PUNCH
consulting engineers

Mixed-Use Development, Crown Square, Galway City

Traffic and Transport Assessment

June 2019

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1.0 Non-Technical Summary

The proposed development at Crown Square comprises commercial office, technology and hotel uses on an integrated campus with residential, leisure, local service and ancillary accommodation and associated basement car-parking. Bicycle facilities in line with the Development Plan will also be provided. There are two proposed accesses to the development, one off Monivea Road to the lower basement car-parking and one-off Joyce's Road to the car-parking on the upper basement level.

Galway City Council (GCC) requested that junction analysis be carried out at the two proposed junction accesses as well as new traffic signal controls at the existing junction between Joyce's Road and Tuam Road and the upgrade of the existing traffic signal-controlled junction between Joyce's Road and Monivea Road/Wellpark Road and Connolly Avenue. Traffic counts were undertaken at the existing junctions.

Development traffic was added to the existing flows as well as traffic growth figures for the opening year of 2022 as well as 2027 and 2037.

Analysis of the upgraded Monivea Road/Connolly Avenue/Wellpark Road/Joyce's Road signalised junction predicts that although there could be significant capacity issues, delays and queuing, the junction will operate better by 2037 than it would if it were not to be altered.

Analysis of the proposed signalised junction at the junction of Joyce's Road and Tuam Road found that the junction could experience capacity issues, in the AM only, by 2037 with the development operational. Further works, including a left slip lane from Tuam Road onto Joyce's Road would help alleviate this issue.

Capacity analysis carried out on both priority-controlled development junctions demonstrates that the junctions will operate successfully up to the design year 2037 and that right-turn lanes are not required at these junctions.

The signalised junction between Bothar na dTreabh and Tuam Road is predicted to operate slightly over capacity without the proposed development in place by the opening year 2022. The proposed development is predicted to have a minimal impact on the junction up to the design year 2037.

Approval has been given for the advancement of the Galway City Ring Road Scheme to the statutory planning process. It is predicted that by 2034 the traffic on the existing N6 east and west of the Tuam Road could have an AADT substantially less after the Ring Road is constructed. Once the proposed ring road is operational this predicted reduction in traffic on the N6 should ease congestion issues along the route of the N6 and the adjoining roads into the future. Given that the Bothar na dTreabh/Tuam Road junction will not be much over capacity in 2037 without the N6 bypass it is anticipated that it will operate within capacity on completion of the bypass. Also, as the N6 bypass will result in a slight reduction in volume on the R336 Tuam Road the Joyce's Road junction will operate better.

Bus lanes are proposed southbound on Joyce's Road and westbound on Monivea Road in line with the Galway Transport Strategy. Cycle lanes are also proposed southbound on Joyce's Road and eastbound on Monivea Road.

Parking spaces for vehicles and bicycles are being provided at basement level . Cycle access and parking will be separated from vehicular access and located in secure locked areas. Drying rooms, cycle maintenance and other support facilities will be provided at lower ground/basement to encourage employees to use alternative modes of transport to the car.

2.0 Introduction

PUNCH Consulting Engineers were commissioned by Crown Square Developments Limited to carry out a Traffic and Transport Assessment (TTA) for a proposed mixed-use development on a partly developed building site at Crown Square, Galway City. The site was previously the former Crown Equipment site at Mervue and occupies an area of 5.12 Hectares. The Crown factory has been demolished and a previously permitted development has been partially constructed c.2008. The proposed redevelopment is predominantly residential with some ground floor crèche/retail/commercial uses including a hotel, office blocks and associated parking.

It proposed to split the development into two phases with Phase 1 comprising of the construction of office blocks and a standalone hotel building and Phase 2 which will mainly be residential apartments including a Restaurant, Cafe, Convenience Store, Medical Centre, Pharmacy and other small retail/service.

Although it is proposed to carry out the development in two phases, only one TTA is required at the request of Galway City Council (GCC).

The assessment has been carried out in accordance with TII's Traffic and Transport Assessment Guidelines PE-PDV-02045 (May 2014) and makes reference to the Design Manual for Urban Roads & Streets (DMURS), the Galway Transport Strategy Technical Report, N6 Galway City Transport Project Traffic Modelling Report and Smarter Travel – A Sustainable Transport Future (2009 – 2020). Sections from the Galway City Development Plan (GCDP) (2017 – 2023) have been used to help describe the development location and its local context.

The purpose of the TTA report is to assess the potential impact of the proposed development on the existing local transport network and to ensure that the proposed site accesses will have adequate capacity to carry the development traffic and the future growth in existing road traffic to the design year and beyond. Also, the existing junctions which fall within the scope of the study will be assessed for potential impact. An assessment of the accessibility of the site for cyclists, pedestrians and public transport users has also been made.

It is estimated that construction will be completed and the overall development ready for occupation in 2022.

2.1 Scoping

Consultation was undertaken with Galway County Council (GCC) to allow them to express their views/comments regarding the proposed development prior to the submission of the planning application.

A number of comments and suggestions were made by GCC in relation to the development which are outlined below:

- GCC requested that we use existing 7-day 24-hour classified vehicle turning counts at the junction of Joyce's Road and Tuam Road. Additionally, new 1-day 24-hour classified vehicle turning count at the junction of Joyce's Road and Monivea Road were carried out as well as a 7-day Automatic Traffic Counter Classified vehicle count along Monivea Road.
- The TRICS database is to be consulted to predict traffic generation for the proposed development.
- The modal split of the proposed development is to be based on a combination of Gross Floor Area (GFA) and car park allocation.
- Reference to the Galway Transport Strategy data and existing patterns to be used for traffic distribution and assignment methodology.

A scoping response was also received from Transport Infrastructure Ireland which stated that our report should have regard to the following;

- Consultations should be had with the relevant local authority/National Roads Design Office with regard to locations of existing and future national road schemes.
- The report should demonstrate that the development can proceed complementary to safeguarding the capacity, safety and operational efficiency of the N6 including the N6 junction with the R336 and the N83, and other relevant national road junctions.

The following TTA deals with the matters raised by GCC and TII above.

3.0 Existing Conditions

3.1 Site Location

The proposed development site is the old Crown Equipment factory located at Crown Square, Joyce's Road, Galway City. The former Crown Equipment site at Mervue occupies an area of 5.12 Hectares or 12.65 acres with road frontage to the Monivea and Joyce's Roads. The Crown factory has been demolished and a previously permitted development has been partially constructed c.2008.

The Mervue area has been developed over the past 30-40 years and is characterized as mixed in terms of use with industrial/commercial, institutional and residential land use adjacent. The site would formerly have been perceived as 'edge' but at a distance of 2.5 Km from Eyre Square, should reasonably be described as more centre than edge.

The substantial Mervue and IDA Business Parks as well as the Eircom telecommunications centre are immediately adjacent. The two business parks have changed in character from light industrial and manufacturing to include office, enterprise and service industry use.

The site location in relation to the wider road network is detailed in Figure 3.1 below.

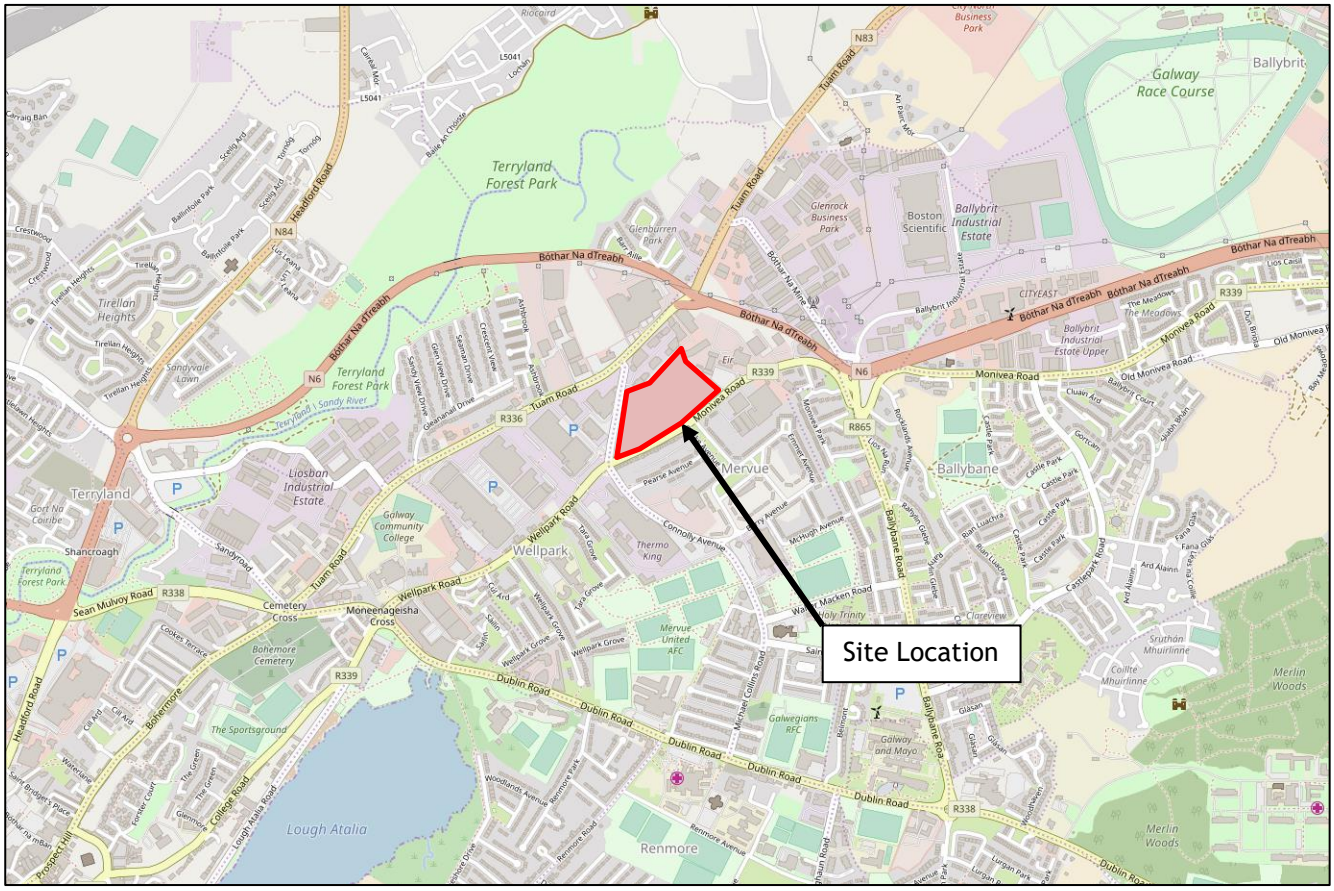

Figure 3.1 - Site location and surrounding road network (© OpenStreetMap contributor)

3.2 Existing Site Characteristics

The existing site was granted planning permission in 2006 for a mixed-use development, with a Gross Floor Area of approximately 57,000 sq. m, which included bulky goods retail, offices, 134 no. residential units, motor sales, Hotel, Leisure Centre, Creche, food court with some small-scale retail uses for local needs along with ancillary parking (1340 no. spaces) and all associated landscaping, site works and services.

Construction works ceased c.2008 and the planning permission for the previously proposed development has lapsed.

A substantial element of the previously permitted development has been completed in that almost the entire site has been excavated through rock to a structural formation level and there is extensive foundation construction across the site and three levels (lower basement to ground) of the range of retail buildings proposed along the Monivea Road are complete structurally.

Given the extent of this structure, its retention, adaptation and reuse is proposed as a sustainable development.

3.3 Existing Road Network

The layout of the local road network is presented in Figure 3.1. The main arterial routes in the vicinity of the site are Monivea Road (R339), Wellpark Road (R339) and Tuam Road (R336) which are all classified as Regional Roads. The R336 and R339 function as key distributor roads from Galway City to the west and the outlying suburbs to the east such as Mervue, Ballybane and Riverside.

A link Road called Joyce's Road connects Monivea Road and Wellpark Road with the Tuam Road. A brief description of the local road network and the major road junctions is provided below:

3.3.1 Monivea Road

Monivea Road is a Regional Road (R339) which runs along the southern boundary of the proposed development site. It is a two-way road comprising of one lane in each direction with high volumes of traffic. A number of residential properties are located along the south of Monivea Road with direct accesses onto the road. A new entry/exit junction is proposed off Monivea Road which will provide an access to the development.

There are no bus lane facilities along the road adjacent to the site but there is a bus stop located on either side of the road adjacent to the development site. Pedestrians are provided for by means of a footpath along both sides of Monivea Road. There are no dedicated cycle facilities along the road within the vicinity of the site.

Queuing was noted on Monivea Road westbound in the AM which is associated with peak hour congestion at its intersection with Moneenageisha Road with reflective queuing back to the Connolly Avenue/Wellpark Road/Joyce's Road signalised junction.

Monivea Road ends at the signalised crossroads junction located at the south-western corner of the development site. The R339 continues through the junction as the main road but the R339 west of the junction is known as Wellpark Road.

3.3.2 Wellpark Road

Wellpark Road has the same characteristics as Monivea Road. It is a two-way road with one lane in each direction and a footpath on both sides of the road. It continues west towards the City Centre where it terminates at Moneenageisha Cross.

3.3.3 Tuam Road

Tuam Road is a Regional Road (R336) and is also a two-way single carriageway road. Footpaths run along either side of the road but there are no dedicated facilities for cyclists. Tuam Road runs through Bóthar na dTreabh to the northeast where it becomes the N83 (old N17) towards Sligo. There is a mixture of Commercial, Industrial and Residential developments along either side of Tuam Road.

A link road, known locally as Joyce's Road, running in a North-South direction links Tuam Road with Wellpark Road and Monivea Road to the south. Joyce's Road forms a priority-controlled T-junction with the Tuam Road with Tuam Road acting as the main route through the junction.

Existing queues were observed on Tuam Road from the junction east of the development site at Bothar na dTreabh which resulted in reflective queuing at the Joyce's Road T-junction with Tuam Road. Queuing from the city side back through the junction was also noted.

It was also noted that there is no right-turn lane present for users wishing to turn right from Tuam Road onto Joyce's Road. The right-turners waiting for a gap in westbound traffic are currently blocking eastbound traffic on Tuam Road.

3.3.4 Joyce's Road

Joyce's Road to the west of Crown Square is a link road connecting Monivea Road and Wellpark Road with Tuam Road. The link road forms the western boundary of the site. Pedestrian footpaths are provided along each side of the road. As part of the development a new entry/exit junction is proposed off Joyce's Road. The northern end of the link road ends at a priority-controlled T-junction with Tuam Road while the southern end forms the northern arm of a signalised crossroads junction with Monivea Rd, Connolly Avenue and Wellpark Rd.

3.3.5 Monivea Road/Connolly Avenue/Wellpark Road/Joyce's Road Signalised Crossroads Junction

This crossroads junction is currently experiencing congestion during peak hours as is the case with many arterial routes throughout the city. The congestion occurring in the AM appears to be a result of reflective queuing back from Moneenageisha junction further west. The PM congestion is as a result of limited capacity at the junction itself and is caused by large traffic volumes travelling outbound from the city centre.

Short right-turning lanes as well as pedestrian crossings are provided on all arms of the junction.

3.3.6 Tuam Road/Joyce's Road Priority Controlled T-Junction

This junction is a priority-controlled T-junction which is also experiencing congestion during peak hours. There is no dedicated right-turn lane provided on the Tuam Road. A dedicated right turn and left-turn lane are provided approaching the junction on Joyce's Road. Dropped kerbs are provided on the link road to provide a location for pedestrians to cross, however this is uncontrolled with no tactile paving provided for visually impaired users. There are no pedestrian crossing locations provided at the junction for pedestrians wishing to cross the Tuam Road.

As mentioned previously reflective queuing was observed at this junction which emanates from the Tuam Road junction with Bothar na dTreabh further east and from the city side.

3.3.7 N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Signalised Crossroads Junction

This junction is a signal-controlled crossroads junction. The N6 Bothar na dTreabh is the main route through this junction which carries high flows from the east to the west and vice versa. The Tuam Road also carries a large quantity of traffic linking Galway City with Claregalway and Tuam as well as other areas. The junction was upgraded to a signalised junction in the past few years to replace the previous roundabout junction.

The junction has multiple lanes on each arm as well as a left slip lane on the N6 arm to the R336. The junction also incorporates cycle lanes in all directions with box turns for cyclists. There are pedestrian crossings and refuge islands on all arms apart from the N6 eastern arm. (There is a crossing on the left-slip lane).

3.4 Existing Traffic Flows

To scope the requirements of this TTA we contacted Galway City Council to discuss and agree the required scope of works for this TTA. As a result of these discussions it was agreed that we analyse the following junctions:

- Junction 1: New traffic signal controls at the existing junction between Joyce's Road and Tuam Road;
- Junction 2: The upgrade of the existing traffic signal-controlled junction between Joyce's Road and Monivea Road/Wellpark Road and Connolly Avenue;
- Junction 3: The new development site entrance junction onto Monivea Road (determine and confirm if it will be traffic signal controlled or not);
- Junction 4: Development Junction with Joyce's Road (determine and confirm if it will be traffic signal controlled or not).

Additionally, TII requested that we analyse the following junction:

- Junction 5: The N6 junction with the R336 Tuam Road and the N83 Tuam Road.

As part of the scoping meeting with GCC it was agreed to use the following counts to gain an understanding of the traffic flows on the local road network within the vicinity of Crown Square:

- Existing 7-day 24-hour classified vehicle turning count at the junction of Joyce's Road and Tuam Road.
- Additional new 1-day 24-hour classified vehicle turning count at the junction of Joyce's Road and Monivea Road.
- A 7-day Automatic Traffic Counter Classified vehicle count along Monivea Road.

As agreed with GCC during the scoping meeting we have used a previous traffic count survey carried out at the junction of Joyce's Road and Tuam Road. We have also used a previous traffic count carried out at the N6 junction with the R336 Tuam Road and the N83 Tuam Road. The counts were undertaken by Innovative Data Solutions (IDASO) on Wednesday 29th November 2017 for a 12-hour period between the hours of 7:00am and 7:00pm.

The surveys found that the mean morning peak hour traffic flow at the junction of Joyce's Road and Tuam Road occurred between 07:45am and 08:45am. The evening peak was found to be relatively flat between the hours 12:00pm and 6:00pm with the flows peaking between 2:30pm and 3:30pm.

The surveys found that the mean morning peak hour traffic flow at the junction of the N6 Bothar na dTreabh junction with the R336 Tuam Road and the N83 Tuam Road occurred between 08:00am and 09:00am. The evening peak occurred between 4:15pm and 5:15pm.

A new manual classified traffic turning count survey was carried out at the junction of and Monivea Road, Connolly Avenue, Wellpark Road and Joyce's Road. The counts were undertaken by Nationwide Data Collection (NDC) on Tuesday 4th September 2018 for a 24-hour period. The surveys found that the mean morning peak hour traffic flow occurred between 08:15am and 09:15am and the evening peak hour occurred between 4:00pm and 5:00pm.

The results of the survey have been reproduced in full as Appendix A to this report. The calculated morning and evening peak hour turning count flows at the development are detailed in the traffic flow diagrams presented in Appendix B.

3.5 Future Transport Proposals

3.5.1 N6 Galway City Ring Road

The Government has recently approved the advancement of the Galway City Ring Road Scheme to the statutory planning process. The purpose of the scheme is to reduce traffic congestion in Galway city and improve journey times and provide direct access from the new motorway to major employment centres at Parkmore and Ballybrit Business Parks. A further benefit of the new scheme is to free up much needed road space in the city centre which will improve public transport services, cycling, walking etc. In addition, the new scheme will;

- Provide an additional bridge crossing of the River Corrib and improve connectivity with the west of the city and to Connemara;
- Enable other key elements of the Galway Transport Strategy to proceed.

The proposed national road project comprises 12km of motorway/dual carriageway between the existing N6 at Coolagh (northeast of the city) to the existing Ballymoneen Road (northwest of the city) and continue as a single carriageway road for 6km as far as the R336 Coast Road, west of Bearna. The ring road will include a new bridge crossing of the River Corrib as well as grade separated junctions serving the N83, N84 and N59.

The N6 Galway City Transport Project Traffic Modelling Report states that the traffic on the existing N6 east of the Tuam Road junction is estimated in 2034 to have an Annual Average Daily Traffic (AADT) of 7,200 less after the Ring Road is constructed. The traffic on the existing N6 west of the Tuam Road is estimated in 2034 to have an AADT of 13,600 less after the Ring Road is constructed. The AADT on the R336 Tuam Road south of the N6 is estimated to be 1,100 less once the Ring Road is operational.

Table 7.5.1 of the N6 Galway City Transport Project Traffic Modelling Report, which shows the forecasted AADT flows on the road network around Galway with and without the proposed Ring Road in operation, is presented in Figure 3.2 overleaf.

Figure 3.3 illustrates the proposed N6 Galway City Ring Road route.

			2034 DM		2034 EPRC	
	AADT Point	Location	AADT	% HGV	AADT	% HGV
DM links	1	N6 South of Galway Airport	21,900	3%	31,300	2%
	2	R446 West of Oranmore Business Park	20,200	5%	26,000	4%
	3	R446 South of N6 Roundabout	14,400	3%	30,900	3%
	4	N6 South of Briarhill	31,100	3%	30,500	2%
	5	N6 Near Ballybrit Business park	37,000	4%	28,400	4%
	6	N6 between N17 and R865	32,000	3%	24,800	3%
	7	N6 Between N84 and N17	33,800	3%	20,200	3%
	8	N6 East of Quincentenary Bridge	29,900	5%	32,000	4%
	9	N6 - On Quincentenary Bridge	34,800	3%	28,600	3%
	10	R338 at Westside Playing fields	11,500	2%	5,700	2%
	11	Western Distributor Rd between Clybaun Rd and R338	12,800	1%	9,300	0%
	12	Western Distributor Rd between Clybaun Rd and Ballymoneen Rd	10,600	1%	5,200	0%
	13	R337 Kingston Road. Kingston	7,100	1%	4,500	1%
	14	R336. Salthill Road Upper. Galway Golf Course.	18,400	1%	16,200	0%
	15	R336. Barna Road. Barna Woods	16,600	1%	7,000	1%
	16	R336. Barna Road. Barna. Creagan bus stop	13,400	1%	5,500	1%
	17	R336. Barna Road. West of Barna. Garrynagry	11,400	1%	14,300	1%
	18	L1321. At Loughinch. South East of Bearna Golf Club	1,100	0%	2,000	1%
	19	Boleybeg Road. Between Cappagh Road and Ballymoneen Road	2,000	1%	200	1%
	20	Rahoon Road. Between Clybaun Rd and Bothar Stiofain	5,000	0%	3,400	1%
	21	N59. Thomas Hynes road. Between Hazel Park and Cherry Park	4,300	2%	3,100	1%
	22	N59. Upper Newcastle Road. Between R338 and Corrib Village	15,900	1%	15,600	1%
	23	N59. Barnacranny. Between chesnut Ln and Circular Rd	18,400	1%	21,500	1%
	24	N84. South of Ballindooly. Ballindooly Lough	10,600	2%	18,600	1%
	25	N84. North of Ballindooly	17,300	1%	18,900	1%
	26	N17. Tuam Road. NorthEast of Parkmore Road	19,300	2%	20,500	2%
	27	R338. Dublin Road. West of Junction with Coast Road.	13,500	5%	10,000	4%
	28	R338. Dublin road. Between Renmore Rd and M. Collins road	18,600	3%	18,300	2%
	29	R336. Tuam Road. Mervue Business Park	14,500	3%	13,400	2%
	30	Wolfe Tone Bridge	20,800	3%	17,000	2%
	31	O'Briens Bridge	9,100	2%	7,600	2%
	32	Salmon Weir Bridge	16,700	2%	14,500	2%
	33	N17. Tuam Road. NorthEast of School Road	14,900	2%	18,100	2%
	89	Eglington Street	7,800	3%	6,400	3%
	90	R336 South of Eyre Square	13,600	3%	12,600	2%
DS Links	98	Expressway - EPR - Briarhill Junction	-		31,300	2%
	99	Expressway - EPR - Parkmore	-		31,400	2%
	100	Expressway - EPR - Between N17 and N84	-		54,600	2%
	101	Expressway - EPR - New Corrib Crossing	-		38,700	2%
	102	Expressway - EPR - N59 Link Road	-		12,500	2%
	103	Expressway - EPR - Rahoon Link Road	-		21,100	2%
	104	Expressway - EPR - Between Ballymoneen and Cappagh Road	-		15,200	1%
	105	Expressway - EPR - at Turskey West	-		10,700	1%
	106	Expressway - EPR - North of R336 Junction	-		10,700	1%

Figure 3.2 – N6 Galway Ring Road Predicted AADT 2034 Design Year

(N6 Galway City Transport Project Traffic Modelling Report)

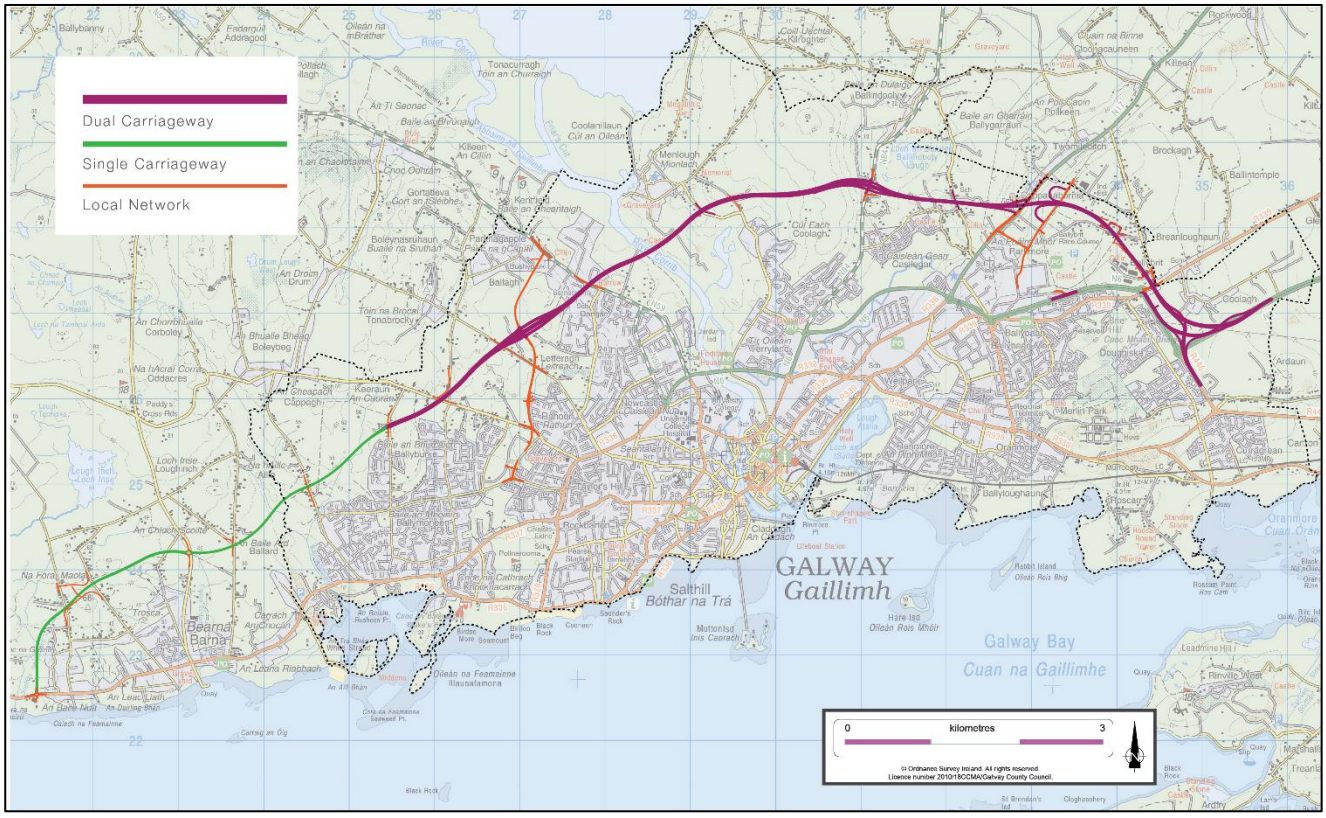

Figure 3.3 – Proposed N6 Galway City Ring Road Route (www.N6galwaycity.ie)

4.0 Proposed Development

4.1 Description

The proposed development at Crown Square comprises commercial office, technology and hotel uses on an integrated campus with residential, leisure, local service and ancillary accommodation.

The Phase 1 development will be to the west of the site along the Monivea and Joyce's Roads. Phase 1 will comprise of the construction of 5 office blocks, 4 of which are located on the footprint of the previously constructed basement carparks, and a standalone hotel building. The hotel fronts onto and has vehicular set-down on the Joyce's Road. It is also accessed as are all of the offices from the new central public space at ground level.

Phase 2 will front the eastern end of the Monivea Road frontage and extend to the northern site boundary over the Phase 1 basement level completion. Phase 2 is mainly residential apartments. Other complementary and neighbourhood facilities are proposed including a Restaurant, Cafe/Coffee Shop, Convenience Store, Medical Centre, Pharmacy, Other Small Retail/Service. These are proposed at ground/lower ground and first floor levels fronting both Monivea Road and the new Phase 2 public open space.

Two significant public landscaped spaces are proposed at ground level. Provision of external vehicular set-down and public transport (bus/taxi) stops is planned as well as public 'city bike' facilities. Vehicular access to the basement car-park and service levels is planned on both Joyce's and Monivea Roads. The ground level public space will be open 24/7, planned for passive security, and the basement car-park access will be a managed and secure facility.

There are two principal pedestrian/cycle entrances to the site. On Monivea Road this will be opposite the McDonough and Clarke Avenue junction. These avenues have a high-quality residential landscape character with mature trees reflecting a previous rural character of Monivea Road. This entrance will provide level pedestrian, cycle and emergency vehicle access. On Joyce's Road pedestrian and cycle access is provided between the office building on the corner with Monivea Road and the hotel.

Details of the basement layout and the associated access are shown on the Architects drawings accompanying the planning application.

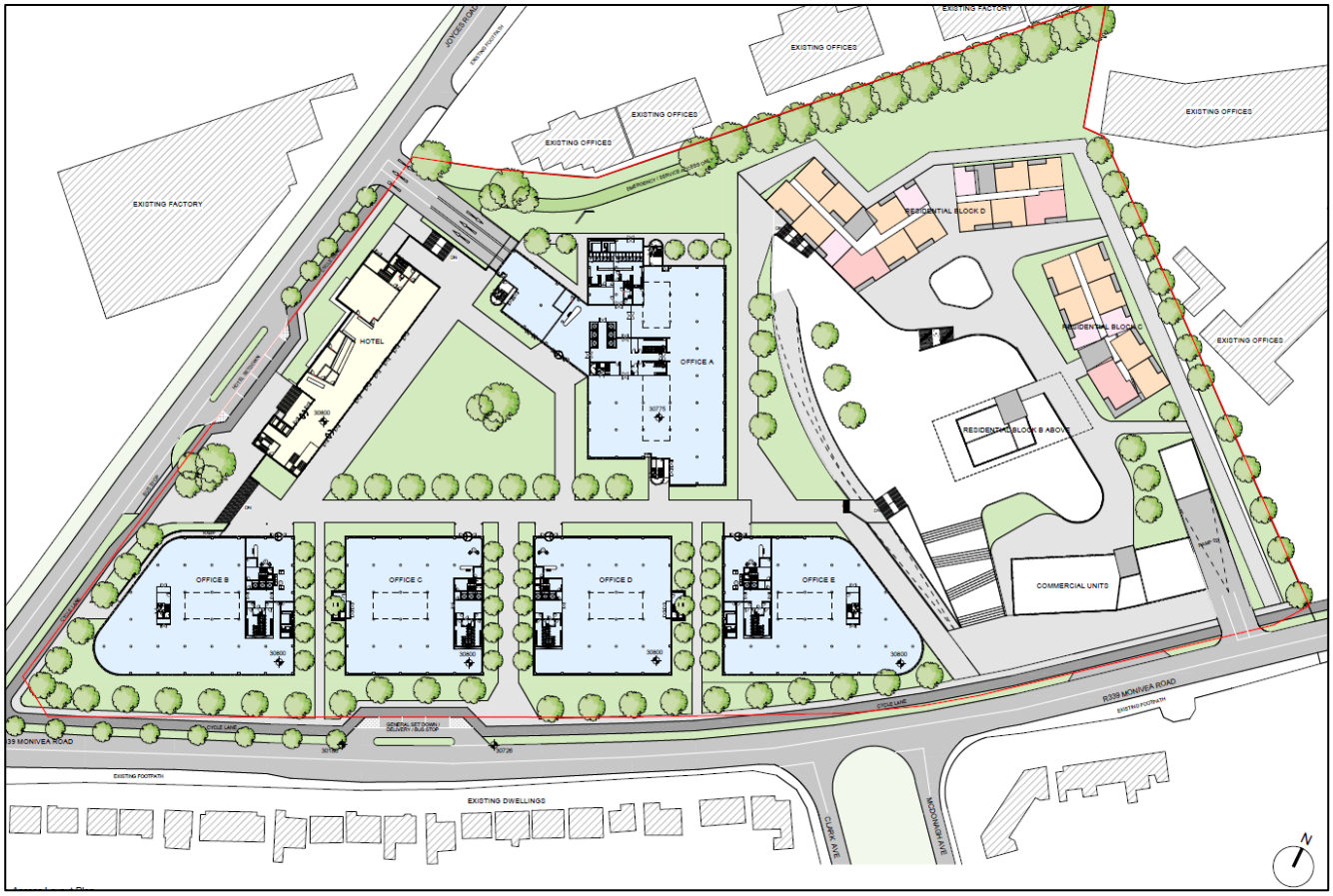

Figure 4.1 – Proposed Site Layout

5.0 Person Trip Generation

5.1 General

The purpose of this section is to determine the overall number of trips that will be generated by the proposed development. Following the quantification of the trip generation, these trips will be distributed onto the adjoining roads in order to provide the necessary traffic flows to allow an assessment of the traffic impact by the proposed development to be undertaken.

In order to estimate the likely volumes of traffic that will be generated by the proposed development, trip rates recommended by TRICS (Trip Rate Computer Information System) were extracted from the database and applied pro-rata to the relevant Gross Floor Area or number of apartments within the development. The estimated total number of vehicular trips generated by the proposed developments is shown in Table 5.1.

Although there is some small retail space, a pharmacy, a restaurant and cafe proposed for the ground floor of the residential development the quantity of trips predicted by TRICS for these is minimal as these are expected to be used by residents/staff within the developments in the main or in the case of the pharmacy, by users of the medical centre, and therefore significant additional vehicular trips are not expected to be generated. Also, the number of car parking spaces required by GCC is minimal for these uses.

Full details of the TRICS analysis are reproduced in Appendix C.

Landuse	Number of Trips			
	AM Arrivals	AM Departures	PM Arrivals	PM Departures
Office	363	49	43	297
Hotel	19	37	23	21
Apartments	11	39	22	27
Leisure Centre	15	16	10	15
Medical Centre	11	4	19	20
TOTAL	**419**	**145**	**126**	**379**

Table 5.1. Predicted Traffic Generated by Proposed Development using TRICS

Due to the location of the proposed developments it is expected that a significant number of trips will be by public transport, bicycle and on foot. As well as this given the mixed-use nature of the developments some apartments within the development may be occupied by employees of the office/retail space provided within the developments or within the surrounding area where there are a number of employment opportunities. Therefore, the developments' location and the mixed-use nature of the development should encourage non-vehicular trips to/from the developments and alleviate the use of motorised vehicular trips to/from the development.

6.0 Traffic Forecasting

6.1 Future Baseline Traffic Growth

In the absence of any specific local traffic growth information it was assumed that baseline traffic will continue to grow at the levels recommended by the TII in the Project Appraisal Guidelines (PAG) – Unit 5.3 'Travel Demand Projections' publication (PE-PAG-02017). The Project Appraisal Guidelines describe three levels of transport model functionality. The static model, which reflects traffic volumes on the basis of link flows, is best suited to the proposed development. Such models do not attempt any route assignment, and hence are applicable for networks where no change in traffic flows will result from a proposed scheme. This model recommends using growth rates in the Project Appraisal Guidelines – Unit 5.5 'Link-Based Traffic Growth Forecasting' publication. We have used figures from it for the Galway City area.

The year of opening of the scheme was assumed to be 2022. The central growth factors from the Project Appraisal Guidelines – Unit 5.3 publication were used and are detailed below: -

- TII Link Based Growth Rates: Annual Growth Factor for 2013-2030 = 1.0082 (LVs) and 1.0237 (HVs);
- TII Link Based Growth Rates: Annual Growth Factor for 2030-2050 = 1.0007 (LVs) and 1.0176 (HVs).

The annual growth factors for Light Vehicles (LVs) and Heavy Vehicles (HV) were applied to surveyed values of vehicles counted. While growing the mainline traffic for the turn-in rate based on the TII traffic counters we have also used the growth factors for both LVs and HVs as the TII give a breakdown of vehicle classification on their website.

