MANUAL
21	WA-03-C-01 UPPER YELLOW ROAD WATERFORD	BLOCKS OF FLATS		WATERFORD
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51			
	Survey date: TUESDAY		12/05/15	Survey Type: MANUAL
22	WM-03-C-04 GILLQUART WAY COVENTRY PARKSIDE	BLOCKS OF FLATS		WEST MIDLANDS
	Edge of Town Centre Residential Zone Total No of Dwellings: 55			
	Survey date: FRIDAY		11/11/16	Survey Type: MANUAL

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 633 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	22	105	0.031	19.721	22	105	0.132	83.542	22	105	0.163	103.263
08:00 - 09:00	22	105	0.058	36.704	22	105	0.190	120.245	22	105	0.248	156.949
09:00 - 10:00	22	105	0.062	39.169	22	105	0.068	43.003	22	105	0.130	82.172
10:00 - 11:00	22	105	0.054	33.965	22	105	0.070	44.373	22	105	0.124	78.338
11:00 - 12:00	22	105	0.059	37.251	22	105	0.081	51.221	22	105	0.140	88.472
12:00 - 13:00	22	105	0.087	54.781	22	105	0.086	54.234	22	105	0.173	109.015
13:00 - 14:00	22	105	0.075	47.660	22	105	0.084	53.412	22	105	0.159	101.072
14:00 - 15:00	22	105	0.082	51.768	22	105	0.078	49.303	22	105	0.160	101.071
15:00 - 16:00	22	105	0.091	57.794	22	105	0.064	40.264	22	105	0.155	98.058
16:00 - 17:00	22	105	0.118	74.503	22	105	0.069	43.825	22	105	0.187	118.328
17:00 - 18:00	22	105	0.161	102.167	22	105	0.085	53.686	22	105	0.246	155.853
18:00 - 19:00	22	105	0.158	99.702	22	105	0.096	60.534	22	105	0.254	160.236
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:		1.036	655.185			1.103	697.642			2.139	1352.827	

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	51 - 332 (units:)
Survey date date range:	01/01/13 - 23/10/20
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	4

Calculation Reference: AUDIT-306901-211230-1252

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : B - BUSINESS PARK

TOTAL VEHICLESSelected regions and areas:

02 SOUTH EAST	
EX ESSEX	1 days
03 SOUTH WEST	
DV DEVON	1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
WY WEST YORKSHIRE	1 days
08 NORTH WEST	
CH CHESHIRE	1 days
10 WALES	
CF CARDIFF	1 days
12 CONNAUGHT	
CS SLIGO	1 days
15 GREATER DUBLIN	
DL DUBLIN	1 days
17 ULSTER (NORTHERN IRELAND)	
AN ANTRIM	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 1281 to 2900 (units: sqm)
 Range Selected by User: 500 to 3000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 18/05/18

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

Selected survey days:

Monday	2 days
Wednesday	2 days
Thursday	3 days
Friday	1 days

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

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	4
Neighbourhood Centre (PPS6 Local Centre)	2
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	1
Development Zone	1

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

Secondary Filtering selection:

Use Class:

Not Known 8 days

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

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	2 days
15,001 to 20,000	1 days
25,001 to 50,000	1 days

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

Population within 5 miles:

5,000 or Less	1 days
5,001 to 25,000	1 days
50,001 to 75,000	1 days
125,001 to 250,000	2 days
250,001 to 500,000	2 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	4 days

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

Travel Plan:

No 8 days

LIST OF SITES relevant to selection parameters

1	AN-02-B-03 BUSINESS PARK BELMONT ROAD BELFAST		ANTRIM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 1790 sqm Survey date: THURSDAY 19/10/17		Survey Type: MANUAL
2	CF-02-B-06 BUSINESS PARK MALTHOUSE AVENUE CARDIFF PONTPRENNAU Edge of Town No Sub Category Total Gross floor area: 1642 sqm Survey date: MONDAY 12/03/18		CARDIFF Survey Type: MANUAL
3	CH-02-B-01 BUSINESS PARK WINTERTON WAY MACCLESFIELD		CHESHIRE
	Edge of Town Development Zone Total Gross floor area: 2395 sqm Survey date: MONDAY 19/09/16		Survey Type: MANUAL
4	CS-02-B-01 BUSINESS PARK AIRPORT ROAD STRANDHILL KILLASPUGBRONE Free Standing (PPS6 Out of Town) Out of Town Total Gross floor area: 2229 sqm Survey date: THURSDAY 27/10/16		SLIGO Survey Type: MANUAL
5	DL-02-B-06 OFFICE PARK MAIN STREET DUBLIN DUNDRUM Neighbourhood Centre (PPS6 Local Centre) High Street Total Gross floor area: 2400 sqm Survey date: WEDNESDAY 01/10/14		DUBLIN Survey Type: MANUAL
6	DV-02-B-01 BUSINESS PARK MANATON CLOSE EXETER MATFORD BUSINESS PARK Edge of Town Commercial Zone Total Gross floor area: 1500 sqm Survey date: WEDNESDAY 05/07/17		DEVON Survey Type: MANUAL
7	EX-02-B-01 BUSINESS PARK BRUNEL COURT COLCHESTER SEVERALLS INDUSTRIAL PK Edge of Town Industrial Zone Total Gross floor area: 2900 sqm Survey date: FRIDAY 18/05/18		ESSEX Survey Type: MANUAL
8	WY-02-B-03 BUSINESS PARK SCRIFTAN LANE WETHERBY KIRK DEIGHTON Neighbourhood Centre (PPS6 Local Centre) Village Total Gross floor area: 1281 sqm Survey date: THURSDAY 15/09/16		WEST YORKSHIRE Survey Type: MANUAL

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

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

TOTAL VEHICLES

Calculation factor: 100 sqm

Estimated TRIP rate value per 1327 SQM shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 00:30												
00:30 - 01:00												
01:00 - 01:30												
01:30 - 02:00												
02:00 - 02:30												
02:30 - 03:00												
03:00 - 03:30												
03:30 - 04:00												
04:00 - 04:30												
04:30 - 05:00												
05:00 - 05:30												
05:30 - 06:00												
06:00 - 06:30												
06:30 - 07:00												
07:00 - 07:30	8	2017	0.204	2.714	8	2017	0.062	0.822	8	2017	0.266	3.536
07:30 - 08:00	8	2017	0.341	4.523	8	2017	0.087	1.151	8	2017	0.428	5.674
08:00 - 08:30	8	2017	0.465	6.168	8	2017	0.068	0.905	8	2017	0.533	7.073
08:30 - 09:00	8	2017	0.762	10.115	8	2017	0.136	1.809	8	2017	0.898	11.924
09:00 - 09:30	8	2017	0.750	9.950	8	2017	0.174	2.303	8	2017	0.924	12.253
09:30 - 10:00	8	2017	0.514	6.825	8	2017	0.260	3.454	8	2017	0.774	10.279
10:00 - 10:30	8	2017	0.390	5.181	8	2017	0.248	3.289	8	2017	0.638	8.470
10:30 - 11:00	8	2017	0.273	3.618	8	2017	0.248	3.289	8	2017	0.521	6.907
11:00 - 11:30	8	2017	0.235	3.125	8	2017	0.198	2.631	8	2017	0.433	5.756
11:30 - 12:00	8	2017	0.353	4.687	8	2017	0.273	3.618	8	2017	0.626	8.305
12:00 - 12:30	8	2017	0.204	2.714	8	2017	0.372	4.934	8	2017	0.576	7.648
12:30 - 13:00	8	2017	0.279	3.701	8	2017	0.328	4.358	8	2017	0.607	8.059
13:00 - 13:30	8	2017	0.316	4.194	8	2017	0.353	4.687	8	2017	0.669	8.881
13:30 - 14:00	8	2017	0.366	4.852	8	2017	0.273	3.618	8	2017	0.639	8.470
14:00 - 14:30	8	2017	0.310	4.112	8	2017	0.359	4.770	8	2017	0.669	8.882
14:30 - 15:00	8	2017	0.291	3.865	8	2017	0.409	5.427	8	2017	0.700	9.292
15:00 - 15:30	8	2017	0.279	3.701	8	2017	0.316	4.194	8	2017	0.595	7.895
15:30 - 16:00	8	2017	0.304	4.029	8	2017	0.341	4.523	8	2017	0.645	8.552
16:00 - 16:30	8	2017	0.242	3.207	8	2017	0.533	7.072	8	2017	0.775	10.279
16:30 - 17:00	8	2017	0.229	3.043	8	2017	0.558	7.401	8	2017	0.787	10.444
17:00 - 17:30	8	2017	0.167	2.220	8	2017	0.948	12.582	8	2017	1.115	14.802
17:30 - 18:00	8	2017	0.130	1.727	8	2017	0.545	7.237	8	2017	0.675	8.964
18:00 - 18:30	8	2017	0.118	1.562	8	2017	0.242	3.207	8	2017	0.360	4.769
18:30 - 19:00	8	2017	0.074	0.987	8	2017	0.229	3.043	8	2017	0.303	4.030
19:00 - 19:30												
19:30 - 20:00												
20:00 - 20:30												
20:30 - 21:00												
21:00 - 21:30												
21:30 - 22:00												
22:00 - 22:30												
22:30 - 23:00												
23:00 - 23:30												
23:30 - 24:00												
Total Rates:			7.596	100.820			7.560	100.324			15.156	201.144

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 1281 - 2900 (units: sqm)
 Survey date date range: 01/01/13 - 18/05/18
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-306901-211230-1212

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
 Category : D - NURSERY
TOTAL VEHICLES

Selected regions and areas:

02 SOUTH EAST	
ES EAST SUSSEX	1 days
03 SOUTH WEST	
WL WILTSHIRE	1 days
04 EAST ANGLIA	
CA CAMBRIDGESHIRE	1 days
05 EAST MIDLANDS	
DS DERBYSHIRE	1 days
LE LEICESTERSHIRE	1 days
06 WEST MIDLANDS	
SH SHROPSHIRE	1 days
WK WARWICKSHIRE	1 days
08 NORTH WEST	
CH CHESHIRE	1 days
09 NORTH	
TV TEES VALLEY	1 days
10 WALES	
BG BRIDGEND	1 days
11 SCOTLAND	
DU DUNDEE CITY	1 days
SR STIRLING	1 days
12 CONNAUGHT	
RO ROSCOMMON	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 150 to 500 (units: sqm)
 Range Selected by User: 120 to 500 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 12/07/18

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 12/07/18

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

Selected survey days:

Monday	4 days
Tuesday	1 days
Wednesday	1 days
Thursday	3 days
Friday	4 days

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

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	7
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Industrial Zone	1
Residential Zone	10
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

E(f)	13 days
------	---------

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	2 days
10,001 to 15,000	1 days
15,001 to 20,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	4 days
50,001 to 100,000	1 days

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

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	5 days
125,001 to 250,000	3 days
250,001 to 500,000	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	10 days

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

Travel Plan:

No	13 days
----	---------

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

PTAL Rating:

No PTAL Present	13 days
-----------------	---------

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

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LIST OF SITES relevant to selection parameters (Cont.)

10	SR-04-D-01 HENDERSON STREET STIRLING BRIDGE OF ALLAN Edge of Town No Sub Category Total Gross floor area: 250 sqm Survey date: MONDAY 16/06/14	NURSERY	STIRLING	Survey Type: MANUAL
11	TV-04-D-01 COTSWOLD DRIVE REDCAR Edge of Town Residential Zone Total Gross floor area: 150 sqm Survey date: FRIDAY 19/05/17	NURSERY	TEES VALLEY	Survey Type: MANUAL
12	WK-04-D-01 THE RIDGEWAY STRATFORD UPON AVON Edge of Town Residential Zone Total Gross floor area: 340 sqm Survey date: FRIDAY 29/06/18	NURSERY	WARWICKSHIRE	Survey Type: MANUAL
13	WL-04-D-01 SHREWSBURY ROAD SWINDON WALCOT Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 500 sqm Survey date: THURSDAY 22/09/16	NURSERY	WILTSHIRE	Survey Type: MANUAL

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

TOTAL VEHICLES

Calculation factor: 100 sqm

Estimated TRIP rate value per 352 SQM shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00	1	400	0.000	0.000	1	400	0.000	0.000	1	400	0.000	0.000
07:00 - 08:00	13	344	2.458	8.651	13	344	1.318	4.640	13	344	3.776	13.291
08:00 - 09:00	13	344	4.312	15.178	13	344	3.329	11.718	13	344	7.641	26.896
09:00 - 10:00	13	344	1.899	6.685	13	344	1.810	6.370	13	344	3.709	13.055
10:00 - 11:00	13	344	0.782	2.752	13	344	0.581	2.045	13	344	1.363	4.797
11:00 - 12:00	13	344	0.916	3.224	13	344	0.626	2.202	13	344	1.542	5.426
12:00 - 13:00	13	344	1.519	5.348	13	344	1.743	6.134	13	344	3.262	11.482
13:00 - 14:00	13	344	1.050	3.696	13	344	1.452	5.112	13	344	2.502	8.808
14:00 - 15:00	13	344	1.095	3.853	13	344	1.028	3.618	13	344	2.123	7.471
15:00 - 16:00	13	344	0.938	3.303	13	344	1.408	4.954	13	344	2.346	8.257
16:00 - 17:00	13	344	1.832	6.449	13	344	2.011	7.078	13	344	3.843	13.527
17:00 - 18:00	13	344	2.703	9.516	13	344	3.552	12.504	13	344	6.255	22.020
18:00 - 19:00	12	361	0.208	0.732	12	361	0.717	2.522	12	361	0.925	3.254
19:00 - 20:00	1	400	0.000	0.000	1	400	0.000	0.000	1	400	0.000	0.000
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			19.712	69.387			19.575	68.897			39.287	138.284

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	150 - 500 (units: sqm)
Survey date date range:	01/01/13 - 12/07/18
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

MRCL

**TRANSPORT
PLANNING PROFESSIONAL**

APPENDIX

5

**ARCADY AND
PICADY
OUTPUT**

ARCADY OUTPUT – WALKINSTOWN ROUNDABOUT

<h1>Junctions 9</h1>
ARCADY 9 - Roundabout Module
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Filename: walk rbout existing flows.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 08/03/2021 14:41:53

» [2021, AM](#)

» [2021, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2021										
Arm 1	3.6	17.65	0.79	C	-3 % [Arm 3]	6.5	26.83	0.89	D	2 % [Arm 1]
Arm 2	7.7	32.87	0.91	D		4.6	22.26	0.84	C	
Arm 3	11.3	49.46	0.94	E		2.4	13.46	0.71	B	
Arm 4	7.3	47.86	0.91	E		5.0	22.53	0.86	C	
Arm 5	1.5	9.74	0.60	A		1.4	8.67	0.58	A	
Arm 6	2.5	11.83	0.72	B		2.0	10.51	0.68	B	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2021	AM	DIRECT	08:00	09:00	60	15
D2	2021	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	29.27	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-3	Arm 3