With regards to the volume of traffic using the road, the passenger car is adopted as the standard unit and other vehicles are assessed in terms of PCU's. Cars and Light Goods Vehicles are grouped together as Light Vehicles (LV). All other Goods Vehicles, Buses and Coaches are defined as Heavy Vehicles (HV).

Estimated future baseline traffic flows on the road network in the vicinity of the proposed development were calculated by applying these factors to the 2017/2018 surveyed flows. The resulting projected flows are detailed in the traffic flow diagrams in Appendix B.

7.0 Construction Stage Traffic

7.1 Introduction

As with any construction project, the contractor will be obliged to prepare a comprehensive traffic management plan for the construction phase. The purpose of such a plan is to outline the measures to manage the expected construction traffic activity during the construction period. In the interim, however, this section will provide an overview of the likely volume and routing of construction vehicles, based on a most likely scenario of construction.

7.2 Likely Construction Programme

The site as proposed would be expected to require approximately 3 years to complete from occupation of the site. Activities would include:

- Site Clearance;
- Excavation and Spoil Removal;
- Construction of Substructure;
- Construction of Superstructure; and
- Fitting and finishing.

The site will exhibit distinct characteristics during each stage of the construction programme, with varying demands for site deliveries, spoil removal, and car parking by site operatives.

7.3 Parking and Construction Staff

Parking for site operatives will be a requirement throughout the contract. It would be expected that a site of this size would generate a requirement for in the region of 300 site operatives during the peak period of construction, and which would lead to a parking requirement for about 100 vehicles.

During the early stages parking will be available on the areas of site where construction of blocks has yet to begin. Given the close proximity of the bus routes and bus stops to the development site it is considered reasonable that this could be a mode of transport during the construction stage. It is anticipated that due to the large area of the site the parking demand will be accommodated within the site.

During the main period of construction, space for parking will become available for site operatives in the basement car park, and the reliance on alternative facilities will be reduced. Parking demand will be accommodated in the basement car park which is proposed to contain 1377 car parking spaces. A Traffic Management Plan for the construction stage would include parking arrangements and be agreed with Galway City Council prior to commencement of the works on site.

7.4 Deliveries to Site

Material deliveries comprise largely of steel and concrete for the substructure, and concrete/precast concrete units/steel, timber, glazing and cladding for the superstructure. The main activity is likely to occur during the construction of the remaining substructure, where large concrete pours may be required. It is estimated that a maximum of 4 HGV loads per hour would be required during the busiest times.

It is assumed that most construction traffic approaching the site will travel via the Tuam Road and Monivea Road. Again, the Traffic Management Plan for the construction stage would identify haulage routes and restrictions as appropriate in discussion with the Local Authority.

7.5 Spoil Removal

The majority of bulk excavation has taken place during the construction of the previously constructed basement. The removal of any further spoil from the site will occur during the early stages of the construction. Spoil removal would be undertaken by rigid HGV's, similar in size to the concrete delivery vehicles. It is expected that most spoil removal activity will have taken place before larger concrete pours commence, and hence there should be limited overlap of the two activities.

7.6 Mitigation Measures

Construction debris (particularly site clearance, spoil removal and dirty water runoff such as dewatering or 'wash' from concreting activities) can have a significant impact on footpaths and roads adjoining a construction site, if not adequately dealt with. There will, therefore, be a requirement for comprehensive measures as part of the construction management, such as:

- Banksmen controlling access and egress from the site;
- All marshalling areas and site offices will be contained within the site boundary and will therefore have little impact on external roads;
- Wheel washers/judder bars to clean off vehicles exiting the site during spoil removal;
- All loads to be properly stowed and secured with a tarpaulin, where appropriate;
- Routine sweeping/cleaning of the road and footpaths in front of the site; and
- No uncontrolled runoff to the public road from dewatering/pumping carried out during construction activity.
- Hoarding will be provided along the site frontage to protect pedestrians using the footpaths.

The mitigation measures will therefore ensure that the presence of construction traffic will not lead to any significant environmental degradation or safety concerns in the vicinity of the proposed works. Furthermore, it is in the interests of the construction programme that deliveries, particularly concrete deliveries, are not unduly hampered by traffic congestion, and as a result continuous review of haulage routes, delivery timings and access arrangements will be undertaken as construction progresses to ensure smooth operation.

8.0 Modal Split

The mode share by trip purpose, obtained from the National Household Travel Survey 2012, is shown in Table 8.1 and illustrated for all trip purposes in Figure 8.1.

Car is the dominant mode, accounting for three quarters of all trips. Walking provides for a high proportion of trips, amounting to nearly 18% overall mode share. It is noteworthy that the proportion of other trips facilitated by walking is relatively high (19%).

Mode	All trip Purposes	Home to Education	Home to Work	Other
Car	74.3%	71.4%	78.2%	74.0%
Walk	17.8%	16.7%	10.7%	19.0%
Bus	3.4%	9.9%	2.5%	2.9%
Train	0.1%	0.0%	0.3%	0.0%
Cycle	1.1%	0.5%	2.5%	0.9%
Taxi	0.5%	0.0%	0.0%	0.6%
Motorbike	0.2%	0.0%	0.9%	0.1%
Truck or Van	2.6%	1.6%	4.7%	2.3%

Table 8.1. Mode Share by Trip Purpose (Source: National Household Travel Survey, 2012, Galway City and County Council)

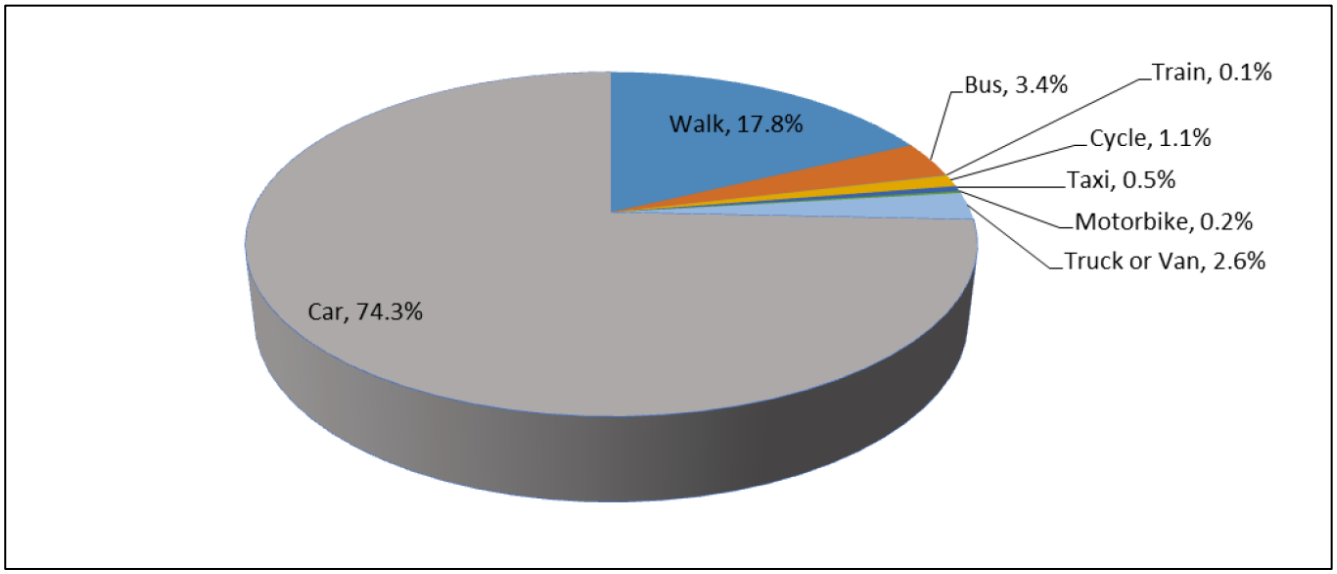

Figure 8.1. Mode Share for all Trip Purposes (Source: National Household Travel Survey, 2012, Galway City & Co. Council)

9.0 Cumulative Impacts

Pre-planning discussions were held with GCC in relation to the proposed development. During these discussions we were not informed of any potential committed large developments within the vicinity of the proposed development which should be included in our analysis.

10.0 Trip Assignment and Distribution

As agreed with GCC during initial scoping discussions, in order to gain an understanding of the future travel patterns of the traffic generated by the proposed development we have referred to the Galway Transport Strategy Report carried out by Galway City Council and Galway County Council in partnership with the National Transport Authority (NTA). GCC, in conjunction with the NTA are developing an Integrated Transport Management Programme (ITMP) for the Galway City area. The boundary of the study area is broadly delineated by, and including, the towns/villages of Bearna, Moycullen, Claregalway and Oranmore. The study area boundary is shown in Figure 10.1 below.

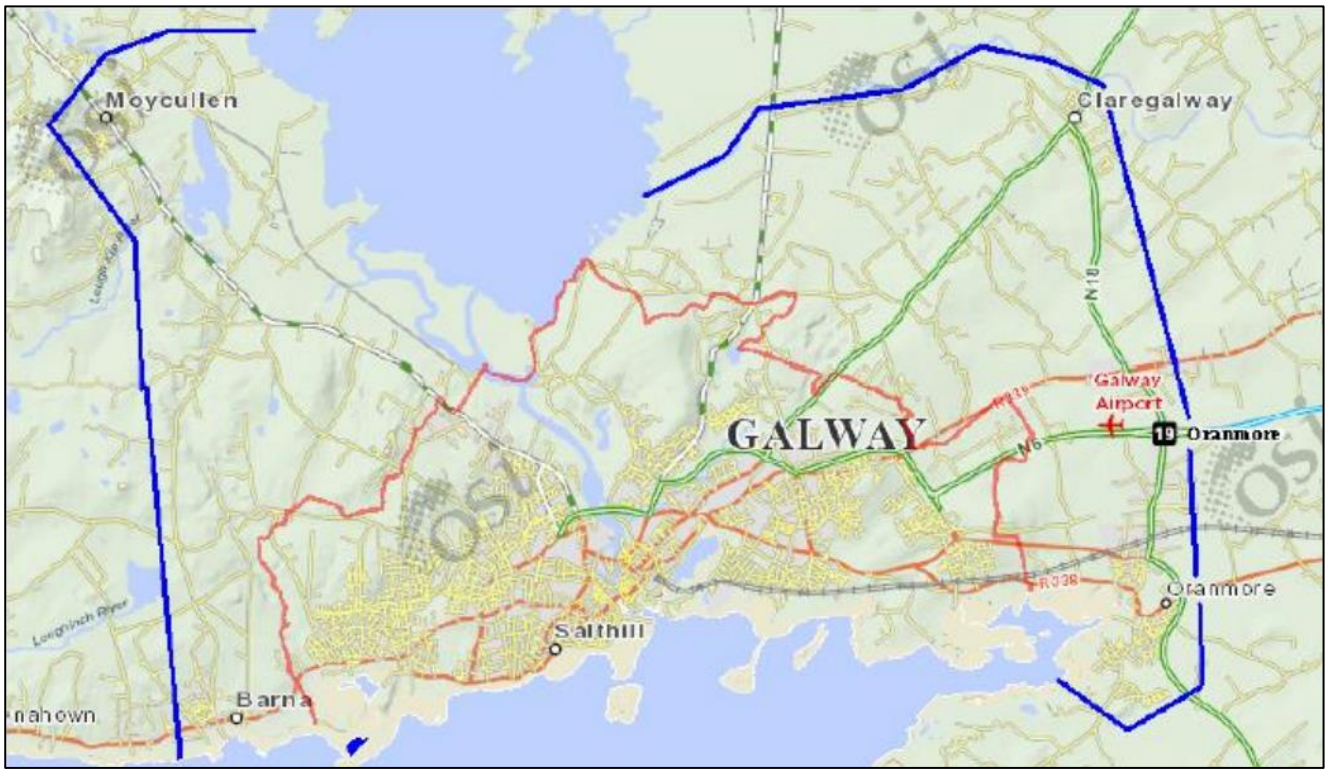

Figure 10.1. ITMP Study Area

The National Transport Authority (NTA) divided the Study Area into 31 zones using the CSO Small Area structure. Figure 10.2 illustrates the zonal structure. POWSCAR data was extracted and processed in accordance with the 31-zone structure. The resulting origin – destination matrix for the 31 zones is included in Figure 10.1 overleaf.

From the POWSCAR data in Table 10.1 we estimated the direction in which traffic generated by the proposed development may arrive and depart the site based on existing traffic behaviour.

The assumed percentage distributions at the existing junctions in the vicinity of the development site and the resulting AM and PM peak hour traffic turning flows generated by the proposed development are detailed in the diagrams presented in Appendix B.

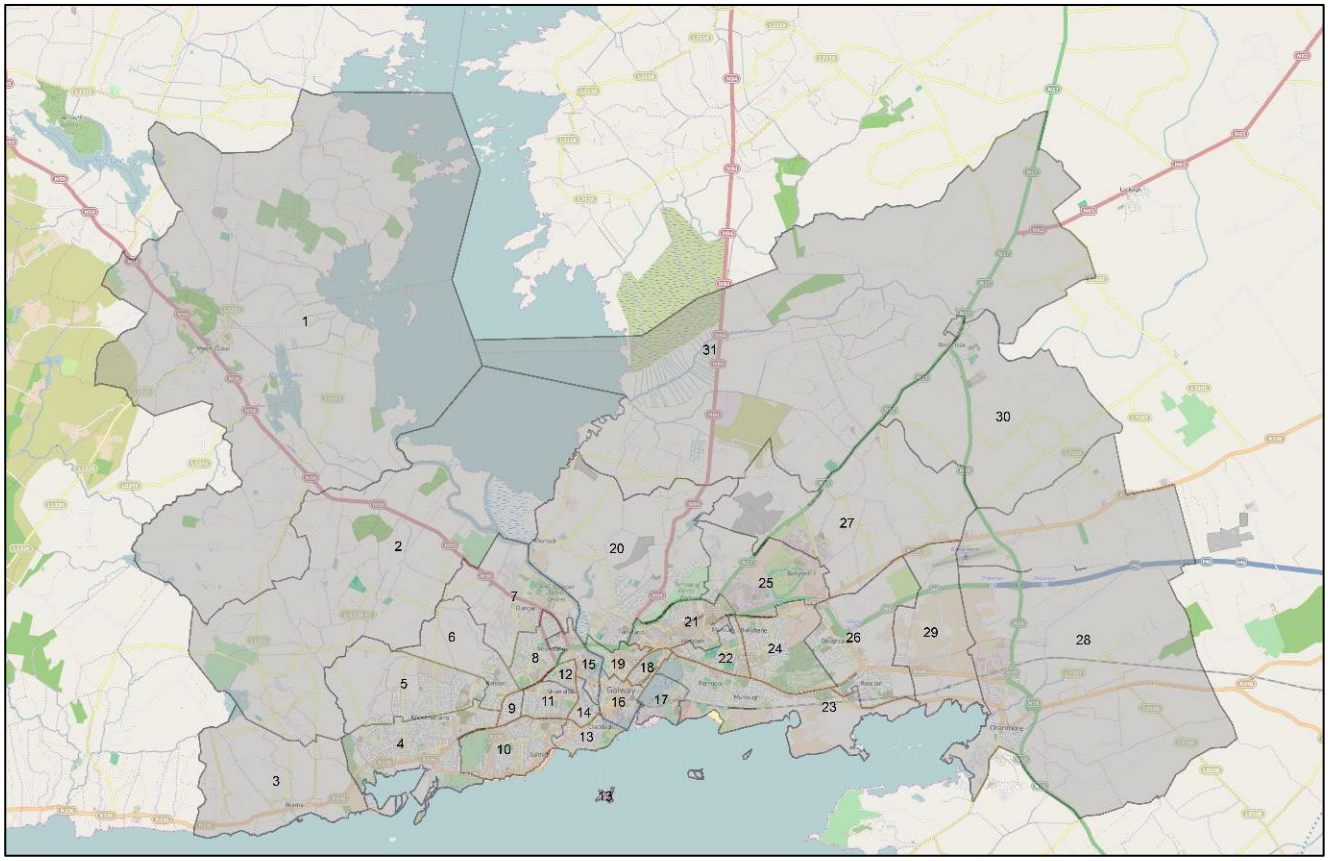

Figure 10.2. NTA Study Area Zones

	Zone Number	Moycullen	Oranswell	Barna	Knocknacarra South	Knocknacarra North	Rahoon	Dangan	Newcastle	Gleann Dara	Salthill	Shantalla	University Hospital	Claddagh	Henry St	NUIG	City Centre	Mellows Park	City Hall	Galway Shopping	Tirellan	Mervue Industrial	GMIT	Renmore	Merlin Park Hospital	Ballybrit	Doughiska	Parkmore	Oranmore	Ardaun	Baile Chláir	Carrowbrowne	Total as Origin	Rank as Origin
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Moycullen	1	595	3	15	7	6	2	55	14	1	167	54	86	32	93	324	151	9	16	26	5	91	47	31	15	118	14	30	15	0	0	3	2025	9
Oranswell	2	19	20	62	43	30	1	59	9	0	105	14	46	9	61	110	70	5	11	9	7	55	17	13	9	43	3	8	9	0	0	0	847	21
Barna	3	8	5	213	59	15	2	18	3	0	113	18	70	17	76	143	124	4	19	11	2	62	26	10	10	44	10	22	6	0	0	6	1116	14
Knocknacarra South	4	22	13	57	393	109	5	99	42	4	685	111	305	127	321	664	603	18	82	87	16	289	133	82	51	290	24	86	49	0	2	14	4783	1
Knocknacarra North	5	12	8	41	256	117	7	83	40	2	435	103	177	80	169	325	355	14	36	54	12	179	64	43	30	191	23	55	29	0	4	12	2956	4
Rahoon	6	5	5	5	37	37	4	59	31	3	205	108	124	50	107	275	213	10	18	29	12	87	40	25	16	100	14	27	20	0	3	17	1686	10
Dangan	7	4	3	1	4	8	0	114	3	0	80	20	59	13	41	252	94	1	13	19	2	57	25	18	11	50	6	13	6	0	1	3	921	20
Newcastle	8	5	0	3	14	10	1	109	43	1	127	92	120	42	89	459	160	12	18	26	6	94	36	19	15	72	3	15	21	0	0	2	1614	11
Gleann Dara	9	1	1	1	15	13	2	22	6	7	69	69	34	25	41	169	67	0	5	6	2	25	17	4	6	29	1	6	8	0	0	3	654	25
Salthill	10	6	5	9	20	15	1	32	12	0	475	49	156	64	240	399	360	4	26	37	8	136	63	30	23	123	14	47	24	0	0	5	2383	7
Shantalla	11	3	1	5	4	3	1	11	15	0	94	71	80	25	119	253	145	4	14	21	2	66	22	13	11	43	5	13	10	0	1	1	1056	16
University Hospital	12	0	0	0	0	0	0	1	1	0	1	1	7	1	6	54	9	0	1	2	0	7	2	3	1	1	0	1	1	0	0	0	100	31
Claddagh	13	0	2	1	7	6	0	12	4	0	67	26	55	72	118	180	178	3	14	22	2	66	30	20	7	61	8	19	19	0	2	0	1001	18
Henry St	14	2	1	0	7	4	0	9	2	3	21	9	46	18	95	259	120	2	6	18	0	46	19	8	7	23	10	21	8	0	0	1	765	23
NUIG	15	1	0	0	1	0	0	15	0	0	10	5	19	7	14	246	34	0	1	5	2	13	9	1	1	9	1	2	0	0	0	0	396	27
City Centre	16	0	1	2	2	6	0	17	6	1	29	2	45	35	29	452	382	4	7	33	6	44	53	6	3	80	8	31	17	0	2	1	1304	12
Mellows Park	17	1	0	0	0	1	0	0	2	0	8	2	5	1	5	6	22	6	2	3	2	16	11	14	1	8	4	3	3	0	1	0	127	30
City Hall	18	2	2	1	0	1	0	5	2	0	22	12	27	14	14	134	222	4	27	36	4	69	51	24	5	57	7	25	8	0	0	0	775	22
Galway Shopping Centre	19	1	2	0	2	2	1	8	3	0	13	14	21	12	5	131	204	2	6	45	6	55	30	5	4	53	4	23	8	0	0	0	660	24
Tirellan	20	9	2	5	12	14	0	56	20	3	143	62	121	43	98	624	514	14	46	125	430	343	136	99	34	405	30	74	50	0	9	29	3550	2
Mervue Industrial Estate	21	1	0	4	3	5	1	6	2	0	40	7	32	18	26	100	187	6	21	37	34	205	83	37	15	141	8	39	24	0	1	5	1088	15
GMIT	22	6	1	0	3	8	0	6	9	0	19	5	26	16	27	61	125	5	9	37	4	131	181	89	18	137	14	36	20	0	1	5	999	19
Renmore	23	1	1	3	3	5	0	15	6	0	77	20	60	31	34	170	244	25	18	47	16	234	448	354	64	183	18	54	79	0	4	5	2219	8
Merlin Park Hospital	24	6	1	3	10	17	1	20	12	1	96	69	55	28	69	141	274	17	15	38	36	277	507	313	66	398	57	133	106	0	3	7	2776	5
Ballybrit	25	0	0	2	0	0	0	3	2	0	18	2	4	1	7	23	34	4	2	5	6	35	22	8	2	68	4	17	8	0	2	2	281	28
Doughiska	26	10	1	6	9	18	1	24	13	2	92	30	101	30	90	139	352	22	29	61	42	334	300	255	48	703	221	325	204	0	14	18	3494	3
Parkmore	27	0	0	0	3	1	0	0	2	0	36	9	18	3	11	41	27	13	5	5	2	30	23	20	10	42	2	77	37	0	22	3	442	26
Oranmore	28	6	0	1	2	5	1	19	13	1	41	4	77	12	30	143	170	24	24	37	6	163	106	84	56	299	60	91	1102	0	16	11	2604	6
Ardaun	29	0	0	0	0	1	0	0	1	0	7	1	1	0	5	9	8	1	2	3	2	8	5	8	4	8	4	13	37	1	1	2	132	29
Baile Chláir	30	2	0	1	6	4	0	15	3	0	51	15	48	7	19	103	77	7	14	22	4	80	37	30	28	158	19	50	185	0	228	44	1257	13
Carrowbrowne	31	2	1	1	4	4	0	7	5	1	70	26	38	10	21	95	72	6	16	24	31	78	45	24	21	124	12	30	66	0	119	60	1013	17
Total as Destination		730	79	442	926	465	31	899	326	30	3416	1030	2063	843	2080	6484	5597	246	523	930	709	3375	2588	1690	592	4061	608	1386	2179	1	436	259		
Rank as Destination		17	28	23	14	22	29	15	25	30	4	12	9	16	8	1	2	27	21	13	18	5	6	10	20	3	19	11	7	31	24	26		

Table 10.1. POWSCAR Demand

11.0 Assessment and Road Impact

11.1 Description

The impact on the local road network has been assessed by examining the projected traffic flows on the local road network both 'with' and 'without' the proposed development in place. The morning peak period and the evening peak period have been examined in order to assess the busiest case in terms of local traffic on the road network and traffic generated by the proposed development.

11.2 Junction Analysis

Capacity analysis was carried out using the JCT Consultancy Traffic Signal Design & Analysis Software package LinSig and also with the TRL software package PICADY.

LinSig was used to carry out an analysis of new traffic signal controls at the existing junction between Joyce's Road and Tuam Road (Junction 1), the upgraded traffic signal-controlled junction between Joyce's Road and Monivea Road/Wellpark Road and Connolly Avenue (Junction 2) and the signal controlled N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road crossroads junction (Junction 5).

PICADY was used for the new development site entrance junction onto Monivea Road (Junction 3) and the development junction with Joyce's Road (Junction 4) to determine and confirm if they will be traffic signal controlled or not. PICADY was also used to analyse the existing junction between Joyce's Road and Tuam Road (Junction 1) in the current year prior to mitigation works.

These five junctions are shown in Figure 11.1 and were analysed for the following traffic flow scenarios:

- 2022 Opening Year AM and PM peak hour flows without proposed development in place;
- 2022 Opening Year AM and PM peak hour flows with proposed development in place;
- 2027 Opening Year + 5 Years AM and PM peak hour flows without proposed development in place;
- 2027 Opening Year + 5 Years AM and PM peak hour flows with proposed development in place.
- 2037 Opening Year + 15 Years AM and PM peak hour flows without proposed development in place;
- 2037 Opening Year + 15 Years AM and PM peak hour flows with proposed development in place.

The existing junctions were also analysed in the current year, 2018, without the development in place.

Estimated turning movements for each of the above scenarios were calculated by summing the predicted generated flows and the expanded baseflows. Total traffic turning flow diagrams for each analysis scenario have been reproduced in the traffic flow diagrams in Appendix B. The following sections summarise the findings of the junction capacity modelling for each of the junctions within the study area.

PICADY Analysis Note:

The ratio of flow to capacity (RFC) is an indicator of the likely performance of a junction under design year loading. Due to site to site variation, there may be a standard error of prediction of the entry capacity by the formulae of + or - 15% for any site. Thus, queuing should not occur in the various turning movements in the chosen design year peak hour in 5 out of 6 peak hour periods or sites if a maximum RFC of about 85% is used.

LinSig Analysis Note:

The Degree of Saturation (DOS) is defined as the ratio of demand flow to the maximum flow which can be passed through the intersection from a particular approach.

Practical Capacity is the level of capacity above which the junction is assumed to work inefficiently (90% saturated).

Practical Reserve Capacity (PRC) is the amount by which traffic demand can grow before Practical Capacity is reached.

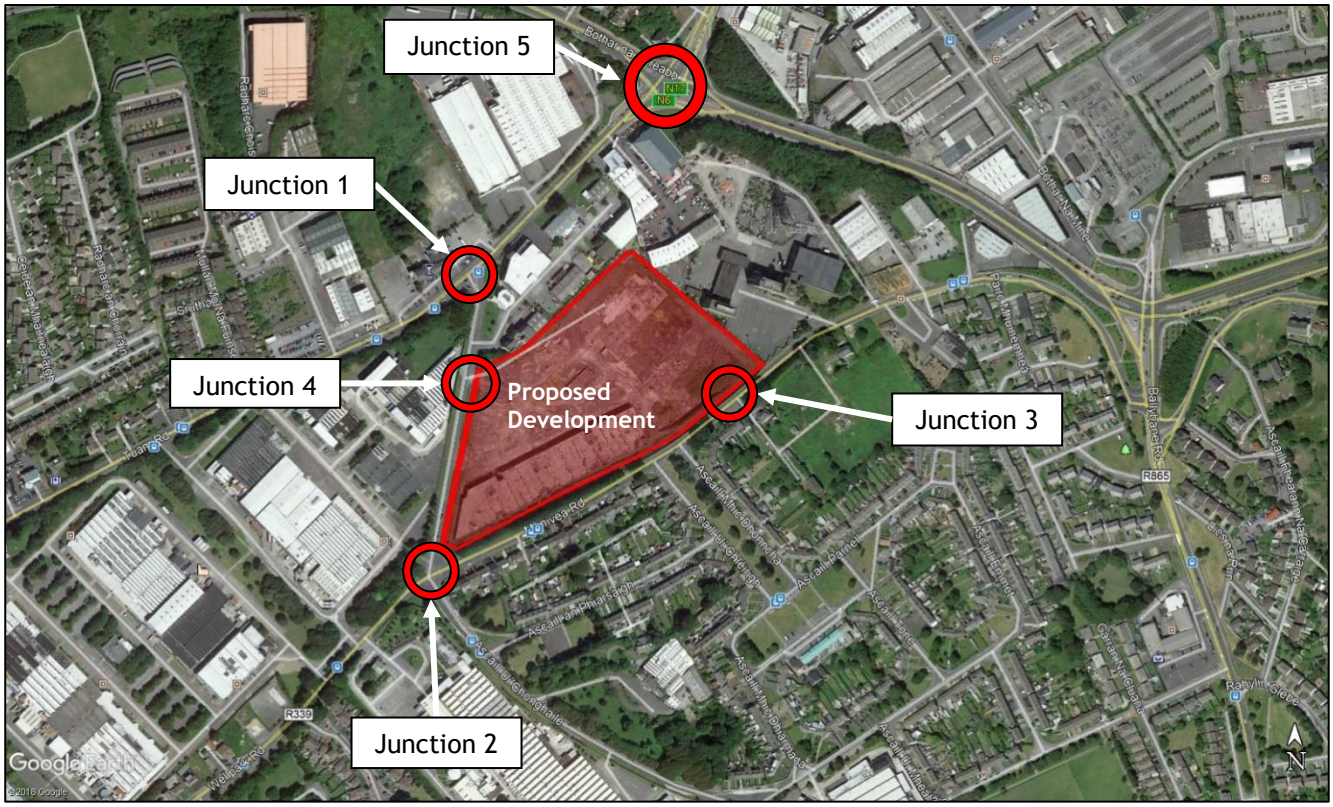

Figure 11.1 – Identified Junctions for Analysis (© OpenStreetMap contributor)

11.2.1 Junction between Joyce's Road and Tuam Road (Junction 1)

The major route through this junction is Tuam Road going in an East/West direction, with Joyce's Road to the South acting as the minor arm. There is no dedicated right turn lane at this location.

There is reflective queuing from the Tuam Road junction with Moneenageisha which queues back past Joyce's Road in the AM and PM peak hours.
The results of the PICADY analysis for the junction have been summarised in the tables overleaf and are reproduced in full in Appendix D1.

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	59.6	58	1.4
Joyce's Road Left to Tuam Road	55.1	20	1.2
Tuam Road Right to Joyce's Road	42.4	16	1.0

Table 11.1. 2018 AM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	67.5	53	1.9
Joyce's Road Left to Tuam Road	43.6	17	0.8
Tuam Road Right to Joyce's Road	36.2	14	0.7

Table 11.2. 2018 PM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	68.0	77	1.9
Joyce's Road Left to Tuam Road	61.8	25	1.5
Tuam Road Right to Joyce's Road	44.6	17	1.1

Table 11.3. 2022 AM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	74.3	76	2.5
Joyce's Road Left to Tuam Road	50.7	23	1.0
Tuam Road Right to Joyce's Road	38.1	15	0.8

Table 11.4. 2022 PM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	82.1	130	3.2
Joyce's Road Left to Tuam Road	79.7	52	3.2
Tuam Road Right to Joyce's Road	47.7	19	1.3

Table 11.5. 2027 AM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	85.2	119	4.0
Joyce's Road Left to Tuam Road	73.4	53	2.3
Tuam Road Right to Joyce's Road	40.7	16	0.9

Table 11.6. 2027 PM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	97.7	223	6.2
Joyce's Road Left to Tuam Road	102.4	162	11.3
Tuam Road Right to Joyce's Road	50.6	20	1.5

Table 11.7. 2037 AM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	Without Dev.	Without Dev.	Without Dev.
Joyce's Road Right to Tuam Road	96.4	184	6.8
Joyce's Road Left to Tuam Road	98.9	160	7.7
Tuam Road Right to Joyce's Road	42.6	17	1.0

Table 11.8. 2037 PM Peak Period - Joyce's Road and Tuam Road Priority Controlled T-Junction

This analysis demonstrates that the existing priority-controlled junction in its current format is predicted to operate above the recommended RFC level of 85% by 2027 PM even without the proposed development in operation.

During scoping discussions with GCC it was agreed to investigate the possibility of making this junction a signalised T-junction. A signalised junction was designed, and further analysis was carried out using LinSig.

The results of the LINSIG analysis for the junction have been summarised in the tables below and are reproduced in full in Appendix D2.

The pedestrian stage has been set to run every second cycle.

Approach Arm	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Tuam Road Westbound	68.1%	86.6%	21.1	35.4	20.3	19.7
Joyce's Road	68.7%	87.8%	57.4	59.8	10.1	7.6
Tuam Road Eastbound	68.3%	87.5%	24.0	43.9	16.1	17.4

Table 11.9. 2022 AM Peak Period - Joyce's Road and Tuam Road Signalised T-Junction

Approach Arm	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Tuam Road Westbound	59.8%	68.8%	16.3	23.8	16.8	20.3
Joyce's Road	63.0%	72.9%	55.8	51.3	5.2	9.7
Tuam Road Eastbound	63.8%	73.2%	18.5	28.1	15.0	18.6

Table 11.10. 2022 PM Peak Period – Joyce's Road and Tuam Road Signalised T-Junction

Approach Arm	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Tuam Road Westbound	71.1%	90.3%	22.1	41.3	21.8	23.7
Joyce's Road	71.7%	92.9%	59.9	75.4	11.2	9.2
Tuam Road Eastbound	71.3%	93.1%	25.5	59.1	17.9	21.8

Table 11.11. 2027 AM Peak Period – Joyce's Road and Tuam Road Signalised T-Junction

Approach Arm	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Tuam Road Westbound	62.1%	71.3%	16.6	24.4	18.5	21.7
Joyce's Road	66.5%	76.0%	57.8	53.8	5.6	10.9
Tuam Road Eastbound	66.3%	75.9%	19.2	29.4	16.8	20.5

Table 11.12. 2027 PM Peak Period – Joyce's Road and Tuam Road Signalised T-Junction

Approach Arm	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Tuam Road Westbound	73.9%	98.7%	25.2	73.7	30.2	31.9
Joyce's Road	74.3%	96.0%	60.2	89.2	11.3	11.2
Tuam Road Eastbound	74.8%	96.9%	30.3	76.2	26.5	26.5

Table 11.13. 2037 AM Peak Period – Joyce's Road and Tuam Road Signalised T-Junction

Approach Arm	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Tuam Road Westbound	64.9%	73.5%	17.5	24.9	19.6	22.4
Joyce's Road	68.2%	79.1%	58.0	57.8	5.9	13.0
Tuam Road Eastbound	69.0%	78.6%	20.4	30.8	18.0	21.2

Table 11.14. 2037 PM Peak Period – Joyce's Road and Tuam Road Signalised T-Junction

The LinSig analysis predicts that by 2037 the junction could be operating at -9.7% PRC (cycle time = 120s) during the morning peak hour and 13.8% PRC (cycle time = 240s) during the evening peak hour. As mentioned previously for the purposes of our analysis a full pedestrian stage has been called every second cycle. This may not happen in practice which will increase the capacity of the junction.

An alternative layout to that analysed would be to install a left-slip lane on the westbound lane on Tuam Road. This would allow left turners onto Joyce's Road to avoid passing through the traffic signals and only yielding to right-turners from Tuam Road at its junction with Joyce's Road. The sketch overleaf illustrates the potential alternative layout which would give the junction additional capacity.

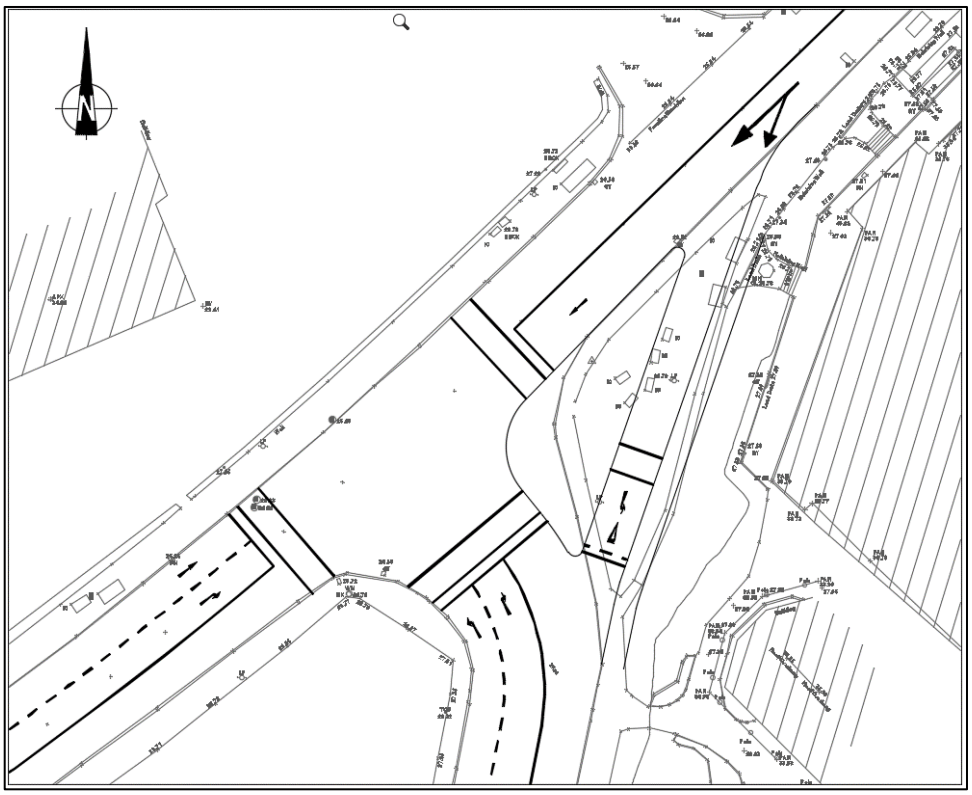

Figure 11.2 – Alternative Signalised Junction Layout at Tuam Road and Joyce's Road

The works required as part of the upgrade works to the junction are discussed further in Section 17 - Mitigation of this report.

11.2.2 Signal-controlled Junction between Joyce's Road & Monivea Road/Wellpark Road & Connolly Avenue (Junction 2)

Monivea Road and Wellpark Road are the main arms at this junction with the predominant flow between the two roads in an east-west direction. There is also a considerable flow of traffic turning onto Wellpark Road from Joyce's Road and Connolly Avenue.

The results of the LINSIG analysis for the existing junction layout have been summarised in the tables below and are reproduced in full in Appendix D3. The analysis uses the same sequencing of lights that is currently in operation as requested by GCC.

The cycle time used during the analysis of this junction is 240 seconds which includes two runs of each traffic stage and one run of the pedestrian stage i.e. the pedestrian stage has been set to run every second cycle (240s).

Approach Arm/Turning Movement	Degree of Saturation (%)	Average Delay per Vehicle (s/pcu)	Queue (pcu)
	Existing Junction Without Dev.	Existing Junction Without Dev.	Existing Junction Without Dev.
Monivea Road Left/Ahead/Right	72.0%	33.8	19.1
Connolly Avenue Left/Ahead/Right	71.9%	44.8	14.1
Wellpark Road Left/Ahead/Right	55.4%	31.7	12.5
Joyce's Road Left/Ahead/Right	49.7%	45.4	3.4

Table 11.15. 2018 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/Turning Movement	Degree of Saturation (%)	Average Delay per Vehicle (s/pcu)	Queue (pcu)
	Existing Junction Without Dev.	Existing Junction Without Dev.	Existing Junction Without Dev.
Monivea Road Left/Ahead/Right	35.6%	17.8	8.0
Connolly Avenue Left/Ahead/Right	82.5%	70.4	12.6
Wellpark Road Left/Ahead/Right	82.2%	28.1	30.9
Joyce's Road Left/Ahead/Right	49.9%	53.9	5.3

Table 11.16. 2018 PM Peak Period – Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.
Monivea Road Left/Ahead/Right	74.5%	81.4%	34.8	41.6	19.2	27.1
Connolly Avenue Left/Ahead/Right	74.4%	81.3%	46.2	51.2	15.3	20.1
Wellpark Road Left/Ahead/Right	57.7%	75.5%	32.4	39.5	11.9	23.4
Joyce's Road Left/Ahead/Right	58.4%	79.0%	49.6	75.7	3.8	7.3

Table 11.17. 2022 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.
Monivea Road Left/Ahead/Right	37.1%	52.5%	18.3	23.7	8.5	15.0
Connolly Avenue Left/Ahead/Right	85.5%	78.7%	75.4	61.8	14.1	13.5
Wellpark Road Left/Ahead/Right	85.3%	94.6%	30.6	54.5	33.9	45.7
Joyce's Road Left/Ahead/Right	51.7%	94.3%	54.8	114.9	5.8	11.9

Table 11.18. 2022 PM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.
Monivea Road Left/Ahead/Right	78.0%	86.5%	38.5	47.2	25.3	29.7
Connolly Avenue Left/Ahead/Right	77.9%	82.8%	49.0	52.3	17.5	21.5
Wellpark Road Left/Ahead/Right	60.7%	79.9%	35.2	44.4	16.1	25.3
Joyce's Road Left/Ahead/Right	67.6%	85.6%	60.5	87.1	5.1	8.7

Table 11.19. 2027 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.
Monivea Road Left/Ahead/Right	38.7%	54.6%	18.3	24.3	8.4	15.5
Connolly Avenue Left/Ahead/Right	89.3%	80.7%	83.2	63.8	14.9	14.8
Wellpark Road Left/Ahead/Right	89.3%	100.1%	35.4	89.7	36.0	57.8
Joyce's Road Left/Ahead/Right	63.0%	100.2%	59.2	157.4	6.1	16.3

Table 11.20. 2027 PM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.
Monivea Road Left/Ahead/Right	81.1%	90.5%	40.2	54.4	26.6	33.0
Connolly Avenue Left/Ahead/Right	81.2%	85.1%	52.5	54.2	20.1	22.0
Wellpark Road Left/Ahead/Right	68.6%	93.0%	37.6	65.0	17.1	30.6
Joyce's Road Left/Ahead/Right	74.7%	96.3%	69.0	129.4	6.0	13.0

Table 11.21. 2037 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.	Existing Junction Without Dev.	Existing Junction with Dev.
Monivea Road Left/Ahead/Right	40.3%	56.7%	18.9	24.7	8.7	16.3
Connolly Avenue Left/Ahead/Right	92.6%	82.2%	93.8	64.7	16.9	15.4
Wellpark Road Left/Ahead/Right	93.0%	105.3%	41.2	168.8	40.5	82.1
Joyce's Road Left/Ahead/Right	86.7%	105.7%	87.0	219.4	8.4	23.0

Table 11.22. 2037 PM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction Existing Layout

This analysis predicts that the junction, in its current form, would operate without any capacity issues as a standalone junction. However, the existing crossroads junction is currently experiencing congestion issues in the PM. It is believed that the congestion issues occurring in the PM are as a result of reflective queuing from the Monivea Rd junction with Bothar na dTreabh further east which backs up to cause congestion at the Monivea

Road/Wellpark Road signalised junction. At stages where the reflective queuing eases congestion still occurs as eastbound traffic drives at a slower speed knowing they are joining the back of a queue further ahead therefore reducing the saturation flow of eastbound traffic causing capacity issues. The junction has been analysed as a standalone junction and therefore reflective queuing from the Bothar na dTreabh junction has not been included.

Aside from the obvious cause of high traffic flows combined with lack of carriageway width for additional lanes, another issue which reduces the saturation flow of the junction is the existing bend at the junction between Monivea Road and Wellpark Road and also between Connolly Avenue and Joyce's Road which causes a 'skew' of the junction. Visibility for right-turners gap accepting at junctions is on occasion compromised by opposing vehicles also right-turning. The bend in both carriageways at the junction further exacerbates the visibility issue with right-turners meeting in the middle of the junction waiting to turn right blocking each other's forward visibility to straight-ahead moving traffic on a bend.

The analysis predicts that the junction could be operating close to capacity in the PM without the development in place by 2027.

GCC requested that we investigate upgrading the signalised junction to improve its operation.

The results of the LINSIG analysis for the existing and proposed junction layout with the development operational have been summarised in the tables below. The full output of results for the proposed signalised junction including any alterations are reproduced in full in Appendix D4.

Once again, the cycle time used during the analysis of this junction is 240 seconds which includes two runs of each traffic stage and one run of the pedestrian stage i.e. the pedestrian stage has been set to run every second cycle (240s).

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.
Monivea Road Left/Ahead/Right	81.4%	80.2%	41.6	40.9	27.1	26.6
Connolly Avenue Left/Ahead/Right	81.3%	79.4%	51.2	48.3	20.1	19.1
Wellpark Road Left/Ahead/Right	75.5%	76.8%	39.5	41.0	23.4	24.5
Joyce's Road Left/Ahead/Right	79.0%	75.3%	75.7	69.3	7.3	6.9

Table 11.23. 2022 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.
Monivea Road Left/Ahead/Right	52.5%	50.8%	23.7	22.8	15.0	14.1
Connolly Avenue Left/Ahead/Right	78.7%	78.7%	61.8	61.5	13.5	13.0
Wellpark Road Left/Ahead/Right	94.6%	93.7%	54.5	52.3	45.7	44.0
Joyce's Road Left/Ahead/Right	94.3%	94.0%	114.9	112.7	11.9	11.8

Table 11.24. 2022 PM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.
Monivea Road Left/Ahead/Right	86.5%	84.4%	47.2	44.4	29.7	28.4
Connolly Avenue Left/Ahead/Right	82.8%	81.9%	52.3	50.5	21.5	21.0
Wellpark Road Left/Ahead/Right	79.9%	80.4%	44.4	43.7	25.3	25.5
Joyce's Road Left/Ahead/Right	85.6%	83.1%	87.1	81.5	8.7	8.2

Table 11.25. 2027 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.
Monivea Road Left/Ahead/Right	54.6%	53.2%	24.3	24.0	15.5	14.5
Connolly Avenue Left/Ahead/Right	80.7%	79.4%	63.8	62.7	14.8	15.1
Wellpark Road Left/Ahead/Right	100.1%	99.2%	89.7	79.4	57.8	56.7
Joyce's Road Left/Ahead/Right	100.2%	96.7%	157.4	129.5	16.3	13.5

Table 11.26. 2027 PM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.
Monivea Road Left/Ahead/Right	90.5%	89.2%	54.4	51.1	33.0	31.2
Connolly Avenue Left/Ahead/Right	85.1%	83.3%	54.2	51.9	22.0	22.6
Wellpark Road Left/Ahead/Right	93.0%	87.6%	65.0	52.8	30.6	28.4
Joyce's Road Left/Ahead/Right	96.3%	90.1%	129.4	98.8	13.0	10.3

Table 11.27. 2037 AM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.	Existing Junction with Dev.	Proposed Junction with Dev.
Monivea Road Left/Ahead/Right	56.7%	55.3%	24.7	24.8	16.3	15.1
Connolly Avenue Left/Ahead/Right	82.2%	80.9%	64.7	63.5	15.4	15.8
Wellpark Road Left/Ahead/Right	105.3%	103.9%	168.8	144.2	82.1	77.0
Joyce's Road Left/Ahead/Right	105.7%	102.5%	219.4	181.6	23.0	19.2

Table 11.28. 2037 PM Peak Period - Monivea Rd/Connolly Ave/Wellpark Rd/Joyce's Rd Signalised Crossroads Junction

The results of the LinSig analysis of the existing junction arrangement and the proposed junction alterations, with the proposed development operational, predict that the alterations proposed at the junction will improve the operating capacity of the junction from the existing layout. The junction will still operate above capacity as it is currently, but the minor mitigation measures proposed are predicted to improve the current situation.

As mentioned previously for the purposes of our analysis a full pedestrian stage has been called every second cycle. This may not happen in practice which will increase the capacity of the junction.

The works required as part of the upgrade works to the junction are discussed further in Section 17 - Mitigation of this report.

11.2.3 Proposed Development site entrance junction onto Monivea Road (Junction 3)

Visitor, delivery, service and additional commercial and residential access will be provided in a centrally managed and secure lower ground/basement car-park facility. Access to the basement levels for service vehicles and cars is proposed at the south-eastern corner of the site. This access will provide direct access to the lower basement car park car park from which the car park in the upper basement may be accessed.

It is anticipated that vehicles wishing to access car parking at the development approaching from the south/southwest direction will enter the car park using this access as it would avoid the necessity for turning right into the development across oncoming traffic.

Monivea Road is the main arm of the T-junction with one lane in each direction. A right-turn lane is not proposed as part of the development works. The development arm has one entry lane and two exit lanes, one each for left-turning and right turning vehicles exiting the development.

The results of the PICADY analysis for the proposed access have been summarised in the tables below and are reproduced in full in Appendix D5.

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Development Right to City Centre	19.9	22	0.2
Development Left (eastbound)	8.1	9	0.1
Monivea Road Right into Dev.	22.3	10	0.4

Table 11.29. 2022 AM Peak Period - Proposed Development Junction onto Monivea Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Development Right to City Centre	53.9	38	1.1
Development Left (eastbound)	28.1	15	0.4
Monivea Road Right into Dev.	7.2	9	0.1

Table 11.30. 2022 PM Peak Period - Proposed Development Junction onto Monivea Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Development Right to City Centre	20.8	23	0.3
Development Left (eastbound)	8.2	9	0.1
Monivea Road Right into Dev.	22.5	10	0.4

Table 11.31. 2027 AM Peak Period - Proposed Development Junction onto Monivea Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Development Right to City Centre	56.7	42	1.3
Development Left (eastbound)	29.0	16	0.4
Monivea Road Right into Dev.	7.3	9	0.1

Table 11.32. 2027 PM Peak Period - Proposed Development Junction onto Monivea Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Development Right to City Centre	21.7	25	0.3
Development Left (eastbound)	8.3	9	0.1
Monivea Road Right into Dev.	22.8	10	0.4

Table 11.33. 2037 AM Peak Period - Proposed Development Junction onto Monivea Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Development Right to City Centre	59.6	47	1.4
Development Left (eastbound)	29.8	16	0.4
Monivea Road Right into Dev.	7.5	10	0.1

Table 11.34. 2037 PM Peak Period – Proposed Development Junction onto Monivea Road

This analysis clearly demonstrates that the proposed development junction with Monivea Road will operate successfully up to the design year 2037.

11.2.4 Proposed Development site entrance junction with Joyce's Road (Junction 4)

There is a second access junction proposed for the development off Joyce's Road. This junction is located in the north-western corner of the development site.

This junction will provide direct access to the car park on the upper basement level. The car park on the lower basement level can be accessed via a ramp from here.

Joyce's Road is the main arm of the T-junction with one lane in each direction. A right-turn lane is not proposed as part of the development works. The development arm has one entry lane and two exit lanes, one each for left-turning and right turning vehicles exiting the development.

The results of the PICADY analysis for the proposed access have been summarised in the tables below and are reproduced in full in Appendix D6.

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Dev. Right (northbound) towards Tuam Road	16.4	14	0.2
Dev. Left (eastbound) towards Monivea Road	8.8	8	0.1
Joyce's Road Right into Dev.	7.2	8	0.1

Table 11.35. 2022 AM Peak Period – Proposed Development Junction onto Joyce's Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Dev. Right (northbound) towards Tuam Road	41.0	19	0.7
Dev. Left (eastbound) towards Monivea Road	25.3	11	0.3
Joyce's Road Right into Dev.	2.1	8	0.1

Table 11.36. 2022 PM Peak Period – Proposed Development Junction onto Joyce's Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Dev. Right (northbound) towards Tuam Road	16.7	14	0.2
Dev. Left (eastbound) towards Monivea Road	8.9	8	0.1
Joyce's Road Right into Dev.	7.3	8	0.1

Table 11.37. 2027 AM Peak Period – Proposed Development Junction onto Joyce's Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Dev. Right (northbound) towards Tuam Road	41.7	19	0.6
Dev. Left (eastbound) towards Monivea Road	25.5	11	0.3
Joyce's Road Right into Dev.	2.1	8	0.1

Table 11.38. 2027 PM Peak Period – Proposed Development Junction onto Joyce's Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Dev. Right (northbound) towards Tuam Road	17.0	15	0.2
Dev. Left (eastbound) towards Monivea Road	9.0	9	0.1
Joyce's Road Right into Dev.	7.4	8	0.1

Table 11.39. 2037 AM Peak Period – Proposed Development Junction onto Joyce's Road

Approach Arm/Turning Movement	RFC (%)	Delay (s)	Max. Queue (PCU)
	With Dev.	With Dev.	With Dev.
Dev. Right (northbound) towards Tuam Road	42.3	20	0.7
Dev. Left (eastbound) towards Monivea Road	25.7	11	0.3
Joyce's Road Right into Dev.	2.1	8	0.1

Table 11.40. 2037 PM Peak Period – Proposed Development Junction onto Joyce's Road

This analysis clearly demonstrates that the proposed development junction with Joyce's Road will operate successfully up to the design year 2037.

11.2.5 Signal-controlled Junction between the N6, the R336 Tuam Road and the N83 Tuam Road (Junction 5)

The N6 Bothar na dTreabh is the main route through this junction and the Tuam Road is the minor arm. The left-slip lane off Bothar na dTreabh to the R336 Tuam Road yields to city bound traffic from the N83 and N6 and also to the signalised pedestrian crossing when they are called.

The results of the LINSIG analysis for the existing junction layout have been summarised in the tables below and are reproduced in full in Appendix D7.

The cycle time used during the analysis of this junction is 120 seconds with pedestrian stages ran during the traffic stages.

Approach Arm/Turning Movement	Degree of Saturation (%)	Average Delay per Vehicle (s/pcu)	Queue (pcu)
	Without Dev.	Without Dev.	Without Dev.
N6 Westbound Left/Ahead	76.0%	24.0	7.7
N6 Westbound Ahead	54.1%	36.3	10.4
N6 Westbound Right	54.2%	69.1	4.0
Tuam Road Northbound Left/Ahead	80.8%	64.2	12.9
Tuam Road Northbound Right	84.5%	67.7	14.2
N6 Eastbound Ahead/Left	85.4%	55.9	18.7
N6 Eastbound Ahead/Right	86.9%	57.8	20.5
Tuam Road Southbound Left/Ahead	75.8%	65.0	7.8
Tuam Road Southbound Ahead	67.5%	67.1	7.1
Tuam Road Southbound Right	83.5%	87.3	9.3

Table 11.41. 2018 AM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/Turning Movement	Degree of Saturation (%)	Average Delay per Vehicle (s/pcu)	Queue (pcu)
	Without Dev.	Without Dev.	Without Dev.
N6 Westbound Left/Ahead	60.9%	21.8	9.2
N6 Westbound Ahead	45.3%	34.3	8.3
N6 Westbound Right	86.5%	94.0	10.1
Tuam Road Northbound Left/Ahead	87.8%	72.5	15.7
Tuam Road Northbound Right	88.0%	72.6	15.9
N6 Eastbound Ahead/Left	89.2%	66.5	19.3
N6 Eastbound Ahead/Right	90.2%	67.8	20.7
Tuam Road Southbound Left/Ahead	64.9%	59.2	6.0
Tuam Road Southbound Ahead	53.4%	62.0	5.0
Tuam Road Southbound Right	86.4%	96.4	9.6

Table 11.42. 2018 PM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
N6 Westbound Left/Ahead	78.7%	78.7%	25.5	25.5	8.6	8.6
N6 Westbound Ahead	56.8%	56.8%	37.1	37.1	11.1	11.1
N6 Westbound Right	56.1%	56.1%	70.0	70.0	4.2	4.2
Tuam Road Northbound Left/Ahead	83.7%	86.7%	67.7	72.5	13.8	14.9
Tuam Road Northbound Right	87.8%	87.8%	73.4	73.4	15.4	15.4
N6 Eastbound Ahead/Left	85.4%	85.4%	55.9	55.9	18.7	18.7
N6 Eastbound Ahead/Right	87.0%	87.0%	58.1	58.1	20.6	20.6
Tuam Road Southbound Left/Ahead	78.1%	84.1%	66.9	74.6	8.2	9.6
Tuam Road Southbound Ahead	70.3%	78.0%	69.0	76.1	7.6	8.8
Tuam Road Southbound Right	86.9%	86.9%	95.0	95.0	10.2	10.2

Table 11.43. 2022 AM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
N6 Westbound Left/Ahead	63.0%	62.2%	22.2	22.4	9.7	10.0
N6 Westbound Ahead	46.8%	46.7%	34.6	35.3	8.6	8.5
N6 Westbound Right	90.0%	90.0%	104.3	104.3	11.2	11.2
Tuam Road Northbound Left/Ahead	90.8%	92.3%	79.8	81.3	17.2	19.0
Tuam Road Northbound Right	91.2%	85.6%	80.5	65.5	17.5	15.6
N6 Eastbound Ahead/Left	89.4%	91.9%	66.9	74.5	19.3	20.4
N6 Eastbound Ahead/Right	90.1%	92.5%	67.6	75.5	20.7	22.0
Tuam Road Southbound Left/Ahead	66.5%	70.2%	59.9	62.5	6.2	6.5
Tuam Road Southbound Ahead	56.0%	59.1%	63.0	65.9	5.3	5.4
Tuam Road Southbound Right	89.2%	94.8%	104.7	133.1	10.5	12.3

Table 11.44. 2022 PM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
N6 Westbound Left/Ahead	83.8%	83.8%	30.2	30.1	10.5	10.5
N6 Westbound Ahead	64.0%	64.5%	40.9	41.0	12.6	12.7
N6 Westbound Right	59.1%	59.1%	71.6	71.6	4.5	4.5
Tuam Road Northbound Left/Ahead	84.5%	87.4%	67.4	72.3	14.5	15.6
Tuam Road Northbound Right	88.7%	88.7%	74.0	74.0	16.2	16.2
N6 Eastbound Ahead/Left	90.1%	90.1%	66.4	66.4	20.4	20.4
N6 Eastbound Ahead/Right	91.1%	91.1%	68.2	68.2	22.2	22.2
Tuam Road Southbound Left/Ahead	77.8%	83.5%	65.0	71.9	8.3	9.8
Tuam Road Southbound Ahead	70.2%	77.5%	67.3	73.6	7.8	9.2
Tuam Road Southbound Right	86.3%	86.3%	90.9	90.9	10.4	10.4

Table 11.45. 2027 AM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
N6 Westbound Left/Ahead	65.7%	65.8%	23.3	23.9	10.4	10.8
N6 Westbound Ahead	49.7%	49.8%	36.0	36.8	9.2	9.1
N6 Westbound Right	93.8%	93.8%	120.5	120.5	12.8	12.8
Tuam Road Northbound Left/Ahead	91.8%	96.2%	81.2	98.3	18.2	22.2
Tuam Road Northbound Right	92.2%	89.4%	82.2	72.8	18.5	17.4
N6 Eastbound Ahead/Left	91.9%	94.5%	74.5	85.6	20.4	22.1
N6 Eastbound Ahead/Right	92.6%	95.2%	75.8	87.3	22.0	23.8
Tuam Road Southbound Left/Ahead	68.9%	69.8%	61.1	60.9	6.5	6.6
Tuam Road Southbound Ahead	59.0%	58.6%	64.2	64.0	5.7	5.6
Tuam Road Southbound Right	93.3%	93.3%	121.2	121.2	12.0	12.0

Table 11.46. 2027 PM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
N6 Westbound Left/Ahead	87.0%	87.0%	33.7	33.8	12.3	12.3
N6 Westbound Ahead	72.1%	72.1%	44.2	44.2	14.9	14.9
N6 Westbound Right	62.0%	62.0%	73.3	73.3	4.8	4.8
Tuam Road Northbound Left/Ahead	87.5%	90.4%	72.5	79.3	15.6	17.0
Tuam Road Northbound Right	92.0%	92.0%	83.3	83.3	17.9	17.9
N6 Eastbound Ahead/Left	90.1%	90.1%	66.4	66.4	20.4	20.4
N6 Eastbound Ahead/Right	91.2%	91.2%	68.4	68.4	22.2	22.2
Tuam Road Southbound Left/Ahead	80.5%	85.9%	67.5	75.5	8.9	10.5
Tuam Road Southbound Ahead	73.2%	80.8%	69.5	77.7	8.4	9.8
Tuam Road Southbound Right	90.3%	90.3%	102.6	102.6	11.8	11.8

Table 11.47. 2037 AM Peak Period – N6/R336/N83 Signalised Crossroads Junction

Approach Arm/ Turning Movement	Degree of Saturation (%)		Average Delay per Vehicle (s/pcu)		Queue (pcu)	
	Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
N6 Westbound Left/Ahead	68.0%	68.1%	23.9	24.9	10.9	11.5
N6 Westbound Ahead	51.6%	52.6%	36.5	38.3	9.7	9.6
N6 Westbound Right	92.5%	97.6%	111.1	143.9	12.7	15.0
Tuam Road Northbound Left/Ahead	95.4%	96.5%	95.8	98.6	21.0	23.1
Tuam Road Northbound Right	95.6%	90.0%	97.0	72.9	21.2	18.1
N6 Eastbound Ahead/Left	94.5%	97.5%	85.6	103.4	22.1	24.5
N6 Eastbound Ahead/Right	95.3%	97.8%	87.7	104.0	23.9	26.3
Tuam Road Southbound Left/Ahead	71.3%	71.4%	62.2	61.7	6.9	6.8
Tuam Road Southbound Ahead	60.8%	61.2%	65.1	65.3	5.9	5.9
Tuam Road Southbound Right	96.1%	96.1%	137.1	137.1	13.5	13.5

Table 11.48. 2037 PM Peak Period – N6/R336/N83 Signalised Crossroads Junction

This analysis predicts that the junction, in its current form, would operate slightly above the recommended capacity levels by 2022 with and without the proposed development in place.

Although the junction is predicted to operate above its capacity, it is predicted that the proposed development will have a minimal impact on the junction due to the low numbers of generated traffic anticipated to use this junction.

11.2.6 Analysis Summary

Analysis of the upgraded Monivea Road/Connolly Avenue/Wellpark Road/Joyce's Road signalised junction predicts that although there could be capacity issues, delays and queuing, the junction will operate better by 2037 than it would if it were not to be altered.

Analysis of the existing priority-controlled T-junction between Joyce's Road and Tuam Road predicts that the junction could be operating above the recommended 85% ratio of flow to capacity (RFC) by 2027. Although there is currently congestion issues evident at this junction in the PM, this is as a result of reflective queuing from junctions to the east and west. However, as the existing priority-controlled junction arrangement is predicted to experience capacity issues by 2027 even without the development operational a signalised junction was considered.

Analysis of the proposed signalised junction at the junction of Joyce's Road and Tuam Road found that the junction would operate successfully in the PM up to the design year 2037 with the development in place. The analysis predicts that the junction could be operating slightly above the recommended capacity in the AM by 2037 with the development operational. Further works, including a left slip lane from Tuam Road onto Joyce's Road would help alleviate this issue.

Capacity analysis carried out on both priority-controlled development junctions demonstrates that the junctions will operate successfully up to the design year 2037 and that right-turn lanes are not required at these junctions.

The N6/R336/N83 signalised junction is predicted to operate slightly above the recommended capacity levels by the design year 2037. However, the levels of traffic generated by the development which are predicted to use this junction as a means of access or departure to/from the development result in the proposed development traffic having a minimal impact on the junction.

It should be noted that approval has been given for the advancement of the Galway City Ring Road Scheme to the statutory planning process. It is predicted that by 2034 the traffic on the existing N6 east of the Tuam Road could have an AADT of 7,200 less after the Ring Road is constructed and 13,600 less on the existing N6 west of the Tuam Road. The AADT on the R336 Tuam Road south of the N6 is estimated to be 1,100 less once the Ring Road is operational. Once the proposed ring road is operational this predicted reduction in traffic on the N6 should ease congestion issues along the route of the N6 and the adjoining roads into the future. Given that the Bothar na dTreabh/Tuam Road junction will not be much over capacity in 2037 without the N6 bypass it is anticipated that it will operate within capacity on completion of the bypass. Also, as the N6 bypass will result in a slight reduction in volume on the R336 Tuam Road the Joyce's Road junction will operate better.

12.0 Road Safety

The only change to the network proposed is the provision of access to the car-parking, new traffic signals at the existing junction between Joyce's Road and Tuam Road and the upgrade of the existing signalised crossroads junction between Joyce's Road and Monivea Road/Wellpark Road and Connolly Avenue. The design team will ensure adequate sightlines are achieved and pedestrian and vulnerable users are adequately catered for.

A Road Safety Audit was carried out by CST Group Chartered Consulting Engineers as part of this planning application. Recommendations made as part of this Road Safety Audit have been included within the design submitted with this application.

13.0 Internal Layout

The layout of the proposed development basement levels are detailed in the architect's drawings submitted as part of this application. This is the only part of the site accessible by vehicular means. Access to the development is made via in/out ramps off both Joyce's Road and Monivea Road. Car parking and bicycle parking are provided within the basement with some cycle parking along the street. A segregated bicycle entrance is provided from street level which provides a safe access for cyclists to the basement cycle facilities.

14.0 Parking

14.1 Car and Bicycle Parking

Car parking serving the subject development is provided within a shared basement level car park.

The total number of car park spaces proposed as part of the development is 1,377. This will be split between a lower basement level and an upper basement level.

The Schedule of Accommodation produced by H J Lyons Architects indicates that in accordance with the Galway City Council Development Plan a significantly larger number of car parking spaces may be provided. However, in order to promote a more sustainable development the car parking will be used as a tool to encourage alternative transport use. In accordance with the GCC Development Plan requirements, provision will be made for cycle parking and disabled parking. An area within the car-park will be reserved for 'GoCar' type (rental) facilities.

14.1.1 Management and Security

A Management and Security Office suite is located at Upper Basement Level between the car park and lower level public open space to the east. This provides operational and welfare facilities for the overall and integrated site management and security staff on site as well as a public contact point.

14.1.2 Car Park Layout and Allocation of Spaces

The overall site layout and design suggests car-park design and allocation of space as follows.

a) Upper Basement Level (Refer to Fig 14.1)

The upper basement level is open to the public open space to the east. It is proposed that this car park level will provide for site visitors and public as well as hotel guest/public and office users. A set-down area is planned immediately adjacent to the public open space beside the visitor/public parking and Management and Security Office. This is to facilitate set-down including taxi pick-up, particularly for the adjacent residential and associated neighbourhood centre uses.

This set-down and visitor vehicular circulation is from Joyce Road and is designed as a 'loop' or short circuit around the block of visitor parking routing back out and up the exit ramp to Joyce Road.

It is proposed that the upper basement level car spaces will be allocated by the overall site management company in line with the site Mobility Management planning and for diverse and efficient use e.g. hotel demand will be higher in evening/over-night while office demand will peak during the day. Equally for evening/week-end public events or other amenity access, office spaces can be allocated for visitor/public use. These allocations are indicatively shown on the following car park plans.

b) Lower Basement Level (Refer to Fig 14.2)

It is proposed that the lower basement level will primarily be used by residential and office occupant users. Hotel staff parking is also provided immediately below the hotel. The residential parking is allocated on a 1 space / apartment resulting in 287 no. car-spaces provided exclusively for residential use. The balance of the spaces will be allocated by the site management company in line with the Mobility Management planning and for diverse and efficient use with those at upper basement level.

The proposed allocation of car spaces is as per the Table 14.1 below.

Car Space Allocation				
Use	**Upper Basement**	**Lower Basement**	**Total**	**Proposed Allocation**
Hotel	142	27	169	Managed
Office	237	605	922	
Visitor	79	0	79	
Residential	0	287		Permanently Allocated
Total	458	919	1377	

Table 14.1 Allocation of Car Park Spaces

14.2 Service and Delivery Trips

It is proposed to limit internal site vehicular access primarily to basement levels with emergency vehicle access only mixing with pedestrian and cycle access at ground level. Vehicular set-down access is provided on both Monivea and Joyce Roads. Visitor, delivery, service and additional commercial and residential access will be provided in a centrally managed and secure lower ground/basement car-park facility. All of the delivery and service trips will access the development via the access off Monivea Road.

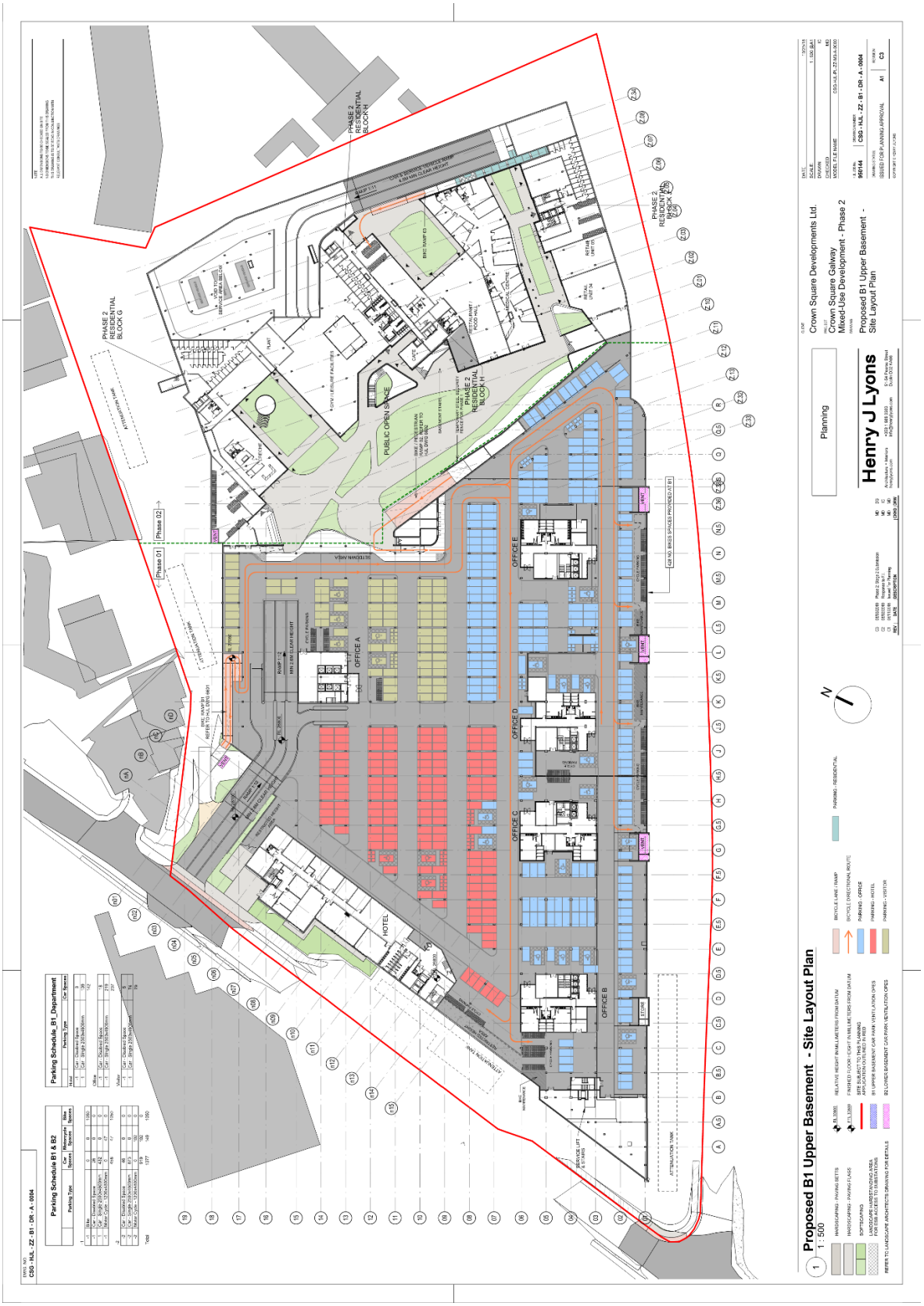

Fig 14.1 Upper Basement Parking Allocation

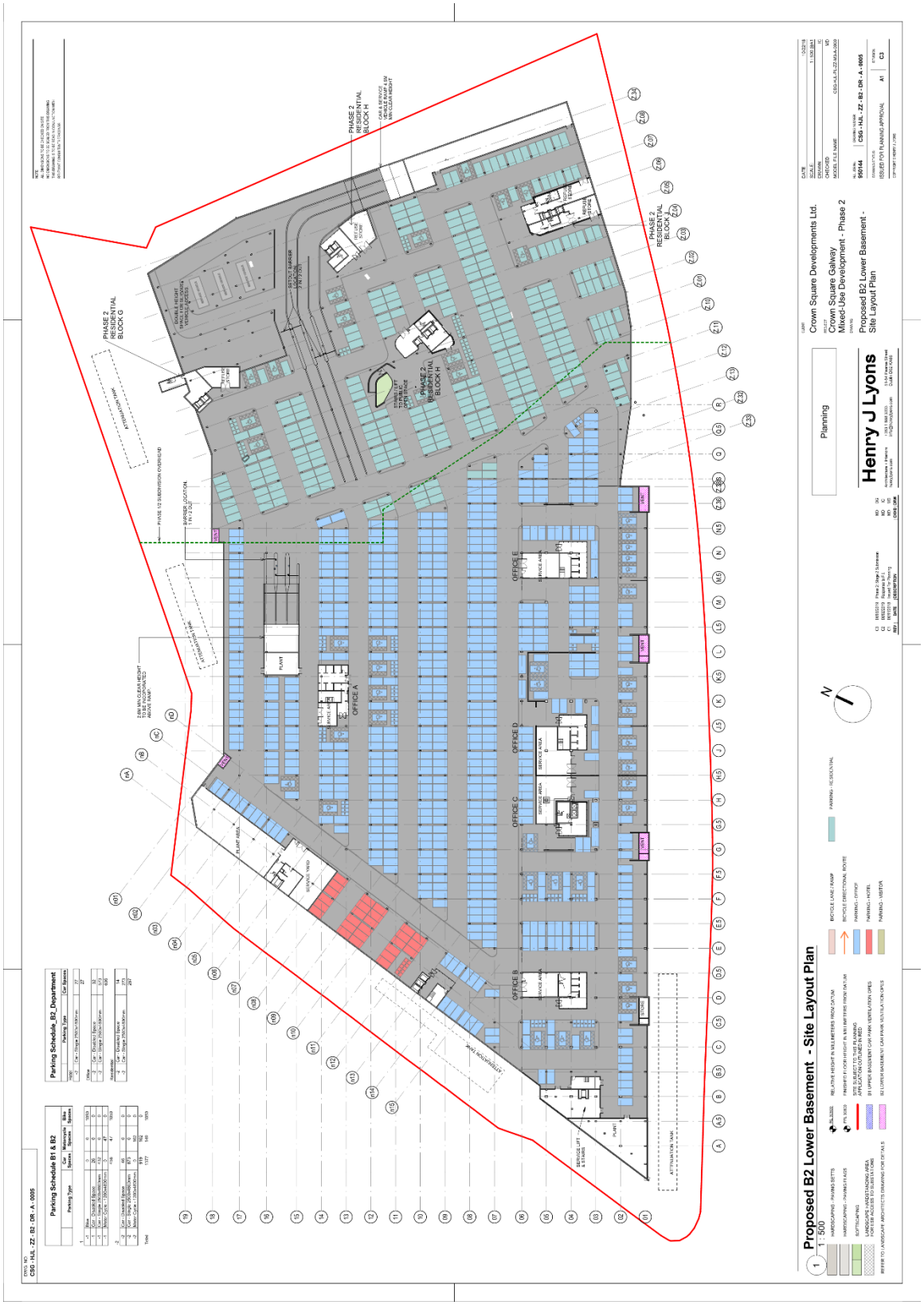

Fig 14.2 Lower Basement Parking Allocation

15.0 Public Transport, Pedestrians/Cyclists

To ensure future transport sustainability and to endeavour to make new developments as accessible as possible to travel by other modes of transport, an assessment has been made of the proposed and existing pedestrian, cyclist and public transport facilities.