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Grenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2021	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	8.00	37.00	73.00	54.00	3.00
	2	6.00	0.00	10.00	40.00	97.00	31.00
	3	7.00	5.00	0.00	8.00	51.00	66.00
	4	68.00	58.00	14.00	0.00	14.00	38.00
	5	36.00	49.00	20.00	6.00	0.00	6.00
	6	6.00	63.00	58.00	37.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	5.00	35.00	61.00	45.00	2.00
		2	3.00	0.00	17.00	45.00	110.00	42.00
		3	11.00	4.00	0.00	4.00	64.00	79.00
		4	60.00	58.00	9.00	0.00	12.00	33.00
		5	27.00	61.00	15.00	5.00	0.00	10.00
		6	6.00	85.00	48.00	38.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	6.00	35.00	68.00	61.00	16.00
		2	7.00	0.00	18.00	38.00	121.00	35.00
		3	26.00	8.00	0.00	0.00	72.00	76.00
		4	46.00	45.00	5.00	0.00	15.00	22.00
		5	25.00	71.00	18.00	10.00	0.00	7.00
		6	5.00	66.00	54.00	20.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	9.00	34.00	50.00	35.00	4.00
		2	9.00	12.00	0.00	20.00	100.00	47.00
		3	36.00	11.00	0.00	2.00	89.00	81.00
		4	50.00	36.00	12.00	0.00	20.00	28.00
		5	38.00	70.00	13.00	7.00	0.00	9.00
		6	2.00	63.00	46.00	20.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.79	17.65	3.6	C
2	0.91	32.87	7.7	D
3	0.94	49.46	11.3	E
4	0.91	47.86	7.3	E
5	0.60	9.74	1.5	A

6	0.72	11.83	2.5	B
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	175.00	321.03	230.23	0.760	172.04	3.0	14.802	B
2	184.00	313.23	234.54	0.785	180.65	3.4	15.845	C
3	137.00	356.97	210.36	0.651	135.20	1.8	11.714	B
4	192.00	330.71	216.22	0.888	185.87	6.1	25.947	D
5	117.00	288.57	248.18	0.471	116.12	0.9	6.771	A
6	180.00	263.43	262.08	0.687	177.89	2.1	10.446	B

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	148.00	338.16	220.76	0.670	148.85	2.1	12.667	B
2	217.00	274.90	255.74	0.849	215.40	5.0	21.345	C
3	162.00	366.20	205.25	0.789	160.38	3.4	19.361	C
4	172.00	373.54	192.89	0.892	171.21	6.9	38.728	E
5	118.00	298.96	242.44	0.487	117.94	0.9	7.226	A
6	193.00	252.22	268.28	0.719	192.64	2.5	11.826	B

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	186.00	314.13	234.05	0.795	184.55	3.6	17.646	C
2	219.00	302.10	240.70	0.910	216.28	7.7	32.873	D
3	182.00	388.58	192.88	0.944	176.32	9.1	43.506	E
4	133.00	429.31	162.51	0.818	134.81	5.1	34.454	D
5	131.00	283.67	250.89	0.522	130.86	1.1	7.488	A
6	161.00	260.70	263.59	0.611	161.86	1.6	8.921	A

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	132.00	296.33	243.89	0.541	134.36	1.2	8.386	A
2	188.00	230.14	280.49	0.670	193.57	2.1	10.978	B
3	219.00	318.02	231.90	0.944	216.78	11.3	49.458	E
4	146.00	433.93	160.00	0.913	143.76	7.3	47.859	E
5	137.00	324.06	228.56	0.599	136.62	1.5	9.745	A
6	138.00	291.69	246.45	0.560	138.31	1.3	8.347	A

2021, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
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1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	18.13	C
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Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	2	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2021	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To					
		1	2	3	4	5	6
From	1	0.00	21.00	40.00	82.00	53.00	5.00
	2	9.00	16.00	16.00	34.00	75.00	26.00
	3	26.00	14.00	0.00	10.00	46.00	61.00
	4	61.00	50.00	24.00	0.00	18.00	31.00
	5	20.00	39.00	26.00	16.00	0.00	15.00
	6	8.00	66.00	54.00	23.00	8.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To					
		1	2	3	4	5	6
From	1	0.00	12.00	40.00	60.00	69.00	5.00
	2	5.00	0.00	26.00	40.00	88.00	33.00
	3	19.00	14.00	0.00	9.00	54.00	47.00
	4	36.00	43.00	0.00	0.00	25.00	28.00
	5	34.00	57.00	34.00	17.00	0.00	20.00
	6	7.00	74.00	56.00	27.00	14.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:30 - 17:45	From	1	0.00	15.00	38.00	57.00	53.00	17.00
		2	4.00	0.00	22.00	30.00	58.00	55.00
		3	21.00	12.00	0.00	19.00	54.00	50.00
		4	64.00	49.00	15.00	0.00	16.00	22.00
		5	21.00	53.00	32.00	16.00	0.00	12.00
		6	5.00	0.00	65.00	28.00	13.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:45 - 18:00	From	1	0.00	14.00	33.00	61.00	58.00	12.00
		2	4.00	0.00	16.00	37.00	76.00	42.00
		3	22.00	7.00	0.00	27.00	51.00	43.00
		4	61.00	45.00	23.00	0.00	26.00	15.00
		5	25.00	53.00	26.00	9.00	0.00	6.00
		6	15.00	49.00	61.00	3.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.89	26.83	6.5	D
2	0.84	22.26	4.6	C
3	0.71	13.46	2.4	B
4	0.86	22.53	5.0	C
5	0.58	8.67	1.4	A
6	0.68	10.51	2.0	B

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	201.00	331.12	224.65	0.895	194.54	6.5	25.993	D
2	176.00	323.25	229.00	0.769	172.92	3.1	15.308	C
3	157.00	339.21	220.18	0.713	154.64	2.4	13.299	B
4	184.00	332.63	215.18	0.855	179.04	5.0	22.530	C
5	116.00	315.96	233.03	0.498	115.03	1.0	7.566	A
6	159.00	295.48	244.36	0.651	157.20	1.8	10.129	B

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	186.00	337.21	221.28	0.841	186.67	5.8	26.827	D
2	192.00	322.80	229.25	0.838	190.52	4.6	22.262	C
3	143.00	357.06	210.31	0.680	143.17	2.2	13.459	B
4	132.00	346.85	207.43	0.636	135.14	1.8	12.954	B
5	162.00	233.29	278.75	0.581	161.61	1.4	7.657	A
6	178.00	261.62	263.08	0.677	177.77	2.0	10.511	B

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	180.00	283.44	251.01	0.717	183.14	2.7	13.815	B
2	169.00	336.98	221.41	0.763	170.13	3.4	17.960	C
3	156.00	334.41	222.83	0.700	155.92	2.3	13.416	B
4	166.00	339.02	211.70	0.784	164.48	3.3	18.459	C
5	134.00	307.08	237.94	0.563	134.05	1.3	8.671	A
6	111.00	285.58	249.83	0.444	112.22	0.8	6.598	A

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	178.00	283.17	251.17	0.709	178.15	2.5	12.368	B
2	175.00	293.37	245.52	0.713	175.85	2.6	13.086	B
3	150.00	309.97	236.34	0.635	150.48	1.8	10.547	B
4	170.00	323.19	220.32	0.772	169.99	3.3	17.859	C
5	119.00	275.14	255.61	0.466	119.43	0.9	6.628	A
6	135.00	275.55	255.38	0.529	134.71	1.1	7.440	A

<h1>Junctions 9</h1>
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: walk rabout 2024 wod.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 08/03/2021 14:19:09

[»2024 WOD, AM](#)

[»2024 WOD, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2024 WOD										
Arm 1	4.2	20.04	0.82	C	-7 % [Arm 3]	13.2	62.29	0.97	F	-4 % [Arm 1]
Arm 2	11.8	48.63	0.95	E		9.2	39.43	0.94	E	
Arm 3	27.1	99.37	1.04	F		3.2	18.13	0.77	C	
Arm 4	15.3	87.07	1.01	F		6.3	28.88	0.89	D	
Arm 5	1.7	11.01	0.64	B		1.8	10.23	0.65	B	
Arm 6	3.1	14.21	0.76	B		3.0	14.95	0.76	B	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2024 WOD	AM	DIRECT	08:00	09:00	60	15
D2	2024 WOD	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 WOD, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	48.66	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-7	Arm 3

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Greenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 WOD	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	8.00	39.00	76.00	57.00	3.00
	2	6.00	0.00	11.00	42.00	102.00	31.00
	3	8.00	5.00	0.00	9.00	54.00	66.00
	4	70.00	61.00	15.00	0.00	15.00	38.00
	5	37.00	52.00	21.00	7.00	0.00	6.00
	6	6.00	66.00	61.00	38.00	17.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	5.00	36.00	64.00	47.00	2.00
		2	3.00	0.00	18.00	48.00	116.00	44.00
		3	11.00	4.00	0.00	4.00	67.00	83.00
		4	63.00	61.00	9.00	0.00	13.00	35.00
		5	28.00	64.00	16.00	6.00	0.00	10.00
		6	6.00	89.00	50.00	40.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	6.00	37.00	71.00	63.00	6.00
		2	7.00	0.00	19.00	40.00	126.00	36.00
		3	28.00	8.00	0.00	0.00	76.00	79.00
		4	48.00	47.00	5.00	0.00	16.00	23.00
		5	26.00	75.00	19.00	10.00	0.00	7.00
		6	6.00	69.00	57.00	20.00	17.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	9.00	36.00	53.00	37.00	4.00
		2	9.00	13.00	0.00	21.00	105.00	49.00
		3	38.00	12.00	0.00	2.00	93.00	85.00
		4	52.00	38.00	13.00	0.00	21.00	30.00
		5	40.00	73.00	14.00	8.00	0.00	9.00
		6	2.00	66.00	49.00	21.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.82	20.04	4.2	C
2	0.95	48.63	11.8	E
3	1.04	99.37	27.1	F
4	1.01	87.07	15.3	F
5	0.64	11.01	1.7	B

6	0.76	14.21	3.1	B
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	183.00	336.20	221.84	0.825	178.84	4.2	19.397	C
2	192.00	327.49	226.66	0.847	187.25	4.8	20.851	C
3	142.00	370.61	202.81	0.700	139.78	2.2	13.836	B
4	199.00	341.88	210.13	0.947	189.71	9.3	35.196	E
5	123.00	292.19	246.17	0.500	122.02	1.0	7.194	A
6	188.00	273.90	256.29	0.734	185.39	2.6	12.282	B

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	154.00	352.56	212.79	0.724	155.40	2.8	16.053	C
2	229.00	287.34	248.86	0.920	225.45	8.3	33.487	D
3	169.00	383.81	195.51	0.864	165.99	5.2	27.936	D
4	181.00	387.99	185.02	0.978	176.35	13.9	71.544	F
5	124.00	308.10	237.38	0.522	123.91	1.1	7.923	A
6	201.00	261.30	263.26	0.764	200.55	3.1	14.209	B

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	183.00	329.78	225.39	0.812	181.84	3.9	20.042	C
2	228.00	304.72	239.25	0.953	224.53	11.8	48.635	E
3	191.00	392.26	190.84	1.001	181.68	14.5	62.827	F
4	139.00	433.18	160.41	0.867	144.92	8.0	63.498	F
5	137.00	286.50	249.32	0.549	136.88	1.2	7.993	A
6	169.00	274.79	255.80	0.661	170.06	2.0	10.627	B

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	139.00	311.13	235.70	0.590	141.45	1.5	9.784	A
2	197.00	243.70	272.99	0.722	206.05	2.7	15.101	C
3	230.00	337.21	221.28	1.039	217.44	27.1	99.368	F
4	154.00	447.14	152.80	1.008	146.75	15.3	87.075	F
5	144.00	331.08	224.67	0.641	143.47	1.7	11.007	B
6	145.00	301.98	240.77	0.602	145.46	1.6	9.492	A

2024 WOD, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
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1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	30.58	D
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Junction Network Options

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 WOD	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:00 - 17:15	From	1	0.00	22.00	42.00	86.00	56.00	5.00
		2	9.00	0.00	17.00	36.00	79.00	27.00
		3	27.00	15.00	0.00	10.00	48.00	64.00
		4	64.00	52.00	25.00	0.00	19.00	33.00
		5	21.00	41.00	27.00	17.00	0.00	15.00
		6	8.00	69.00	56.00	24.00	8.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:15 - 17:30	From	1	0.00	13.00	42.00	63.00	72.00	5.00
		2	5.00	0.00	27.00	42.00	92.00	34.00
		3	20.00	15.00	0.00	9.00	57.00	49.00
		4	38.00	45.00	21.00	0.00	26.00	29.00
		5	35.00	60.00	36.00	18.00	0.00	21.00
		6	7.00	78.00	59.00	29.00	14.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:30 - 17:45	From	1	0.00	1.00	39.00	60.00	56.00	17.00
		2	4.00	0.00	23.00	32.00	60.00	58.00
		3	22.00	13.00	0.00	20.00	56.00	52.00
		4	67.00	51.00	16.00	0.00	17.00	23.00
		5	22.00	56.00	34.00	17.00	0.00	13.00
		6	5.00	63.00	68.00	29.00	14.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:45 - 18:00	From	1	0.00	15.00	45.00	64.00	60.00	13.00
		2	4.00	0.00	17.00	39.00	79.00	44.00
		3	23.00	7.00	0.00	28.00	53.00	45.00
		4	63.00	47.00	24.00	0.00	27.00	16.00
		5	26.00	55.00	27.00	9.00	0.00	6.00
		6	16.00	52.00	63.00	14.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.97	62.29	13.2	F
2	0.94	39.43	9.2	E
3	0.77	18.13	3.2	C
4	0.89	28.88	6.3	D
5	0.65	10.23	1.8	B
6	0.76	14.95	3.0	B

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	211.00	328.63	226.03	0.934	202.42	8.6	31.305	D
2	168.00	336.08	221.91	0.757	165.09	2.9	15.156	C
3	164.00	337.89	220.91	0.742	161.29	2.7	14.509	B
4	193.00	330.90	216.12	0.893	186.66	6.3	26.567	D
5	121.00	312.71	234.83	0.515	119.96	1.0	7.767	A
6	165.00	291.61	246.50	0.669	163.05	2.0	10.555	B