15.1 Public Transport

High frequency public transport is available in the area of the development, as described below.

15.1.1 Train Services

Galway Train Station is very accessible from the site and there are regular train services between Galway and the surrounding areas, as follows:

- Dublin Heuston - Galway
- Galway - Limerick
- Galway - Limerick (Connections with Cork & Tralee)
- Waterford - Clonmel - Limerick Junction (Connections with Dublin, Cork, Limerick & Galway)

The site is located 2.4km from Galway Train Station making it a 9-minute journey by bus, 7 minutes by bike, a 39-minute walk and is accessible by public transport and non-car-based transport. Irish Rail connects Galway to the rest of the country and is a reliable and efficient service running throughout Ireland.

It should be noted that Oranmore Railway station on the outskirts of Galway City is nearby and also provides a convenient means for rail access to/from the development.

15.1.2 Bus Services

The local area surrounding the development is served by existing Bus Éireann services. The following Bus Éireann routes serve the bus stops on Monivea Rd, located to the south of the proposed development. These services bring commuters directly into Galway's city centre

- 403 Route (Eyre Square – Castlepark)
- 405 Route (Rahoon - Eyre Square – Ballybane)
- 409 Route (Eyre Square - GMIT – Parkmore)

The following Bus Éireann routes serve the bus stops from the nearby Tuam Rd, located to the north of the proposed development.

- 425 Route (Galway – Mountbellew – Longford)
- 425A Route (Galway – Mountbellew)

Other bus routes (by private operators) may be available at other stops in the vicinity of the site e.g. Tuam Road. The site is in a prime location within Galway for availing of frequent and regular bus services. (See Figure 15.1)

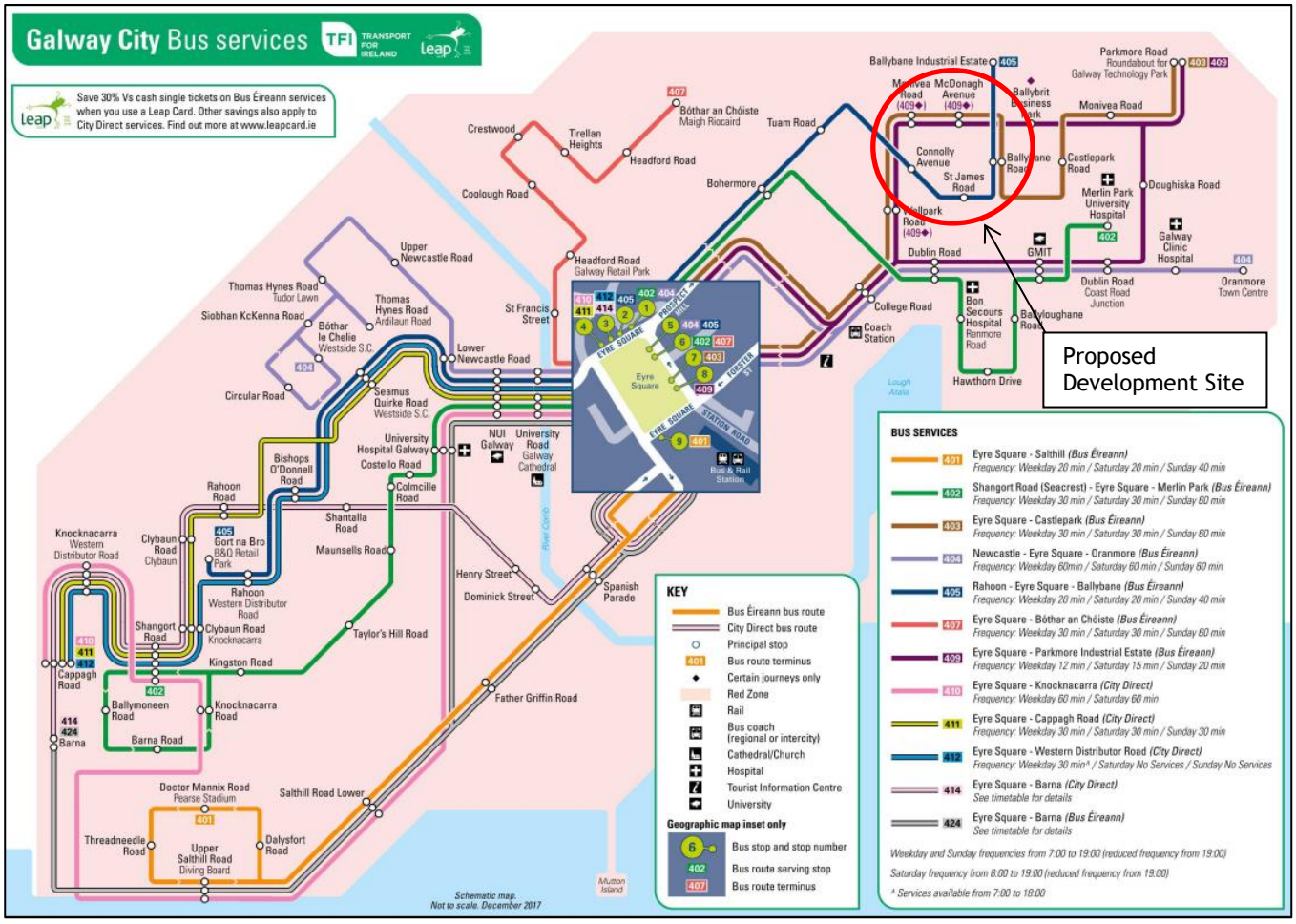

Figure 15.1: Galway City Bus Services (ref. TFI)

A bus lane is proposed as part of the development works southbound on Joyce's Road and westbound along Monivea Road.

15.1.3 Taxi Services

There is a constant flow of taxis along Monivea Road and Tuam Road collecting and depositing passengers. This will facilitate taxi use by providing a safe and convenient means of accessing this form of transport. The objective is to encourage lift sharing in taxis to help reduce the demand on parking and congestion at peak times.

The site is well located in to maximise potential for public transport accessibility with a number of key services provided in close proximity. The various modes of public transport in the area are discussed below.

15.2 Pedestrians

The proposed development is located in the suburb area of Mervue, Galway City. As the potential for pedestrian trips to and from the development is high to moderate, it is important that the development is properly integrated into the existing footpath network. There are footpaths at the south (Monivea Road) and west (Joyces Road) of the site.

The development is a 2.7km (33 minute) walk from Shop Street, which is the main thoroughfare of Galway City Centre.

In addition to direct pedestrian routes from the development to/from surrounding areas, the pedestrian network also provides routes to/from surrounding public transport network, including the nearby bus stops on Monivea Road. Refer to section 2.5 below for further details regarding public transport network.

15.3 Cycling

Cycling is to be significantly encouraged as part of the development. The city centre has cycle lanes and designated routes for the use of cyclists. It is noted that there is not an existing bicycle lane running along or surrounding Monivea Road to the south of the development. However, there are proposed future plans to improve cycle networks for the Galway City Development Plan 2017-2023 (see Figure 15.2.).

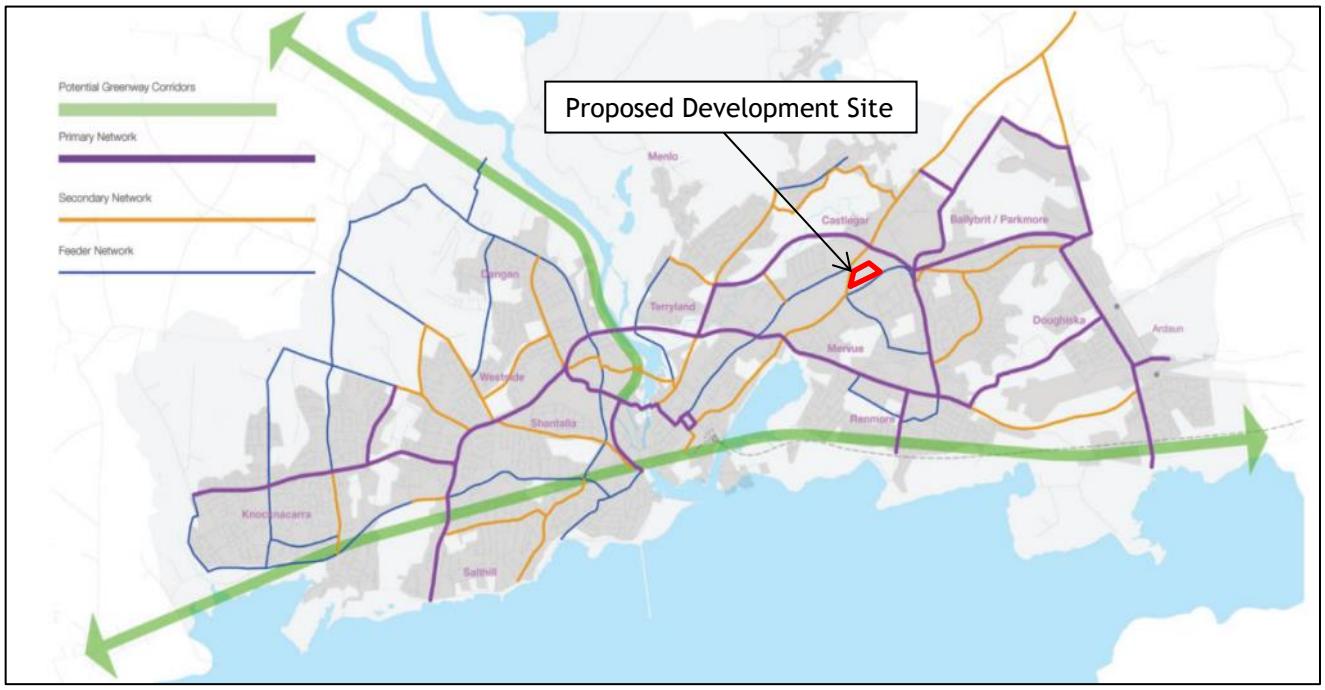

Figure 15.2 – Proposed upgrade to the Galway Cycle Network. (ref. Galway City Development Plan 2017-2023)

The development will facilitate the provision of a cycle lane along Joyce's Road and also along Monivea Road.

The development will provide 1 bike space for every 4 car parking spaces. On the basis that there are 1,609 car park spaces it is proposed to provide 402 no. cycle parking spaces.

Cycle access and parking will be separated from vehicular access and located in secure locked areas. Drying rooms, cycle maintenance and other support facilities will be provided at lower ground/basement.

Consideration will be given to the provision of a cycle for rent scheme such as the existing 'Coke Zero' Galway Bike scheme.

16.0 Access for People with Disabilities

Parking facilities for disabled users are provided at basement level within the development and should be provided in line with the GCDP. A lift provides access from the basement to all levels of the development building. Disabled friendly accesses to the proposed development are designed to the Technical Guidance Document M of the Building Regulations.

17.0 Mitigation

17.1 Proposed Mitigation Measures

Works required on the existing road network include:

- Proposed Bus Lanes on Joyce's Road and Monivea Road
- Proposed Cycle Lanes on Joyce's Road and Monivea Road
- New traffic signals at the existing junction between Joyce's Road and Tuam Road;
- The upgrade of the existing signalised crossroads junction between Joyce's Road and Monivea Road/Wellpark Road and Connolly Avenue.

The two junctions requiring works are currently experiencing congestion issues and as part of the scoping meeting with GCC it was requested that we carry out works to these junctions in order to alleviate the existing congestion problems.

The mitigation measures proposed are discussed in the following sections.

17.2 Proposed Bus Lanes on Joyce's Road and Monivea Road

New bus lanes are proposed southbound along Joyce's Road and westbound along Monivea Road as part of the proposed development works. These bus lanes form part of the future bus infrastructure outlined within the Galway Transport Strategy.

The Joyce's Road bus lane begins just south of the Joyce's Road/Tuam Road junction and terminates on the approach to the Monivea Road/Wellpark Road junction where a straight ahead/left lane commences.

The Monivea Road bus lane commences just east of the eastern boundary of the development site and once again this bus lane terminates on the approach to the Monivea Road/Wellpark Road signalised junction.

17.3 Proposed Cycle Lanes on Joyce's Road and Monivea Road

Kerbed cycle lanes are provided southbound along Joyce's Road and eastbound along Monivea Road as part of the proposed development works. These cycle lanes form part of the future cycle infrastructure outlined within the Galway Transport Strategy.

17.4 Traffic Signals at the junction of Joyce's Road and Tuam Road

Traffic signals are proposed to replace the existing priority-controlled T-junction at this location.

As part of the upgrade works a right-turn lane for traffic exiting Tuam Road onto Joyce's Road will be provided and will be controlled by signals as will the adjacent eastbound lane. The existing two lane exit from Joyce's Road and one lane westbound on Tuam Road will remain but will now be controlled by signals.

A pedestrian crossing is proposed on each arm of the junction which will be an upgrade on the existing situation where there appears to be no defined crossing location for pedestrians.

17.5 Upgrading of the Monivea Road/Connolly Avenue/Wellpark Road and Joyce's Road Signalised Junction

Mitigation measures are proposed at this junction to help ease the congestion issues it is currently experiencing. The addition of bus lanes and cycle lanes on Joyce's Road and Monivea Road are also a mitigating factor which required that upgrade works be undertaken at the junction.

Improvement works such as lane widening or additional lanes on Connolly Avenue and Wellpark Road were not considered due to private land ownership restraints.

The lanes on Joyce's Road and Monivea Road have been narrowed in order to comply with the Design Manual for Roads and Streets (DMURS). Also, the straight ahead/left lane on Joyce's Road and Monivea Road have been lengthened to provide extra stacking space.

The narrower lanes on Joyce's Road result in a shorter pedestrian crossing on this arm which reduces the crossing time for pedestrians which is both an improvement in terms of safety for pedestrians but also reduces the time allocated for the pedestrian crossing which results in additional green time for vehicular traffic and helps the junction capacity.

It is also proposed to move the pedestrian crossing on Monivea Road further east closer to the existing stop line which will decrease the crossing length and will have the same benefits as Joyce's Road pedestrian crossing as outlined above.

18.0 Summary and Conclusion

- The proposed development at Crown Square comprises commercial office, technology and hotel uses on an integrated campus with residential, leisure, local service and ancillary accommodation and associated basement car-parking. Bicycle facilities in line with the Development Plan will also be provided.
- The proposed development site is the old Crown Equipment factory located at Crown Square, Joyce's Road, Galway City. The former Crown Equipment site at Mervue occupies an area of 5.12 Hectares with road frontage to the Monivea and Joyce's Roads. The Crown factory has been demolished and a previously permitted development has been partially constructed c.2008.
- Galway City Council (GCC) requested that junction analysis be carried out at the two proposed junction accesses, on Joyce's Road and Monivea Road, as well as new traffic signal controls at the existing junction between Joyce's Road and Tuam Road and the upgrade of the existing traffic signal-controlled junction between Joyce's Road and Monivea Road/Wellpark Road and Connolly Avenue. Traffic counts were undertaken at the existing junctions.
- For the purposes of our assessment, the TRICS database was consulted to provide an equivalent trip rate per Gross Floor Area/No. of Apartments for similar developments in similar locations in the UK and Ireland.
- As agreed with GCC during initial scoping discussions traffic distribution of the predicted generated traffic for the proposed development is based on findings within the Galway Transport Strategy Report carried out by Galway City Council and Galway County Council in partnership with the National Transport Authority (NTA). GCC, in conjunction with the NTA who are developing an Integrated Transport Management Programme (ITMP) for the Galway City area.
- Capacity analysis carried out on both priority-controlled development junctions demonstrates that the junctions will operate successfully up to the design year 2037 and that right-turn lanes are not required at these junctions.
- Analysis of the proposed signalised junction at the junction of Joyce's Road and Tuam Road found that the junction would operate successfully beyond 2027 without the development operational but would experience capacity issues, in the AM only, by 2037 with the development operational. Further works, including a left slip lane from Tuam Road onto Joyce's Road would help alleviate this issue.
- Analysis of the upgraded Monivea Road/Connolly Avenue/Wellpark Road/Joyce's Road signalised junction predicts that although there could be significant capacity issues, delays and queuing, the junction will operate better by 2037 than it would if it were not to be altered.
- The signalised junction between Bothar na dTreabh and Tuam Road is predicted to operate slightly over capacity without the proposed development in place by the opening year 2022. The proposed development is predicted to have a minimal impact on the junction up to the design year 2037.
- Approval has been given for the advancement of the Galway City Ring Road Scheme to the statutory planning process. It is predicted that by 2034 the traffic on the existing N6 east of the Tuam Road could have an AADT of 7,200 less after the Ring Road is constructed and 13,600 less on the existing N6 west of the Tuam Road. The AADT on the R336 Tuam Road south of the N6 is estimated to be 1,100 less once the Ring Road is operational. Once the proposed ring road is operational this predicted reduction in traffic on the N6 should ease congestion issues along the route of the N6 and the adjoining roads into the future. Given that the Bothar na dTreabh/Tuam Road junction will not be much over capacity in 2037 without the N6 bypass it is anticipated

that it will operate within capacity on completion of the bypass. Also, as the N6 bypass will result in a slight reduction in volume on the R336 Tuam Road the Joyce's Road junction will operate better.

- Bus lanes are proposed southbound on Joyce's Road and westbound on Monivea Rd in line with the Galway Transport Strategy. Cycle lanes are also proposed southbound on Joyce's Rd and eastbound on Monivea Rd.
- Car parking is provided within a shared basement level car park. The total number of car park spaces proposed as part of the development is 1,377. This will be split between a lower basement level and an upper basement level.
- Cycle access and parking will be separated from vehicular access and located in secure locked areas. Drying rooms, cycle maintenance and other support facilities will be provided at lower ground/basement.

APPENDIX A

TRAFFIC FLOW SURVEYS

Bothar Nua
Coolough Rd
COOLOUGH
Castlegar
Castlegar Village
Ballinfoyle
Parkmore West
Galway Technology
BRIARHILL BUSINESS PARK
BRIARHILL
COOLAGH
Barnacranny
University of Ireland, Galway...
GALWAY BUSINESS PARK
Corrib Village
GREENFIELDS
TERRYLAND
GLENAN
Mervue Business Park
NEWCASTLE
LETTERAGH
MINCLOON
RAHOON
Westside Playing Fields
University Hospital Galway
SHANTALLA
MERVUE
MARLAY WOOD
Ballybane
Merlin Park University Hospital
Doughiska
Roscam
RENMORE
MURROUGH
Island Ferries
Galway Business Enterprise Park
Ballyloughane Strand
Kiniska
PROSPECT
BALLYLOUGHANE
FORT LORENZO
KNOCKNACARRA
KINGSTON
THE DOCKS
THE CLADDAGH
South Park
Salthill
Galway Atlantaquaria, National Aquarium of...
Galway Golf Club
Letteragh Rd
Gort Na Bró
Rahoon Rd
Dr Mannix Road
Revagh Rd
Grattan Rd
Shangort Rd
Clybaun Rd
Old Dublin
Coast Road
ATC8
ATC12
ATC13
ATC14
ATC15
44/2
69/3
70/4
9/6
18/5
71/8
73/14
8/13
7/11
45-10
46-9
Bridge 1
Bridge 3
1
2
3
4
5
6
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11
12
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IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	A=>A												A=>B											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	0	1	0	8	9
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	1	0	0	0	0	0	14	14
07:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	13	0	3	0	0	0	1	0	18	18.2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	35	0	5	1	0	0	0	0	42	41.7
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	2	0	67	0	10	1	0	0	2	0	82	82.9
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	7	0	0	0	1	0	57	58
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	1	3	0	0	0	1	0	63	64
08:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	36	0	3	0	1	0	0	0	41	41.5
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	2	1	0	0	1	0	37	38.5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	176	1	15	1	1	0	3	0	198	202
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	5	0	0	0	1	0	44	45
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	1	2	1	1	0	1	0	39	41.8
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	2	1	0	0	1	0	25	26.5
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	24	0	4	0	0	0	0	0	29	28.4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	116	1	13	2	1	0	3	0	137	142
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	4	1	0	0	2	0	31	33.5
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	1	5	0	0	0	0	0	23	23
10:30	0	0	1	0	0	0	0	0	0	0	1	1	0	0	20	0	5	0	0	0	1	0	26	27
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	1	0	0	0	1	0	28	29
H/TOT	0	0	1	0	0	0	0	0	0	0	1	1	0	0	87	1	15	1	0	0	4	0	108	113
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	3	0	0	0	0	0	26	26
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	9	0	0	0	1	0	28	29
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	2	0	0	0	1	0	27	28
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1	2	0	0	0	1	0	26	27
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	1	16	0	0	0	3	0	107	110
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	4	0	1	0	1	0	37	39.3
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	3	0	0	0	0	0	30	30
12:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	27	0	6	2	0	0	1	0	37	38.2
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	7	0	0	0	1	0	46	47
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	123	0	20	2	1	0	3	0	150	155
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	4	0	0	0	1	0	40	41
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	4	0	0	0	0	0	23	23
13:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	23	0	6	0	0	0	1	0	31	31.2
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	3	0	0	0	0	0	38	38
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	112	0	17	0	0	0	2	0	132	133
14:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	27	0	6	0	0	0	2	0	38	37.6
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	3	0	0	0	0	0	34	34
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	4	0	0	0	1	0	39	40
14:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	29	0	4	0	1	0	1	0	36	37.5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	4	0	121	0	17	0	1	0	4	0	147	149
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	28	1	5	2	0	0	0	0	37	37.4
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	7	0	0	0	1	0	30	31
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0	5	0	0	0	1	0	42	43

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	A=>A												A=>B											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	2	0	0	0	1	0	38	39
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	121	1	19	2	0	0	3	0	147	150
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	14	1	0	0	0	0	35	35.5
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	4	0	0	0	1	0	31	32
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	35	0	5	0	0	0	1	0	42	42.4
16:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	39	0	4	0	0	0	0	0	44	43.2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	1	120	0	27	1	0	0	2	0	152	153
17:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	48	1	4	1	0	0	1	0	56	56.7
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	1	0	0	0	1	0	40	41
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	30	0	4	0	0	0	0	0	35	34.4
17:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	38	0	4	0	0	0	1	0	45	44.4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	3	1	154	1	13	1	0	0	3	0	176	177
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	1	2	0	0	0	1	0	29	30
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	3	0	0	0	1	0	21	22
18:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	12	0	1	0	0	0	0	0	14	13.2
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	1	0	18	19
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	71	1	6	0	0	0	3	0	82	84.2
12 TOT	0	0	1	0	0	0	0	0	0	0	1	1	14	4	1355	7	188	11	4	0	35	0	1618	1650

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	A=>C												B=>A											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
07:00	0	0	8	0	1	0	2	0	0	0	11	13.6	0	0	20	0	2	0	0	0	1	0	23	24
07:15	0	0	5	0	2	1	0	0	0	0	8	8.5	0	0	29	0	3	0	0	0	1	0	33	34
07:30	0	0	9	0	2	1	0	0	0	0	12	12.5	0	0	33	0	4	0	0	0	0	0	37	37
07:45	0	0	11	3	2	0	0	0	0	0	16	16	0	1	48	0	1	0	0	0	1	0	51	51.4
H/TOT	0	0	33	3	7	2	2	0	0	0	47	50.6	0	1	130	0	10	0	0	0	3	0	144	146
08:00	0	0	11	1	3	0	0	0	0	0	15	15	1	0	36	0	5	0	0	0	1	0	43	43.2
08:15	0	0	17	1	2	0	3	0	0	0	23	26.9	0	0	25	0	5	1	0	0	1	0	32	33.5
08:30	0	0	16	5	2	1	0	0	0	0	24	24.5	0	0	21	0	2	2	0	0	0	0	25	26
08:45	0	0	16	1	2	1	0	0	0	0	20	20.5	0	1	16	0	3	0	0	0	1	0	21	21.4
H/TOT	0	0	60	8	9	2	3	0	0	0	82	86.9	1	1	98	0	15	3	0	0	3	0	121	124
09:00	0	0	7	3	4	2	1	0	0	2	19	23.3	1	0	15	0	1	0	0	0	1	0	18	18.2
09:15	0	0	14	2	2	0	0	0	0	0	18	18	0	0	27	0	2	0	0	0	1	0	30	31
09:30	0	0	10	3	4	0	1	0	0	0	18	19.3	0	0	21	0	3	0	0	0	0	0	24	24
09:45	0	0	8	1	0	1	0	0	0	0	10	10.5	0	0	23	0	4	1	0	0	1	0	29	30.5
H/TOT	0	0	39	9	10	3	2	0	0	2	65	71.1	1	0	86	0	10	1	0	0	3	0	101	104
10:00	0	0	12	2	4	2	0	0	0	2	22	25	0	0	17	0	1	0	0	0	1	0	19	20
10:15	0	0	8	6	2	1	0	0	0	0	17	17.5	0	0	22	0	0	0	0	0	1	0	23	24
10:30	0	0	9	1	1	0	0	0	0	1	12	13	0	0	19	0	0	0	0	0	0	0	19	19
10:45	0	0	18	5	0	2	0	0	0	1	26	28	0	0	24	0	6	2	0	0	1	0	33	35
H/TOT	0	0	47	14	7	5	0	0	0	4	77	83.5	0	0	82	0	7	2	0	0	3	0	94	98
11:00	0	0	11	2	2	1	0	0	0	0	16	16.5	1	0	22	0	3	0	1	0	1	0	28	29.5
11:15	0	0	17	6	2	1	0	0	0	0	26	26.5	0	0	13	0	1	0	0	0	1	0	15	16
11:30	0	0	15	2	3	0	0	0	0	0	20	20	0	0	29	1	5	0	0	0	0	0	35	35
11:45	0	0	16	1	3	1	1	0	0	0	22	23.8	0	2	20	0	2	1	0	0	1	0	26	26.3
H/TOT	0	0	59	11	10	3	1	0	0	0	84	86.8	1	2	84	1	11	1	1	0	3	0	104	107
12:00	0	0	14	3	6	0	1	0	0	0	24	25.3	0	0	23	0	2	0	0	0	1	0	26	27
12:15	0	0	15	1	3	0	0	0	0	1	20	21	0	0	35	0	5	1	0	0	0	0	41	41.5
12:30	0	0	15	2	3	1	1	0	0	0	22	23.8	0	0	26	0	3	0	0	0	1	0	30	31
12:45	0	0	21	4	6	1	0	0	0	0	32	32.5	0	0	31	0	3	0	0	0	1	0	35	36
H/TOT	0	0	65	10	18	2	2	0	0	1	98	103	0	0	115	0	13	1	0	0	3	0	132	136
13:00	0	0	18	0	3	1	1	0	0	0	23	24.8	0	0	35	0	5	0	0	0	1	0	41	42
13:15	0	0	15	2	3	0	1	0	0	1	22	24.3	0	0	43	0	5	0	0	0	0	0	48	48
13:30	0	0	12	0	2	1	1	0	0	0	16	17.8	1	0	26	0	1	0	0	0	1	0	29	29.2
13:45	1	0	10	2	5	1	0	0	0	0	19	18.7	1	0	30	1	1	0	1	0	1	0	35	36.5
H/TOT	1	0	55	4	13	3	3	0	0	1	80	85.6	2	0	134	1	12	0	1	0	3	0	153	156
14:00	0	0	28	1	4	0	0	0	0	0	33	33	0	0	33	1	3	0	0	0	1	0	38	39
14:15	0	0	23	3	2	2	1	0	0	1	32	35.3	0	0	14	0	0	0	0	0	0	0	14	14
14:30	0	1	19	2	6	0	0	0	0	0	28	27.4	0	0	23	0	4	0	1	0	1	0	29	31.3
14:45	0	0	16	3	4	0	2	0	0	0	25	27.6	0	0	30	0	5	0	0	0	1	0	36	37
H/TOT	0	1	86	9	16	2	3	0	0	1	118	123	0	0	100	1	12	0	1	0	3	0	117	121
15:00	0	0	18	2	2	1	0	0	1	0	24	25.5	0	0	35	0	3	0	0	0	1	0	39	40
15:15	0	0	26	3	4	0	0	0	0	0	33	33	0	0	24	0	4	0	0	0	1	0	29	30
15:30	1	0	22	2	6	2	0	0	0	2	35	37.2	0	0	20	1	2	1	0	0	0	0	24	24.5

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	A=>C												B=>A											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
15:45	0	0	17	0	0	1	0	0	0	0	18	18.5	0	0	16	0	1	0	0	0	1	0	18	19
H/TOT	1	0	83	7	12	4	0	0	1	2	110	114	0	0	95	1	10	1	0	0	3	0	110	114
16:00	0	0	23	1	6	0	0	0	0	0	30	30	0	0	35	0	3	0	0	0	1	0	39	40
16:15	0	0	21	2	5	0	0	0	0	1	29	30	0	0	24	0	0	2	0	0	0	0	26	27
16:30	0	0	27	1	1	0	0	0	0	0	29	29	1	0	15	0	2	0	0	0	1	0	19	19.2
16:45	0	0	22	0	3	0	0	0	0	0	25	25	0	0	18	2	3	0	0	0	1	0	24	25
H/TOT	0	0	93	4	15	0	0	0	0	1	113	114	1	0	92	2	8	2	0	0	3	0	108	111
17:00	0	0	23	0	5	0	0	0	0	1	29	30	1	0	16	1	4	0	0	0	0	0	22	21.2
17:15	1	0	27	0	2	0	1	0	0	1	32	33.5	0	1	13	1	2	0	0	0	1	0	18	18.4
17:30	0	0	17	0	3	0	0	0	0	2	22	24	0	0	29	0	1	0	0	0	1	0	31	32
17:45	0	1	13	0	2	0	1	0	0	0	17	17.7	0	0	37	0	2	0	0	0	1	0	40	41
H/TOT	1	1	80	0	12	0	2	0	0	4	100	105	1	1	95	2	9	0	0	0	3	0	111	113
18:00	0	1	20	0	2	1	0	0	0	2	26	27.9	0	0	44	0	5	0	0	0	0	0	49	49
18:15	0	0	28	1	2	0	0	0	0	1	32	33	0	0	24	1	0	0	0	0	0	0	25	25
18:30	1	0	14	0	2	0	0	0	0	0	17	16.2	0	0	29	0	0	0	0	0	1	0	30	31
18:45	0	0	17	0	2	0	0	0	0	1	20	21	0	0	34	0	1	1	0	0	1	0	37	38.5
H/TOT	1	1	79	1	8	1	0	0	0	4	95	98.1	0	0	131	1	6	1	0	0	2	0	141	144
12 TOT	4	3	779	80	137	27	18	0	1	20	1069	1122	7	5	1242	9	123	12	3	0	35	0	1436	1472

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	B=>B												B=>C											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	1	7	0	2	0	1	0	62	65.6
07:15	0	0	0	0	0	0	0	0	0	0	0	0	3	1	57	3	11	2	0	0	1	1	79	79
07:30	0	0	0	0	0	0	0	0	0	0	0	0	3	0	109	0	10	3	0	0	0	0	125	124
07:45	0	0	0	0	0	0	0	0	0	0	0	0	2	1	140	1	16	0	1	0	0	1	162	162
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	8	2	357	5	44	5	3	0	2	2	428	431
08:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	138	0	16	1	0	0	0	1	159	158
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	142	1	15	0	3	0	0	0	162	165
08:30	0	0	0	0	0	0	0	0	0	0	0	0	5	0	146	0	20	3	1	0	0	0	175	174
08:45	0	0	0	0	0	0	0	0	0	0	0	0	5	0	135	1	12	3	1	0	1	0	158	158
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	13	1	561	2	63	7	5	0	1	1	654	655
09:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	115	0	14	1	0	0	0	1	133	133
09:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	100	0	16	2	1	0	0	1	122	124
09:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	94	0	31	3	3	0	0	0	132	137
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	1	23	1	0	0	0	1	108	110
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	5	0	391	1	84	7	4	0	0	3	495	503
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	0	18	2	0	0	0	0	104	105
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	0	20	0	0	0	0	0	112	112
10:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	77	0	22	3	2	0	1	2	108	114
10:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	100	1	27	2	1	0	0	0	132	134
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	2	0	353	1	87	7	3	0	1	2	456	465
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103	0	30	1	0	0	0	1	135	137
11:15	0	0	0	0	0	0	0	0	0	0	0	0	1	1	110	0	28	1	1	0	0	0	142	142
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	1	27	4	1	0	0	0	153	156
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	1	33	3	0	0	0	0	154	156
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	1	450	2	118	9	2	0	0	1	584	591
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	0	26	2	1	0	1	2	151	156
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	0	28	1	0	0	0	0	140	141
12:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	132	1	17	2	0	0	0	1	154	155
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	113	0	36	0	0	0	0	0	150	149
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	1	475	1	107	5	1	0	1	3	595	601
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	0	28	4	0	0	1	0	154	157
13:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	126	1	28	1	1	0	0	0	158	159
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152	0	21	2	1	0	0	0	176	178
13:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	135	1	23	3	1	0	0	0	164	166
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	2	0	534	2	100	10	3	0	1	0	652	660
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	3	18	1	1	0	0	1	135	138
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	2	26	4	0	0	2	1	146	151
14:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	155	1	29	1	0	0	0	1	188	189
14:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	137	1	21	1	2	0	0	0	163	165
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	2	0	514	7	94	7	3	0	2	3	632	643
15:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	127	0	20	2	1	0	0	1	154	155
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	21	4	2	0	0	0	152	157
15:30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	138	2	16	2	1	0	0	0	163	162

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	B=>B												B=>C											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
15:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	143	3	28	2	0	0	1	0	178	179
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	8	0	533	5	85	10	4	0	1	1	647	653
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143	1	22	2	1	0	0	1	170	173
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	2	16	2	1	0	0	0	121	123
16:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	106	0	21	1	0	0	1	0	130	131
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135	1	22	2	1	0	1	1	163	167
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	484	4	81	7	3	0	2	2	584	595
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	115	0	23	0	0	0	0	0	139	138
17:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	141	1	21	1	1	0	0	0	166	167
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156	0	16	0	0	0	0	1	173	174
17:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	141	0	27	1	0	0	1	2	174	176
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	3	1	553	1	87	2	1	0	1	3	652	655
18:00	0	0	0	0	0	0	0	0	0	0	0	0	1	1	146	0	8	0	1	0	0	0	157	157
18:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	106	1	7	0	1	0	4	1	121	127
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	2	12	0	0	0	0	1	112	113
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	1	17	0	0	0	0	0	115	115
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	2	1	446	4	44	0	2	0	4	2	505	511
12 TOT	0	0	0	0	0	0	0	0	0	0	0	0	48	7	5651	35	994	76	34	0	16	23	6884	6963