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	195.00	374.33	200.76	0.971	190.41	13.2	62.289	F
2	200.00	353.89	212.06	0.943	193.66	9.2	39.428	E
3	150.00	364.78	206.04	0.728	150.00	2.7	16.075	C
4	159.00	356.09	202.40	0.786	161.35	4.0	23.030	C
5	170.00	262.30	262.71	0.647	169.26	1.8	9.555	A
6	187.00	294.36	244.98	0.763	185.92	3.0	14.948	B

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	173.00	360.64	208.32	0.830	180.54	5.6	37.182	E
2	177.00	356.53	210.60	0.840	180.24	6.0	32.028	D
3	163.00	354.88	211.51	0.771	162.55	3.2	18.133	C
4	174.00	356.51	202.17	0.861	172.71	5.3	28.883	D
5	142.00	320.88	230.31	0.617	142.14	1.6	10.228	B
6	179.00	300.66	241.50	0.741	179.08	2.9	14.471	B

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	197.00	307.03	237.97	0.828	197.45	5.2	22.668	C
2	183.00	327.84	226.46	0.808	184.41	4.6	22.160	C
3	156.00	335.39	222.29	0.702	156.70	2.5	13.882	B
4	177.00	337.31	212.62	0.832	177.09	5.2	25.606	D
5	123.00	287.97	248.51	0.495	123.65	1.0	7.247	A
6	152.00	285.92	249.64	0.609	153.35	1.6	9.475	A

<h1>Junctions 9</h1>
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: walk about 2024 wdev 633 units.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 31/12/2021 18:01:26

[»2024 WDEV, AM](#)
[»2024 WDEV, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2024 WDEV										
Arm 1	4.8	23.11	0.85	C	-10 % [Arm 4]	21.1	90.42	1.02	F	-7 % [Arm 1]
Arm 2	14.7	59.02	0.97	F		12.0	48.83	0.98	E	
Arm 3	34.1	121.39	1.07	F		3.8	21.73	0.80	C	
Arm 4	46.0	234.65	1.10	F		8.6	39.41	0.94	E	
Arm 5	1.8	11.47	0.65	B		1.9	10.78	0.66	B	
Arm 6	3.3	15.08	0.78	C		3.4	16.68	0.79	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. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2024 WDEV	AM	DIRECT	08:00	09:00	60	15
D2	2024 WDEV	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 WDEV, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	81.45	F

Junction Network Options

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

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Grenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 WDEV	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	9.00	39.00	80.00	57.00	3.00
	2	6.00	0.00	11.00	44.00	102.00	33.00
	3	8.00	5.00	0.00	9.00	54.00	70.00
	4	78.00	65.00	15.00	0.00	15.00	47.00
	5	37.00	52.00	21.00	7.00	0.00	6.00
	6	6.00	66.00	61.00	40.00	17.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	5.00	36.00	68.00	47.00	2.00
		2	3.00	0.00	18.00	50.00	116.00	44.00
		3	11.00	4.00	0.00	4.00	67.00	83.00
		4	69.00	64.00	9.00	0.00	13.00	41.00
		5	28.00	64.00	16.00	6.00	0.00	10.00
		6	6.00	89.00	50.00	42.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	6.00	37.00	75.00	63.00	6.00
		2	7.00	0.00	19.00	42.00	126.00	36.00
		3	28.00	8.00	0.00	0.00	76.00	79.00
		4	54.00	50.00	5.00	0.00	16.00	29.00
		5	26.00	75.00	19.00	10.00	0.00	7.00
		6	6.00	69.00	57.00	22.00	17.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	9.00	36.00	57.00	37.00	4.00
		2	9.00	13.00	0.00	23.00	105.00	49.00
		3	38.00	12.00	0.00	2.00	93.00	85.00
		4	59.00	41.00	13.00	0.00	21.00	36.00
		5	40.00	73.00	14.00	8.00	0.00	9.00
		6	2.00	66.00	49.00	23.00	7.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.85	23.11	4.8	C
2	0.97	59.02	14.7	F
3	1.07	121.39	34.1	F
4	1.10	234.65	46.0	F
5	0.65	11.47	1.8	B

6	0.78	15.08	3.3	C
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	188.00	337.66	221.03	0.851	183.16	4.8	21.609	C
2	196.00	331.95	224.19	0.874	190.37	5.6	23.689	C
3	146.00	379.19	198.07	0.737	143.38	2.6	15.786	C
4	220.00	346.70	207.51	1.060	198.35	21.6	63.166	F
5	123.00	307.14	237.91	0.517	121.95	1.1	7.694	A
6	190.00	277.05	254.55	0.746	187.22	2.8	12.887	B

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	158.00	354.51	211.71	0.746	159.71	3.1	17.844	C
2	231.00	293.50	245.45	0.941	226.68	10.0	39.543	E
3	169.00	391.32	191.36	0.883	165.73	5.9	31.547	D
4	196.00	387.30	185.40	1.057	183.48	34.2	152.668	F
5	124.00	315.48	233.30	0.532	123.93	1.1	8.222	A
6	203.00	264.52	261.48	0.776	202.50	3.3	15.080	C

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	187.00	334.54	222.76	0.839	185.52	4.6	23.113	C
2	230.00	310.62	235.99	0.975	225.20	14.7	59.023	F
3	191.00	398.81	187.22	1.020	179.96	16.9	71.587	F
4	154.00	430.31	161.97	0.951	158.84	29.3	187.532	F
5	137.00	300.00	241.86	0.566	136.84	1.3	8.554	A
6	171.00	282.82	251.36	0.680	172.08	2.2	11.506	B

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	143.00	313.90	234.17	0.611	146.00	1.6	10.536	B
2	199.00	248.74	270.20	0.736	210.79	3.0	17.850	C
3	230.00	348.18	215.21	1.069	212.80	34.1	121.388	F
4	170.00	444.70	154.13	1.103	153.37	46.0	234.646	F
5	144.00	336.97	221.42	0.650	143.48	1.8	11.465	B
6	147.00	305.63	238.74	0.616	147.56	1.6	9.934	A

2024 WDEV, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
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1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	40.62	E
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Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-7	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 WDEV	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:00 - 17:15	From	1	0.00	22.00	42.00	93.00	56.00	5.00
		2	9.00	0.00	17.00	39.00	79.00	27.00
		3	27.00	15.00	0.00	10.00	48.00	64.00
		4	68.00	54.00	25.00	0.00	19.00	37.00
		5	21.00	41.00	27.00	17.00	0.00	15.00
		6	8.00	69.00	56.00	28.00	8.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:15 - 17:30	From	1	0.00	13.00	42.00	70.00	72.00	5.00
		2	5.00	0.00	27.00	46.00	92.00	34.00
		3	20.00	15.00	0.00	9.00	57.00	49.00
		4	42.00	47.00	21.00	0.00	26.00	33.00
		5	35.00	60.00	36.00	18.00	0.00	21.00
		6	7.00	78.00	59.00	32.00	14.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:30 - 17:45	From	1	0.00	1.00	39.00	67.00	56.00	17.00
		2	4.00	0.00	23.00	35.00	60.00	58.00
		3	22.00	13.00	0.00	20.00	56.00	52.00
		4	71.00	53.00	16.00	0.00	17.00	27.00
		5	22.00	56.00	34.00	17.00	0.00	13.00
		6	5.00	63.00	68.00	33.00	14.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:45 - 18:00	From	1	0.00	15.00	45.00	71.00	60.00	13.00
		2	4.00	0.00	17.00	42.00	79.00	44.00
		3	23.00	7.00	0.00	28.00	53.00	45.00
		4	67.00	49.00	24.00	0.00	27.00	20.00
		5	26.00	55.00	27.00	9.00	0.00	6.00
		6	16.00	52.00	63.00	17.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.02	90.42	21.1	F
2	0.98	48.83	12.0	E
3	0.80	21.73	3.8	C
4	0.94	39.41	8.6	E
5	0.66	10.78	1.9	B
6	0.79	16.68	3.4	C

Main Results for each time segment**17:00 - 17:15**

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	218.00	333.55	223.31	0.976	206.06	11.9	39.385	E
2	171.00	343.63	217.73	0.785	167.65	3.3	16.995	C
3	164.00	348.94	214.80	0.764	161.01	3.0	15.953	C
4	203.00	329.49	216.88	0.936	194.37	8.6	32.609	D

5	121.00	320.26	230.65	0.525	119.92	1.1	8.051	A
6	169.00	295.86	244.15	0.692	166.84	2.2	11.348	B

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	202.00	379.40	197.95	1.020	192.88	21.1	90.417	F
2	204.00	359.49	208.96	0.976	195.36	12.0	48.232	E
3	150.00	373.30	201.32	0.745	150.02	3.0	17.577	C
4	169.00	352.73	204.23	0.828	172.23	5.4	30.291	D
5	170.00	272.68	256.96	0.662	169.19	1.9	10.158	B
6	190.00	300.98	241.32	0.787	188.73	3.4	16.682	C

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	180.00	366.29	205.20	0.877	191.82	9.2	69.790	F
2	180.00	371.27	202.45	0.889	182.29	9.7	48.832	E
3	163.00	371.03	202.58	0.805	162.22	3.8	21.735	C
4	184.00	356.90	201.96	0.911	181.78	7.6	39.413	E
5	142.00	328.91	225.87	0.629	142.16	1.7	10.780	B
6	183.00	305.76	238.67	0.767	183.05	3.4	16.239	C

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	204.00	312.31	235.05	0.868	205.71	7.5	32.616	D
2	186.00	339.36	220.10	0.845	189.48	6.2	31.843	D
3	156.00	351.41	213.43	0.731	156.90	2.9	16.191	C
4	187.00	339.51	211.43	0.884	187.00	7.6	36.789	E
5	123.00	299.16	242.33	0.508	123.69	1.0	7.628	A
6	155.00	292.01	246.28	0.629	156.63	1.7	10.214	B

<h1>Junctions 9</h1>
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: walk rabout 2029 wod.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 08/03/2021 14:26:28

[»2029 WOD, AM](#)

[»2029 WOD, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2029 WOD										
Arm 1	10.0	46.71	0.95	E	-14 % [Arm 3]	51.9	239.12	1.15	F	-12 % [Arm 1]
Arm 2	51.5	168.74	1.10	F		22.0	103.15	1.05	F	
Arm 3	100.6	345.67	1.33	F		5.9	31.69	0.88	D	
Arm 4	67.7	363.49	1.16	F		18.2	89.25	1.02	F	
Arm 5	2.0	12.09	0.68	B		2.6	13.12	0.73	B	
Arm 6	5.1	21.90	0.85	C		5.9	26.62	0.88	D	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2029 WOD	AM	DIRECT	08:00	09:00	60	15
D2	2029 WOD	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 WOD, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	167.47	F

Junction Network Options

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

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Greenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 WOD	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	9.00	42.00	83.00	62.00	3.00
	2	7.00	0.00	12.00	45.00	111.00	35.00
	3	8.00	5.00	0.00	9.00	58.00	76.00
	4	77.00	66.00	16.00	0.00	16.00	43.00
	5	40.00	56.00	22.00	7.00	0.00	7.00
	6	7.00	72.00	66.00	42.00	18.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	6.00	39.00	70.00	51.00	2.00
		2	3.00	0.00	20.00	52.00	125.00	48.00
		3	12.00	5.00	0.00	5.00	72.00	89.00
		4	68.00	66.00	10.00	0.00	14.00	37.00
		5	30.00	69.00	17.00	6.00	0.00	11.00
		6	7.00	97.00	55.00	43.00	18.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	7.00	40.00	77.00	69.00	6.00
		2	8.00	0.00	21.00	43.00	137.00	39.00
		3	30.00	9.00	0.00	0.00	82.00	86.00
		4	52.00	51.00	6.00	0.00	17.00	24.00
		5	28.00	81.00	20.00	11.00	0.00	8.00
		6	6.00	75.00	61.00	22.00	18.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	10.00	39.00	57.00	40.00	5.00
		2	10.00	14.00	0.00	22.00	114.00	53.00
		3	41.00	13.00	0.00	2.00	101.00	92.00
		4	57.00	41.00	14.00	0.00	23.00	32.00
		5	43.00	79.00	15.00	8.00	0.00	10.00
		6	2.00	72.00	53.00	22.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.95	46.71	10.0	E
2	1.10	168.74	51.5	F
3	1.33	345.67	100.6	F
4	1.16	363.49	67.7	F
5	0.68	12.09	2.0	B

6	0.85	21.90	5.1	C
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	199.00	354.58	211.68	0.940	190.16	8.8	33.842	D
2	210.00	347.79	215.43	0.975	198.37	11.6	39.922	E
3	156.00	394.25	189.74	0.822	151.98	4.0	21.952	C
4	218.00	367.50	196.18	1.111	189.52	28.5	81.349	F
5	132.00	304.86	239.17	0.552	130.79	1.2	8.217	A
6	205.00	281.36	252.16	0.813	201.07	3.9	16.536	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	168.00	376.34	199.64	0.842	170.77	6.1	33.531	D
2	248.00	312.96	234.69	1.057	230.75	28.9	92.869	F
3	183.00	404.28	184.19	0.994	173.87	13.2	58.965	F
4	195.00	404.87	175.83	1.109	175.00	48.5	214.821	F
5	133.00	312.52	234.94	0.566	132.92	1.3	8.813	A
6	220.00	270.09	258.40	0.851	218.84	5.1	21.898	C

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	199.00	356.60	210.56	0.945	195.04	10.0	46.710	E
2	248.00	327.83	226.47	1.095	225.39	51.5	168.744	F
3	207.00	406.91	182.74	1.133	181.13	39.0	144.241	F
4	150.00	438.32	157.61	0.952	154.42	44.1	273.879	F
5	148.00	296.94	243.55	0.608	147.77	1.5	9.368	A
6	182.00	292.09	246.23	0.739	184.11	3.0	14.945	B

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	151.00	329.13	225.75	0.669	158.93	2.1	14.956	B
2	213.00	264.43	261.53	0.814	256.98	7.5	111.078	F
3	249.00	398.16	187.58	1.327	187.41	100.6	345.665	F
4	167.00	464.05	143.59	1.163	143.32	67.7	363.487	F
5	155.00	324.50	228.31	0.679	154.48	2.0	12.094	B
6	156.00	307.46	237.73	0.656	157.01	2.0	11.288	B

2029 WOD, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
----------	------	---------------	-----------------------	-----------	--------------------	--------------