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	C=>A												C=>B											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
07:00	0	0	50	0	4	0	0	0	0	1	55	56	0	0	79	0	10	2	0	0	0	0	91	92
07:15	0	0	54	2	7	0	0	0	0	1	64	65	0	0	110	1	11	2	0	0	0	0	124	125
07:30	0	0	34	0	8	0	0	0	0	0	42	42	3	1	112	0	31	3	1	0	0	1	152	153
07:45	1	0	28	0	1	1	2	0	0	1	34	37.3	1	1	112	1	24	3	1	0	0	0	143	144
H/TOT	1	0	166	2	20	1	2	0	0	3	195	200	4	2	413	2	76	10	2	0	0	1	510	514
08:00	1	0	21	2	4	0	0	0	0	0	28	27.2	0	0	144	0	34	0	0	0	0	0	178	178
08:15	2	0	34	1	6	1	0	0	0	1	45	44.9	1	0	132	1	29	3	0	0	0	2	168	171
08:30	0	0	23	1	4	2	1	0	0	0	31	33.3	1	1	137	0	25	4	0	0	1	2	171	175
08:45	0	0	30	2	4	1	0	0	0	0	37	37.5	0	0	126	1	22	3	1	0	0	2	155	160
H/TOT	3	0	108	6	18	4	1	0	0	1	141	143	2	1	539	2	110	10	1	0	1	6	672	683
09:00	0	0	28	0	4	2	0	0	0	0	34	35	0	0	130	1	23	3	2	0	0	0	159	163
09:15	0	0	29	0	7	0	0	0	0	0	36	36	0	0	149	0	23	4	0	0	0	2	178	182
09:30	0	0	35	0	14	1	1	0	0	0	51	52.8	0	0	151	0	23	5	1	0	1	0	181	186
09:45	0	0	42	1	3	0	1	0	0	0	47	48.3	0	0	153	0	34	0	2	0	0	1	190	194
H/TOT	0	0	134	1	28	3	2	0	0	0	168	172	0	0	583	1	103	12	5	0	1	3	708	725
10:00	0	0	25	0	4	0	0	0	0	0	29	29	2	0	141	1	27	4	2	0	0	1	178	182
10:15	0	0	21	1	7	2	0	0	0	0	31	32	0	0	143	0	22	3	3	0	0	1	172	178
10:30	0	0	33	1	9	2	0	0	1	0	46	48	0	0	124	0	30	2	0	0	1	3	160	165
10:45	0	0	30	2	9	0	0	0	0	2	43	45	0	0	131	2	30	2	0	0	0	1	166	168
H/TOT	0	0	109	4	29	4	0	0	1	2	149	154	2	0	539	3	109	11	5	0	1	6	676	693
11:00	0	0	29	1	5	0	0	0	1	0	36	37	0	2	121	0	25	0	1	0	0	0	149	149
11:15	0	0	26	2	4	2	1	0	1	0	36	39.3	0	0	152	1	30	2	1	0	0	2	188	192
11:30	0	0	20	1	4	0	1	0	0	0	26	27.3	0	0	125	0	29	0	1	0	0	2	157	160
11:45	0	0	26	0	4	0	1	0	0	0	31	32.3	0	0	142	1	17	1	1	0	0	0	162	164
H/TOT	0	0	101	4	17	2	3	0	2	0	129	136	0	2	540	2	101	3	4	0	0	4	656	666
12:00	0	0	31	1	6	0	0	0	0	0	38	38	0	0	134	0	26	1	0	0	0	1	162	164
12:15	0	0	21	0	7	1	2	0	0	0	31	34.1	2	0	122	0	19	3	0	0	0	0	146	146
12:30	0	0	31	2	8	2	0	0	0	0	43	44	0	0	137	0	30	3	0	0	0	2	172	176
12:45	0	0	18	0	2	0	1	0	0	0	21	22.3	2	0	121	1	24	1	0	0	0	0	149	148
H/TOT	0	0	101	3	23	3	3	0	0	0	133	138	4	0	514	1	99	8	0	0	0	3	629	633
13:00	0	0	20	0	7	1	0	0	0	2	30	32.5	0	1	120	0	18	1	0	0	0	0	140	140
13:15	1	0	31	1	6	1	1	0	0	0	41	42	0	0	135	0	18	0	1	0	0	0	154	155
13:30	0	0	29	1	8	2	0	0	0	0	40	41	0	0	117	0	20	2	0	0	0	1	140	142
13:45	1	0	14	2	5	0	0	0	0	0	22	21.2	0	0	123	0	17	2	2	0	0	1	145	150
H/TOT	2	0	94	4	26	4	1	0	0	2	133	137	0	1	495	0	73	5	3	0	0	2	579	587
14:00	1	0	26	1	8	1	1	0	0	1	39	41	0	1	115	0	23	4	0	0	0	0	143	144
14:15	0	0	16	1	5	2	3	0	0	0	27	31.9	1	0	108	0	22	1	0	0	0	0	132	132
14:30	1	0	31	1	6	1	0	0	0	0	40	39.7	1	0	128	0	33	1	0	0	1	0	164	165
14:45	2	0	23	1	6	1	0	0	0	0	33	31.9	1	0	108	1	24	0	1	0	0	2	137	140
H/TOT	4	0	96	4	25	5	4	0	0	1	139	145	3	1	459	1	102	6	1	0	1	2	576	580
15:00	1	0	26	2	4	4	0	0	0	0	37	38.2	0	0	128	1	25	3	1	0	0	0	158	161
15:15	0	0	29	2	8	1	1	0	1	0	42	44.8	0	0	106	0	26	1	1	0	0	0	134	136
15:30	0	0	27	5	3	0	1	0	0	0	36	37.3	0	1	119	1	20	1	1	0	0	0	143	144

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	C=>A												C=>B											
TIME	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU	PCL	MCL	CAR	TAXI	LGV	OGV1	OGV2	CDB	BEB	OB	TOT	PCU
15:45	0	0	32	1	7	1	2	0	0	0	43	46.1	1	2	116	0	14	4	0	0	0	0	137	137
H/TOT	1	0	114	10	22	6	4	0	1	0	158	166	1	3	469	2	85	9	3	0	0	0	572	578
16:00	0	0	27	0	1	0	0	0	0	1	29	30	6	0	117	1	14	5	1	0	1	0	145	145
16:15	0	0	34	1	5	0	2	0	0	0	42	44.6	3	0	134	1	12	1	0	0	0	0	151	149
16:30	0	0	29	1	2	0	0	0	0	0	32	32	3	2	133	1	24	1	0	0	0	0	164	161
16:45	1	0	26	0	4	0	1	0	1	0	33	34.5	2	0	146	0	15	1	0	0	0	1	165	165
H/TOT	1	0	116	2	12	0	3	0	1	1	136	141	14	2	530	3	65	8	1	0	1	1	625	620
17:00	0	0	26	1	3	1	0	0	0	0	31	31.5	2	0	132	1	20	0	0	0	1	2	158	159
17:15	0	0	30	0	3	2	0	0	0	0	35	36	2	1	126	0	13	1	0	0	0	1	144	143
17:30	0	0	28	1	2	0	0	0	0	0	31	31	2	0	86	0	10	0	0	0	0	0	98	96.4
17:45	0	0	26	0	1	3	0	0	0	0	30	31.5	4	0	117	1	12	0	0	0	0	1	135	133
H/TOT	0	0	110	2	9	6	0	0	0	0	127	130	10	1	461	2	55	1	0	0	1	4	535	532
18:00	0	0	21	2	2	3	0	0	0	0	28	29.5	1	0	144	0	7	0	0	0	0	0	152	151
18:15	0	1	29	0	2	0	0	0	0	0	32	31.4	1	0	132	1	5	0	0	0	0	0	139	138
18:30	0	0	24	0	2	0	0	0	0	0	26	26	0	2	151	1	9	0	0	0	0	0	163	162
18:45	1	0	24	0	1	0	0	0	0	0	26	25.2	2	1	119	1	9	1	0	0	0	1	134	133
H/TOT	1	1	98	2	7	3	0	0	0	0	112	112	4	3	546	3	30	1	0	0	0	1	588	585
12 TOT	13	1	1347	44	236	41	23	0	5	10	1720	1774	44	16	6088	22	1008	84	25	0	6	33	7326	7395

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	C=>C											
TIME	**PCL**	**MCL**	**CAR**	**TAXI**	**LGV**	**OGV1**	**OGV2**	**CDB**	**BEB**	**OB**	**TOT**	**PCU**
07:00	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0

IDASO

Survey Name : IDA-17-106 Galway
Site : 17
Date : 29/11/17
Location : Tuam Rd / Joyces Rd

	C=>C											
TIME	**PCL**	**MCL**	**CAR**	**TAXI**	**LGV**	**OGV1**	**OGV2**	**CDB**	**BEB**	**OB**	**TOT**	**PCU**
15:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0
12 TOT	0	0	0	0	0	0	0	0	0	0	0	0

Ireland

9 City Gate,
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Dublin 8

Tel: 01 633 4725
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PUNCH CONSULTING
GALWAY
TRAFFIC SURVEY

SURVEY REPORT
SEPTEMBER 2018

PROJECT NO.	9144
CHECKED	P. MURRAY
DATE	17/09/2018
CONTACT	A.CHAMBERS
REVISION	

Email: enquiries@nationwidedatacollection.ie
Website: www.nationwidedatacollection.ie

Registered Office:
9 City Gate, Lower Bridge Street,,
Dublin 8
Company Reg. No. 444096
VAT Reg. No. IE 9664307L

CONTENTS

Introduction

Junction Turning Counts

Automatic Traffic Count

Diagram 9144-01

Appendix A – Vehicle Categories

INTRODUCTION

Nationwide Data Collection (NDC) was instructed by Punch Consulting to undertake the following surveys in Galway City, Co. Galway

A general location plan is given in Diagram 9144-01.

JUNCTION TURNING COUNTS

A junction turning count was undertaken at the following site:

Site No.	Location.	Day / Date
1	Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)	Tuesday 4th September 2018

The site was surveyed using a telescopically mounted video camera from which the information was subsequently extracted. Details of the observed movements are given in Diagram 9144-01.

The survey was carried out with survey hours of 00:00 to 00(24):00. All information was collected in 15 minute intervals and has been tabulated with both hourly and period totals.

Vehicles were classified into the following categories:

- Cars and Taxis (**CAR**)
- Light Goods Vehicles (**LGV**),
- Heavy Goods Vehicles (**HGV**),
- Buses (**BUS**),
- Agricultural (**AGRI**)
- Miscellaneous (**MISC**)
- Motorcycles (**M/C**) and
- Pedal Cycles (**P/C**).

A detailed description of the vehicles included in each category is provided in Appendix A.

AUTOMATIC TRAFFIC COUNT

An automatic traffic count was undertaken at the following site:

Site No.	Location.	Days / Dates
1	R339, east of McDonagh Avenue*	Monday 3rd September to Monday 10th September 2018

* Damage to Counter/Tubing during the survey.

METROCOUNT 5600 series automatic traffic counter, attached to pneumatic tube, was used at this site. Data was collected in both directions at this location, with one counter being used for single carriageway sites (1 lane per direction).

The survey was carried out with survey hours of 00:00 to 00(24):00.

The results have been provided in excel, in hourly totals and includes the following information:

- Total Vehicles
- Class Bin Totals (12 Class)
- Number of Vehicles over Speed Limit
- Percentage of Vehicles over Speed Limit
- Number of Vehicles over Speed Limit 1 (Speed Limit + 5kph)
- Percentage of Vehicles over Speed Limit 1
- Number of Vehicles over Speed Limit 2 – (Speed Limit + 10kph)
- Percentage of Vehicles over Speed Limit 2
- Mean Speed
- 85th Percentile Speed
- Speed Bin Totals (Range 0 to 140kph)

12hr (07:00 to 19:00), 16hr (06:00 to 22:00), 18hr (06:00 to 00:00) and 24hr (00:00 to 00:00) totals are also included along with a virtual day, week and grand total. The peak time period for both the a.m (00:00 to 12:00) and p.m (12:00 to 24:00) are also highlighted.

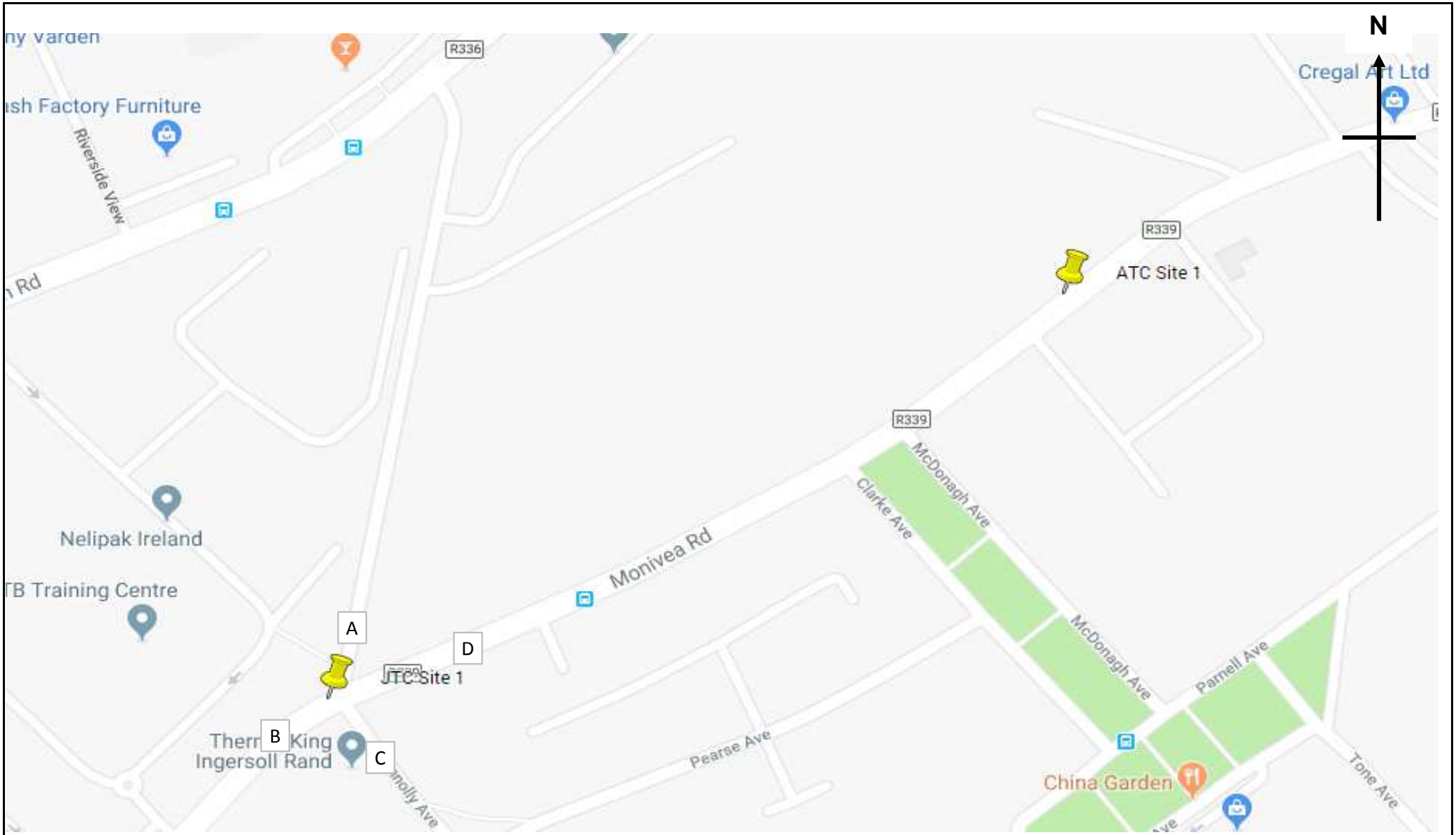
A detailed description of the vehicles included in each category is provided in Appendix A.

SITE REPORT

Weather	Overcast but dry.
Accidents	None.
Roadworks	None.
Queues	Not required.
Pedestrians	Not required.
General Site Notes.	No additional notes.

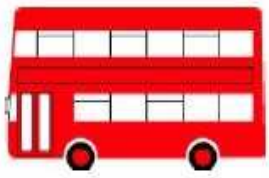
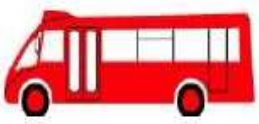
APPENDIX A

VEHICLE CATEGORIES



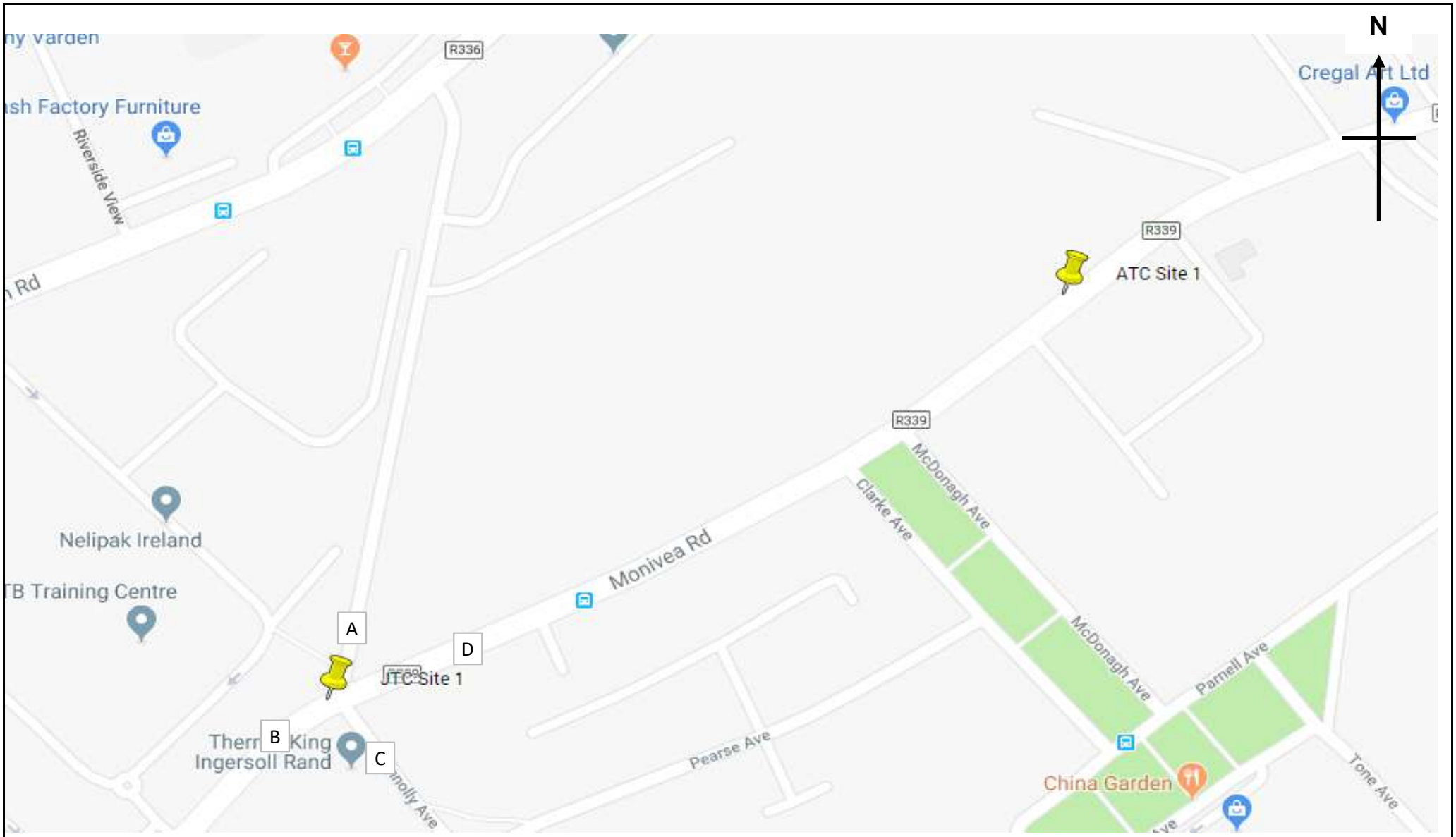
NDC NATIONWIDE DATA COLLECTION	**Sites / Location:**	JTC Site 1 and ATC Site 1 / Galway	**Project No:**	9144	**Diagram No:**	9144-01	**Drawn By:**	AC
	Survey Date:	JTC: Tuesday 4th September 2018 ATC: Monday 3rd September to Monday 10 September 2018	**Project Name:**	GALWAY				
	Survey Times:	00:00 to 00(24):00	**Diagram Title:**	General Location Plan				

COBA VEHICLE CATEGORIES

CAR	 SALOON  ESTATE  PEOPLE CARRIER  CAR TOWING CARAVAN / TRAILER
LIGHT GOODS VEHICLE (LGV)	 VAN  <3.5 TONNES – single rear tyres  PICK-UP
HEAVY GOODS VEHICLE (HGV)	 > 3.5 TONNES – twin rear tyres  2-AXLES RIGID  2-AXLES RIGID  3 AXLES-RIGID
	 4 OR MORE AXLES RIGID  3-AXLES ARTIC  4 OR MORE AXLES ARTIC  OTHER GOODS VEHICLE WITH TRAILER
BUSES & COACHES (PSV)	 DOUBLE DECK BUS  SINGLE DECK BUS OR COACH

ATC VEHICLE CATEGORIES

Axles	Groups	Description	Class		Parameters	Dominant Vehicle	Aggregate
2	1 or 2	Very Short - Bicycle or Motorcycle	MC	1	d(1)<1.7m & axles=2		
2	1 or 2	Short - Sedan, Wagon, 4WD, Utility, Light Van	SV	2	d(1)>=1.7m, d(1)<=3.2m & axles=2		
3, 4 or 5	3	Short Towing - Trailer, Caravan, Boat, etc.	SVT	3	groups=3, d(1)>=2.1m, d(1)<=3.2m, d(2)>=2.1m & axles=3,4,5		1 (Light)
2	2	Two axle truck or Bus	TB2	4	d(1)>3.2m & axles=2		
3	2	Three axle truck or Bus	TB3	5	axles=3 & groups=2		
>3	2	Four axle truck	T4	6	axles>3 & groups=2		2 (Medium)
3	3	Three axle articulated vehicle or Rigid vehicle and trailer	ART3	7	d(1)>3.2m, axles=3 & groups=3		
4	>2	Four axle articulated vehicle or Rigid vehicle and trailer	ART4	8	d(2)<2.1m or d(1)<2.1m or d(1)>3.2m axles = 4 & groups>2		
5	>2	Five axle articulated vehicle or Rigid vehicle and trailer	ART5	9	d(2)<2.1m or d(1)<2.1m or d(1)>3.2m axles=5 & groups>2		
>=6	>2	Six (or more) axle articulated vehicle or Rigid vehicle and trailer	ART6	10	axles=6 & groups>2 or axles>6 & groups=3		
>6	4	B-Double or Heavy truck and trailer	BD	11	groups=4 & axles>6		
>6	>=5	Double or triple road train or Heavy truck and two (or more) trailers	DRT	12	groups>=5 & axles>6		3 (Heavy)



NDC NATIONWIDE DATA COLLECTION	**Sites / Location:**	JTC Site 1 and ATC Site 1 / Galway	**Project No:**	9144	**Diagram No:**	9144-01	**Drawn By:**	AC
	Survey Date:	JTC: Tuesday 4th September 2018 ATC: Monday 3rd September to Monday 10 September 2018	**Project Name:**	GALWAY				
	Survey Times:	00:00 to 00(24):00	**Diagram Title:**	General Location Plan				

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	A to D - Unnamed Road to R339(NE)								Veh. Total	A to C - Unnamed Road to Connolly Avenue								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	3	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	4
00:15	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
00:30	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
00:45	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Hour	7	0	0	0	0	0	0	0	7	8	0	0	0	0	0	0	0	8
01:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
01:30	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
01:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Hour	1	0	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	4
02:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
02:15	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
02:30	1	0	0	0	0	0	0	0	1	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
Hour	3	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	1
03:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
03:15	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	4
03:30	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
03:45	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Hour	6	0	0	0	0	0	0	0	6	4	0	0	0	0	0	0	0	4
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	2	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	1
04:45	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Hour	2	0	1	0	0	0	0	0	3	0	1	0	0	0	0	0	0	1
05:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
05:30	1	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	5
05:45	1	0	0	0	0	0	0	0	1	20	3	0	0	0	0	0	1	24
Hour	3	0	0	0	0	0	0	0	3	26	4	0	0	0	0	0	1	31
06:00	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	0	0	4
06:15	1	0	0	0	0	0	0	0	1	7	1	0	0	0	0	0	0	8
06:30	1	0	0	0	0	0	0	0	1	10	4	0	0	0	0	0	0	14
06:45	4	0	0	0	0	0	0	0	4	16	3	1	0	0	0	0	0	20
Hour	6	0	0	0	0	0	0	1	7	36	9	1	0	0	0	0	0	46
07:00	2	0	0	0	0	0	0	0	2	12	4	0	1	0	0	1	0	18
07:15	2	2	0	0	0	0	0	1	5	24	3	0	1	0	0	0	0	28
07:30	3	2	0	0	0	0	0	0	5	24	3	0	0	0	0	0	1	28
07:45	1	1	1	0	0	0	0	1	4	26	1	0	1	0	0	0	1	29
Hour	8	5	1	0	0	0	0	2	16	86	11	0	3	0	0	1	2	103
08:00	1	0	0	0	0	0	0	0	1	20	0	1	1	0	0	0	0	22
08:15	2	1	0	0	0	0	0	0	3	13	4	0	0	0	0	0	0	17
08:30	2	0	0	0	0	0	1	0	3	22	1	0	1	0	2	0	0	26
08:45	7	2	2	0	0	0	0	0	11	14	4	1	1	0	0	0	0	20
Hour	12	3	2	0	0	0	1	0	18	69	9	2	3	0	2	0	0	85
09:00	8	1	0	0	0	0	0	0	9	20	4	0	1	0	0	0	0	25
09:15	9	2	0	0	0	0	0	0	11	17	1	0	1	0	0	0	0	19
09:30	9	1	1	0	0	0	0	1	12	10	4	1	0	0	0	0	0	15
09:45	10	0	0	0	0	0	0	0	10	12	2	1	1	0	0	0	0	16
Hour	36	4	1	0	0	0	0	1	42	59	11	2	3	0	0	0	0	75
10:00	5	1	0	0	0	0	0	0	6	11	4	0	1	0	0	0	0	16
10:15	15	3	0	0	0	0	0	0	18	11	0	2	0	0	0	0	0	13
10:30	9	1	0	0	0	0	0	0	10	11	3	1	1	0	0	0	0	16
10:45	8	1	0	0	0	0	0	0	9	18	4	2	1	0	0	0	0	25
Hour	37	6	0	0	0	0	0	0	43	51	11	5	3	0	0	0	0	70
11:00	11	6	1	0	0	0	0	0	18	16	4	1	1	1	0	0	0	23
11:15	11	2	1	0	0	0	0	0	14	21	1	0	2	0	0	0	0	24
11:30	8	0	1	1	0	0	0	0	10	14	2	0	0	0	0	0	0	16
11:45	9	0	1	0	0	0	0	0	10	19	3	0	1	0	0	0	0	23
Hour	39	8	4	1	0	0	0	0	52	70	10	1	4	1	0	0	0	86
12:00	13	2	0	0	0	0	0	0	15	20	3	1	1	0	0	0	0	25
12:15	16	3	0	0	0	0	0	0	19	21	3	1	0	0	0	0	0	26

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	12	3	0	1	0	0	0	0	16	19	0	1	1	0	0	0	0	21
12:45	18	4	0	0	0	0	0	0	22	16	4	1	1	0	0	0	0	22
Hour	59	12	0	1	0	0	0	0	72	76	10	4	3	0	0	0	1	94
13:00	16	3	0	0	0	0	0	0	19	23	2	1	1	0	0	0	0	27
13:15	16	0	0	0	0	0	0	1	17	20	2	2	1	0	0	0	0	25
13:30	14	0	1	0	0	0	0	0	15	25	2	0	0	0	0	0	1	28
13:45	12	0	0	0	0	0	0	0	12	17	3	0	1	0	0	0	0	21
Hour	58	3	1	0	0	0	0	1	63	85	9	3	3	0	0	0	1	101
14:00	13	0	0	0	0	0	0	1	14	24	0	1	1	0	0	0	0	26
14:15	15	3	0	0	0	0	0	0	18	27	1	2	0	0	0	0	0	30
14:30	8	0	2	0	0	0	0	0	10	20	1	1	1	0	0	0	0	23
14:45	17	1	0	0	0	0	0	1	19	24	4	1	1	0	0	0	0	30
Hour	53	4	2	0	0	0	0	2	61	95	6	5	3	0	0	0	0	109
15:00	11	1	0	0	0	0	0	1	13	21	2	2	1	0	0	0	0	26
15:15	15	1	0	0	0	0	0	0	16	35	2	0	0	0	0	0	1	38
15:30	9	1	0	0	0	0	0	0	10	17	3	1	1	0	0	0	0	22
15:45	11	2	0	0	0	0	0	1	14	22	3	0	4	0	0	0	1	30
Hour	46	5	0	0	0	0	0	2	53	95	10	3	6	0	0	0	2	116
16:00	12	0	0	0	0	0	0	1	13	24	1	1	0	0	0	0	1	27
16:15	9	2	0	0	0	0	0	1	12	25	2	0	1	0	0	0	0	28
16:30	10	0	0	0	0	0	0	1	11	25	1	0	1	0	0	0	1	28
16:45	11	1	0	0	0	0	0	0	12	25	1	0	1	0	0	2	0	29
Hour	42	3	0	0	0	0	0	3	48	99	5	1	3	0	0	2	2	112
17:00	7	0	0	0	0	0	0	1	8	30	5	1	0	0	0	0	1	37
17:15	10	1	0	0	0	0	0	1	12	37	2	0	1	0	0	1	2	43
17:30	17	1	0	0	0	0	1	1	20	49	7	0	0	0	0	0	0	56
17:45	16	0	0	0	0	0	0	0	16	41	3	0	1	0	0	0	1	46
Hour	50	2	0	0	0	0	1	3	56	157	17	1	2	0	0	1	4	182
18:00	21	4	0	0	0	0	0	0	25	29	4	1	1	0	0	0	0	35
18:15	14	2	0	0	0	0	0	0	16	27	6	0	1	0	0	0	0	34
18:30	13	2	0	0	0	0	0	1	16	26	1	0	0	0	0	0	0	27
18:45	11	1	0	0	0	0	1	0	13	10	1	0	1	0	0	0	0	12
Hour	59	9	0	0	0	0	1	1	70	92	12	1	3	0	0	0	0	108
19:00	11	0	0	0	0	0	0	0	11	16	2	0	1	0	0	0	0	19
19:15	9	1	0	0	0	0	0	0	10	23	1	0	1	0	0	1	0	26
19:30	9	1	0	0	0	0	0	0	10	17	0	0	0	0	0	0	1	18
19:45	13	0	0	0	0	0	0	0	13	14	2	0	0	0	0	0	0	16
Hour	42	2	0	0	0	0	0	0	44	70	5	0	2	0	0	1	1	79
20:00	7	0	0	0	0	0	0	1	8	16	2	0	1	0	0	0	1	20
20:15	5	1	0	0	0	0	0	1	7	18	1	0	0	0	0	0	0	19
20:30	9	2	1	0	0	0	0	0	12	15	1	0	0	0	0	0	0	16
20:45	8	1	0	0	0	0	0	1	10	12	0	0	1	0	0	1	0	14
Hour	29	4	1	0	0	0	0	3	37	61	4	0	2	0	0	1	1	69
21:00	11	2	0	0	0	0	0	0	13	11	0	1	0	0	0	0	0	12
21:15	5	0	0	0	0	0	0	1	6	8	0	0	1	0	0	0	0	9
21:30	5	1	0	0	0	0	0	0	6	10	1	0	0	0	0	0	0	11
21:45	3	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3
Hour	24	3	0	0	0	0	0	1	28	32	1	1	1	0	0	0	0	35
22:00	6	1	0	0	0	0	0	2	9	5	0	0	1	0	0	0	0	6
22:15	3	2	0	0	0	0	0	0	5	3	0	0	0	0	0	0	0	3
22:30	4	1	0	0	0	0	0	1	6	2	1	0	0	0	0	0	0	3
22:45	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	0	5
Hour	13	4	0	0	0	0	0	3	20	14	1	0	2	0	0	0	0	17
23:00	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	3
23:15	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	4
23:30	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
23:45	3	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	1	3
Hour	4	0	0	0	0	0	0	0	4	8	1	0	1	0	0	0	2	12
Total	639	77	13	2	0	0	3	23	757	1297	148	30	47	1	2	6	17	1548

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	A to B - Unnamed Road to R339(SW)								Veh. Total	B to A - R339(SW) to Unnamed Road								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	0	0	1	0	0	0	0	0	1	15	1	1	0	0	0	0	0	17
00:15	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
00:30	1	0	0	1	0	0	0	0	2	3	1	0	0	0	0	0	0	4
00:45	2	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	2
Hour	5	0	1	1	0	0	0	0	7	20	2	1	1	0	0	0	0	24
01:00	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
01:15	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
01:45	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	0	2
Hour	4	0	0	1	0	0	0	0	5	7	0	0	0	0	0	0	0	7
02:00	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
02:15	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	1	5
02:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
02:45	1	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	3
Hour	2	0	0	0	0	0	0	0	2	7	0	0	1	0	0	0	2	10
03:00	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
04:00	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
04:15	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
04:45	1	0	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
Hour	1	1	2	0	0	0	0	0	4	2	1	0	0	0	0	0	0	3
05:00	3	1	1	0	0	0	0	1	6	1	0	0	0	0	0	0	0	1
05:15	2	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	1
05:30	5	2	2	0	0	0	0	0	9	0	0	1	0	0	0	0	0	1
05:45	6	3	0	0	0	0	0	0	9	5	0	0	0	0	0	0	0	5
Hour	16	6	3	0	0	0	0	1	26	6	1	1	0	0	0	0	0	8
06:00	3	2	2	0	0	0	0	0	7	2	0	0	0	0	0	0	0	2
06:15	6	0	1	0	0	0	0	0	7	3	0	2	1	0	0	0	0	6
06:30	16	1	1	1	0	0	0	0	19	2	1	0	0	0	0	0	0	3
06:45	16	3	2	1	0	0	1	0	23	3	0	1	2	0	0	0	0	6
Hour	41	6	6	2	0	0	1	0	56	10	1	3	3	0	0	0	0	17
07:00	24	3	0	1	0	0	0	0	28	6	3	1	0	0	0	0	0	10
07:15	16	4	1	0	0	0	0	0	21	1	0	1	0	0	0	0	0	2
07:30	11	3	2	1	0	0	0	0	17	8	2	2	0	0	0	0	0	12
07:45	17	3	5	0	0	0	0	0	25	6	1	1	0	0	0	0	0	8
Hour	68	13	8	2	0	0	0	0	91	21	6	5	0	0	0	0	0	32
08:00	15	6	2	0	0	0	0	0	23	9	0	0	0	0	0	0	1	10
08:15	17	4	0	0	0	0	0	0	21	13	3	3	0	0	0	0	1	20
08:30	21	4	3	0	0	0	0	2	30	10	6	1	1	0	0	0	0	18
08:45	18	0	3	1	0	0	0	0	22	17	2	2	1	0	0	0	0	22
Hour	71	14	8	1	0	0	0	2	96	49	11	6	2	0	0	0	2	70
09:00	18	4	0	0	0	0	0	1	23	6	4	1	1	0	0	0	0	12
09:15	19	7	3	0	0	0	0	0	29	7	0	3	0	0	0	0	0	10
09:30	14	3	2	0	0	0	0	1	20	8	0	1	1	0	0	0	0	10
09:45	17	4	0	0	0	0	0	1	22	7	1	0	1	0	0	1	0	10
Hour	68	18	5	0	0	0	0	3	94	28	5	5	3	0	0	1	0	42
10:00	21	7	2	0	0	0	0	0	30	14	2	0	0	0	0	0	0	16
10:15	23	2	4	0	0	0	0	0	29	11	3	1	2	0	0	0	0	17
10:30	16	2	2	0	0	0	0	0	20	11	1	3	0	0	0	0	0	15
10:45	21	3	5	1	0	0	0	0	30	9	1	4	1	0	0	0	1	16
Hour	81	14	13	1	0	0	0	0	109	45	7	8	3	0	0	0	1	64
11:00	24	4	4	2	0	0	0	0	34	6	3	2	0	0	0	0	0	11
11:15	25	4	3	0	0	0	0	0	32	12	3	1	0	0	0	0	0	16
11:30	11	5	0	0	0	0	0	0	16	16	3	0	1	0	0	0	0	20
11:45	18	5	3	1	0	0	0	0	27	13	4	5	0	0	0	0	0	22
Hour	78	18	10	3	0	0	0	0	109	47	13	8	1	0	0	0	0	69
12:00	21	5	3	0	0	0	0	0	29	13	0	1	0	0	0	0	0	14
12:15	17	2	2	0	0	0	0	0	21	10	5	1	1	0	0	0	0	17

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	23	5	1	1	0	0	0	0	30	18	0	0	0	0	0	0	0	18
12:45	16	1	3	0	0	0	1	0	21	15	4	2	0	0	0	0	0	21
Hour	77	13	9	1	0	0	1	0	101	56	9	4	1	0	0	0	0	70
13:00	22	3	2	0	0	0	0	0	27	15	4	1	1	0	0	0	0	21
13:15	14	2	3	0	0	0	0	0	19	13	2	0	1	0	0	0	0	16
13:30	24	5	0	0	0	0	0	0	29	13	3	2	0	0	0	0	0	18
13:45	21	2	1	1	0	0	0	0	25	11	0	1	1	0	0	2	0	15
Hour	81	12	6	1	0	0	0	0	100	52	9	4	3	0	0	2	0	70
14:00	13	2	1	2	0	0	0	1	19	18	1	3	0	0	0	0	0	22
14:15	21	3	3	1	0	0	0	0	28	12	4	1	1	0	0	0	0	18
14:30	12	5	4	0	0	0	0	0	21	7	4	3	0	0	0	0	0	14
14:45	12	1	0	0	0	0	0	0	13	12	1	2	0	0	0	0	0	15
Hour	58	11	8	3	0	0	0	1	81	49	10	9	1	0	0	0	0	69
15:00	18	3	2	2	0	0	0	2	27	7	3	1	2	0	0	0	0	13
15:15	12	0	4	0	0	0	0	0	16	24	1	1	0	0	0	0	0	26
15:30	16	2	0	0	0	0	0	0	18	20	4	2	2	0	0	2	0	30
15:45	8	2	5	0	0	0	0	0	15	16	2	1	0	0	0	0	0	19
Hour	54	7	11	2	0	0	0	2	76	67	10	5	4	0	0	2	0	88
16:00	16	3	0	0	0	0	0	0	19	19	3	0	0	0	0	0	0	22
16:15	6	0	0	0	0	0	0	0	6	15	1	1	1	0	0	0	0	18
16:30	16	4	2	0	0	0	0	0	22	19	1	5	0	0	0	0	0	25
16:45	16	0	1	0	0	0	0	1	18	21	4	0	0	0	0	0	0	25
Hour	54	7	3	0	0	0	0	1	65	74	9	6	1	0	0	0	0	90
17:00	13	6	1	0	0	0	0	0	20	18	4	1	2	0	0	0	0	25
17:15	19	2	0	1	0	0	1	0	23	11	2	0	0	0	0	0	0	13
17:30	17	1	0	0	0	0	0	0	18	14	1	1	1	0	0	0	0	17
17:45	9	1	0	1	0	0	0	0	11	23	1	0	2	0	0	1	0	27
Hour	58	10	1	2	0	0	1	0	72	66	8	2	5	0	0	1	0	82
18:00	14	3	2	0	0	0	0	0	19	17	3	0	0	0	0	0	1	21
18:15	13	4	1	0	0	0	0	0	18	16	2	0	1	0	0	0	1	20
18:30	13	1	0	0	0	0	0	0	14	15	0	0	2	0	0	0	0	17
18:45	12	2	0	1	0	0	0	0	15	13	0	0	2	0	0	0	0	15
Hour	52	10	3	1	0	0	0	0	66	61	5	0	5	0	0	0	2	73
19:00	14	2	0	0	0	0	0	0	16	6	0	1	2	0	0	0	0	9
19:15	10	4	0	1	0	0	0	0	15	17	2	2	1	0	0	0	0	22
19:30	6	0	0	0	0	0	1	0	7	17	2	0	0	0	0	0	0	19
19:45	22	0	0	3	0	0	0	0	25	7	0	0	0	0	0	0	0	7
Hour	52	6	0	4	0	0	1	0	63	47	4	3	3	0	0	0	0	57
20:00	11	2	0	0	0	0	0	0	13	11	0	0	0	0	0	0	0	11
20:15	7	4	0	0	0	0	0	1	12	11	4	0	1	0	0	1	1	18
20:30	12	0	1	0	0	0	0	0	13	9	1	0	0	0	0	0	0	10
20:45	9	0	1	0	0	0	0	0	10	17	1	0	0	0	0	0	0	18
Hour	39	6	2	0	0	0	0	1	48	48	6	0	1	0	0	1	1	57
21:00	8	2	0	0	0	0	1	0	11	7	1	1	1	0	0	0	0	10
21:15	3	1	0	0	0	0	0	0	4	10	0	0	1	0	0	0	0	11
21:30	5	1	0	0	0	0	0	0	6	8	1	0	1	0	0	0	0	10
21:45	3	1	0	0	0	0	0	0	4	6	1	0	1	0	0	0	0	8
Hour	19	5	0	0	0	0	1	0	25	31	3	1	4	0	0	0	0	39
22:00	10	0	0	0	0	0	0	0	10	4	2	0	0	0	0	1	0	7
22:15	3	0	0	0	0	0	0	0	3	5	1	0	0	0	0	0	0	6
22:30	6	2	0	0	0	0	0	0	8	8	0	0	0	0	0	0	0	8
22:45	5	0	0	0	0	0	0	0	5	2	0	0	1	0	0	0	0	3
Hour	24	2	0	0	0	0	0	0	26	19	3	0	1	0	0	1	0	24
23:00	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	4
23:15	5	0	0	0	0	0	0	0	5	6	1	0	0	0	0	0	0	7
23:30	2	0	0	0	0	0	0	0	2	8	0	0	1	0	0	0	0	9
23:45	2	2	0	0	0	0	0	0	4	18	1	0	0	0	0	0	0	19
Hour	13	2	0	0	0	0	0	0	15	36	2	0	1	0	0	0	0	39
Total	1018	181	99	25	0	0	5	11	1339	850	125	71	44	0	0	8	8	1106

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	B to D - R339(SW) to R339(NE)								Veh. Total	B to C - R339(SW) to Connolly Avenue								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	21	3	0	0	0	0	0	0	24	2	1	0	0	0	0	0	0	3
00:15	11	0	0	0	0	0	0	0	11	1	0	0	0	0	0	0	0	1
00:30	9	0	0	0	0	0	0	0	9	1	0	0	0	0	0	0	3	4
00:45	9	0	0	0	0	0	0	0	9	1	0	0	0	0	0	0	0	1
Hour	50	3	0	0	0	0	0	0	53	5	1	0	0	0	0	0	3	9
01:00	14	0	0	0	0	0	0	0	14	1	1	0	0	0	0	0	2	4
01:15	6	1	0	1	0	0	0	0	8	1	0	0	0	0	0	0	0	1
01:30	7	0	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	3
01:45	5	0	0	1	0	0	0	0	6	1	0	0	0	0	0	0	0	1
Hour	32	1	0	2	0	0	0	0	35	6	1	0	0	0	0	0	2	9
02:00	8	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
02:15	10	0	0	1	0	0	0	0	11	1	0	0	0	0	0	0	0	1
02:30	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
02:45	4	0	0	1	0	0	0	0	5	0	0	0	0	0	0	0	0	0
Hour	26	0	0	2	0	0	0	0	28	1	0	0	0	0	0	0	0	1
03:00	14	0	0	0	0	0	0	0	14	1	0	0	0	0	0	0	0	1
03:15	2	0	1	1	0	0	0	1	5	1	0	0	0	0	0	0	0	1
03:30	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
03:45	1	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Hour	18	0	3	1	0	0	0	1	23	2	0	0	0	0	0	0	0	2
04:00	4	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	1	1
04:15	3	1	0	1	0	0	0	0	5	1	0	0	0	0	0	0	0	1
04:30	3	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
04:45	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Hour	11	3	0	1	0	0	0	0	15	1	0	0	0	0	0	0	1	2
05:00	5	0	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	0
05:15	2	0	0	1	0	0	0	0	3	0	1	0	0	0	0	0	0	1
05:30	6	1	3	0	0	0	0	1	11	1	0	0	0	0	0	0	1	2
05:45	12	0	1	1	0	0	0	4	18	6	0	0	0	0	0	0	0	6
Hour	25	1	4	3	0	0	0	5	38	7	1	0	0	0	0	0	1	9
06:00	15	2	1	0	0	0	0	0	18	2	0	0	0	0	0	0	0	2
06:15	9	2	1	0	0	0	0	2	14	2	0	0	0	0	0	0	0	2
06:30	12	3	2	1	0	0	0	2	20	6	0	1	0	0	0	0	0	7
06:45	18	2	1	3	0	0	0	2	26	8	0	1	0	0	0	0	2	11
Hour	54	9	5	4	0	0	0	6	78	18	0	2	0	0	0	0	2	22
07:00	22	3	0	0	0	0	0	1	26	7	0	0	0	0	0	0	0	7
07:15	33	2	1	2	0	0	0	3	41	11	0	0	0	0	0	0	0	11
07:30	32	8	2	1	0	0	1	2	46	9	1	2	0	0	0	0	2	14
07:45	39	7	2	2	0	0	0	3	53	16	0	0	0	0	0	0	0	16
Hour	126	20	5	5	0	0	1	9	166	43	1	2	0	0	0	0	2	48
08:00	58	5	3	0	0	0	1	5	72	16	1	0	0	0	0	0	1	18
08:15	63	7	2	2	0	0	1	2	77	20	1	1	0	0	0	0	0	22
08:30	63	5	3	2	0	0	1	3	77	30	4	0	1	0	0	0	0	35
08:45	71	10	0	1	0	0	0	1	83	22	2	0	0	0	0	0	0	24
Hour	255	27	8	5	0	0	3	11	309	88	8	1	1	0	0	0	1	99
09:00	44	13	2	0	0	0	1	3	63	22	0	1	0	0	0	0	1	24
09:15	52	8	5	3	0	0	0	2	70	23	0	0	0	0	0	0	0	23
09:30	62	9	4	1	0	0	1	1	78	20	6	1	0	0	0	0	1	28
09:45	52	11	7	2	0	0	0	2	74	13	0	0	0	0	0	0	0	13
Hour	210	41	18	6	0	0	2	8	285	78	6	2	0	0	0	0	2	88
10:00	63	4	2	0	0	0	0	0	69	17	3	1	0	0	0	0	0	21
10:15	73	12	3	3	0	0	0	2	93	18	2	0	0	0	0	0	0	20
10:30	59	10	6	2	0	0	1	0	78	11	2	0	0	0	0	1	1	15
10:45	63	10	8	3	0	0	1	1	86	16	1	0	0	0	0	0	0	17
Hour	258	36	19	8	0	0	2	3	326	62	8	1	0	0	0	1	1	73
11:00	67	7	4	0	0	0	1	2	81	16	2	0	0	0	0	0	1	19
11:15	64	14	5	2	0	0	0	1	86	17	0	0	0	0	0	0	0	17
11:30	60	10	7	1	0	0	0	1	79	18	0	0	0	0	0	0	1	19
11:45	59	11	4	3	0	0	1	1	79	25	1	0	0	0	0	0	0	26
Hour	250	42	20	6	0	0	2	5	325	76	3	0	0	0	0	0	2	81
12:00	60	12	6	1	0	0	0	0	79	15	0	0	0	0	0	0	0	15
12:15	66	10	5	3	0	0	0	1	85	22	1	0	0	0	0	0	0	24

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	71	11	3	1	0	0	0	1	87	22	2	0	0	0	0	0	2	26
12:45	62	10	5	2	0	0	0	1	80	29	0	1	0	0	0	0	0	30
Hour	259	43	19	7	0	0	0	3	331	88	3	1	0	0	0	0	3	95
13:00	85	13	6	0	0	0	0	0	104	25	2	0	0	0	0	0	0	27
13:15	85	7	2	2	0	0	1	1	98	16	2	1	0	0	0	0	0	19
13:30	68	9	6	0	0	0	0	2	85	26	7	0	0	0	0	0	2	35
13:45	100	9	3	2	0	0	0	0	114	28	5	1	0	0	0	1	1	36
Hour	338	38	17	4	0	0	1	3	401	95	16	2	0	0	0	1	3	117
14:00	90	12	4	0	0	0	0	0	106	28	3	0	0	0	0	0	2	33
14:15	84	12	6	3	0	0	0	1	106	43	9	0	1	0	0	0	0	53
14:30	74	7	2	2	0	0	0	2	87	34	1	1	0	0	0	0	0	36
14:45	90	16	3	2	0	0	1	1	113	31	6	0	1	0	0	0	0	38
Hour	338	47	15	7	0	0	1	4	412	136	19	1	2	0	0	0	2	160
15:00	121	7	5	0	0	0	1	0	134	49	6	1	0	0	0	0	0	56
15:15	124	13	2	1	0	0	1	2	143	55	4	1	0	0	0	0	1	61
15:30	119	9	3	1	0	0	2	3	137	39	7	0	0	0	0	0	2	48
15:45	105	14	5	2	0	0	0	1	127	31	5	0	0	0	0	0	2	38
Hour	469	43	15	4	0	0	4	6	541	174	22	2	0	0	0	0	5	203
16:00	115	19	6	0	0	0	2	4	146	57	4	1	0	0	0	0	0	62
16:15	138	20	1	1	0	0	1	1	162	64	6	1	0	0	0	0	1	72
16:30	105	13	2	2	0	0	1	3	126	71	6	0	0	0	0	0	0	77
16:45	108	10	2	1	0	0	0	2	123	78	4	0	0	0	0	1	1	84
Hour	466	62	11	4	0	0	4	10	557	270	20	2	0	0	0	1	2	295
17:00	113	8	5	0	0	0	0	1	127	75	7	1	0	0	0	1	1	85
17:15	76	8	0	1	0	0	0	2	87	92	5	0	0	0	0	0	2	99
17:30	115	12	1	1	0	0	2	2	133	89	8	0	0	0	0	1	4	102
17:45	117	15	1	1	0	0	0	2	136	70	5	0	0	0	0	0	3	78
Hour	421	43	7	3	0	0	2	7	483	326	25	1	0	0	0	2	10	364
18:00	121	7	0	1	0	0	1	3	133	61	7	0	0	0	0	0	1	69
18:15	96	6	2	1	0	0	0	4	109	42	5	0	0	0	0	0	2	49
18:30	84	11	3	1	0	0	1	1	101	30	4	0	0	0	0	0	1	35
18:45	63	4	0	2	0	0	0	3	72	18	1	0	0	0	0	0	0	19
Hour	364	28	5	5	0	0	2	11	415	151	17	0	0	0	0	0	4	172
19:00	58	3	1	0	0	0	0	4	66	25	0	0	0	0	0	0	1	26
19:15	56	2	2	3	0	0	1	0	64	10	1	0	0	0	0	1	1	13
19:30	42	9	2	0	0	0	0	0	53	12	1	0	0	0	0	0	0	13
19:45	37	4	0	1	0	0	0	0	42	8	3	0	0	0	0	0	1	12
Hour	193	18	5	4	0	0	1	4	225	55	5	0	0	0	0	1	3	64
20:00	45	0	1	0	0	0	1	0	47	14	0	0	0	0	0	0	0	14
20:15	43	3	0	2	0	0	1	0	49	11	0	0	0	0	0	0	0	11
20:30	41	3	0	0	0	0	0	2	46	8	2	0	0	0	0	0	1	11
20:45	46	2	2	0	0	0	0	1	51	9	1	0	0	0	0	0	0	10
Hour	175	8	3	2	0	0	2	3	193	42	3	0	0	0	0	0	1	46
21:00	42	4	0	0	0	0	1	0	47	17	0	0	0	0	0	0	0	17
21:15	36	1	0	1	0	0	0	0	38	14	3	0	0	0	0	0	0	17
21:30	36	2	0	0	0	0	1	2	41	8	0	0	0	0	0	0	1	9
21:45	27	4	1	0	0	0	0	0	32	8	1	0	0	0	0	0	0	9
Hour	141	11	1	1	0	0	2	2	158	47	4	0	0	0	0	0	1	52
22:00	28	4	0	0	0	0	0	0	32	5	0	0	0	0	0	0	0	5
22:15	28	2	0	1	0	0	0	1	32	2	1	0	0	0	0	0	0	3
22:30	17	4	0	0	0	0	0	0	21	11	0	0	0	0	0	0	0	11
22:45	23	2	0	0	0	0	0	0	25	4	1	0	0	0	0	0	2	7
Hour	96	12	0	1	0	0	0	1	110	22	2	0	0	0	0	0	2	26
23:00	13	2	2	0	0	0	0	0	17	2	1	0	0	0	0	0	0	3
23:15	20	0	0	1	0	0	0	0	21	3	0	0	0	0	0	0	0	3
23:30	17	1	0	0	0	0	0	0	18	4	0	0	0	0	0	0	1	5
23:45	23	1	0	0	0	0	0	0	24	5	0	0	0	0	0	1	0	6
Hour	73	4	2	1	0	0	0	0	80	14	1	0	0	0	0	1	1	17
Total	4648	540	182	86	0	0	29	102	5587	1807	166	17	3	0	0	7	54	2054

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	C to B - Connolly Avenue to R339(SW)								Veh. Total	C to A - Connolly Avenue to Unnamed Road								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	4	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	2
00:15	1	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	2
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1
Hour	7	0	0	0	0	0	0	1	8	4	0	0	0	0	0	0	1	5
01:00	2	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	2
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	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	0	0	0	0	1	0	0	0	0	0	0	0	1
Hour	2	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	3
02:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
02:30	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Hour	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	3
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	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	1	0	0	0	0	0	0	0	1
04:15	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	1	1	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	2
05:00	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2
05:15	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
05:30	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
05:45	3	1	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	2
Hour	4	1	1	0	0	0	0	1	7	5	0	0	0	0	0	0	0	5
06:00	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
06:15	5	0	0	0	0	0	0	2	7	1	1	0	0	0	0	0	1	3
06:30	8	2	1	0	0	0	0	0	11	2	1	0	0	0	0	0	0	3
06:45	11	2	0	0	0	0	0	0	13	6	0	0	0	0	0	0	0	6
Hour	25	4	2	0	0	0	0	2	33	9	2	0	0	0	0	0	1	12
07:00	12	0	0	0	0	0	0	0	12	3	1	0	2	0	0	0	0	6
07:15	20	2	0	0	0	0	0	0	22	6	0	0	0	0	0	0	0	6
07:30	41	3	0	0	0	0	0	2	46	18	5	0	1	0	0	0	0	24
07:45	70	5	1	0	0	0	0	4	80	36	4	0	1	0	0	0	1	42
Hour	143	10	1	0	0	0	0	6	160	63	10	0	4	0	0	0	1	78
08:00	68	9	1	0	0	0	0	5	83	39	0	1	0	0	0	2	0	42
08:15	72	7	0	0	0	0	0	1	80	27	1	1	1	0	0	0	0	30
08:30	62	5	0	0	0	0	0	2	69	25	2	1	1	0	0	0	0	29
08:45	61	6	1	0	0	0	0	0	68	33	4	0	0	0	0	0	0	37
Hour	263	27	2	0	0	0	0	8	300	124	7	3	2	0	0	2	0	138
09:00	64	6	3	0	0	0	0	2	75	29	2	1	2	0	0	0	0	34
09:15	35	1	1	0	0	0	0	1	38	20	3	0	1	0	0	0	0	24
09:30	40	5	0	0	0	0	0	0	45	26	1	0	1	0	0	0	0	28
09:45	32	3	1	0	0	0	0	1	37	15	1	0	1	0	0	0	0	17
Hour	171	15	5	0	0	0	0	4	195	90	7	1	5	0	0	0	0	103
10:00	31	3	2	0	0	0	0	0	36	16	1	1	1	0	0	0	0	19
10:15	26	2	0	0	0	0	0	0	28	16	1	0	0	0	0	0	0	17
10:30	19	2	0	0	0	0	0	0	21	10	0	1	1	0	0	0	0	12
10:45	23	4	1	0	0	0	0	0	28	18	3	1	1	0	0	0	0	23
Hour	99	11	3	0	0	0	0	0	113	60	5	3	3	0	0	0	0	71
11:00	27	4	0	0	0	0	0	0	31	7	2	1	1	0	0	0	1	12
11:15	23	3	0	0	0	0	3	0	29	17	1	1	1	0	0	0	0	20
11:30	16	5	0	0	0	0	0	2	23	9	4	0	0	0	0	0	0	13
11:45	24	3	0	0	0	0	0	0	27	20	4	0	1	0	0	0	1	26
Hour	90	15	0	0	0	0	3	2	110	53	11	2	3	0	0	0	2	71
12:00	32	3	0	0	0	0	0	4	39	17	0	0	1	0	0	0	0	18
12:15	15	5	1	0	0	0	0	0	21	17	3	0	1	0	0	0	0	21

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	32	2	1	0	0	0	0	1	36	11	1	0	0	0	0	0	1	13
12:45	38	6	0	0	0	0	0	0	44	15	3	1	1	0	0	0	0	20
Hour	117	16	2	0	0	0	0	5	140	60	7	1	3	0	0	0	1	72
13:00	24	1	0	0	0	0	0	0	25	18	3	0	0	0	0	0	0	21
13:15	21	4	0	0	0	0	0	0	25	12	1	0	2	0	0	0	0	15
13:30	26	1	1	0	0	0	0	0	28	26	0	1	0	0	0	1	0	28
13:45	19	3	1	0	0	0	0	0	23	25	1	2	1	0	0	0	0	29
Hour	90	9	2	0	0	0	0	0	101	81	5	3	3	0	0	1	0	93
14:00	33	2	1	0	0	0	0	2	38	22	2	0	1	0	0	0	0	25
14:15	29	2	0	1	0	0	0	0	32	18	5	1	0	0	0	0	2	26
14:30	36	5	1	1	0	0	0	0	43	33	2	0	1	0	0	0	0	36
14:45	28	4	0	0	0	0	1	1	34	18	4	1	1	0	0	0	0	24
Hour	126	13	2	2	0	0	1	3	147	91	13	2	3	0	0	0	2	111
15:00	25	4	0	0	0	0	0	0	29	18	1	0	1	0	0	0	0	20
15:15	30	3	1	0	0	0	0	2	36	14	2	0	0	0	0	1	0	17
15:30	20	2	2	0	0	1	0	2	27	16	4	0	1	0	0	0	0	21
15:45	30	2	0	0	0	0	0	1	33	16	4	0	2	0	1	0	0	23
Hour	105	11	3	0	0	1	0	5	125	64	11	0	4	0	1	1	0	81
16:00	40	5	0	0	0	0	0	1	46	32	6	1	0	0	0	1	0	40
16:15	31	2	0	0	0	0	0	1	34	19	0	0	1	0	0	0	0	20
16:30	48	5	0	0	0	0	0	0	53	40	1	0	0	0	0	0	1	42
16:45	37	3	0	0	0	0	0	2	42	22	1	1	2	0	0	0	0	26
Hour	156	15	0	0	0	0	0	4	175	113	8	2	3	0	0	1	1	128
17:00	43	0	0	0	0	0	0	1	44	25	0	1	0	0	0	0	0	26
17:15	44	3	0	0	0	0	0	1	48	25	3	0	1	0	0	0	0	29
17:30	16	0	0	0	0	0	0	1	17	17	2	1	1	0	0	0	0	21
17:45	26	2	0	0	0	0	0	1	29	19	1	0	1	0	0	0	0	21
Hour	129	5	0	0	0	0	0	4	138	86	6	2	3	0	0	0	0	97
18:00	24	2	0	0	0	0	0	3	29	14	1	1	0	0	0	0	0	16
18:15	24	3	0	0	0	0	0	0	27	20	4	0	1	0	0	1	1	27
18:30	21	0	0	0	0	0	0	0	21	13	2	0	2	0	0	0	0	17
18:45	12	0	0	0	0	0	0	0	12	11	1	0	0	0	0	0	1	13
Hour	81	5	0	0	0	0	0	3	89	58	8	1	3	0	0	1	2	73
19:00	17	0	1	0	0	0	0	0	18	12	0	0	1	0	0	0	0	13
19:15	14	2	0	0	0	0	0	1	17	14	1	0	1	0	0	0	0	16
19:30	10	0	0	0	0	0	0	0	10	12	1	0	0	0	0	0	0	13
19:45	18	0	0	0	0	0	0	0	18	10	2	0	1	0	0	0	0	13
Hour	59	2	1	0	0	0	0	1	63	48	4	0	3	0	0	0	0	55
20:00	11	0	0	0	0	0	0	0	11	9	2	0	0	0	0	0	0	11
20:15	11	2	0	0	0	0	0	1	14	13	3	0	0	0	0	0	0	16
20:30	15	3	0	0	0	0	0	0	18	13	0	0	1	0	0	0	0	14
20:45	7	0	0	0	0	0	0	2	9	7	1	0	0	0	0	0	0	8
Hour	44	5	0	0	0	0	0	3	52	42	6	0	1	0	0	0	0	49
21:00	8	0	0	0	0	0	0	0	8	6	0	0	1	0	0	0	1	8
21:15	7	0	0	0	0	0	0	0	7	7	0	0	0	0	0	0	0	7
21:30	7	0	0	0	0	0	0	0	7	4	1	0	0	0	0	0	0	5
21:45	7	0	0	0	0	0	0	0	7	6	0	0	1	0	0	0	0	7
Hour	29	0	0	0	0	0	0	0	29	23	1	0	2	0	0	0	1	27
22:00	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	1	5
22:15	2	0	0	0	0	0	0	0	2	2	0	0	1	0	0	0	0	3
22:30	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	4
22:45	2	1	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	4
Hour	10	1	0	0	0	0	0	0	11	14	0	0	1	0	0	0	1	16
23:00	6	0	0	0	0	0	0	0	6	2	1	0	1	0	0	0	0	4
23:15	3	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	2
23:30	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
23:45	3	0	0	0	0	0	0	0	3	2	0	0	1	0	0	0	0	3
Hour	13	0	0	0	0	0	0	0	13	6	1	0	2	0	0	0	1	10
Total	1766	166	24	2	0	1	4	52	2015	1100	114	20	48	0	1	6	14	1303

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	C to D - Connolly Avenue to R339(NE)								Veh. Total	D to C - R339(NE) to Connolly Avenue								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	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	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	0	0	0	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
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	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
Hour	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	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	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	0	0	0	0	0	0
04:15	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
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:15	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
05:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
Hour	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	8
06:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
06:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
06:30	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
06:45	0	0	0	0	0	0	0	1	1	2	1	2	0	0	0	0	0	5
Hour	0	0	0	0	0	0	0	1	1	6	1	3	0	0	0	0	0	10
07:00	0	0	1	0	0	0	0	0	1	5	1	0	0	0	0	0	0	6
07:15	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
07:30	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	3
07:45	1	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	6
Hour	2	0	1	0	0	0	0	0	3	14	1	2	0	0	0	0	1	18
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	2	0	0	0	0	0	0	0	2	3	1	1	0	0	0	0	0	5
08:30	1	0	0	0	0	0	0	0	1	5	0	2	0	0	0	0	0	7
08:45	2	0	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0	4
Hour	5	0	0	0	0	0	0	0	5	11	2	3	0	0	0	0	0	16
09:00	1	1	0	1	0	0	0	0	3	1	0	0	0	0	0	0	0	1
09:15	2	0	1	0	0	0	0	0	3	4	0	1	0	0	0	0	0	5
09:30	1	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	3
09:45	2	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	1
Hour	6	1	1	1	0	0	0	1	10	8	0	2	0	0	0	0	0	10
10:00	1	3	0	0	0	0	0	0	4	1	0	1	0	0	0	0	0	2
10:15	1	0	0	0	0	0	0	0	1	1	2	3	0	0	0	0	0	6
10:30	0	2	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
10:45	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Hour	2	5	0	0	0	0	0	0	7	3	5	4	0	0	0	0	0	12
11:00	1	0	0	0	0	0	0	0	1	7	0	2	0	0	0	0	0	9
11:15	2	1	0	0	0	0	0	0	3	0	1	2	0	0	0	0	0	3
11:30	0	2	1	0	0	0	0	0	3	3	0	1	0	0	0	0	0	4
11:45	3	0	0	1	0	0	0	0	4	3	1	2	0	0	0	0	0	6
Hour	6	3	1	1	0	0	0	0	11	13	2	7	0	0	0	0	0	22
12:00	3	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	1
12:15	2	0	1	0	0	0	0	0	3	3	0	2	0	0	0	0	0	5

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	1	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	3
12:45	3	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	2
Hour	9	0	1	0	0	0	0	0	10	8	0	3	0	0	0	0	0	11
13:00	4	0	0	0	0	0	0	0	4	1	1	1	0	0	0	0	0	3
13:15	1	0	1	1	0	0	0	1	4	4	0	1	0	0	0	0	0	5
13:30	4	0	0	1	0	0	0	0	5	0	0	0	0	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
Hour	9	0	1	2	0	0	0	1	13	7	1	3	0	0	0	0	1	12
14:00	4	0	1	1	0	0	0	0	6	4	1	0	0	0	0	0	0	5
14:15	5	1	0	0	0	0	0	0	6	5	0	0	0	0	0	0	0	5
14:30	5	0	0	0	0	0	0	0	5	2	1	0	0	0	0	0	0	3
14:45	1	0	0	0	0	0	0	0	1	4	0	1	0	0	0	0	0	5
Hour	15	1	1	1	0	0	0	0	18	15	2	1	0	0	0	0	0	18
15:00	2	0	0	0	0	0	0	0	2	6	0	0	0	0	0	0	0	6
15:15	5	0	0	0	0	0	0	0	5	4	0	0	0	0	0	0	0	4
15:30	1	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	6
15:45	3	1	0	0	0	0	0	1	5	4	0	1	0	0	0	0	0	5
Hour	11	1	0	0	0	0	0	1	13	20	0	1	0	0	0	0	0	21
16:00	4	1	0	1	0	0	0	0	6	1	0	0	0	0	0	0	0	1
16:15	3	2	0	0	0	0	0	0	5	5	1	0	0	0	0	0	1	7
16:30	3	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3
16:45	2	0	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0	4
Hour	12	3	0	1	0	0	0	0	16	12	2	0	0	0	0	0	1	15
17:00	1	0	2	0	0	0	0	0	3	2	0	0	0	0	0	0	0	2
17:15	3	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3
17:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:45	1	0	0	0	0	0	0	1	2	4	0	0	0	0	0	0	1	5
Hour	5	0	2	0	0	0	0	1	8	9	0	1	0	0	0	0	1	11
18:00	3	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	2
18:15	3	0	0	0	0	0	0	0	3	6	0	1	0	0	0	0	1	8
18:30	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
18:45	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	1	4
Hour	10	0	0	0	0	0	0	0	10	11	1	1	0	0	0	0	2	15
19:00	3	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	2
19:15	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
19:30	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
19:45	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Hour	8	0	0	0	0	0	0	0	8	7	0	0	0	0	0	0	0	7
20:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
20:15	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
20:30	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	2
20:45	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Hour	4	0	0	0	0	0	0	0	4	3	1	0	0	0	0	0	0	4
21:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:30	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	1	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
22:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Hour	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
23:00	2	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	2	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	1
Total	107	14	8	6	0	0	0	7	142	162	18	31	0	0	0	0	6	217

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	D to B - R339(NE) to R339(SW)								Veh. Total	D to A - R339(NE) to Unnamed Road								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	8	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
00:15	6	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	1
00:30	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
00:45	4	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	1
Hour	22	0	0	0	0	0	0	0	22	2	0	0	0	0	0	0	0	2
01:00	4	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
01:15	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
01:30	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
01:45	5	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0
Hour	16	1	0	0	0	0	0	1	18	0	0	0	0	0	0	0	0	0
02:00	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
02:15	9	0	0	0	0	0	0	0	9	1	0	0	0	0	0	0	0	1
02:30	7	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	1
02:45	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
Hour	23	0	0	0	0	0	0	0	23	2	0	0	0	0	0	0	0	2
03:00	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
03:15	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
03:30	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
03:45	2	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Hour	12	0	2	0	0	0	0	0	14	1	0	0	0	0	0	0	0	1
04:00	3	1	1	0	0	0	0	1	6	0	0	0	0	0	0	0	0	0
04:15	1	0	1	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0
04:30	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
04:45	2	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Hour	7	1	3	0	0	0	0	2	13	0	0	0	0	0	0	0	0	0
05:00	4	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
05:15	3	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
05:30	7	2	2	0	0	0	0	1	12	0	1	0	0	0	0	0	0	1
05:45	17	1	2	0	0	0	0	2	22	0	0	0	0	0	0	0	0	0
Hour	31	4	5	0	0	0	0	3	43	0	1	0	0	0	0	0	0	1
06:00	9	1	2	0	0	0	0	2	14	0	0	0	0	0	0	0	0	0
06:15	17	3	1	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0
06:30	36	2	1	0	0	0	0	1	40	0	0	0	0	0	0	0	0	0
06:45	36	4	0	0	0	0	0	1	41	4	0	0	0	0	0	0	1	5
Hour	98	10	4	0	0	0	0	4	116	4	0	0	0	0	0	0	1	5
07:00	56	9	1	0	0	0	0	1	67	2	0	0	0	0	0	0	0	2
07:15	82	12	3	1	0	1	0	4	103	4	3	0	0	0	0	0	0	7
07:30	93	12	0	3	0	0	1	3	112	6	1	0	0	0	0	0	0	7
07:45	97	8	4	2	0	0	0	1	112	5	1	0	0	0	0	0	0	6
Hour	328	41	8	6	0	1	1	9	394	17	5	0	0	0	0	0	0	22
08:00	102	12	2	3	0	0	0	2	121	9	1	0	0	0	0	0	0	10
08:15	120	11	4	0	0	0	0	1	136	5	0	0	0	0	0	0	0	5
08:30	130	6	1	0	0	0	0	2	139	8	1	2	0	0	0	0	0	11
08:45	124	11	1	1	0	0	2	7	146	11	1	0	0	0	0	0	0	12
Hour	476	40	8	4	0	0	2	12	542	33	3	2	0	0	0	0	0	38
09:00	123	19	1	1	0	0	0	4	148	10	2	0	0	0	0	0	0	12
09:15	115	16	0	1	0	0	0	2	134	14	0	0	0	0	0	0	0	14
09:30	128	13	6	0	0	0	0	0	147	14	0	0	0	0	0	0	1	15
09:45	124	20	1	3	0	0	0	0	148	11	1	0	1	0	0	0	0	13
Hour	490	68	8	5	0	0	0	6	577	49	3	0	1	0	0	0	1	54
10:00	93	13	6	1	0	0	0	0	113	14	3	0	0	0	0	1	0	18
10:15	70	12	6	0	0	0	1	0	89	10	4	1	0	0	0	1	0	16
10:30	98	16	1	1	0	0	0	2	118	5	2	2	0	0	0	0	0	9
10:45	77	9	4	1	0	0	1	3	95	7	1	0	1	0	0	0	0	9
Hour	338	50	17	3	0	0	2	5	415	36	10	3	1	0	0	2	0	52
11:00	63	15	4	1	0	0	0	1	84	7	1	0	0	0	0	0	0	8
11:15	62	9	3	0	0	0	0	1	75	10	1	0	0	0	0	0	0	11
11:30	77	12	2	2	0	0	0	3	96	7	1	0	0	0	0	0	0	8
11:45	78	5	3	0	0	0	0	0	86	7	0	1	0	0	0	0	0	8
Hour	280	41	12	3	0	0	0	5	341	31	3	1	0	0	0	0	0	35
12:00	82	6	2	1	0	0	1	1	93	12	2	2	0	0	0	0	0	16
12:15	76	13	1	0	0	0	0	0	90	10	3	0	0	0	0	0	0	13

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12:30	90	11	4	2	0	0	0	1	108	6	2	0	0	0	0	0	0	8
12:45	77	12	1	0	0	0	0	3	93	8	1	0	0	0	0	0	0	9
Hour	325	42	8	3	0	0	1	5	384	36	8	2	0	0	0	0	0	46
13:00	89	7	1	1	0	0	0	1	99	9	0	1	0	0	0	0	0	10
13:15	71	5	1	0	0	0	0	1	78	4	0	1	0	0	0	0	0	5
13:30	76	7	1	2	0	0	0	2	88	8	1	0	0	0	0	0	0	9
13:45	90	13	0	0	0	0	0	2	105	14	2	0	0	0	0	0	0	16
Hour	326	32	3	3	0	0	0	6	370	35	3	2	0	0	0	0	0	40
14:00	90	6	3	1	0	0	2	2	104	11	1	0	0	0	0	1	0	13
14:15	84	4	2	2	0	0	0	0	92	6	0	0	0	0	0	0	0	6
14:30	84	6	2	1	0	0	1	3	97	3	1	0	0	0	0	0	1	5
14:45	80	12	3	3	0	0	1	2	101	13	2	1	0	0	0	0	0	16
Hour	338	28	10	7	0	0	4	7	394	33	4	1	0	0	0	1	1	40
15:00	59	11	5	2	0	0	1	1	79	15	3	0	0	0	0	0	0	18
15:15	87	12	4	0	0	0	0	2	105	4	0	0	0	0	0	0	0	4
15:30	78	6	2	1	0	0	1	0	88	10	0	0	0	0	0	0	1	11
15:45	77	11	2	0	0	0	0	6	96	11	2	1	0	0	0	0	0	14
Hour	301	40	13	3	0	0	2	9	368	40	5	1	0	0	0	0	1	47
16:00	64	11	2	2	0	0	0	5	84	10	3	0	0	0	0	0	0	13
16:15	77	6	0	1	0	0	0	2	86	6	1	0	0	0	0	0	0	7
16:30	72	1	3	1	0	0	1	6	84	10	1	0	0	0	0	0	0	11
16:45	81	2	1	1	0	0	2	6	93	15	1	0	0	0	0	0	0	16
Hour	294	20	6	5	0	0	3	19	347	41	6	0	0	0	0	0	0	47
17:00	78	1	2	0	0	0	0	2	83	10	0	0	0	0	0	0	0	10
17:15	90	4	0	0	0	0	0	1	95	8	1	0	0	0	0	0	0	9
17:30	65	7	1	0	0	0	0	7	80	10	0	0	0	0	0	0	0	10
17:45	66	10	3	1	0	0	0	2	82	4	0	0	0	0	0	0	1	5
Hour	299	22	6	1	0	0	0	12	340	32	1	0	0	0	0	0	1	34
18:00	74	4	0	1	0	0	2	10	91	2	3	0	0	0	0	0	0	5
18:15	68	5	2	2	0	0	1	6	84	6	0	0	0	0	0	0	1	7
18:30	72	4	0	0	0	0	0	0	76	4	1	0	0	0	0	0	1	6
18:45	59	3	0	1	0	0	0	3	66	6	0	0	0	0	0	0	0	6
Hour	273	16	2	4	0	0	3	19	317	18	4	0	0	0	0	0	2	24
19:00	64	2	2	0	0	0	0	0	68	1	0	1	1	0	0	0	0	3
19:15	46	6	1	1	0	0	0	3	57	7	0	0	0	0	0	0	0	7
19:30	45	1	0	2	0	0	0	4	52	9	1	1	0	0	0	1	0	12
19:45	42	6	0	0	0	0	0	1	49	5	0	0	0	0	0	0	0	5
Hour	197	15	3	3	0	0	0	8	226	22	1	2	1	0	0	1	0	27
20:00	40	3	0	1	0	0	0	0	44	5	0	0	0	0	0	0	0	5
20:15	33	2	1	0	0	0	3	2	41	3	0	0	0	0	0	0	0	3
20:30	26	3	1	0	0	0	0	1	31	4	0	0	0	0	0	0	0	4
20:45	31	2	2	1	0	0	0	0	36	5	0	0	0	0	0	0	0	5
Hour	130	10	4	2	0	0	3	3	152	17	0	0	0	0	0	0	0	17
21:00	27	3	1	0	0	0	0	2	33	7	0	0	0	0	0	0	0	7
21:15	26	1	0	0	0	0	0	0	27	4	0	0	0	0	0	0	0	4
21:30	26	0	1	0	0	0	0	0	27	0	0	1	0	0	0	0	1	2
21:45	21	1	0	1	0	0	0	2	25	3	0	0	0	0	0	0	0	3
Hour	100	5	2	1	0	0	0	4	112	14	0	1	0	0	0	0	1	16
22:00	20	2	0	0	0	0	0	1	23	1	0	0	0	0	0	0	0	1
22:15	18	2	1	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0
22:30	17	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0
22:45	12	2	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0
Hour	67	6	1	0	0	0	0	1	75	1	0	0	0	0	0	0	0	1
23:00	19	0	0	1	0	0	1	3	24	0	0	0	0	0	0	0	0	0
23:15	17	0	2	0	0	0	3	3	25	0	0	0	0	0	0	0	0	0
23:30	13	1	0	0	0	0	0	0	14	1	0	0	0	0	0	0	0	1
23:45	11	1	0	1	0	0	0	0	13	1	0	0	0	0	0	0	0	1
Hour	60	2	2	2	0	0	4	6	76	2	0	0	0	0	0	0	0	2
Total	4831	494	127	55	0	1	25	146	5679	466	57	15	3	0	0	4	8	553