1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	90.48	F
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Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-12	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 WOD	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:00 - 17:15	From	1	0.00	23.00	46.00	93.00	61.00	6.00
		2	10.00	0.00	19.00	39.00	86.00	29.00
		3	29.00	16.00	0.00	11.00	52.00	70.00
		4	69.00	56.00	27.00	0.00	20.00	36.00
		5	23.00	45.00	30.00	18.00	0.00	16.00
		6	9.00	74.00	61.00	26.00	9.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:15 - 17:30	From	1	0.00	14.00	46.00	68.00	78.00	6.00
		2	6.00	0.00	29.00	46.00	100.00	37.00
		3	22.00	16.00	0.00	10.00	62.00	53.00
		4	41.00	48.00	23.00	0.00	28.00	31.00
		5	38.00	65.00	39.00	19.00	0.00	22.00
		6	8.00	84.00	64.00	31.00	15.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:30 - 17:45	From	1	0.00	1.00	43.00	65.00	60.00	19.00
		2	4.00	0.00	25.00	34.00	66.00	63.00
		3	24.00	14.00	0.00	21.00	61.00	56.00
		4	72.00	55.00	17.00	0.00	19.00	25.00
		5	24.00	61.00	36.00	18.00	0.00	14.00
		6	6.00	68.00	74.00	32.00	15.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:45 - 18:00	From	1	0.00	16.00	49.00	69.00	65.00	14.00
		2	5.00	0.00	19.00	42.00	86.00	47.00
		3	25.00	7.00	0.00	30.00	58.00	48.00
		4	69.00	51.00	26.00	0.00	29.00	17.00
		5	28.00	60.00	30.00	10.00	0.00	7.00
		6	17.00	56.00	69.00	15.00	8.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.15	239.12	51.9	F
2	1.05	103.15	22.0	F
3	0.88	31.69	5.9	D
4	1.02	89.25	18.2	F
5	0.73	13.12	2.6	B
6	0.88	26.62	5.9	D

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	229.00	351.50	213.38	1.073	204.88	24.1	66.789	F
2	183.00	351.18	213.56	0.857	177.99	5.0	22.843	C
3	178.00	354.91	211.49	0.842	173.44	4.6	21.609	C
4	208.00	353.10	204.02	1.019	192.01	16.0	51.771	F
5	132.00	328.91	225.87	0.584	130.63	1.4	9.321	A
6	179.00	308.69	237.06	0.755	176.11	2.9	14.170	B

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	212.00	402.89	184.96	1.146	184.18	51.9	197.544	F
2	218.00	361.05	208.10	1.048	201.64	21.4	74.002	F
3	163.00	370.71	202.75	0.804	163.21	4.3	23.059	C
4	171.00	370.79	194.39	0.880	177.92	9.1	59.510	F
5	183.00	286.40	249.38	0.734	181.75	2.6	13.067	B
6	202.00	321.47	229.99	0.878	199.00	5.9	26.619	D

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	188.00	388.06	193.16	0.973	189.02	50.9	239.117	F
2	192.00	376.39	199.62	0.962	191.83	21.5	103.148	F
3	176.00	374.00	200.94	0.876	174.49	5.9	31.690	D
4	188.00	379.20	189.81	0.990	181.88	15.2	72.662	F
5	153.00	335.25	222.37	0.688	153.33	2.3	13.119	B
6	195.00	319.42	231.12	0.844	195.17	5.7	25.424	D

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	213.00	334.84	222.59	0.957	218.30	45.6	199.624	F
2	199.00	364.97	205.93	0.966	198.58	22.0	102.513	F
3	168.00	368.39	204.04	0.823	168.75	5.1	26.286	D
4	192.00	368.46	195.66	0.981	188.95	18.2	89.248	F
5	135.00	311.79	235.34	0.574	135.91	1.4	9.134	A
6	165.00	309.73	236.48	0.698	168.31	2.4	13.786	B

<h1>Junctions 9</h1>
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
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Filename: walk about 2029 wdev 633 units.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 01/01/2022 12:59:16

[»2029 WDEV, AM](#)

[»2029 WDEV, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2029 WDEV										
Arm 1	11.9	51.85	0.97	F	-17 % [Arm 4]	74.4	333.20	1.20	F	-14 % [Arm 1]
Arm 2	57.2	184.33	1.11	F		29.7	136.32	1.07	F	
Arm 3	104.7	363.96	1.34	F		6.6	35.47	0.89	E	
Arm 4	120.4	636.71	1.24	F		31.7	141.27	1.06	F	
Arm 5	2.1	12.30	0.68	B		2.8	14.08	0.75	B	
Arm 6	5.3	22.71	0.86	C		7.3	31.81	0.91	D	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2029 WDEV	AM	DIRECT	08:00	09:00	60	15
D2	2029 WDEV	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 WDEV, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	224.98	F

Junction Network Options

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

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Greenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 WDEV	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	9.00	42.00	70.00	62.00	3.00
	2	7.00	0.00	12.00	47.00	111.00	35.00
	3	8.00	5.00	0.00	9.00	58.00	76.00
	4	84.00	70.00	16.00	0.00	16.00	50.00
	5	40.00	56.00	22.00	7.00	0.00	7.00
	6	7.00	72.00	66.00	44.00	18.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	6.00	39.00	73.00	51.00	2.00
		2	3.00	0.00	20.00	54.00	125.00	48.00
		3	12.00	5.00	0.00	5.00	72.00	89.00
		4	74.00	69.00	10.00	0.00	14.00	44.00
		5	30.00	69.00	17.00	6.00	0.00	11.00
		6	7.00	97.00	55.00	45.00	18.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	7.00	40.00	81.00	69.00	6.00
		2	8.00	0.00	21.00	45.00	137.00	39.00
		3	30.00	9.00	0.00	0.00	82.00	86.00
		4	58.00	54.00	6.00	0.00	17.00	31.00
		5	28.00	81.00	20.00	11.00	0.00	8.00
		6	6.00	75.00	61.00	24.00	18.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	10.00	39.00	61.00	40.00	5.00
		2	10.00	14.00	0.00	24.00	114.00	53.00
		3	41.00	13.00	0.00	2.00	101.00	92.00
		4	63.00	44.00	14.00	0.00	23.00	39.00
		5	43.00	79.00	15.00	8.00	0.00	10.00
		6	2.00	72.00	53.00	24.00	7.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

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

Results**Results Summary for whole modelled period**

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.97	51.85	11.9	F
2	1.11	184.33	57.2	F
3	1.34	363.96	104.7	F
4	1.24	636.71	120.4	F
5	0.68	12.30	2.1	B

6	0.86	22.71	5.3	C
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	186.00	354.70	211.61	0.879	180.25	5.7	25.334	D
2	212.00	338.67	220.47	0.962	201.42	10.6	36.762	E
3	156.00	388.56	192.89	0.809	152.25	3.7	20.589	C
4	236.00	369.47	195.11	1.210	190.88	45.1	118.689	F
5	132.00	307.61	237.65	0.555	130.78	1.2	8.330	A
6	207.00	280.68	252.54	0.820	202.91	4.1	16.962	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	171.00	376.41	199.60	0.857	170.97	5.8	31.130	D
2	250.00	314.96	233.58	1.070	229.91	30.7	94.922	F
3	183.00	406.39	183.02	1.000	173.08	13.7	60.132	F
4	211.00	401.42	177.70	1.187	177.45	78.7	333.429	F
5	133.00	314.69	233.73	0.569	132.93	1.3	8.918	A
6	222.00	269.45	258.75	0.858	220.76	5.3	22.707	C

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	203.00	358.21	209.67	0.968	196.89	11.9	51.845	F
2	250.00	331.72	224.32	1.114	223.49	57.2	184.334	F
3	207.00	409.69	181.20	1.142	179.76	40.9	151.135	F
4	166.00	433.41	160.28	1.036	159.88	84.8	479.828	F
5	148.00	302.77	240.32	0.616	147.73	1.6	9.688	A
6	184.00	293.58	245.41	0.750	186.16	3.2	15.702	C

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	155.00	331.45	224.46	0.691	164.54	2.3	17.215	C
2	215.00	269.83	258.54	0.832	254.10	18.1	138.200	F
3	249.00	402.15	185.37	1.343	185.22	104.7	363.957	F
4	183.00	457.01	147.43	1.241	147.36	120.4	636.706	F
5	155.00	326.68	227.10	0.683	154.49	2.1	12.298	B
6	158.00	309.00	236.88	0.667	159.10	2.1	11.733	B

2029 WDEV, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
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1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	126.03	F
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Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-14	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 WDEV	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:00 - 17:15	From	1	0.00	23.00	46.00	100.00	61.00	6.00
		2	10.00	0.00	19.00	42.00	86.00	29.00
		3	29.00	16.00	0.00	11.00	52.00	70.00
		4	73.00	58.00	27.00	0.00	20.00	40.00
		5	23.00	45.00	30.00	18.00	0.00	16.00
		6	9.00	74.00	61.00	30.00	9.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:15 - 17:30	From	1	0.00	14.00	46.00	75.00	78.00	6.00
		2	6.00	0.00	29.00	49.00	100.00	37.00
		3	22.00	16.00	0.00	10.00	62.00	53.00
		4	45.00	50.00	23.00	0.00	28.00	35.00
		5	38.00	65.00	39.00	19.00	0.00	22.00
		6	8.00	84.00	64.00	35.00	15.00	0.00

Demand (PCU/TS)

17:30 - 17:45

		To					
		1	2	3	4	5	6
From	1	0.00	1.00	43.00	72.00	60.00	19.00
	2	4.00	0.00	25.00	38.00	66.00	63.00
	3	24.00	14.00	0.00	21.00	61.00	56.00
	4	76.00	57.00	17.00	0.00	19.00	29.00
	5	24.00	61.00	36.00	18.00	0.00	14.00
	6	6.00	68.00	74.00	35.00	15.00	0.00

Demand (PCU/TS)

17:45 - 18:00

		To					
		1	2	3	4	5	6
From	1	0.00	16.00	49.00	76.00	65.00	14.00
	2	5.00	0.00	19.00	45.00	86.00	47.00
	3	25.00	7.00	0.00	30.00	58.00	48.00
	4	73.00	53.00	26.00	0.00	29.00	21.00
	5	28.00	60.00	30.00	10.00	0.00	7.00
	6	17.00	56.00	69.00	18.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.20	333.20	74.4	F
2	1.07	136.32	29.7	F
3	0.89	35.47	6.6	E
4	1.06	141.27	31.7	F
5	0.75	14.08	2.8	B
6	0.91	31.81	7.3	D

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	236.00	355.10	211.39	1.116	204.82	31.2	81.880	F
2	186.00	354.93	211.48	0.880	180.23	5.8	25.407	D
3	178.00	362.89	207.08	0.860	172.94	5.1	23.693	C

4	218.00	350.36	205.52	1.061	196.42	21.6	63.202	F
5	132.00	333.12	223.54	0.590	130.59	1.4	9.546	A
6	183.00	310.53	236.03	0.775	179.80	3.2	15.246	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	219.00	407.49	182.42	1.201	182.02	68.2	255.164	F
2	221.00	362.43	207.33	1.066	202.17	24.6	83.009	F
3	163.00	375.19	200.28	0.814	163.36	4.7	24.855	C
4	181.00	365.63	197.20	0.918	187.62	15.0	89.214	F
5	183.00	295.95	244.10	0.750	181.58	2.8	14.079	B
6	206.00	327.47	226.67	0.909	201.90	7.3	31.806	D

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	195.00	392.29	190.82	1.022	190.06	73.1	333.199	F
2	196.00	379.67	197.80	0.991	193.55	27.0	128.072	F
3	176.00	380.70	197.23	0.892	174.14	6.6	35.468	E
4	198.00	374.74	192.24	1.030	188.48	24.5	107.541	F
5	153.00	338.92	220.34	0.694	153.46	2.4	13.567	B
6	198.00	322.34	229.51	0.863	198.42	6.9	29.856	D

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	220.00	339.03	220.28	0.999	218.72	74.4	308.185	F
2	202.00	370.00	203.15	0.994	199.33	29.7	136.324	F
3	168.00	376.38	199.62	0.842	168.68	5.9	30.132	D
4	202.00	365.30	197.38	1.023	194.75	31.7	141.270	F
5	135.00	318.64	231.55	0.583	135.93	1.4	9.504	A
6	168.00	312.57	234.91	0.715	172.24	2.6	15.229	C

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: walk rabout 2039 wod.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 08/03/2021 14:32:27

- » [2039 WOD, AM](#)
- » [2039 WOD, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2039 WOD										
Arm 1	35.5	137.76	1.07	F	-20 % [Arm 4]	138.9	564.20	1.30	F	-17 % [Arm 1]
Arm 2	107.7	393.48	1.20	F		51.8	217.10	1.11	F	
Arm 3	144.0	514.77	1.44	F		7.1	32.94	0.91	D	
Arm 4	107.6	569.76	1.23	F		38.7	162.49	1.13	F	
Arm 5	2.4	13.22	0.71	B		3.8	17.75	0.81	C	
Arm 6	8.2	33.40	0.92	D		15.3	69.24	0.97	F	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2039 WOD	AM	DIRECT	08:00	09:00	60	15
D2	2039 WOD	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 WOD, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	293.42	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-20	Arm 4

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Greenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 WOD	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	10.00	45.00	88.00	66.00	4.00
	2	7.00	0.00	12.00	48.00	118.00	38.00
	3	9.00	5.00	0.00	10.00	62.00	81.00
	4	82.00	71.00	17.00	0.00	17.00	46.00
	5	43.00	60.00	24.00	8.00	0.00	7.00
	6	7.00	76.00	71.00	44.00	19.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	6.00	42.00	74.00	55.00	2.00
		2	4.00	0.00	21.00	55.00	134.00	51.00
		3	13.00	5.00	0.00	5.00	77.00	95.00
		4	72.00	70.00	10.00	0.00	15.00	40.00
		5	32.00	74.00	18.00	6.00	0.00	12.00
		6	7.00	103.00	58.00	46.00	19.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	7.00	43.00	82.00	73.00	7.00
		2	8.00	0.00	22.00	46.00	146.00	42.00
		3	32.00	10.00	0.00	0.00	87.00	92.00
		4	55.00	54.00	6.00	0.00	18.00	26.00
		5	30.00	86.00	22.00	12.00	0.00	8.00
		6	6.00	80.00	65.00	24.00	20.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	11.00	41.00	61.00	43.00	5.00
		2	11.00	15.00	0.00	24.00	122.00	57.00
		3	44.00	14.00	0.00	2.00	107.00	98.00
		4	60.00	44.00	15.00	0.00	25.00	34.00
		5	46.00	84.00	16.00	9.00	0.00	11.00
		6	2.00	77.00	56.00	24.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.07	137.76	35.5	F
2	1.20	393.48	107.7	F
3	1.44	514.77	144.0	F
4	1.23	569.76	107.6	F
5	0.71	13.22	2.4	B

6	0.92	33.40	8.2	D
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	213.00	370.50	202.87	1.050	193.14	19.9	60.384	F
2	223.00	359.76	208.81	1.068	200.08	22.9	64.417	F
3	167.00	401.83	185.55	0.900	160.57	6.4	30.782	D
4	233.00	379.18	189.82	1.227	185.88	47.1	126.431	F
5	142.00	307.66	237.62	0.598	140.55	1.4	9.141	A
6	217.00	288.98	247.95	0.875	211.24	5.8	21.933	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	179.00	392.60	190.65	0.939	179.82	19.0	93.506	F
2	265.00	329.35	225.63	1.174	224.88	63.0	184.607	F
3	195.00	409.84	181.12	1.077	176.92	24.5	94.881	F
4	207.00	409.26	173.44	1.194	173.20	80.9	351.262	F
5	142.00	311.79	235.34	0.603	141.95	1.5	9.628	A
6	233.00	277.02	254.57	0.915	230.54	8.2	33.396	D

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	212.00	380.22	197.50	1.073	195.56	35.5	137.758	F
2	264.00	340.47	219.48	1.203	219.31	107.7	351.212	F
3	221.00	407.26	182.54	1.211	182.04	63.5	229.670	F
4	159.00	435.25	159.28	0.998	158.23	81.7	473.144	F
5	158.00	302.05	240.72	0.656	157.64	1.9	10.779	B
6	195.00	302.83	240.29	0.812	198.49	4.7	22.997	C

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	161.00	347.69	215.49	0.747	193.10	3.4	66.738	F
2	229.00	304.45	239.40	0.957	237.20	99.5	393.483	F
3	265.00	403.61	184.56	1.436	184.50	144.0	514.766	F
4	178.00	448.21	152.22	1.169	152.12	107.6	569.763	F
5	166.00	316.11	232.95	0.713	165.48	2.4	13.218	B
6	167.00	317.23	232.33	0.719	169.04	2.7	14.648	B

2039 WOD, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
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1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	195.11	F
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Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-17	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 WOD	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:00 - 17:15	From	1	0.00	25.00	49.00	99.00	65.00	6.00
		2	11.00	0.00	20.00	41.00	91.00	31.00
		3	31.00	17.00	0.00	12.00	55.00	74.00
		4	74.00	60.00	29.00	0.00	22.00	38.00
		5	25.00	48.00	32.00	19.00	0.00	18.00
		6	10.00	79.00	65.00	28.00	10.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:15 - 17:30	From	1	0.00	15.00	49.00	73.00	83.00	6.00
		2	6.00	0.00	31.00	49.00	107.00	40.00
		3	23.00	17.00	0.00	11.00	66.00	57.00
		4	43.00	52.00	24.00	0.00	30.00	33.00
		5	41.00	69.00	41.00	21.00	0.00	24.00
		6	8.00	90.00	68.00	33.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:30 - 17:45	From	1	0.00	1.00	46.00	69.00	64.00	20.00
		2	4.00	0.00	27.00	37.00	70.00	67.00
		3	25.00	15.00	0.00	23.00	65.00	6.00
		4	77.00	59.00	18.00	0.00	20.00	26.00
		5	25.00	65.00	39.00	19.00	0.00	15.00
		6	6.00	73.00	79.00	34.00	16.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:45 - 18:00	From	1	0.00	17.00	52.00	74.00	70.00	15.00
		2	5.00	0.00	20.00	45.00	92.00	50.00
		3	27.00	8.00	0.00	32.00	62.00	52.00
		4	73.00	55.00	27.00	0.00	31.00	18.00
		5	30.00	64.00	32.00	10.00	0.00	7.00
		6	18.00	60.00	73.00	16.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.30	564.20	138.9	F
2	1.11	217.10	51.8	F
3	0.91	32.94	7.1	D
4	1.13	162.49	38.7	F
5	0.81	17.75	3.8	C
6	0.97	69.24	15.3	F

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	244.00	368.33	204.07	1.196	199.58	44.4	113.491	F
2	194.00	355.05	211.41	0.918	186.51	7.5	30.336	D
3	189.00	362.26	207.43	0.911	181.88	7.1	29.823	D
4	223.00	366.05	196.97	1.132	191.00	32.0	87.904	F
5	142.00	334.85	222.59	0.638	140.30	1.7	10.729	B
6	192.00	318.89	231.41	0.830	187.71	4.3	19.061	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	226.00	421.94	174.43	1.296	174.27	96.1	372.480	F
2	233.00	359.27	209.08	1.114	206.07	34.4	106.755	F
3	174.00	370.77	202.73	0.858	174.45	6.7	32.937	D
4	182.00	378.32	190.29	0.956	183.66	30.3	149.492	F
5	196.00	298.75	242.55	0.808	193.88	3.8	17.748	C
6	215.00	338.49	220.57	0.975	206.98	12.3	48.274	E

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	200.00	418.64	176.25	1.135	176.14	120.0	531.022	F
2	205.00	373.82	201.04	1.020	199.08	40.3	178.653	F
3	134.00	371.21	202.48	0.662	138.63	2.0	15.028	C
4	200.00	338.62	211.91	0.944	206.09	24.2	124.002	F
5	163.00	306.91	238.04	0.685	164.57	2.3	12.502	B
6	208.00	349.50	214.49	0.970	205.04	15.3	69.244	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	228.00	358.97	209.25	1.090	209.12	138.9	564.202	F
2	212.00	372.84	201.58	1.052	200.55	51.8	217.096	F
3	181.00	371.43	202.36	0.894	176.67	6.4	30.865	D
4	204.00	376.93	191.05	1.068	189.50	38.7	162.493	F
5	143.00	320.00	230.80	0.620	143.58	1.7	10.392	B
6	175.00	319.63	231.00	0.758	186.89	3.4	24.844	C

Junctions 9
ARCADY 9 - Roundabout Module
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Filename: walk about 2039 wdev 633 units.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\ARCADY
Report generation date: 01/01/2022 13:21:48

[»2039 WDEV, AM](#)
[»2039 WDEV, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2039 WDEV										
Arm 1	43.2	163.12	1.10	F	-22 % [Arm 4]	172.7	698.28	1.34	F	-19 % [Arm 1]
Arm 2	117.7	456.17	1.22	F		62.9	258.73	1.13	F	
Arm 3	149.4	542.22	1.46	F		8.0	36.54	0.93	E	
Arm 4	162.3	830.22	1.31	F		61.4	249.05	1.17	F	
Arm 5	2.4	13.37	0.71	B		4.1	19.01	0.82	C	
Arm 6	8.8	35.45	0.92	E		19.2	84.71	1.00	F	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	13/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2039 WDEV	AM	DIRECT	08:00	09:00	60	15
D2	2039 WDEV	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 WDEV, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	363.34	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-22	Arm 4

Arms

Arms

Arm	Name	Description
1	Walkinstown Road	
2	Cromwellsfort Road	
3	St Peters Road	
4	Greenhills Road	
5	Ballymount Road	
6	Walkinstown Avenue	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	8.00	20.0	15.0	55.0	45.0	
2	3.00	8.00	20.0	15.0	55.0	45.0	

3	3.00	8.00	20.0	15.0	55.0	45.0	
4	3.00	7.50	20.0	15.0	55.0	45.0	
5	3.00	8.00	20.0	15.0	55.0	45.0	
6	3.00	8.00	20.0	15.0	55.0	45.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.553	407.752
2	0.553	407.752
3	0.553	407.752
4	0.545	396.355
5	0.553	407.752
6	0.553	407.752

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 WDEV	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15

		To					
		1	2	3	4	5	6
From	1	0.00	10.00	45.00	92.00	66.00	4.00
	2	7.00	0.00	12.00	50.00	118.00	38.00
	3	9.00	5.00	0.00	10.00	62.00	81.00
	4	89.00	74.00	17.00	0.00	17.00	53.00
	5	43.00	60.00	24.00	8.00	0.00	7.00
	6	7.00	76.00	71.00	46.00	19.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:15 - 08:30	From	1	0.00	6.00	42.00	78.00	55.00	2.00
		2	4.00	0.00	21.00	57.00	134.00	51.00
		3	13.00	5.00	0.00	5.00	77.00	95.00
		4	79.00	73.00	10.00	0.00	15.00	46.00
		5	32.00	74.00	18.00	6.00	0.00	12.00
		6	7.00	103.00	58.00	48.00	19.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:30 - 08:45	From	1	0.00	7.00	43.00	86.00	73.00	7.00
		2	8.00	0.00	22.00	48.00	146.00	42.00
		3	32.00	10.00	0.00	0.00	87.00	92.00
		4	62.00	58.00	6.00	0.00	18.00	33.00
		5	30.00	86.00	22.00	12.00	0.00	8.00
		6	6.00	80.00	65.00	26.00	20.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
08:45 - 09:00	From	1	0.00	11.00	41.00	65.00	43.00	5.00
		2	11.00	15.00	0.00	26.00	122.00	57.00
		3	44.00	14.00	0.00	2.00	107.00	98.00
		4	67.00	47.00	15.00	0.00	25.00	41.00
		5	46.00	84.00	16.00	9.00	0.00	11.00
		6	2.00	77.00	56.00	26.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.10	163.12	43.2	F
2	1.22	456.17	117.7	F
3	1.46	542.22	149.4	F
4	1.31	830.22	162.3	F
5	0.71	13.37	2.4	B

6	0.92	35.45	8.8	E
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Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	217.00	370.51	202.87	1.070	194.31	22.7	66.372	F
2	225.00	362.06	207.54	1.084	199.66	25.3	69.605	F
3	167.00	405.19	183.69	0.909	160.19	6.8	32.290	D
4	250.00	376.39	191.34	1.307	188.29	61.7	159.399	F
5	142.00	310.12	236.26	0.601	140.53	1.5	9.265	A
6	219.00	288.81	248.04	0.883	212.94	6.1	22.740	C

08:15 - 08:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	183.00	392.67	190.62	0.960	182.98	22.7	112.551	F
2	267.00	334.14	222.98	1.197	222.41	69.9	204.889	F
3	195.00	413.04	179.35	1.087	175.63	26.2	100.754	F
4	223.00	404.81	175.86	1.268	175.75	109.0	458.816	F
5	142.00	313.42	234.44	0.606	141.96	1.5	9.722	A
6	235.00	277.18	254.48	0.923	232.25	8.8	35.446	E

08:30 - 08:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	216.00	381.56	196.76	1.098	195.48	43.2	163.124	F
2	266.00	342.48	218.37	1.218	218.23	117.7	387.983	F
3	221.00	409.24	181.45	1.218	181.00	66.2	242.000	F
4	177.00	430.36	161.94	1.093	161.82	124.1	664.745	F
5	158.00	306.29	238.38	0.663	157.61	1.9	11.080	B
6	197.00	303.71	239.81	0.821	200.72	5.1	24.750	C

08:45 - 09:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	165.00	349.76	214.34	0.770	203.96	4.3	100.875	F
2	231.00	314.97	233.58	0.989	231.28	117.4	456.172	F
3	265.00	408.47	181.88	1.457	181.82	149.4	542.220	F
4	195.00	439.62	156.90	1.243	156.86	162.3	830.223	F
5	166.00	317.45	232.21	0.715	165.50	2.4	13.372	B
6	169.00	318.79	231.46	0.730	171.24	2.9	15.455	C

2039 WDEV, 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	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
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1	untitled	Standard Roundabout		1, 2, 3, 4, 5, 6	249.07	F
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Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-19	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 WDEV	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000
5		✓	100.000
6		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:00 - 17:15	From	1	0.00	25.00	49.00	106.00	65.00	6.00
		2	11.00	0.00	20.00	45.00	91.00	31.00
		3	31.00	17.00	0.00	12.00	55.00	74.00
		4	78.00	62.00	29.00	0.00	22.00	42.00
		5	25.00	48.00	32.00	19.00	0.00	18.00
		6	10.00	79.00	65.00	31.00	10.00	0.00

Demand (PCU/TS)

		To						
		1	2	3	4	5	6	
17:15 - 17:30	From	1	0.00	15.00	49.00	80.00	83.00	6.00
		2	6.00	0.00	31.00	52.00	107.00	40.00
		3	23.00	17.00	0.00	11.00	66.00	57.00
		4	47.00	54.00	24.00	0.00	30.00	37.00
		5	41.00	69.00	41.00	21.00	0.00	24.00
		6	8.00	90.00	68.00	37.00	16.00	0.00

Demand (PCU/TS)

17:30 - 17:45

		To					
		1	2	3	4	5	6
From	1	0.00	1.00	46.00	76.00	64.00	20.00
	2	4.00	0.00	27.00	40.00	70.00	67.00
	3	25.00	15.00	0.00	23.00	65.00	6.00
	4	81.00	61.00	18.00	0.00	20.00	30.00
	5	25.00	65.00	39.00	19.00	0.00	15.00
	6	6.00	73.00	79.00	37.00	16.00	0.00

Demand (PCU/TS)

17:45 - 18:00

		To					
		1	2	3	4	5	6
From	1	0.00	17.00	52.00	81.00	70.00	15.00
	2	5.00	0.00	20.00	48.00	92.00	50.00
	3	27.00	8.00	0.00	32.00	62.00	52.00
	4	77.00	57.00	27.00	0.00	31.00	22.00
	5	30.00	64.00	32.00	10.00	0.00	7.00
	6	18.00	60.00	73.00	19.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1.34	698.28	172.7	F
2	1.13	258.73	62.9	F
3	0.93	36.54	8.0	E
4	1.17	249.05	61.4	F
5	0.82	19.01	4.1	C
6	1.00	84.71	19.2	F

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	251.00	370.37	202.95	1.237	199.11	51.9	130.803	F
2	198.00	357.25	210.20	0.942	189.06	8.9	34.313	D
3	189.00	369.15	203.62	0.928	181.00	8.0	32.785	D

4	233.00	362.58	198.86	1.172	193.90	39.1	102.258	F
5	142.00	337.29	221.24	0.642	140.27	1.7	10.896	B
6	195.00	319.60	231.02	0.844	190.32	4.7	20.261	C

17:15 - 17:30

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	233.00	423.61	173.50	1.343	173.40	111.5	432.860	F
2	236.00	360.45	208.43	1.132	206.10	38.8	119.404	F
3	174.00	375.04	200.36	0.868	174.60	7.4	36.542	E
4	192.00	373.58	192.87	0.996	190.25	40.8	193.654	F
5	196.00	305.68	238.72	0.821	193.62	4.1	19.012	C
6	219.00	342.51	218.35	1.003	208.15	15.5	57.230	F