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	To Arm A - Unnamed Road								Veh.	From Arm A - Unnamed Road								Veh.
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	Total	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	Total
00:00	17	1	1	0	0	0	0	0	19	7	0	1	0	0	0	0	0	8
00:15	4	0	0	0	0	0	0	0	4	5	0	0	0	0	0	0	0	5
00:30	3	1	0	0	0	0	0	0	4	4	0	0	1	0	0	0	0	5
00:45	2	0	0	1	0	0	0	1	4	4	0	0	0	0	0	0	0	4
Hour	26	2	1	1	0	0	0	1	31	20	0	1	1	0	0	0	0	22
01:00	2	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3
01:15	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
01:30	4	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	2
01:45	3	0	0	0	0	0	0	0	3	1	0	0	1	0	0	0	0	2
Hour	9	1	0	0	0	0	0	0	10	8	1	0	1	0	0	0	0	10
02:00	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
02:15	6	0	0	0	0	0	0	1	7	2	0	0	0	0	0	0	0	2
02:30	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
02:45	3	0	0	1	0	0	0	1	5	1	0	0	0	0	0	0	0	1
Hour	12	0	0	1	0	0	0	2	15	6	0	0	0	0	0	0	0	6
03:00	1	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	3
03:15	1	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	6
03:30	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Hour	3	0	0	0	0	0	0	0	3	12	0	0	0	0	0	0	0	12
04:00	1	1	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	1
04:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:30	1	1	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	3
04:45	1	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3
Hour	3	2	0	0	0	0	0	0	5	3	2	3	0	0	0	0	0	8
05:00	3	0	0	0	0	0	0	0	3	4	1	1	0	0	0	0	1	7
05:15	0	1	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	4
05:30	1	1	1	0	0	0	0	0	3	11	2	2	0	0	0	0	0	15
05:45	7	0	0	0	0	0	0	0	7	27	6	0	0	0	0	0	1	34
Hour	11	2	1	0	0	0	0	0	14	45	10	3	0	0	0	0	2	60
06:00	2	0	0	0	0	0	0	0	2	6	3	2	0	0	0	0	1	12
06:15	4	1	2	1	0	0	0	1	9	14	1	1	0	0	0	0	0	16
06:30	4	2	0	0	0	0	0	0	6	27	5	1	1	0	0	0	0	34
06:45	13	0	1	2	0	0	0	1	17	36	6	3	1	0	0	1	0	47
Hour	23	3	3	3	0	0	0	2	34	83	15	7	2	0	0	1	1	109
07:00	11	4	1	2	0	0	0	0	18	38	7	0	2	0	0	1	0	48
07:15	11	3	1	0	0	0	0	0	15	42	9	1	1	0	0	0	1	54
07:30	32	8	2	1	0	0	0	0	43	38	8	2	1	0	0	0	1	50
07:45	47	6	1	1	0	0	0	1	56	44	5	6	1	0	0	0	2	58
Hour	101	21	5	4	0	0	0	1	132	162	29	9	5	0	0	1	4	210
08:00	57	1	1	0	0	0	2	1	62	36	6	3	1	0	0	0	0	46
08:15	45	4	4	1	0	0	0	1	55	32	9	0	0	0	0	0	0	41
08:30	43	9	4	2	0	0	0	0	58	45	5	3	1	0	2	1	2	59
08:45	61	7	2	1	0	0	0	0	71	39	6	6	2	0	0	0	0	53
Hour	206	21	11	4	0	0	2	2	246	152	26	12	4	0	2	1	2	199
09:00	45	8	2	3	0	0	0	0	58	46	9	0	1	0	0	0	1	57
09:15	41	3	3	1	0	0	0	0	48	45	10	3	1	0	0	0	0	59
09:30	48	1	1	2	0	0	0	1	53	33	8	4	0	0	0	0	2	47
09:45	33	3	0	3	0	0	1	0	40	39	6	1	1	0	0	0	1	48
Hour	167	15	6	9	0	0	1	1	199	163	33	8	3	0	0	0	4	211
10:00	44	6	1	1	0	0	1	0	53	37	12	2	1	0	0	0	0	52
10:15	37	8	2	2	0	0	1	0	50	49	5	6	0	0	0	0	0	60
10:30	26	3	6	1	0	0	0	0	36	36	6	3	1	0	0	0	0	46
10:45	34	5	5	3	0	0	0	1	48	47	8	7	2	0	0	0	0	64
Hour	141	22	14	7	0	0	2	1	187	169	31	18	4	0	0	0	0	222
11:00	20	6	3	1	0	0	0	1	31	51	14	6	3	1	0	0	0	75
11:15	39	5	2	1	0	0	0	0	47	57	7	4	2	0	0	0	0	70
11:30	32	8	0	1	0	0	0	0	41	33	7	1	1	0	0	0	0	42
11:45	40	8	6	1	0	0	0	1	56	46	8	4	2	0	0	0	0	60
Hour	131	27	11	4	0	0	0	2	175	187	36	15	8	1	0	0	0	247
12:00	42	2	3	1	0	0	0	0	48	54	10	4	1	0	0	0	0	69
12:15	37	11	1	2	0	0	0	0	51	54	8	3	0	[illegible]	[illegible]	[illegible]	[illegible]	66

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	35	3	0	0	0	0	0	1	39	54	8	2	3	0	0	0	0	67
12:45	38	8	3	1	0	0	0	0	50	50	9	4	1	0	0	1	0	65
Hour	152	24	7	4	0	0	0	1	188	212	35	13	5	0	0	1	1	267
13:00	42	7	2	1	0	0	0	0	52	61	8	3	1	0	0	0	0	73
13:15	29	3	1	3	0	0	0	0	36	50	4	5	1	0	0	0	1	61
13:30	47	4	3	0	0	0	1	0	55	63	7	1	0	0	0	0	1	72
13:45	50	3	3	2	0	0	2	0	60	50	5	1	2	0	0	0	0	58
Hour	168	17	9	6	0	0	3	0	203	224	24	10	4	0	0	0	2	264
14:00	51	4	3	1	0	0	1	0	60	50	2	2	3	0	0	0	2	59
14:15	36	9	2	1	0	0	0	2	50	63	7	5	1	0	0	0	0	76
14:30	43	7	3	1	0	0	0	1	55	40	6	7	1	0	0	0	0	54
14:45	43	7	4	1	0	0	0	0	55	53	6	1	1	0	0	0	1	62
Hour	173	27	12	4	0	0	1	3	220	206	21	15	6	0	0	0	3	251
15:00	40	7	1	3	0	0	0	0	51	50	6	4	3	0	0	0	3	66
15:15	42	3	1	0	0	0	1	0	47	62	3	4	0	0	0	0	1	70
15:30	46	8	2	3	0	0	2	1	62	42	6	1	1	0	0	0	0	50
15:45	43	8	2	2	0	1	0	0	56	41	7	5	4	0	0	0	2	59
Hour	171	26	6	8	0	1	3	1	216	195	22	14	8	0	0	0	6	245
16:00	61	12	1	0	0	0	1	0	75	52	4	1	0	0	0	0	2	59
16:15	40	2	1	2	0	0	0	0	45	40	4	0	1	0	0	0	1	46
16:30	69	3	5	0	0	0	0	1	78	51	5	2	1	0	0	0	2	61
16:45	58	6	1	2	0	0	0	0	67	52	2	1	1	0	0	2	1	59
Hour	228	23	8	4	0	0	1	1	265	195	15	4	3	0	0	2	6	225
17:00	53	4	2	2	0	0	0	0	61	50	11	2	0	0	0	0	2	65
17:15	44	6	0	1	0	0	0	0	51	66	5	0	2	0	0	2	3	78
17:30	41	3	2	2	0	0	0	0	48	83	9	0	0	0	0	1	1	94
17:45	46	2	0	3	0	0	1	1	53	66	4	0	2	0	0	0	1	73
Hour	184	15	4	8	0	0	1	1	213	265	29	2	4	0	0	3	7	310
18:00	33	7	1	0	0	0	0	1	42	64	11	3	1	0	0	0	0	79
18:15	42	6	0	2	0	0	1	3	54	54	12	1	1	0	0	0	0	68
18:30	32	3	0	4	0	0	0	1	40	52	4	0	0	0	0	0	1	57
18:45	30	1	0	2	0	0	0	1	34	33	4	0	2	0	0	1	0	40
Hour	137	17	1	8	0	0	1	6	170	203	31	4	4	0	0	1	1	244
19:00	19	0	2	4	0	0	0	0	25	41	4	0	1	0	0	0	0	46
19:15	38	3	2	2	0	0	0	0	45	42	6	0	2	0	0	1	0	51
19:30	38	4	1	0	0	0	1	0	44	32	1	0	0	0	0	1	1	35
19:45	22	2	0	1	0	0	0	0	25	49	2	0	3	0	0	0	0	54
Hour	117	9	5	7	0	0	1	0	139	164	13	0	6	0	0	2	1	186
20:00	25	2	0	0	0	0	0	0	27	34	4	0	1	0	0	0	2	41
20:15	27	7	0	1	0	0	1	1	37	30	6	0	0	0	0	0	2	38
20:30	26	1	0	1	0	0	0	0	28	36	3	2	0	0	0	0	0	41
20:45	29	2	0	0	0	0	0	0	31	29	1	1	1	0	0	1	1	34
Hour	107	12	0	2	0	0	1	1	123	129	14	3	2	0	0	1	5	154
21:00	20	1	1	2	0	0	0	1	25	30	4	1	0	0	0	1	0	36
21:15	21	0	0	1	0	0	0	0	22	16	1	0	1	0	0	0	1	19
21:30	12	2	1	1	0	0	0	1	17	20	3	0	0	0	0	0	0	23
21:45	15	1	0	2	0	0	0	0	18	9	1	0	0	0	0	0	0	10
Hour	68	4	2	6	0	0	0	2	82	75	9	1	1	0	0	1	1	88
22:00	9	2	0	0	0	0	1	1	13	21	1	0	1	0	0	0	2	25
22:15	7	1	0	1	0	0	0	0	9	9	2	0	0	0	0	0	0	11
22:30	12	0	0	0	0	0	0	0	12	12	4	0	0	0	0	0	1	17
22:45	6	0	0	1	0	0	0	0	7	9	0	0	1	0	0	0	0	10
Hour	34	3	0	2	0	0	1	1	41	51	7	0	2	0	0	0	3	63
23:00	6	1	0	1	0	0	0	0	8	6	1	0	0	0	0	0	1	8
23:15	8	1	0	0	0	0	0	0	9	8	0	0	1	0	0	0	0	9
23:30	9	0	0	1	0	0	0	1	11	4	0	0	0	0	0	0	0	4
23:45	21	1	0	1	0	0	0	0	23	7	2	0	0	0	0	0	1	10
Hour	44	3	0	3	0	0	0	1	51	25	3	0	1	0	0	0	2	31
Total	2416	296	106	95	0	1	18	30	2962	2954	406	142	74	1	2	14	51	3644

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	To Arm B - R339(SW)								Veh.	From Arm B - R339(SW)								Veh.
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	Total	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	Total
00:00	12	0	1	0	0	0	0	0	13	38	5	1	0	0	0	0	0	44
00:15	9	0	0	0	0	0	0	1	10	13	0	0	0	0	0	0	0	13
00:30	5	0	0	1	0	0	0	0	6	13	1	0	0	0	0	0	3	17
00:45	8	0	0	0	0	0	0	0	8	11	0	0	1	0	0	0	0	12
Hour	34	0	1	1	0	0	0	1	37	75	6	1	1	0	0	0	3	86
01:00	8	1	0	0	0	0	0	0	9	16	1	0	0	0	0	0	2	19
01:15	4	0	0	0	0	0	0	0	4	7	1	0	1	0	0	0	0	9
01:30	5	0	0	0	0	0	0	0	5	14	0	0	0	0	0	0	0	14
01:45	5	0	0	1	0	0	0	1	7	8	0	0	1	0	0	0	0	9
Hour	22	1	0	1	0	0	0	1	25	45	2	0	2	0	0	0	2	51
02:00	5	0	0	0	0	0	0	0	5	9	0	0	0	0	0	0	0	9
02:15	9	0	0	0	0	0	0	0	9	15	0	0	1	0	0	0	1	17
02:30	8	0	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	5
02:45	5	0	0	0	0	0	0	0	5	5	0	0	2	0	0	0	1	8
Hour	27	0	0	0	0	0	0	0	27	34	0	0	3	0	0	0	2	39
03:00	9	0	0	0	0	0	0	0	9	16	0	0	0	0	0	0	0	16
03:15	2	0	0	0	0	0	0	0	2	3	0	1	1	0	0	0	1	6
03:30	1	0	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
03:45	2	0	1	0	0	0	0	0	3	1	0	2	0	0	0	0	0	3
Hour	14	0	2	0	0	0	0	0	16	22	0	3	1	0	0	0	1	27
04:00	3	1	2	0	0	0	0	1	7	4	2	0	0	0	0	0	1	7
04:15	2	2	1	0	0	0	0	1	6	4	1	0	1	0	0	0	0	6
04:30	1	0	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	5
04:45	3	0	2	0	0	0	0	0	5	2	0	0	0	0	0	0	0	2
Hour	9	3	5	0	0	0	0	2	19	14	4	0	1	0	0	0	1	20
05:00	7	1	2	0	0	0	0	2	12	6	0	0	1	0	0	0	0	7
05:15	5	1	1	0	0	0	0	0	7	2	2	0	1	0	0	0	0	5
05:30	13	4	4	0	0	0	0	1	22	7	1	4	0	0	0	0	2	14
05:45	26	5	2	0	0	0	0	2	35	23	0	1	1	0	0	0	4	29
Hour	51	11	9	0	0	0	0	5	76	38	3	5	3	0	0	0	6	55
06:00	13	3	5	0	0	0	0	2	23	19	2	1	0	0	0	0	0	22
06:15	28	3	2	0	0	0	0	2	35	14	2	3	1	0	0	0	2	22
06:30	60	5	3	1	0	0	0	1	70	20	4	3	1	0	0	0	2	30
06:45	63	9	2	1	0	0	1	1	77	29	2	3	5	0	0	0	4	43
Hour	164	20	12	2	0	0	1	6	205	82	10	10	7	0	0	0	8	117
07:00	92	12	1	1	0	0	0	1	107	35	6	1	0	0	0	0	1	43
07:15	118	18	4	1	0	1	0	4	146	45	2	2	2	0	0	0	3	54
07:30	145	18	2	4	0	0	1	5	175	49	11	6	1	0	0	1	4	72
07:45	184	16	10	2	0	0	0	5	217	61	8	3	2	0	0	0	3	77
Hour	539	64	17	8	0	1	1	15	645	190	27	12	5	0	0	1	11	246
08:00	185	27	5	3	0	0	0	7	227	83	6	3	0	0	0	1	7	100
08:15	209	22	4	0	0	0	0	2	237	96	11	6	2	0	0	1	3	119
08:30	213	15	4	0	0	0	0	6	238	103	15	4	4	0	0	1	3	130
08:45	203	17	5	2	0	0	2	7	236	110	14	2	2	0	0	0	1	129
Hour	810	81	18	5	0	0	2	22	938	392	46	15	8	0	0	3	14	478
09:00	205	29	4	1	0	0	0	7	246	72	17	4	1	0	0	1	4	99
09:15	169	24	4	1	0	0	0	3	201	82	8	8	3	0	0	0	2	103
09:30	182	21	8	0	0	0	0	1	212	90	15	6	2	0	0	1	2	116
09:45	173	27	2	3	0	0	0	2	207	72	12	7	3	0	0	1	2	97
Hour	729	101	18	5	0	0	0	13	866	316	52	25	9	0	0	3	10	415
10:00	145	23	10	1	0	0	0	0	179	94	9	3	0	0	0	0	0	106
10:15	119	16	10	0	0	0	1	0	146	102	17	4	5	0	0	0	2	130
10:30	133	20	3	1	0	0	0	2	159	81	13	9	2	0	0	2	1	108
10:45	121	16	10	2	0	0	1	3	153	88	12	12	4	0	0	1	2	119
Hour	518	75	33	4	0	0	2	5	637	365	51	28	11	0	0	3	5	463
11:00	114	23	8	3	0	0	0	1	149	89	12	6	0	0	0	1	3	111
11:15	110	16	6	0	0	0	3	1	136	93	17	6	2	0	0	0	1	119
11:30	104	22	2	2	0	0	0	5	135	94	13	7	2	0	0	0	2	118
11:45	120	13	6	1	0	0	0	0	140	97	16	9	3	0	0	1	1	127
Hour	448	74	22	6	0	0	3	7	560	373	58	28	7	0	0	2	7	475
12:00	135	14	5	1	0	0	1	5	161	88	12	7	1	0	0	0	0	108
12:15	108	20	4	0	0	0	0	0	132	98	16	6	4	[illegible]	[illegible]	[illegible]	[illegible]	126

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	145	18	6	3	0	0	0	2	174	111	13	3	1	0	0	0	3	131
12:45	131	19	4	0	0	0	1	3	158	106	14	8	2	0	0	0	1	131
Hour	519	71	19	4	0	0	2	10	625	403	55	24	8	0	0	0	6	496
13:00	135	11	3	1	0	0	0	1	151	125	19	7	1	0	0	0	0	152
13:15	106	11	4	0	0	0	0	1	122	114	11	3	3	0	0	1	1	133
13:30	126	13	2	2	0	0	0	2	145	107	19	8	0	0	0	0	4	138
13:45	130	18	2	1	0	0	0	2	153	139	14	5	3	0	0	3	1	165
Hour	497	53	11	4	0	0	0	6	571	485	63	23	7	0	0	4	6	588
14:00	136	10	5	3	0	0	2	5	161	136	16	7	0	0	0	0	2	161
14:15	134	9	5	4	0	0	0	0	152	139	25	7	5	0	0	0	1	177
14:30	132	16	7	2	0	0	1	3	161	115	12	6	2	0	0	0	2	137
14:45	120	17	3	3	0	0	2	3	148	133	23	5	3	0	0	1	1	166
Hour	522	52	20	12	0	0	5	11	622	523	76	25	10	0	0	1	6	641
15:00	102	18	7	4	0	0	1	3	135	177	16	7	2	0	0	1	0	203
15:15	129	15	9	0	0	0	0	4	157	203	18	4	1	0	0	1	3	230
15:30	114	10	4	1	0	1	1	2	133	178	20	5	3	0	0	4	5	215
15:45	115	15	7	0	0	0	0	7	144	152	21	6	2	0	0	0	3	184
Hour	460	58	27	5	0	1	2	16	569	710	75	22	8	0	0	6	11	832
16:00	120	19	2	2	0	0	0	6	149	191	26	7	0	0	0	2	4	230
16:15	114	8	0	1	0	0	0	3	126	217	27	3	2	0	0	1	2	252
16:30	136	10	5	1	0	0	1	6	159	195	20	7	2	0	0	1	3	228
16:45	134	5	2	1	0	0	2	9	153	207	18	2	1	0	0	1	3	232
Hour	504	42	9	5	0	0	3	24	587	810	91	19	5	0	0	5	12	942
17:00	134	7	3	0	0	0	0	3	147	206	19	7	2	0	0	1	2	237
17:15	153	9	0	1	0	0	1	2	166	179	15	0	1	0	0	0	4	199
17:30	98	8	1	0	0	0	0	8	115	218	21	2	2	0	0	3	6	252
17:45	101	13	3	2	0	0	0	3	122	210	21	1	3	0	0	1	5	241
Hour	486	37	7	3	0	0	1	16	550	813	76	10	8	0	0	5	17	929
18:00	112	9	2	1	0	0	2	13	139	199	17	0	1	0	0	1	5	223
18:15	105	12	3	2	0	0	1	6	129	154	13	2	2	0	0	0	7	178
18:30	106	5	0	0	0	0	0	0	111	129	15	3	3	0	0	1	2	153
18:45	83	5	0	2	0	0	0	3	93	94	5	0	4	0	0	0	3	106
Hour	406	31	5	5	0	0	3	22	472	576	50	5	10	0	0	2	17	660
19:00	95	4	3	0	0	0	0	0	102	89	3	2	2	0	0	0	5	101
19:15	70	12	1	2	0	0	0	4	89	83	5	4	4	0	0	2	1	99
19:30	61	1	0	2	0	0	1	4	69	71	12	2	0	0	0	0	0	85
19:45	82	6	0	3	0	0	0	1	92	52	7	0	1	0	0	0	1	61
Hour	308	23	4	7	0	0	1	9	352	295	27	8	7	0	0	2	7	346
20:00	62	5	0	1	0	0	0	0	68	70	0	1	0	0	0	1	0	72
20:15	51	8	1	0	0	0	3	4	67	65	7	0	3	0	0	2	1	78
20:30	53	6	2	0	0	0	0	1	62	58	6	0	0	0	0	0	3	67
20:45	47	2	3	1	0	0	0	2	55	72	4	2	0	0	0	0	1	79
Hour	213	21	6	2	0	0	3	7	252	265	17	3	3	0	0	3	5	296
21:00	43	5	1	0	0	0	1	2	52	66	5	1	1	0	0	1	0	74
21:15	36	2	0	0	0	0	0	0	38	60	4	0	2	0	0	0	0	66
21:30	38	1	1	0	0	0	0	0	40	52	3	0	1	0	0	1	3	60
21:45	31	2	0	1	0	0	0	2	36	41	6	1	1	0	0	0	0	49
Hour	148	10	2	1	0	0	1	4	166	219	18	2	5	0	0	2	3	249
22:00	34	2	0	0	0	0	0	1	37	37	6	0	0	0	0	1	0	44
22:15	23	2	1	0	0	0	0	0	26	35	4	0	1	0	0	0	1	41
22:30	25	2	0	0	0	0	0	0	27	36	4	0	0	0	0	0	0	40
22:45	19	3	0	0	0	0	0	0	22	29	3	0	1	0	0	0	2	35
Hour	101	9	1	0	0	0	0	1	112	137	17	0	2	0	0	1	3	160
23:00	29	0	0	1	0	0	1	3	34	19	3	2	0	0	0	0	0	24
23:15	25	0	2	0	0	0	3	3	33	29	1	0	1	0	0	0	0	31
23:30	16	1	0	0	0	0	0	0	17	29	1	0	1	0	0	0	1	32
23:45	16	3	0	1	0	0	0	0	20	46	2	0	0	0	0	1	0	49
Hour	86	4	2	2	0	0	4	6	104	123	7	2	2	0	0	1	1	136
Total	7615	841	250	82	0	2	34	209	9033	7305	831	270	133	0	0	44	164	8747

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

Time	To Arm C - Connolly Avenue								Veh. Total	From Arm C - Connolly Avenue								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	6	1	0	0	0	0	0	0	7	6	0	0	0	0	0	0	0	6
00:15	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	1	4
00:30	3	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	0
00:45	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	1	3
Hour	13	1	0	0	0	0	0	3	17	11	0	0	0	0	0	0	2	13
01:00	1	1	0	0	0	0	0	2	4	3	1	0	0	0	0	0	0	4
01:15	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
01:30	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
01:45	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
Hour	9	2	0	0	0	0	0	2	13	4	1	0	0	0	0	0	0	5
02:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
02:15	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
02:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
02:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Hour	2	0	0	0	0	0	0	0	2	5	0	0	0	0	0	0	0	5
03:00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
03:15	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	6	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1
04:15	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	2
04:30	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour	1	1	0	0	0	0	0	1	3	2	2	0	0	0	0	0	0	4
05:00	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	3
05:15	3	2	0	0	0	0	0	0	5	0	0	1	0	0	0	0	0	1
05:30	7	0	0	0	0	0	0	1	8	2	0	0	0	0	0	0	0	2
05:45	30	3	0	0	0	0	0	1	34	5	1	0	0	0	0	0	0	6
Hour	41	5	0	0	0	0	0	2	48	9	1	1	0	0	0	0	1	12
06:00	6	1	0	0	0	0	0	0	7	1	0	1	0	0	0	0	0	2
06:15	10	1	0	0	0	0	0	0	11	6	1	0	0	0	0	0	3	10
06:30	18	4	2	0	0	0	0	0	24	10	3	1	0	0	0	0	0	14
06:45	26	4	4	0	0	0	0	2	36	17	2	0	0	0	0	0	1	20
Hour	60	10	6	0	0	0	0	2	78	34	6	2	0	0	0	0	4	46
07:00	24	5	0	1	0	0	1	0	31	15	1	1	2	0	0	0	0	19
07:15	37	3	1	1	0	0	0	0	42	26	2	0	0	0	0	0	0	28
07:30	34	4	3	0	0	0	0	4	45	60	8	0	1	0	0	0	2	71
07:45	48	1	0	1	0	0	0	1	51	107	9	1	1	0	0	0	5	123
Hour	143	13	4	3	0	0	1	5	169	208	20	2	4	0	0	0	7	241
08:00	36	1	1	1	0	0	0	1	40	107	9	2	0	0	0	2	5	125
08:15	36	6	2	0	0	0	0	0	44	101	8	1	1	0	0	0	1	112
08:30	57	5	2	2	0	2	0	0	68	88	7	1	1	0	0	0	2	99
08:45	39	7	1	1	0	0	0	0	48	96	10	1	0	0	0	0	0	107
Hour	168	19	6	4	0	2	0	1	200	392	34	5	2	0	0	2	8	443
09:00	43	4	1	1	0	0	0	1	50	94	9	4	3	0	0	0	2	112
09:15	44	1	1	1	0	0	0	0	47	57	4	2	1	0	0	0	1	65
09:30	32	10	3	0	0	0	0	1	46	67	6	0	1	0	0	0	0	74
09:45	26	2	1	1	0	0	0	0	30	49	4	1	1	0	0	0	2	57
Hour	145	17	6	3	0	0	0	2	173	267	23	7	6	0	0	0	5	308
10:00	29	7	2	1	0	0	0	0	39	48	7	3	1	0	0	0	0	59
10:15	30	4	5	0	0	0	0	0	39	43	3	0	0	0	0	0	0	46
10:30	22	7	1	1	0	0	1	1	33	29	4	1	1	0	0	0	0	35
10:45	35	6	2	1	0	0	0	0	44	41	7	2	1	0	0	0	0	51
Hour	116	24	10	3	0	0	1	1	155	161	21	6	3	0	0	0	0	191
11:00	39	6	3	1	1	0	0	1	51	35	6	1	1	0	0	0	1	44
11:15	38	2	2	2	0	0	0	0	44	42	5	1	1	0	0	3	0	52
11:30	35	2	1	0	0	0	0	1	39	25	11	1	0	0	0	0	2	39
11:45	47	5	2	1	0	0	0	0	55	47	7	0	2	0	0	0	1	57
Hour	159	15	8	4	1	0	0	2	189	149	29	3	4	0	0	3	4	192
12:00	36	3	1	1	0	0	0	0	41	52	3	0	1	0	0	0	4	60
12:15	46	4	3	0	0	0	0	2	55	34	8	2	1	0	0	0	0	45

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Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	43	2	2	1	0	0	0	2	50	44	3	1	0	0	0	0	2	50
12:45	47	4	2	1	0	0	0	0	54	56	9	1	1	0	0	0	0	67
Hour	172	13	8	3	0	0	0	4	200	186	23	4	3	0	0	0	6	222
13:00	49	5	2	1	0	0	0	0	57	46	4	0	0	0	0	0	0	50
13:15	40	4	4	1	0	0	0	0	49	34	5	1	3	0	0	0	1	44
13:30	51	9	0	0	0	0	0	4	64	56	1	2	1	0	0	1	0	61
13:45	47	8	2	1	0	0	1	1	60	44	4	3	1	0	0	0	0	52
Hour	187	26	8	3	0	0	1	5	230	180	14	6	5	0	0	1	1	207
14:00	56	4	1	1	0	0	0	2	64	59	4	2	2	0	0	0	2	69
14:15	75	10	2	1	0	0	0	0	88	52	8	1	1	0	0	0	2	64
14:30	56	3	2	1	0	0	0	0	62	74	7	1	2	0	0	0	0	84
14:45	59	10	2	2	0	0	0	0	73	47	8	1	1	0	0	1	1	59
Hour	246	27	7	5	0	0	0	2	287	232	27	5	6	0	0	1	5	276
15:00	76	8	3	1	0	0	0	0	88	45	5	0	1	0	0	0	0	51
15:15	94	6	1	0	0	0	0	2	103	49	5	1	0	0	0	1	2	58
15:30	62	10	1	1	0	0	0	2	76	37	6	2	1	0	1	0	2	49
15:45	57	8	1	4	0	0	0	3	73	49	7	0	2	0	1	0	2	61
Hour	289	32	6	6	0	0	0	7	340	180	23	3	4	0	2	1	6	219
16:00	82	5	2	0	0	0	0	1	90	76	12	1	1	0	0	1	1	92
16:15	94	9	1	1	0	0	0	2	107	53	4	0	1	0	0	0	1	59
16:30	99	7	0	1	0	0	0	1	108	91	6	0	0	0	0	0	1	98
16:45	106	6	0	1	0	0	3	1	117	61	4	1	2	0	0	0	2	70
Hour	381	27	3	3	0	0	3	5	422	281	26	2	4	0	0	1	5	319
17:00	107	12	2	0	0	0	1	2	124	69	0	3	0	0	0	0	1	73
17:15	132	7	0	1	0	0	1	4	145	72	6	0	1	0	0	0	1	80
17:30	138	15	1	0	0	0	1	4	159	33	2	1	1	0	0	0	1	38
17:45	115	8	0	1	0	0	0	5	129	46	3	0	1	0	0	0	2	52
Hour	492	42	3	2	0	0	3	15	557	220	11	4	3	0	0	0	5	243
18:00	91	12	1	1	0	0	0	1	106	41	3	1	0	0	0	0	3	48
18:15	75	11	1	1	0	0	0	3	91	47	7	0	1	0	0	1	1	57
18:30	57	5	0	0	0	0	0	1	63	36	2	0	2	0	0	0	0	40
18:45	31	2	0	1	0	0	0	1	35	25	1	0	0	0	0	0	1	27
Hour	254	30	2	3	0	0	0	6	295	149	13	1	3	0	0	1	5	172
19:00	43	2	0	1	0	0	0	1	47	32	0	1	1	0	0	0	0	34
19:15	35	2	0	1	0	0	2	1	41	30	3	0	1	0	0	0	1	35
19:30	31	1	0	0	0	0	0	1	33	24	1	0	0	0	0	0	0	25
19:45	23	5	0	0	0	0	0	1	29	29	2	0	1	0	0	0	0	32
Hour	132	10	0	2	0	0	2	4	150	115	6	1	3	0	0	0	1	126
20:00	31	2	0	1	0	0	0	1	35	20	2	0	0	0	0	0	0	22
20:15	30	1	0	0	0	0	0	0	31	26	5	0	0	0	0	0	1	32
20:30	24	4	0	0	0	0	0	1	29	29	3	0	1	0	0	0	0	33
20:45	21	1	0	1	0	0	1	0	24	15	1	0	0	0	0	0	2	18
Hour	106	8	0	2	0	0	1	2	119	90	11	0	1	0	0	0	3	105
21:00	30	0	1	0	0	0	0	0	31	14	0	0	1	0	0	0	1	16
21:15	22	3	0	1	0	0	0	0	26	14	0	0	0	0	0	0	0	14
21:30	18	1	0	0	0	0	0	1	20	12	1	0	0	0	0	0	1	14
21:45	11	1	0	0	0	0	0	0	12	13	0	0	1	0	0	0	0	14
Hour	81	5	1	1	0	0	0	1	89	53	1	0	2	0	0	0	2	58
22:00	11	0	0	1	0	0	0	0	12	8	0	0	0	0	0	0	1	9
22:15	6	1	0	0	0	0	0	0	7	4	0	0	1	0	0	0	0	5
22:30	13	1	0	0	0	0	0	0	14	6	0	0	0	0	0	0	0	6
22:45	10	1	0	1	0	0	0	2	14	6	1	0	0	0	0	0	0	7
Hour	40	3	0	2	0	0	0	2	47	24	1	0	1	0	0	0	1	27
23:00	3	2	0	0	0	0	0	1	6	10	1	0	1	0	0	0	1	13
23:15	6	0	0	1	0	0	0	0	7	5	0	0	0	0	0	0	0	5
23:30	7	0	0	0	0	0	0	1	8	1	0	0	0	0	0	0	1	2
23:45	7	0	0	0	0	0	1	1	9	5	0	0	1	0	0	0	0	6
Hour	23	2	0	1	0	0	1	3	30	21	1	0	2	0	0	0	2	26
Total	3266	332	78	50	1	2	13	77	3819	2973	294	52	56	0	2	10	73	3460

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)
Date Tuesday 4 September 2018