17:30 - 17:45

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	207.00	420.99	174.95	1.183	174.89	143.6	625.263	F
2	208.00	374.05	200.91	1.035	199.57	47.3	204.357	F
3	134.00	374.58	200.62	0.668	139.30	2.1	15.824	C
4	210.00	334.32	214.26	0.980	209.87	41.0	179.227	F
5	163.00	308.23	237.31	0.687	164.83	2.3	12.716	B
6	211.00	350.07	214.17	0.985	207.32	19.2	84.710	F

17:45 - 18:00

Arm	Total Demand (PCU/TS)	Circulating flow (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	235.00	364.96	205.94	1.141	205.88	172.7	698.283	F
2	215.00	375.65	200.03	1.075	199.40	62.9	258.728	F
3	181.00	375.50	200.11	0.905	176.29	6.8	32.761	D
4	214.00	371.28	194.12	1.102	193.55	61.4	249.045	F
5	143.00	324.89	228.09	0.627	143.55	1.7	10.718	B
6	178.00	321.19	230.14	0.773	193.45	3.8	32.021	D

PICADY OUTPUT – GREENHILS ROAD / BALLYMOUNT ROAD JUNCTION

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
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Filename: Greenhills Ballymount exist.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\PICADY
Report generation date: 07/03/2021 16:52:03

- » [2021, AM](#)
- » [2021, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2021										
Stream B-ACD	0.0	16.14	0.02	C	-17 % [Stream D-ABC]	0.0	8.34	0.03	A	-15 % [Stream D-ABC]
Stream A-BCD	9.2	34.59	0.88	D		2.9	10.09	0.61	B	
Stream D-ABC	11.4	179.24	1.06	F		8.9	111.11	0.97	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin
---	-----	-----	-----	----------------	---	------	--------

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2021	AM	DIRECT	08:00	09:00	60	15
D2	2021	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021, 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	Right-Left Stagger	Two-way		30.05	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-17	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2021	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	173.00	27.00
	B	0.00	0.00	0.00	0.00	
	C	185.00	0.00	0.00	62.00	
	D	26.00	0.00	20.00	0.00	

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	155.00	33.00
	B	0.00	0.00	0.00	0.00	
	C	209.00	0.00	0.00	70.00	
	D	30.00	0.00	33.00	0.00	

Demand (PCU/TS)

08:30 - 08:45

		To			
		A	B	C	D
From	A	0.00	0.00	133.00	61.00
	B	1.00	0.00	0.00	0.00
	C	172.00	0.00	0.00	60.00
	D	28.00	0.00	33.00	0.00

Demand (PCU/TS)

08:45 - 09:00

		To			
		A	B	C	D
From	A	0.00	0.00	123.00	54.00
	B	0.00	0.00	0.00	0.00
	C	191.00	0.00	0.00	77.00
	D	30.00	0.00	27.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.02	16.14	0.0	C
A-BCD	0.88	34.59	9.2	D
A-B				
A-C				
D-ABC	1.06	179.24	11.4	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	70.14	0.000	0.00	0.0	0.000	A
A-BCD	106.42	231.81	0.459	104.46	2.0	7.084	A
A-B	0.00			0.00			
A-C	93.58			93.58			
D-ABC	46.00	71.24	0.646	44.35	1.6	31.826	D
C-ABD	0.00	107.61	0.000	0.00	0.0	0.000	A
C-D	62.00			62.00			
C-A	185.00			185.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	66.27	0.000	0.00	0.0	0.000	A
A-BCD	123.06	214.12	0.575	122.15	2.9	10.011	B
A-B	0.00			0.00			
A-C	64.94			64.94			
D-ABC	63.00	59.19	1.064	54.80	9.8	123.490	F
C-ABD	0.00	108.23	0.000	0.00	0.0	0.000	A
C-D	70.00			70.00			
C-A	209.00			209.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	56.74	0.018	0.98	0.0	16.135	C
A-BCD	179.98	204.15	0.882	173.70	9.2	29.980	D
A-B	0.00			0.00			
A-C	14.02			14.02			
D-ABC	61.00	62.75	0.972	59.45	11.4	179.243	F
C-ABD	0.00	112.02	0.000	0.00	0.0	0.000	A
C-D	60.00			60.00			
C-A	172.00			172.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	75.41	0.000	0.02	0.0	0.000	A
A-BCD	162.41	193.85	0.838	162.40	9.2	34.587	D
A-B	0.00			0.00			
A-C	14.59			14.59			
D-ABC	57.00	62.16	0.917	57.00	11.4	178.636	F
C-ABD	0.00	114.48	0.000	0.00	0.0	0.000	A
C-D	77.00			77.00			
C-A	191.00			191.00			

2021, 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	Right-Left Stagger	Two-way		18.36	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-15	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2021	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	146.00	44.00
	B	0.00	0.00	3.00	0.00
	C	143.00	0.00	0.00	50.00
	D	29.00	0.00	33.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	166.00	35.00
	B	0.00	0.00	3.00	0.00
	C	153.00	0.00	0.00	50.00
	D	28.00	0.00	32.00	0.00

Demand (PCU/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	0.00	187.00	27.00
	B	0.00	0.00	1.00	0.00
	C	162.00	0.00	0.00	40.00
	D	29.00	0.00	35.00	0.00

Demand (PCU/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	0.00	182.00	39.00
	B	0.00	0.00	0.00	0.00
	C	131.00	0.00	0.00	43.00
	D	36.00	0.00	39.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	8.34	0.0	A
A-BCD	0.61	10.09	2.9	B
A-B				
A-C				
D-ABC	0.97	111.11	8.9	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	120.38	0.025	2.97	0.0	7.663	A
A-BCD	132.37	218.69	0.605	129.60	2.8	10.087	B
A-B	0.00			0.00			
A-C	57.63			57.63			
D-ABC	62.00	76.46	0.811	58.70	3.3	44.819	E
C-ABD	0.00	110.73	0.000	0.00	0.0	0.000	A
C-D	50.00			50.00			
C-A	143.00			143.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	114.79	0.026	3.00	0.0	8.050	A
A-BCD	126.12	234.68	0.537	126.32	2.6	8.533	A
A-B	0.45			0.45			
A-C	75.42			75.42			
D-ABC	60.00	73.17	0.820	59.49	3.8	61.690	F
C-ABD	0.00	105.46	0.000	0.00	0.0	0.000	A
C-D	50.00			50.00			
C-A	153.00			153.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	108.99	0.009	1.02	0.0	8.338	A
A-BCD	111.57	250.14	0.446	112.16	2.0	6.660	A
A-B	0.00			0.00			
A-C	102.43			102.43			
D-ABC	64.00	70.91	0.902	62.18	5.6	84.636	F
C-ABD	0.00	100.26	0.000	0.00	0.0	0.000	A
C-D	40.00			40.00			
C-A	162.00			162.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	71.45	0.000	0.01	0.0	0.000	A
A-BCD	147.48	249.75	0.591	146.56	2.9	8.890	A
A-B	0.00			0.00			
A-C	73.52			73.52			
D-ABC	75.00	77.28	0.971	71.75	8.9	111.107	F
C-ABD	0.00	100.33	0.000	0.00	0.0	0.000	A
C-D	43.00			43.00			
C-A	131.00			131.00			

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Report generation date: 07/03/2021 17:04:45

- » [2024 WOD, AM](#)
- » [2024 WOD, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2024 WOD										
Stream B-ACD	0.0	16.97	0.02	C	-18 % [Stream D-ABC]	0.0	8.59	0.03	A	-19 % [Stream D-ABC]
Stream A-BCD	15.8	65.43	0.95	F		3.6	11.35	0.66	B	
Stream D-ABC	16.6	264.45	1.08	F		17.3	197.50	1.07	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin
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Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2024 WOD	AM	DIRECT	08:00	09:00	60	15
D2	2024 WOD	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 WOD, 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	Right-Left Stagger	Two-way		48.52	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-18	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2024 WOD	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	182.00	28.00
		B	0.00	0.00	0.00	0.00
		C	194.00	0.00	0.00	65.00
		D	27.00	0.00	21.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	163.00	35.00
		B	0.00	0.00	0.00	0.00
		C	219.00	0.00	0.00	73.00
		D	31.00	0.00	24.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:30 - 08:45	From	A	0.00	0.00	139.00	63.00
	From	B	1.00	0.00	0.00	0.00
	From	C	180.00	0.00	0.00	63.00
	From	D	29.00	0.00	34.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:45 - 09:00	From	A	0.00	0.00	129.00	56.00
	From	B	0.00	0.00	0.00	0.00
	From	C	200.00	0.00	0.00	81.00
	From	D	31.00	0.00	28.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.02	16.97	0.0	C
A-BCD	0.95	65.43	15.8	F
A-B				
A-C				
D-ABC	1.08	264.45	16.6	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	65.72	0.000	0.00	0.0	0.000	A
A-BCD	120.15	237.30	0.506	117.72	2.4	7.554	A
A-B	0.00			0.00			
A-C	89.85			89.85			
D-ABC	48.00	66.70	0.720	45.81	2.2	39.819	E
C-ABD	0.00	105.37	0.000	0.00	0.0	0.000	A
C-D	65.00			65.00			
C-A	194.00			194.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	64.43	0.000	0.00	0.0	0.000	A
A-BCD	142.02	219.03	0.648	140.53	3.9	11.853	B
A-B	0.00			0.00			
A-C	55.98			55.98			
D-ABC	55.00	58.83	0.935	51.50	5.7	93.303	F
C-ABD	0.00	108.32	0.000	0.00	0.0	0.000	A
C-D	73.00			73.00			
C-A	219.00			219.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	53.98	0.019	0.98	0.0	16.975	C
A-BCD	198.00	207.81	0.953	187.70	14.2	44.173	E
A-B	0.00			0.00			
A-C	4.00			4.00			
D-ABC	63.00	58.50	1.077	56.11	12.6	177.679	F
C-ABD	0.00	110.86	0.000	0.00	0.0	0.000	A
C-D	63.00			63.00			
C-A	180.00			180.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	70.53	0.000	0.02	0.0	0.000	A
A-BCD	184.34	199.53	0.924	182.76	15.8	65.432	F
A-B	0.00			0.00			
A-C	0.66			0.66			
D-ABC	59.00	56.43	1.046	54.99	16.6	264.450	F
C-ABD	0.00	111.96	0.000	0.00	0.0	0.000	A
C-D	81.00			81.00			
C-A	200.00			200.00			

2024 WOD, 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	Right-Left Stagger	Two-way		31.07	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-19	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 WOD	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	153.00	46.00
	B	0.00	0.00	3.00	0.00
	C	150.00	0.00	0.00	52.00
	D	30.00	0.00	35.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	174.00	37.00
	B	0.00	0.00	3.00	0.00
	C	161.00	0.00	0.00	52.00
	D	29.00	0.00	34.00	0.00

Demand (PCU/TS)

		To			
		A	B	C	D
17:30 - 17:45	From A	0.00	0.00	196.00	28.00
	B	0.00	0.00	1.00	0.00
	C	169.00	0.00	0.00	42.00
	D	30.00	0.00	37.00	0.00

Demand (PCU/TS)

		To			
		A	B	C	D
17:45 - 18:00	From A	0.00	0.00	191.00	40.00
	B	0.00	0.00	0.00	0.00
	C	137.00	0.00	0.00	45.00
	D	38.00	0.00	41.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	8.59	0.0	A
A-BCD	0.66	11.35	3.6	B
A-B				
A-C				
D-ABC	1.07	197.50	17.3	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	118.19	0.025	2.97	0.0	7.809	A
A-BCD	146.99	222.69	0.660	143.48	3.5	11.346	B
A-B	0.00			0.00			
A-C	52.01			52.01			
D-ABC	65.00	72.48	0.897	60.13	4.9	59.653	F
C-ABD	0.00	108.72	0.000	0.00	0.0	0.000	A
C-D	52.00			52.00			
C-A	150.00			150.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	112.01	0.027	3.00	0.0	8.255	A
A-BCD	143.72	239.89	0.599	143.86	3.4	9.745	A
A-B	0.39			0.39			
A-C	67.89			67.89			
D-ABC	63.00	68.58	0.919	61.40	6.5	99.800	F
C-ABD	0.00	102.91	0.000	0.00	0.0	0.000	A
C-D	52.00			52.00			
C-A	161.00			161.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	105.81	0.009	1.02	0.0	8.589	A
A-BCD	125.73	256.39	0.490	126.66	2.4	7.144	A
A-B	0.00			0.00			
A-C	98.27			98.27			
D-ABC	67.00	66.81	1.003	63.11	10.4	142.664	F
C-ABD	0.00	97.33	0.000	0.00	0.0	0.000	A
C-D	42.00			42.00			
C-A	169.00			169.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	66.74	0.000	0.01	0.0	0.000	A
A-BCD	163.14	255.78	0.638	162.00	3.6	9.851	A
A-B	0.00			0.00			
A-C	67.86			67.86			
D-ABC	79.00	73.87	1.069	72.04	17.3	197.501	F
C-ABD	0.00	97.19	0.000	0.00	0.0	0.000	A
C-D	45.00			45.00			
C-A	137.00			137.00			

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: Greenhills Ballymount 2024 wdev 633 units.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\PICADY
Report generation date: 01/01/2022 13:27:56

»[2024 WDEV, AM](#)
 »[2024 WDEV, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2024 WDEV										
Stream B-ACD	0.0	18.42	0.02	C	-20 % [Stream D-ABC]	0.0	8.82	0.03	A	-22 % [Stream D-ABC]
Stream A-BCD	32.0	133.48	1.04	F		5.1	13.30	0.72	B	
Stream D-ABC	31.4	486.97	1.23	F		32.1	358.74	1.17	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin
---	-----	-----	-----	----------------	---	------	--------

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2024 WDEV	AM	DIRECT	08:00	09:00	60	15
D2	2024 WDEV	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 WDEV, 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	Right-Left Stagger	Two-way		96.78	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-20	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2024 WDEV	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	194.00	32.00
		B	0.00	0.00	0.00	0.00
		C	200.00	0.00	0.00	65.00
		D	29.00	0.00	21.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	175.00	39.00
		B	0.00	0.00	0.00	0.00
		C	224.00	0.00	0.00	73.00
		D	29.00	0.00	24.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:30 - 08:45	From	A	0.00	0.00	151.00	67.00
	B	1.00	0.00	0.00	0.00	
	C	185.00	0.00	0.00	63.00	
	D	31.00	0.00	34.00	0.00	

Demand (PCU/TS)

		To				
		A	B	C	D	
08:45 - 09:00	From	A	0.00	0.00	141.00	60.00
	B	0.00	0.00	0.00	0.00	
	C	205.00	0.00	0.00	81.00	
	D	34.00	0.00	28.00	0.00	

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.02	18.42	0.0	C
A-BCD	1.04	133.48	32.0	F
A-B				
A-C				
D-ABC	1.23	486.97	31.4	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	61.53	0.000	0.00	0.0	0.000	A
A-BCD	151.24	246.06	0.615	147.55	3.7	9.197	A
A-B	0.00			0.00			
A-C	74.76			74.76			
D-ABC	50.00	62.99	0.794	47.05	3.0	50.020	F
C-ABD	0.00	102.69	0.000	0.00	0.0	0.000	A
C-D	65.00			65.00			
C-A	200.00			200.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	59.93	0.000	0.00	0.0	0.000	A
A-BCD	175.47	228.92	0.767	172.59	6.6	17.061	C
A-B	0.00			0.00			
A-C	38.53			38.53			
D-ABC	53.00	52.86	1.003	48.32	7.6	127.916	F
C-ABD	0.00	105.34	0.000	0.00	0.0	0.000	A
C-D	73.00			73.00			
C-A	224.00			224.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	49.81	0.020	0.98	0.0	18.424	C
A-BCD	218.00	210.50	1.036	199.93	24.6	74.563	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	65.00	54.11	1.201	53.09	19.5	266.866	F
C-ABD	0.00	107.48	0.000	0.00	0.0	0.000	A
C-D	63.00			63.00			
C-A	185.00			185.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	63.54	0.000	0.02	0.0	0.000	A
A-BCD	201.00	199.76	1.006	193.68	32.0	133.477	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	62.00	50.39	1.230	50.09	31.4	486.969	F
C-ABD	0.00	106.87	0.000	0.00	0.0	0.000	A
C-D	81.00			81.00			
C-A	205.00			205.00			

2024 WDEV, 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	Right-Left Stagger	Two-way		54.61	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-22	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 WDEV	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	161.00	48.00
	B	0.00	0.00	3.00	0.00
	C	160.00	0.00	0.00	52.00
	D	33.00	0.00	35.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	182.00	39.00
	B	0.00	0.00	3.00	0.00
	C	171.00	0.00	0.00	52.00
	D	33.00	0.00	34.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
17:30 - 17:45	From	A	0.00	0.00	204.00	31.00
	From	B	0.00	0.00	1.00	0.00
	From	C	179.00	0.00	0.00	42.00
	From	D	33.00	0.00	37.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
17:45 - 18:00	From	A	0.00	0.00	198.00	43.00
	From	B	0.00	0.00	0.00	0.00
	From	C	147.00	0.00	0.00	45.00
	From	D	41.00	0.00	41.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	8.82	0.0	A
A-BCD	0.72	13.30	5.1	B
A-B				
A-C				
D-ABC	1.17	358.74	32.1	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	116.25	0.026	2.97	0.0	7.943	A
A-BCD	164.42	227.38	0.723	159.76	4.7	13.297	B
A-B	0.00			0.00			
A-C	44.58			44.58			
D-ABC	68.00	69.36	0.980	60.85	7.2	78.528	F
C-ABD	0.00	106.94	0.000	0.00	0.0	0.000	A
C-D	52.00			52.00			
C-A	160.00			160.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	109.60	0.027	3.00	0.0	8.442	A
A-BCD	163.91	245.43	0.668	163.99	4.6	11.749	B
A-B	0.32			0.32			
A-C	57.77			57.77			
D-ABC	67.00	65.62	1.021	62.56	11.6	160.590	F
C-ABD	0.00	100.68	0.000	0.00	0.0	0.000	A
C-D	52.00			52.00			
C-A	171.00			171.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	103.04	0.010	1.02	0.0	8.824	A
A-BCD	150.85	262.11	0.576	151.96	3.5	8.565	A
A-B	0.00			0.00			
A-C	84.15			84.15			
D-ABC	70.00	62.98	1.112	61.84	19.8	250.455	F
C-ABD	0.00	94.79	0.000	0.00	0.0	0.000	A
C-D	42.00			42.00			
C-A	179.00			179.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	62.04	0.000	0.01	0.0	0.000	A
A-BCD	187.92	260.48	0.721	186.27	5.1	12.683	B
A-B	0.00			0.00			
A-C	53.08			53.08			
D-ABC	82.00	70.12	1.170	69.63	32.1	358.738	F
C-ABD	0.00	94.38	0.000	0.00	0.0	0.000	A
C-D	45.00			45.00			
C-A	147.00			147.00			

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: Greenhills Ballymount 2029 wod.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\PICADY
Report generation date: 07/03/2021 17:31:31

- » [2029 WOD, AM](#)
- » [2029 WOD, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2029 WOD										
Stream B-ACD	0.0	20.09	0.02	C	-24 % [Stream D-ABC]	0.0	9.19	0.03	A	-25 % [Stream D-ABC]
Stream A-BCD	44.8	188.82	1.08	F		6.7	15.41	0.78	C	
Stream D-ABC	57.6	1018.04	1.50	F		51.1	588.61	1.28	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

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

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2029 WOD	AM	DIRECT	08:00	09:00	60	15
D2	2029 WOD	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 WOD, 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	Right-Left Stagger	Two-way		171.93	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-24	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2029 WOD	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	197.00	31.00
		B	0.00	0.00	0.00	0.00
		C	211.00	0.00	0.00	71.00
		D	29.00	0.00	23.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	177.00	38.00
		B	0.00	0.00	0.00	0.00
		C	237.00	0.00	0.00	79.00
		D	34.00	0.00	26.00	0.00

Demand (PCU/TS)

08:30 - 08:45

		To			
		A	B	C	D
From	A	0.00	0.00	151.00	69.00
	B	1.00	0.00	0.00	0.00
	C	195.00	0.00	0.00	69.00
	D	31.00	0.00	37.00	0.00

Demand (PCU/TS)

08:45 - 09:00

		To			
		A	B	C	D
From	A	0.00	0.00	140.00	61.00
	B	0.00	0.00	0.00	0.00
	C	217.00	0.00	0.00	88.00
	D	34.00	0.00	30.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.02	20.09	0.0	C
A-BCD	1.08	188.82	44.8	F
A-B				
A-C				
D-ABC	1.50	1018.04	57.6	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	57.52	0.000	0.00	0.0	0.000	A
A-BCD	154.83	246.32	0.629	150.81	4.0	9.504	A
A-B	0.00			0.00			
A-C	73.17			73.17			
D-ABC	52.00	57.65	0.902	47.38	4.6	70.788	F
C-ABD	0.00	101.57	0.000	0.00	0.0	0.000	A
C-D	71.00			71.00			
C-A	211.00			211.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	55.42	0.000	0.00	0.0	0.000	A
A-BCD	180.99	228.25	0.793	177.38	7.6	19.170	C
A-B	0.00			0.00			
A-C	34.01			34.01			
D-ABC	60.00	49.35	1.216	47.97	16.6	235.470	F
C-ABD	0.00	104.20	0.000	0.00	0.0	0.000	A
C-D	79.00			79.00			
C-A	237.00			237.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	45.76	0.022	0.98	0.0	20.089	C
A-BCD	220.00	203.17	1.083	195.97	31.7	96.838	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	68.00	48.50	1.402	48.29	36.4	550.246	F
C-ABD	0.00	105.76	0.000	0.00	0.0	0.000	A
C-D	69.00			69.00			
C-A	195.00			195.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	56.27	0.000	0.02	0.0	0.000	A
A-BCD	201.00	190.96	1.053	187.90	44.8	188.816	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	64.00	42.79	1.496	42.74	57.6	1018.039	F
C-ABD	0.00	103.47	0.000	0.00	0.0	0.000	A
C-D	88.00			88.00			
C-A	217.00			217.00			

2029 WOD, 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	Right-Left Stagger	Two-way		87.27	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-25	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 WOD	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	166.00	49.00
	B	0.00	0.00	3.00	0.00
	C	163.00	0.00	0.00	57.00
	D	32.00	0.00	38.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	189.00	40.00
	B	0.00	0.00	3.00	0.00
	C	174.00	0.00	0.00	56.00
	D	32.00	0.00	36.00	0.00

Demand (PCU/TS)

		To			
		A	B	C	D
17:30 - 17:45	From A	0.00	0.00	213.00	31.00
	B	0.00	0.00	1.00	0.00
	C	184.00	0.00	0.00	45.00
	D	32.00	0.00	40.00	0.00

Demand (PCU/TS)

		To			
		A	B	C	D
17:45 - 18:00	From A	0.00	0.00	207.00	44.00
	B	0.00	0.00	0.00	0.00
	C	149.00	0.00	0.00	49.00
	D	41.00	0.00	44.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	9.19	0.0	A
A-BCD	0.78	15.41	6.7	C
A-B				
A-C				
D-ABC	1.28	588.61	51.1	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	114.30	0.026	2.97	0.0	8.082	A
A-BCD	175.89	230.10	0.764	170.21	5.7	15.025	C
A-B	0.00			0.00			
A-C	39.11			39.11			
D-ABC	70.00	65.39	1.070	59.64	10.4	105.362	F
C-ABD	0.00	105.15	0.000	0.00	0.0	0.000	A
C-D	57.00			57.00			
C-A	163.00			163.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	106.75	0.028	3.00	0.0	8.674	A
A-BCD	179.85	250.59	0.718	179.85	5.7	13.830	B
A-B	0.26			0.26			
A-C	49.88			49.88			
D-ABC	68.00	61.54	1.105	60.24	18.1	243.101	F
C-ABD	0.00	98.06	0.000	0.00	0.0	0.000	A
C-D	56.00			56.00			
C-A	174.00			174.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	99.00	0.010	1.02	0.0	9.188	A
A-BCD	164.54	268.87	0.612	166.04	4.2	9.323	A
A-B	0.00			0.00			
A-C	79.46			79.46			
D-ABC	72.00	58.27	1.236	57.91	32.2	403.137	F
C-ABD	0.00	91.07	0.000	0.00	0.0	0.000	A
C-D	45.00			45.00			
C-A	184.00			184.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	55.77	0.000	0.01	0.0	0.000	A
A-BCD	207.50	267.09	0.777	204.94	6.7	15.411	C
A-B	0.00			0.00			
A-C	43.50			43.50			
D-ABC	85.00	66.27	1.283	66.12	51.1	588.610	F
C-ABD	0.00	89.89	0.000	0.00	0.0	0.000	A
C-D	49.00			49.00			
C-A	149.00			149.00			

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Report generation date: 01/01/2022 17:13:01

»[2029 WDEV, AM](#)
 »[2029 WDEV, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2029 WDEV										
Stream B-ACD	0.0	23.16	0.03	C	-27 % [Stream D-ABC]	0.0	9.55	0.03	A	-27 % [Stream D-ABC]
Stream A-BCD	78.4	314.98	1.15	F		10.4	23.35	0.86	C	
Stream D-ABC	87.5	2002.36	2.04	F		76.2	933.65	1.40	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin
---	-----	-----	-----	----------------	---	------	--------

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2029 WDEV	AM	DIRECT	08:00	09:00	60	15
D2	2029 WDEV	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 WDEV, 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	Right-Left Stagger	Two-way		329.52	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-27	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2029 WDEV	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	209.00	35.00
		B	0.00	0.00	0.00	0.00
		C	216.00	0.00	0.00	71.00
		D	31.00	0.00	23.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	189.00	42.00
		B	0.00	0.00	0.00	0.00
		C	242.00	0.00	0.00	79.00
		D	36.00	0.00	26.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:30 - 08:45	From	A	0.00	0.00	163.00	73.00
	B	1.00	0.00	0.00	0.00	
	C	200.00	0.00	0.00	69.00	
	D	34.00	0.00	37.00	0.00	

Demand (PCU/TS)

		To				
		A	B	C	D	
08:45 - 09:00	From	A	0.00	0.00	152.00	65.00
	B	0.00	0.00	0.00	0.00	
	C	222.00	0.00	0.00	88.00	
	D	36.00	0.00	30.00	0.00	

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	23.16	0.0	C
A-BCD	1.15	314.98	78.4	F
A-B				
A-C				
D-ABC	2.04	2002.36	87.5	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	53.30	0.000	0.00	0.0	0.000	A
A-BCD	192.72	255.38	0.755	185.93	6.8	13.205	B
A-B	0.00			0.00			
A-C	51.28			51.28			
D-ABC	54.00	53.73	1.005	47.01	7.0	98.568	F
C-ABD	0.00	98.89	0.000	0.00	0.0	0.000	A
C-D	71.00			71.00			
C-A	216.00			216.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	50.11	0.000	0.00	0.0	0.000	A
A-BCD	224.19	239.40	0.936	214.32	16.7	41.475	E
A-B	0.00			0.00			
A-C	6.81			6.81			
D-ABC	62.00	44.24	1.401	43.71	25.3	372.751	F
C-ABD	0.00	100.78	0.000	0.00	0.0	0.000	A
C-D	79.00			79.00			
C-A	242.00			242.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	39.81	0.025	0.97	0.0	23.161	C
A-BCD	236.00	204.69	1.153	201.76	50.9	160.815	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	71.00	42.56	1.668	42.49	53.8	1010.311	F
C-ABD	0.00	100.65	0.000	0.00	0.0	0.000	A
C-D	69.00			69.00			
C-A	200.00			200.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	45.53	0.000	0.03	0.0	0.000	A
A-BCD	217.00	190.39	1.140	189.48	78.4	314.983	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	66.00	32.30	2.043	32.29	87.5	2002.362	F
C-ABD	0.00	95.95	0.000	0.00	0.0	0.000	A
C-D	88.00			88.00			
C-A	222.00			222.00			

2029 WDEV, 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	Right-Left Stagger	Two-way		139.43	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-27	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 WDEV	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	174.00	52.00
	B	0.00	0.00	3.00	0.00
	C	173.00	0.00	0.00	57.00
	D	36.00	0.00	38.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	196.00	42.00
	B	0.00	0.00	3.00	0.00
	C	184.00	0.00	0.00	56.00
	D	35.00	0.00	36.00	0.00

Demand (PCU/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	0.00	220.00	33.00
	B	0.00	0.00	1.00	0.00
	C	193.00	0.00	0.00	45.00
	D	36.00	0.00	40.00	0.00

Demand (PCU/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	0.00	214.00	46.00
	B	0.00	0.00	0.00	0.00
	C	158.00	0.00	0.00	49.00
	D	44.00	0.00	44.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	9.55	0.0	A
A-BCD	0.86	23.35	10.4	C
A-B				
A-C				
D-ABC	1.40	933.65	76.2	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	112.36	0.027	2.97	0.0	8.226	A
A-BCD	200.50	234.93	0.853	191.59	8.9	20.794	C
A-B	0.00			0.00			
A-C	25.50			25.50			
D-ABC	74.00	62.05	1.193	58.33	15.7	147.891	F
C-ABD	0.00	103.36	0.000	0.00	0.0	0.000	A
C-D	57.00			57.00			
C-A	173.00			173.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	103.85	0.029	3.00	0.0	8.923	A
A-BCD	206.18	256.77	0.803	206.15	8.9	21.038	C
A-B	0.17			0.17			
A-C	32.66			32.66			
D-ABC	71.00	57.54	1.234	57.11	29.6	389.699	F
C-ABD	0.00	95.40	0.000	0.00	0.0	0.000	A
C-D	56.00			56.00			
C-A	184.00			184.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	95.34	0.010	1.02	0.0	9.545	A
A-BCD	191.55	275.43	0.695	194.28	6.2	12.553	B
A-B	0.00			0.00			
A-C	61.45			61.45			
D-ABC	76.00	54.84	1.386	54.73	50.8	649.336	F
C-ABD	0.00	87.70	0.000	0.00	0.0	0.000	A
C-D	45.00			45.00			
C-A	193.00			193.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	49.54	0.000	0.01	0.0	0.000	A
A-BCD	233.93	272.74	0.858	229.74	10.4	23.353	C
A-B	0.00			0.00			
A-C	26.07			26.07			
D-ABC	88.00	62.65	1.405	62.60	76.2	933.647	F
C-ABD	0.00	85.96	0.000	0.00	0.0	0.000	A
C-D	49.00			49.00			
C-A	158.00			158.00			

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: Greenhills Ballymount 2039 wod.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\PICADY
Report generation date: 07/03/2021 17:44:41

- » [2039 WOD, AM](#)
- » [2039 WOD, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2039 WOD										
Stream B-ACD	0.0	24.82	0.03	C	-29 % [Stream D-ABC]	0.0	10.36	0.03	B	-30 % [Stream D-ABC]
Stream A-BCD	85.2	348.37	1.17	F		26.0	67.90	1.01	F	
Stream D-ABC	107.3	2918.13	2.50	F		104.6	1375.58	1.61	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin
---	-----	-----	-----	----------------	---	------	--------

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2039 WOD	AM	DIRECT	08:00	09:00	60	15
D2	2039 WOD	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 WOD, 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	Right-Left Stagger	Two-way		435.06	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-29	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2039 WOD	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	210.00	33.00
		B	0.00	0.00	0.00	0.00
		C	225.00	0.00	0.00	76.00
		D	31.00	0.00	24.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	188.00	40.00
		B	0.00	0.00	0.00	0.00
		C	253.00	0.00	0.00	84.00
		D	36.00	0.00	28.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:30 - 08:45	From	A	0.00	0.00	161.00	73.00
	From	B	1.00	0.00	0.00	0.00
	From	C	208.00	0.00	0.00	73.00
	From	D	33.00	0.00	39.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:45 - 09:00	From	A	0.00	0.00	150.00	65.00
	From	B	0.00	0.00	0.00	0.00
	From	C	231.00	0.00	0.00	94.00
	From	D	36.00	0.00	32.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	24.82	0.0	C
A-BCD	1.17	348.37	85.2	F
A-B				
A-C				
D-ABC	2.50	2918.13	107.3	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	50.40	0.000	0.00	0.0	0.000	A
A-BCD	188.66	254.52	0.741	182.07	6.6	12.671	B
A-B	0.00			0.00			
A-C	54.34			54.34			
D-ABC	55.00	50.36	1.092	45.54	9.5	128.030	F
C-ABD	0.00	98.44	0.000	0.00	0.0	0.000	A
C-D	76.00			76.00			
C-A	225.00			225.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	46.71	0.000	0.00	0.0	0.000	A
A-BCD	219.90	236.44	0.930	210.24	16.3	40.110	E
A-B	0.00			0.00			
A-C	8.10			8.10			
D-ABC	64.00	40.11	1.596	39.86	33.6	527.332	F
C-ABD	0.00	100.33	0.000	0.00	0.0	0.000	A
C-D	84.00			84.00			
C-A	253.00			253.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	37.21	0.027	0.97	0.0	24.821	C
A-BCD	234.00	199.69	1.172	197.02	53.2	169.679	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	72.00	39.12	1.840	39.09	66.5	1503.927	F
C-ABD	0.00	99.79	0.000	0.00	0.0	0.000	A
C-D	73.00			73.00			
C-A	208.00			208.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	39.90	0.000	0.03	0.0	0.000	A
A-BCD	215.00	183.78	1.170	183.08	85.2	348.375	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	68.00	27.16	2.503	27.16	107.3	2918.133	F
C-ABD	0.00	93.83	0.000	0.00	0.0	0.000	A
C-D	94.00			94.00			
C-A	231.00			231.00			

2039 WOD, 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	Right-Left Stagger	Two-way		220.66	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-30	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 WOD	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	177.00	53.00
	B	0.00	0.00	3.00	0.00
	C	174.00	0.00	0.00	61.00
	D	35.00	0.00	41.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	201.00	53.00
	B	0.00	0.00	3.00	0.00
	C	186.00	0.00	0.00	60.00
	D	34.00	0.00	39.00	0.00

Demand (PCU/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	0.00	227.00	33.00
	B	0.00	0.00	1.00	0.00
	C	196.00	0.00	0.00	48.00
	D	35.00	0.00	42.00	0.00

Demand (PCU/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	0.00	221.00	47.00
	B	0.00	0.00	0.00	0.00
	C	158.00	0.00	0.00	52.00
	D	44.00	0.00	47.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	10.36	0.0	B
A-BCD	1.01	67.90	26.0	F
A-B				
A-C				
D-ABC	1.61	1375.58	104.6	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	110.90	0.027	2.97	0.0	8.337	A
A-BCD	210.43	236.59	0.889	199.54	10.9	24.351	C
A-B	0.00			0.00			
A-C	19.57			19.57			
D-ABC	76.00	59.09	1.286	56.24	19.8	189.387	F
C-ABD	0.00	102.02	0.000	0.00	0.0	0.000	A
C-D	61.00			61.00			
C-A	174.00			174.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	100.89	0.030	3.00	0.0	9.193	A
A-BCD	255.00	253.45	1.006	239.93	26.0	67.903	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	73.00	49.67	1.470	49.52	43.2	610.202	F
C-ABD	0.00	92.68	0.000	0.00	0.0	0.000	A
C-D	60.00			60.00			
C-A	186.00			186.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	87.93	0.011	1.02	0.0	10.357	B
A-BCD	234.37	290.84	0.806	248.15	12.2	35.390	E
A-B	0.00			0.00			
A-C	25.63			25.63			
D-ABC	77.00	47.90	1.608	47.86	72.4	990.196	F
C-ABD	0.00	80.87	0.000	0.00	0.0	0.000	A
C-D	48.00			48.00			
C-A	196.00			196.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	41.02	0.000	0.01	0.0	0.000	A
A-BCD	260.55	281.87	0.924	255.68	17.1	42.134	E
A-B	0.00			0.00			
A-C	7.45			7.45			
D-ABC	91.00	58.77	1.549	58.74	104.6	1375.582	F
C-ABD	0.00	79.69	0.000	0.00	0.0	0.000	A
C-D	52.00			52.00			
C-A	158.00			158.00			

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: Greenhills Ballymount 2039 wdev 633 units.j9
Path: C:\Users\martin.rogers\Dropbox\chadwicks\PICADY
Report generation date: 01/01/2022 17:20:21

- » [2039 WDEV, AM](#)
- » [2039 WDEV, PM](#)

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
2039 WDEV										
Stream B-ACD	0.0	31.38	0.03	D	-31 % [Stream D-ABC]	0.0	10.69	0.03	B	-32 % [Stream D-ABC]
Stream A-BCD	129.6	527.24	1.26	F		29.8	82.49	0.98	F	
Stream D-ABC	152.1	10204.47	6.54	F		130.3	1885.03	1.80	F	
Stream C-ABD	0.0	0.00	0.00	A		0.0	0.00	0.00	A	

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

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

File summary

File Description

Title	
Location	
Site number	
Date	15/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
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	perTimeSegment	s	-Min	perMin
---	-----	-----	-----	----------------	---	------	--------

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	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 period length (min)	Time segment length (min)
D1	2039 WDEV	AM	DIRECT	08:00	09:00	60	15
D2	2039 WDEV	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 WDEV, 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	Right-Left Stagger	Two-way		1294.48	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-31	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Greenhills Road North		Major
B	Minor Road		Minor
C	Greenhills Road South		Major
D	Ballymount Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.00			50.0	✓	0.00
C	7.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
-----	----------------	----------------	------------------------	-------------------------

B	One lane	3.00	50	50
D	One lane	3.00	50	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	150.730	-	-	-	0.223	0.223	0.223	-	0.223	-	-
1	B-AD	129.627	0.090	0.228	-	-	-	0.144	0.326	0.144	0.090	0.228
1	B-C	163.853	0.096	0.243	-	-	-	-	-	-	0.096	0.243
1	C-B	150.730	0.223	0.223	-	-	-	-	-	-	0.223	0.223
1	D-A	163.853	-	-	-	0.243	0.096	0.243	-	0.096	-	-
1	D-BC	129.627	0.144	0.144	0.326	0.228	0.090	0.228	-	0.090	-	-

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 period length (min)	Time segment length (min)
D1	2039 WDEV	AM	DIRECT	08:00	09:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

		To				
		A	B	C	D	
08:00 - 08:15	From	A	0.00	0.00	222.00	37.00
		B	0.00	0.00	0.00	0.00
		C	230.00	0.00	0.00	76.00
		D	33.00	0.00	24.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:15 - 08:30	From	A	0.00	0.00	200.00	44.00
		B	0.00	0.00	0.00	0.00
		C	258.00	0.00	0.00	84.00
		D	39.00	0.00	28.00	0.00

Demand (PCU/TS)

		To				
		A	B	C	D	
08:30 - 08:45	From	A	0.00	0.00	173.00	77.00
	B	1.00	0.00	0.00	0.00	
	C	213.00	0.00	0.00	73.00	
	D	36.00	0.00	39.00	0.00	

Demand (PCU/TS)

		To				
		A	B	C	D	
08:45 - 09:00	From	A	0.00	0.00	162.00	69.00
	B	0.00	0.00	0.00	0.00	
	C	236.00	0.00	0.00	94.00	
	D	39.00	0.00	32.00	0.00	

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	31.38	0.0	D
A-BCD	1.26	527.24	129.6	F
A-B				
A-C				
D-ABC	6.54	10204.47	152.1	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	45.98	0.000	0.00	0.0	0.000	A
A-BCD	233.85	263.73	0.887	220.61	13.2	22.057	C
A-B	0.00			0.00			
A-C	25.15			25.15			
D-ABC	57.00	45.95	1.241	42.90	14.1	190.542	F
C-ABD	0.00	95.76	0.000	0.00	0.0	0.000	A
C-D	76.00			76.00			
C-A	230.00			230.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	39.74	0.000	0.00	0.0	0.000	A
A-BCD	244.00	236.11	1.033	225.24	32.0	89.751	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	67.00	33.59	1.995	33.51	47.6	1047.221	F
C-ABD	0.00	95.97	0.000	0.00	0.0	0.000	A
C-D	84.00			84.00			
C-A	258.00			258.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	29.61	0.034	0.97	0.0	31.384	D
A-BCD	250.00	201.65	1.240	200.64	81.4	269.085	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	75.00	30.68	2.445	30.67	91.9	4232.454	F
C-ABD	0.00	93.06	0.000	0.00	0.0	0.000	A
C-D	73.00			73.00			
C-A	213.00			213.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	25.13	0.000	0.03	0.0	0.000	A
A-BCD	231.00	183.00	1.262	182.76	129.6	527.243	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	71.00	10.85	6.543	10.85	152.1	10204.470	F
C-ABD	0.00	84.51	0.000	0.00	0.0	0.000	A
C-D	94.00			94.00			
C-A	236.00			236.00			

2039 WDEV, 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	Right-Left Stagger	Two-way		299.60	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-32	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 WDEV	PM	DIRECT	17:00	18:00	60	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15

		To			
		A	B	C	D
From	A	0.00	0.00	185.00	55.00
	B	0.00	0.00	3.00	0.00
	C	184.00	0.00	0.00	61.00
	D	38.00	0.00	41.00	0.00

Demand (PCU/TS)

17:15 - 17:30

		To			
		A	B	C	D
From	A	0.00	1.00	209.00	45.00
	B	0.00	0.00	3.00	0.00
	C	196.00	0.00	0.00	60.00
	D	37.00	0.00	39.00	0.00

Demand (PCU/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	0.00	235.00	35.00
	B	0.00	0.00	1.00	0.00
	C	206.00	0.00	0.00	48.00
	D	38.00	0.00	42.00	0.00

Demand (PCU/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	0.00	228.00	49.00
	B	0.00	0.00	0.00	0.00
	C	168.00	0.00	0.00	52.00
	D	47.00	0.00	47.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-ACD	0.03	10.69	0.0	B
A-BCD	0.98	82.49	29.8	F
A-B				
A-C				
D-ABC	1.80	1885.03	130.3	F
C-ABD	0.00	0.00	0.0	A
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	108.96	0.028	2.97	0.0	8.490	A
A-BCD	235.01	241.53	0.973	217.01	18.0	36.955	E
A-B	0.00			0.00			
A-C	4.99			4.99			
D-ABC	79.00	55.40	1.426	53.32	25.7	249.295	F
C-ABD	0.00	100.23	0.000	0.00	0.0	0.000	A
C-D	61.00			61.00			
C-A	184.00			184.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	3.00	96.94	0.031	3.00	0.0	9.580	A
A-BCD	255.00	266.74	0.956	249.59	23.4	66.765	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	76.00	48.03	1.582	47.94	53.7	799.858	F
C-ABD	0.00	89.04	0.000	0.00	0.0	0.000	A
C-D	60.00			60.00			
C-A	196.00			196.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	1.00	85.21	0.012	1.02	0.0	10.694	B
A-BCD	259.97	295.15	0.881	261.52	21.8	48.855	E
A-B	0.00			0.00			
A-C	10.04			10.04			
D-ABC	80.00	44.50	1.798	44.48	89.3	1380.759	F
C-ABD	0.00	78.37	0.000	0.00	0.0	0.000	A
C-D	48.00			48.00			
C-A	206.00			206.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0.00	32.41	0.000	0.01	0.0	0.000	A
A-BCD	277.00	281.92	0.983	269.01	29.8	82.490	F
A-B	0.00			0.00			
A-C	0.00			0.00			
D-ABC	94.00	52.99	1.774	52.98	130.3	1885.034	F
C-ABD	0.00	74.62	0.000	0.00	0.0	0.000	A
C-D	52.00			52.00			
C-A	168.00			168.00			