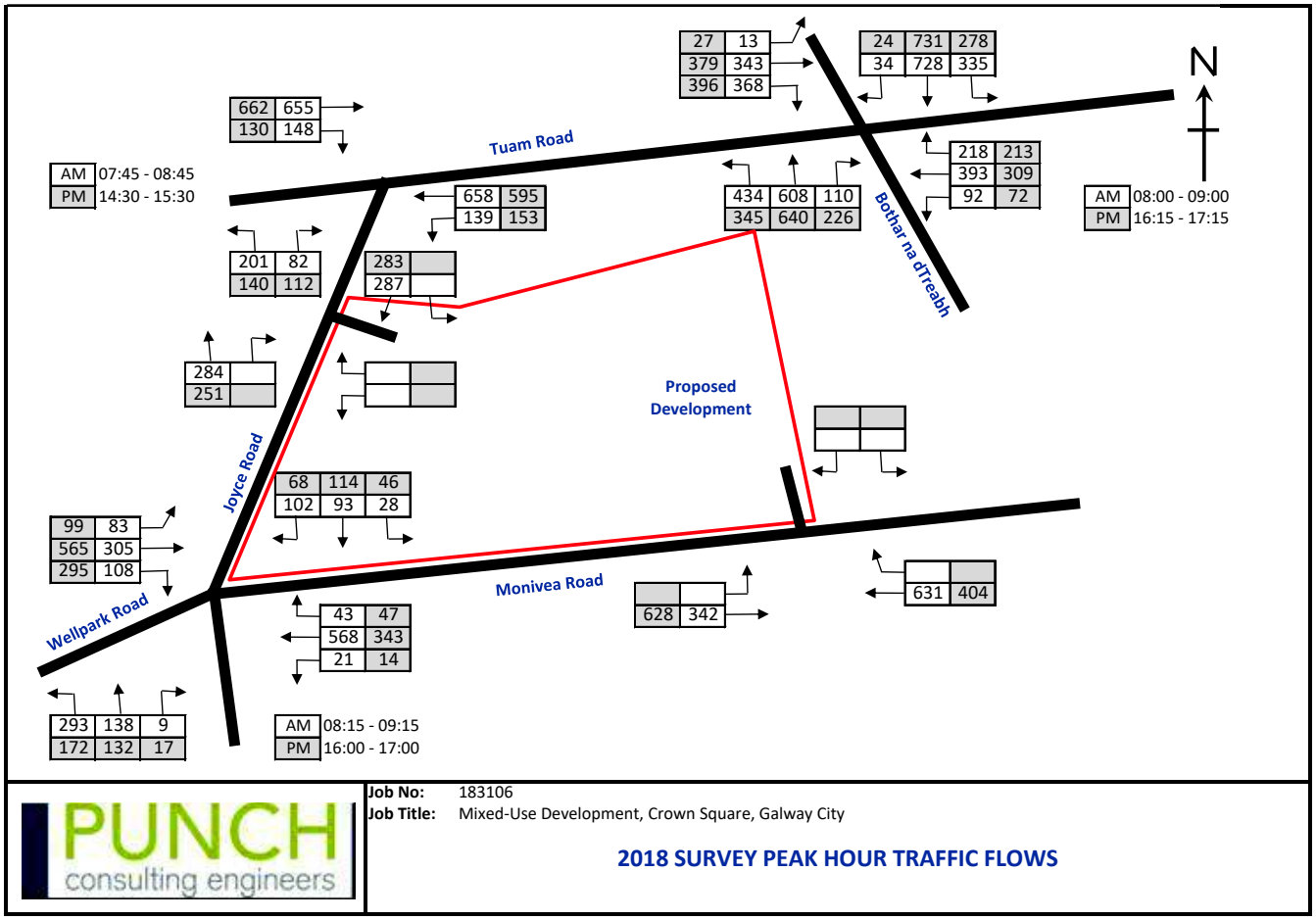
Time	To Arm D - R339(NE)								Veh. Total	From Arm D - R339(NE)								Veh. Total
	CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C		CAR	LGV	HGV	BUS	AGRI	MISC	M/C	P/C	
00:00	24	3	0	0	0	0	0	0	27	8	0	0	0	0	0	0	0	8
00:15	13	0	0	0	0	0	0	0	13	7	0	0	0	0	0	0	0	7
00:30	10	0	0	0	0	0	0	0	10	4	0	0	0	0	0	0	0	4
00:45	10	0	0	0	0	0	0	0	10	5	0	0	0	0	0	0	0	5
Hour	57	3	0	0	0	0	0	0	60	24	0	0	0	0	0	0	0	24
01:00	15	0	0	0	0	0	0	0	15	4	1	0	0	0	0	0	0	5
01:15	6	1	0	1	0	0	0	0	8	2	0	0	0	0	0	0	0	2
01:30	7	0	0	0	0	0	0	0	7	5	0	0	0	0	0	0	0	5
01:45	5	0	0	1	0	0	0	0	6	5	0	0	0	0	0	0	1	6
Hour	33	1	0	2	0	0	0	0	36	16	1	0	0	0	0	0	1	18
02:00	9	0	0	0	0	0	0	0	9	3	0	0	0	0	0	0	0	3
02:15	11	0	0	1	0	0	0	0	12	10	0	0	0	0	0	0	0	10
02:30	5	0	0	0	0	0	0	0	5	8	0	0	0	0	0	0	0	8
02:45	4	0	0	1	0	0	0	0	5	4	0	0	0	0	0	0	0	4
Hour	29	0	0	2	0	0	0	0	31	25	0	0	0	0	0	0	0	25
03:00	15	0	0	0	0	0	0	0	15	7	0	0	0	0	0	0	0	7
03:15	4	0	1	1	0	0	0	1	7	3	0	0	0	0	0	0	0	3
03:30	3	0	0	0	0	0	0	0	3	1	0	1	0	0	0	0	0	2
03:45	2	0	2	0	0	0	0	0	4	2	0	1	0	0	0	0	0	3
Hour	24	0	3	1	0	0	0	1	29	13	0	2	0	0	0	0	0	15
04:00	4	1	0	0	0	0	0	0	5	3	1	1	0	0	0	0	1	6
04:15	3	1	0	1	0	0	0	0	5	1	0	1	0	0	0	0	1	3
04:30	5	1	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	1
04:45	1	0	1	0	0	0	0	0	2	2	0	1	0	0	0	0	0	3
Hour	13	3	1	1	0	0	0	0	18	7	1	3	0	0	0	0	2	13
05:00	6	0	0	1	0	0	0	0	7	5	0	1	0	0	0	0	0	6
05:15	2	0	0	1	0	0	0	0	3	5	1	0	0	0	0	0	0	6
05:30	7	1	3	0	0	0	0	1	12	8	3	2	0	0	0	0	1	14
05:45	13	0	1	1	0	0	0	4	19	21	1	2	0	0	0	0	2	26
Hour	28	1	4	3	0	0	0	5	41	39	5	5	0	0	0	0	3	52
06:00	15	2	1	0	0	0	0	1	19	10	1	2	0	0	0	0	2	15
06:15	10	2	1	0	0	0	0	2	15	18	3	1	0	0	0	0	0	22
06:30	13	3	2	1	0	0	0	2	21	38	2	2	0	0	0	0	1	43
06:45	22	2	1	3	0	0	0	3	31	42	5	2	0	0	0	0	2	51
Hour	60	9	5	4	0	0	0	8	86	108	11	7	0	0	0	0	5	131
07:00	24	3	1	0	0	0	0	1	29	63	10	1	0	0	0	0	1	75
07:15	35	4	1	2	0	0	0	4	46	88	15	4	1	0	1	0	4	113
07:30	36	10	2	1	0	0	1	2	52	100	13	1	3	0	0	1	4	122
07:45	41	8	3	2	0	0	0	4	58	108	9	4	2	0	0	0	1	124
Hour	136	25	7	5	0	0	1	11	185	359	47	10	6	0	1	1	10	434
08:00	59	5	3	0	0	0	1	5	73	111	13	2	3	0	0	0	2	131
08:15	67	8	2	2	0	0	1	2	82	128	12	5	0	0	0	0	1	146
08:30	66	5	3	2	0	0	2	3	81	143	7	5	0	0	0	0	2	157
08:45	80	12	2	1	0	0	0	1	96	138	13	1	1	0	0	2	7	162
Hour	272	30	10	5	0	0	4	11	332	520	45	13	4	0	0	2	12	596
09:00	53	15	2	1	0	0	1	3	75	134	21	1	1	0	0	0	4	161
09:15	63	10	6	3	0	0	0	2	84	133	16	1	1	0	0	0	2	153
09:30	72	10	5	1	0	0	1	2	91	144	13	7	0	0	0	0	1	165
09:45	64	11	7	2	0	0	0	3	87	136	21	1	4	0	0	0	0	162
Hour	252	46	20	7	0	0	2	10	337	547	71	10	6	0	0	0	7	641
10:00	69	8	2	0	0	0	0	0	79	108	16	7	1	0	0	1	0	133
10:15	89	15	3	3	0	0	0	2	112	81	18	10	0	0	0	2	0	111
10:30	68	13	6	2	0	0	1	0	90	103	20	3	1	0	0	0	2	129
10:45	71	11	8	3	0	0	1	1	95	85	11	4	2	0	0	1	3	106
Hour	297	47	19	8	0	0	2	3	376	377	65	24	4	0	0	4	5	479
11:00	79	13	5	0	0	0	1	2	100	77	16	6	1	0	0	0	1	101
11:15	77	17	6	2	0	0	0	1	103	72	11	5	0	0	0	0	1	89
11:30	68	12	9	2	0	0	0	1	92	87	13	3	2	0	0	0	3	108
11:45	71	11	5	4	0	0	1	1	93	88	6	6	0	0	0	0	0	100
Hour	295	53	25	8	0	0	2	5	388	324	46	20	3	0	0	0	5	398
12:00	76	14	6	1	0	0	0	0	97	95	8	4	1	0	0	1	1	110
12:15	84	13	6	3	0	0	0	1	107	89	16	3	0	0	0	0	0	108

Site No. 1
Location Unnamed Road / R339(SW) / Connolly Avenue / R339(NE)

12:30	84	14	3	2	0	0	0	1	104	98	13	5	2	0	0	0	1	119
12:45	83	14	5	2	0	0	0	1	105	87	13	1	0	0	0	0	3	104
Hour	327	55	20	8	0	0	0	3	413	369	50	13	3	0	0	1	5	441
13:00	105	16	6	0	0	0	0	0	127	99	8	3	1	0	0	0	1	112
13:15	102	7	3	3	0	0	1	3	119	79	5	3	0	0	0	0	1	88
13:30	86	9	7	1	0	0	0	2	105	84	8	1	2	0	0	0	3	98
13:45	112	9	3	2	0	0	0	0	126	106	15	1	0	0	0	0	2	124
Hour	405	41	19	6	0	0	1	5	477	368	36	8	3	0	0	0	7	422
14:00	107	12	5	1	0	0	0	1	126	105	8	3	1	0	0	3	2	122
14:15	104	16	6	3	0	0	0	1	130	95	4	2	2	0	0	0	0	103
14:30	87	7	4	2	0	0	0	2	102	89	8	2	1	0	0	1	4	105
14:45	108	17	3	2	0	0	1	2	133	97	14	5	3	0	0	1	2	122
Hour	406	52	18	8	0	0	1	6	491	386	34	12	7	0	0	5	8	452
15:00	134	8	5	0	0	0	1	1	149	80	14	5	2	0	0	1	1	103
15:15	144	14	2	1	0	0	1	2	164	95	12	4	0	0	0	0	2	113
15:30	129	10	3	1	0	0	2	3	148	94	6	2	1	0	0	1	1	105
15:45	119	17	5	2	0	0	0	3	146	92	13	4	0	0	0	0	6	115
Hour	526	49	15	4	0	0	4	9	607	361	45	15	3	0	0	2	10	436
16:00	131	20	6	1	0	0	2	5	165	75	14	2	2	0	0	0	5	98
16:15	150	24	1	1	0	0	1	2	179	88	8	0	1	0	0	0	3	100
16:30	118	13	2	2	0	0	1	4	140	85	2	3	1	0	0	1	6	98
16:45	121	11	2	1	0	0	0	2	137	99	4	1	1	0	0	2	6	113
Hour	520	68	11	5	0	0	4	13	621	347	28	6	5	0	0	3	20	409
17:00	121	8	7	0	0	0	0	2	138	90	1	2	0	0	0	0	2	95
17:15	89	9	0	1	0	0	0	3	102	101	5	0	0	0	0	0	1	107
17:30	132	13	1	1	0	0	3	3	153	75	7	2	0	0	0	0	7	91
17:45	134	15	1	1	0	0	0	3	154	74	10	3	1	0	0	0	4	92
Hour	476	45	9	3	0	0	3	11	547	340	23	7	1	0	0	0	14	385
18:00	145	11	0	1	0	0	1	3	161	77	8	0	1	0	0	2	10	98
18:15	113	8	2	1	0	0	0	4	128	80	5	3	2	0	0	1	8	99
18:30	99	13	3	1	0	0	1	2	119	77	5	0	0	0	0	0	1	83
18:45	76	5	0	2	0	0	1	3	87	68	3	0	1	0	0	0	4	76
Hour	433	37	5	5	0	0	3	12	495	302	21	3	4	0	0	3	23	356
19:00	72	3	1	0	0	0	0	4	80	67	2	3	1	0	0	0	0	73
19:15	67	3	2	3	0	0	1	0	76	55	6	1	1	0	0	0	3	66
19:30	53	10	2	0	0	0	0	0	65	56	2	1	2	0	0	1	4	66
19:45	51	4	0	1	0	0	0	0	56	48	6	0	0	0	0	0	1	55
Hour	243	20	5	4	0	0	1	4	277	226	16	5	4	0	0	1	8	260
20:00	52	0	1	0	0	0	1	1	55	46	3	0	1	0	0	0	0	50
20:15	50	4	0	2	0	0	1	1	58	37	2	1	0	0	0	3	2	45
20:30	51	5	1	0	0	0	0	2	59	31	4	1	0	0	0	0	1	37
20:45	55	3	2	0	0	0	0	2	62	36	2	2	1	0	0	0	0	41
Hour	208	12	4	2	0	0	2	6	234	150	11	4	2	0	0	3	3	173
21:00	53	6	0	0	0	0	1	0	60	36	3	1	0	0	0	0	2	42
21:15	41	1	0	1	0	0	0	1	44	30	1	0	0	0	0	0	0	31
21:30	42	3	0	0	0	0	1	3	49	26	0	2	0	0	0	0	1	29
21:45	30	4	1	0	0	0	0	0	35	24	1	0	1	0	0	0	2	28
Hour	166	14	1	1	0	0	2	4	188	116	5	3	1	0	0	0	5	130
22:00	34	5	0	0	0	0	0	2	41	22	2	0	0	0	0	0	1	25
22:15	31	4	0	1	0	0	0	1	37	19	2	1	0	0	0	0	0	22
22:30	21	5	0	0	0	0	0	1	27	17	0	0	0	0	0	0	0	17
22:45	23	2	0	0	0	0	0	0	25	14	2	0	0	0	0	0	0	16
Hour	109	16	0	1	0	0	0	4	130	72	6	1	0	0	0	0	1	80
23:00	16	2	2	0	0	0	0	1	21	19	0	0	1	0	0	1	3	24
23:15	20	0	0	1	0	0	0	0	21	17	0	2	0	0	0	3	3	25
23:30	17	1	0	0	0	0	0	0	18	15	1	0	0	0	0	0	0	16
23:45	26	1	0	0	0	0	0	0	27	12	1	0	1	0	0	0	0	14
Hour	79	4	2	1	0	0	0	1	87	63	2	2	2	0	0	4	6	79
Total	5394	631	203	94	0	0	32	132	6486	5459	569	173	58	0	1	29	160	6449

APPENDIX B

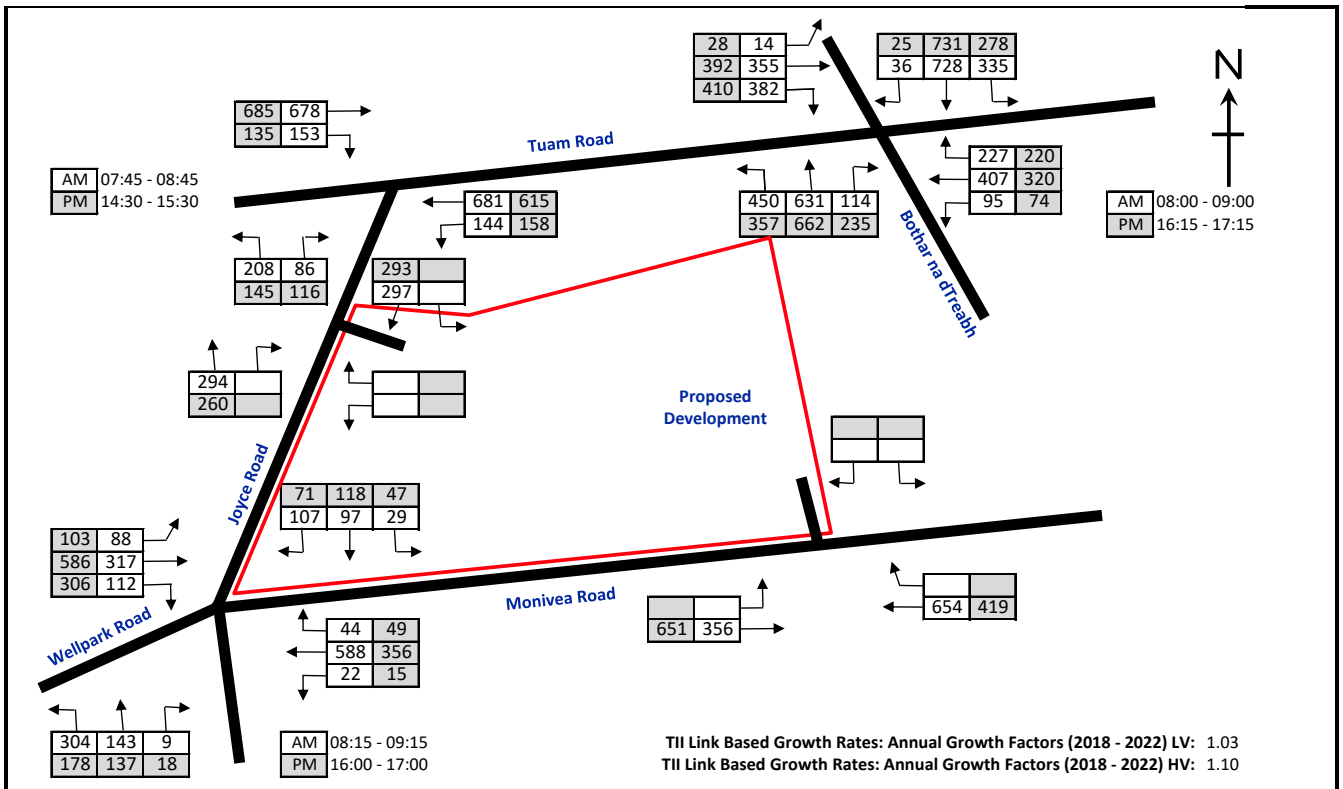
TRAFFIC FLOW DIAGRAMS



PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

2018 SURVEY PEAK HOUR TRAFFIC FLOWS

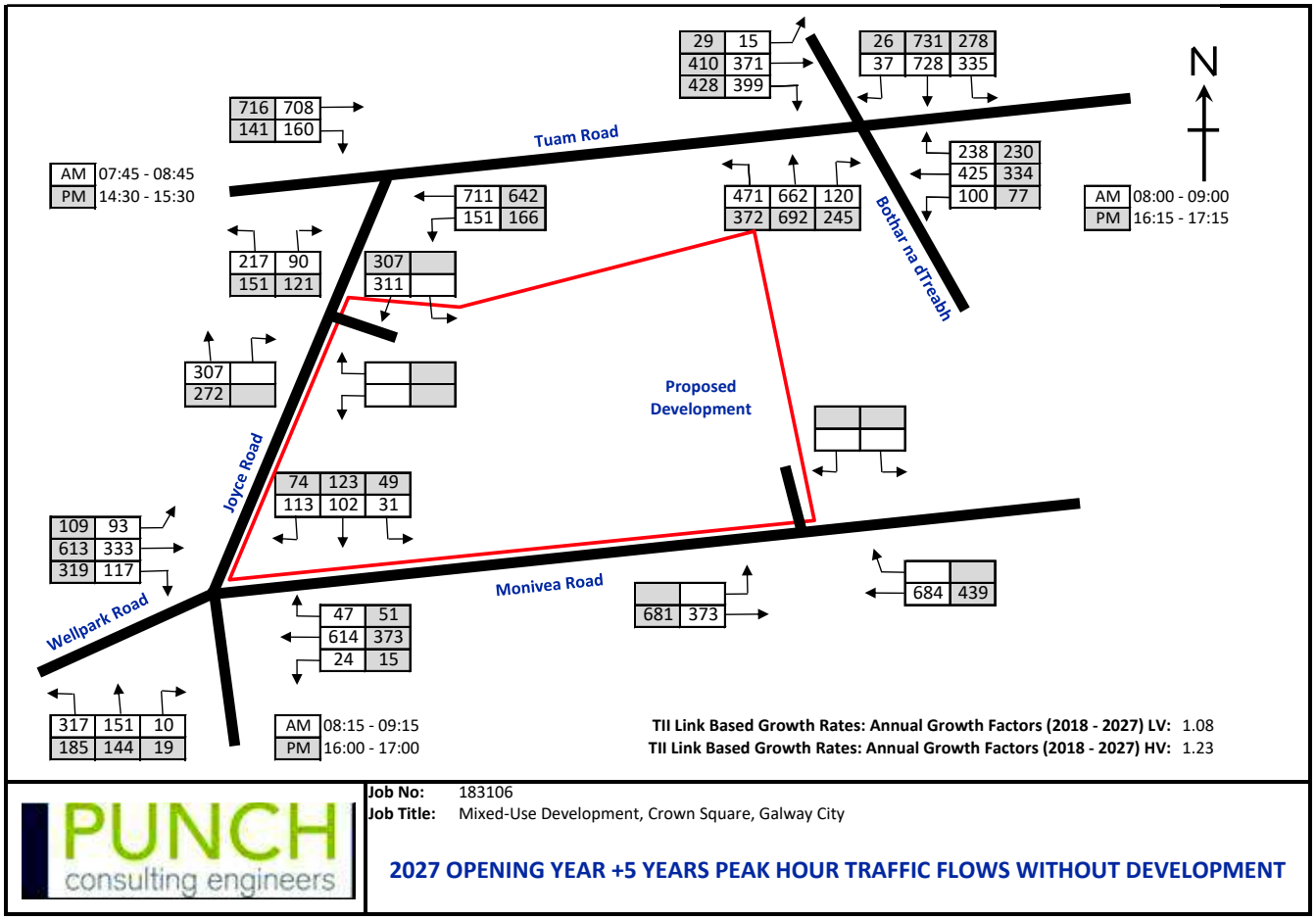


TII Link Based Growth Rates: Annual Growth Factors (2018 - 2022) LV: 1.03
TII Link Based Growth Rates: Annual Growth Factors (2018 - 2022) HV: 1.10

PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

2022 OPENING YEAR PEAK HOUR TRAFFIC FLOWS WITHOUT DEVELOPMENT

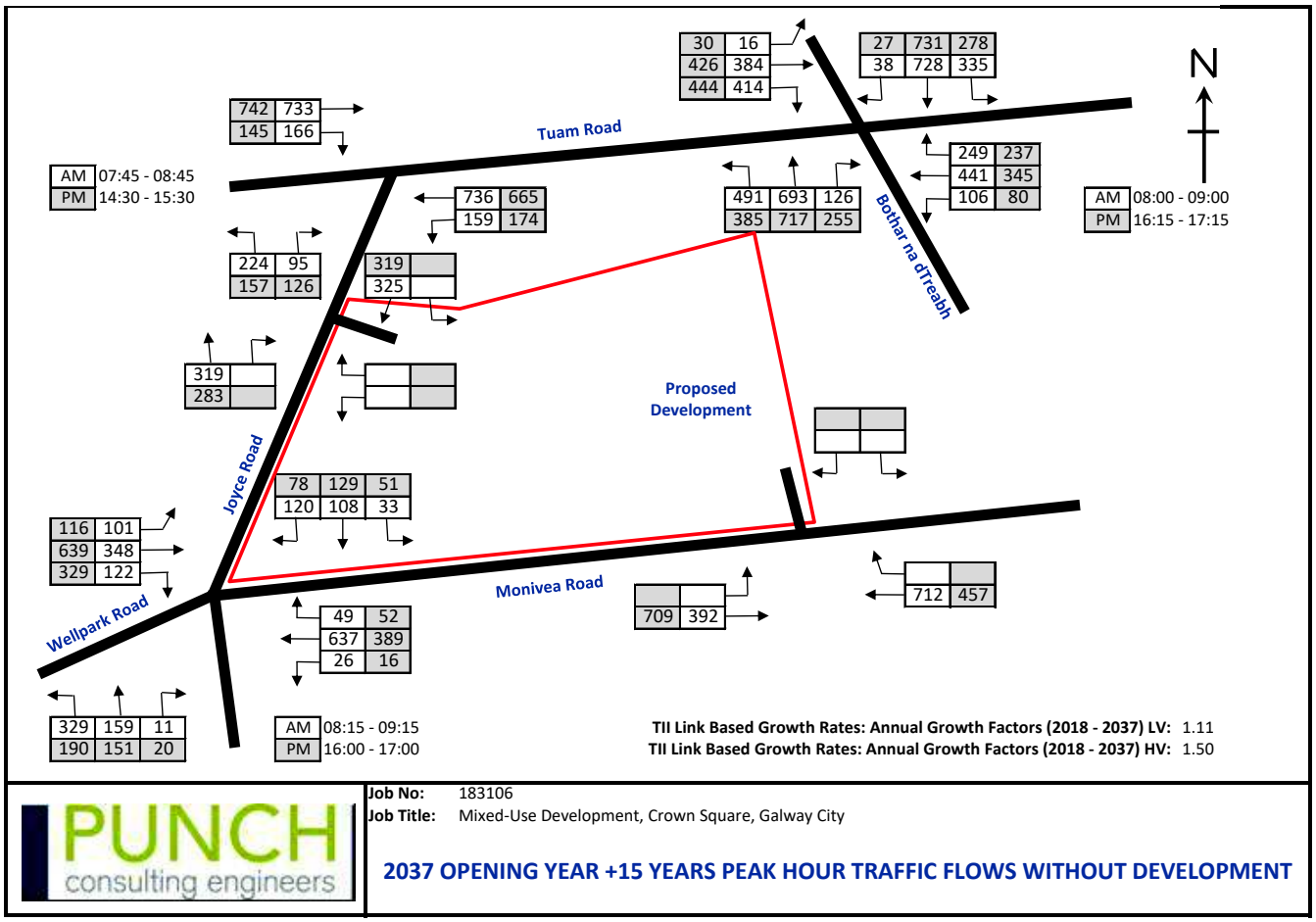


TII Link Based Growth Rates: Annual Growth Factors (2018 - 2027) LV: 1.08
TII Link Based Growth Rates: Annual Growth Factors (2018 - 2027) HV: 1.23

PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

2027 OPENING YEAR +5 YEARS PEAK HOUR TRAFFIC FLOWS WITHOUT DEVELOPMENT



TII Link Based Growth Rates: Annual Growth Factors (2018 - 2037) LV: 1.11
TII Link Based Growth Rates: Annual Growth Factors (2018 - 2037) HV: 1.50

PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

2037 OPENING YEAR +15 YEARS PEAK HOUR TRAFFIC FLOWS WITHOUT DEVELOPMENT

Landuse	Calculation Factor No. of Apartments / GFA	Trip Rate per 100m2 or per dwelling AM Arrivals	AM Departures	PM Arrivals	PM Departures	Number of Trips AM Arrivals	AM Departures	PM Arrivals	PM Departures
PHASE 1									
Office	40405	0.987	0.133	0.116	0.807	399	54	47	326
Hotel	8675	0.231	0.449	0.282	0.250	20	39	24	22
SUB-TOTAL						**419**	**93**	**71**	**348**
PHASE 2									
Apartments	250	0.045	0.157	0.086	0.106	11	39	22	27
Leisure Centre	1200	1.269	1.302	1.657	1.261	15	16	20	15
Medical Centre	600	1.751	0.653	3.086	3.353	11	4	19	20
SUB-TOTAL						**37**	**59**	**60**	**62**
TOTAL						**456**	**151**	**131**	**410**

Notes:

PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

TRAFFIC GENERATED BY NEW DEVELOPMENT

	Zone Number	Mervue Ind Estate	% of tatal trips	Location in relation to Prop. Dev.
Moycullen	1	91	2.7%	NW
Oranswell	2	55	1.6%	NW
Barna	3	62	1.8%	SW
Knocknacarra South	4	289	8.6%	SW
Knocknacarra North	5	179	5.3%	SW
Rahoon	6	87	2.6%	NW/SW
Dangan	7	57	1.7%	NW/SW
Newcastle	8	94	2.8%	NW/SW
Gleann Dara	9	25	0.7%	SW
Salthill	10	136	4.0%	SW
Shantalla	11	66	2.0%	SW
University Hospital	12	7	0.2%	SW
Claddagh	13	66	2.0%	SW
Henry St	14	46	1.4%	SW
NUIG	15	13	0.4%	SW
City Centre	16	44	1.3%	SW
Mellows Park	17	16	0.5%	S
City Hall	18	69	2.0%	S
Galway Shopping Ctr.	19	55	1.6%	SW
Tirellan	20	343	10.2%	NW
Mervue Ind Estate	21	205	6.1%	NW/SW
GMIT	22	131	3.9%	S
Renmore	23	234	6.9%	S
Merlin Park Hospital	24	277	8.2%	NE/SE
Ballybrit	25	35	1.0%	NE/SE
Doughiska	26	334	9.9%	NE/SE
Parkmore	27	30	0.9%	NE/SE
Oranmore	28	163	4.8%	NE/SE
Ardaun	29	8	0.2%	NE/SE
Baile Chlair	30	80	2.4%	NE
Carrowbrowne	31	78	2.3%	NE
TOTAL		3375		

Direction	NW	NE	SW	SE	S
% of Traffic	21.1%	17.2%	35.8%	12.5%	13.3%

Note:
East movements split between NE and SE
West movements split between NW and SW

Arriving	NW	NE	SW	SE	S
Joyce Rd Access	21.1%	8.6%	0.0%	0.0%	6.7%
Monivea Rd Access	0.0%	8.6%	35.8%	12.5%	6.7%

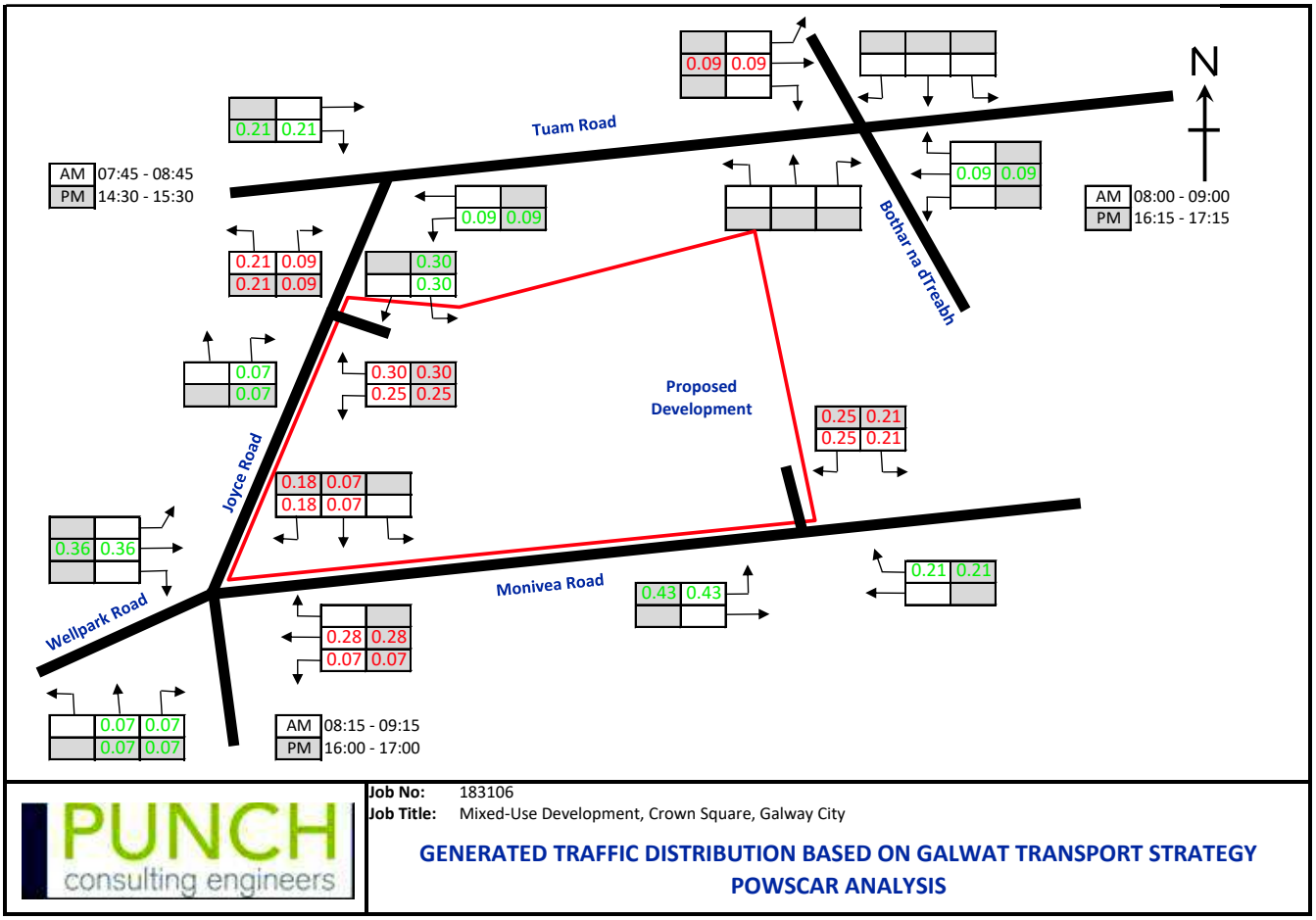
Departing	NW	NE	SW	SE	S
Joyce Rd Access	21.1%	8.6%	17.9%	0.0%	6.7%
Monivea Rd Access	0.0%	8.6%	17.9%	12.5%	6.7%

Note: As agreed with GCC during initial scoping discussions, in order to gain an understanding of the future travel patterns of the traffic generated by the proposed development we have referred to the Galway Transport Strategy Report carried out by Galway City Council and Galway County Council in partnership with the National Transport Authority (NTA). GCC, in conjunction with the NTA are developing an Integrated Transport Management Programme (ITMP) for the Galway City area. The boundary of the study area is broadly delineated by, and including, the towns/villages of Bearna, Moycullen, Claregalway and Oranmore. The study area boundary is shown in Figure 10.1 below.The National Transport Authority (NTA) divided the Study Area into 31 zones using the CSO Small Area structure. Figure 10.2 illustrates the zonal structure. POWSCAR data was extracted and processed in accordance with the 31-zone structure. It is anticipated that vehicles wishing to access car parking at the development approaching from the south/southwest direction will enter the car park using the Monivea Road access as it would avoid the necessity for turning right into the development across oncoming traffic.

PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

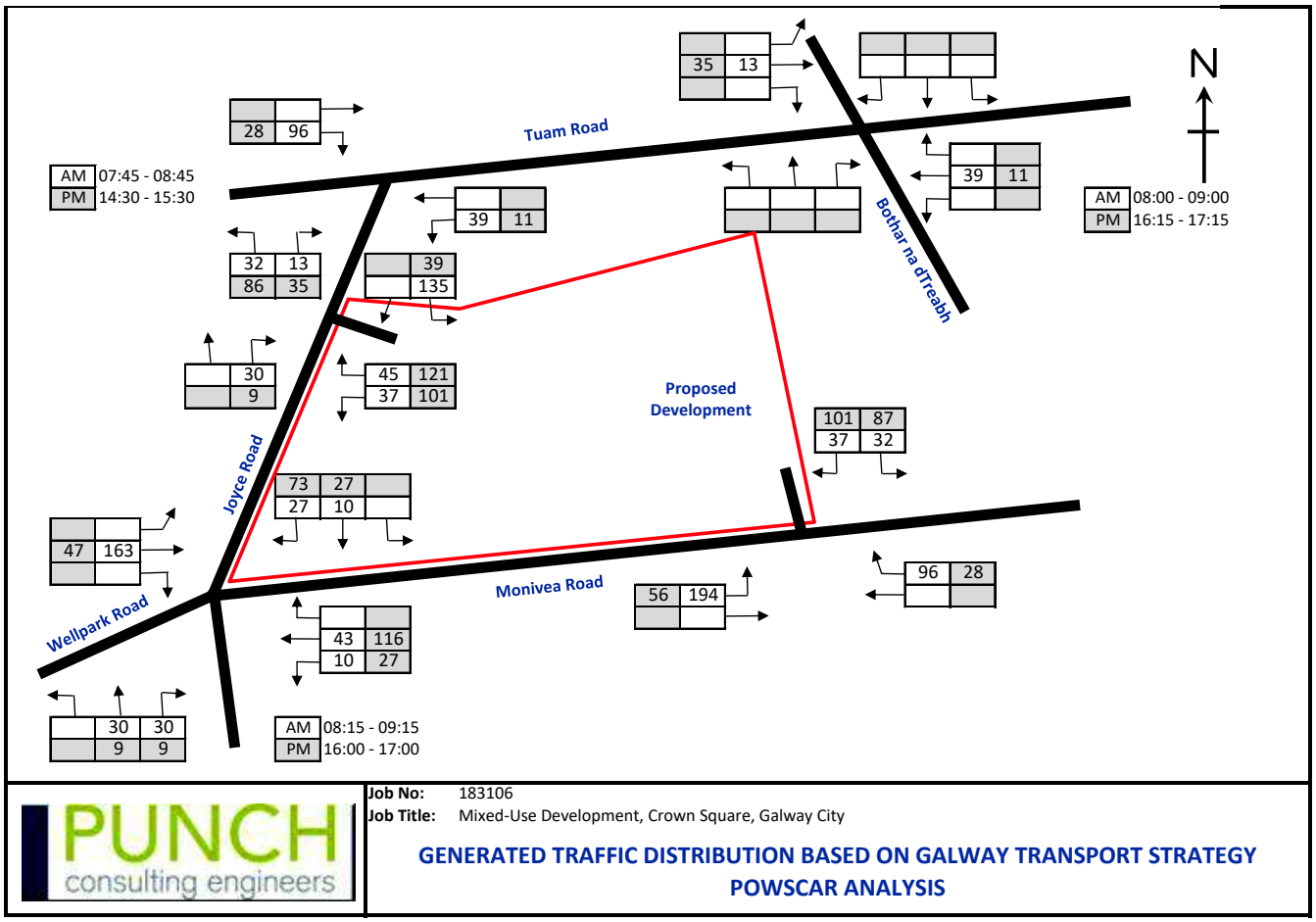
ORIGIN-DESTINATION MATRIX AND ASSUMED DIRECTIONAL DISTRIBUTION BASED ON DEVELOPMENT SITE LOCATION (BASED ON GALWAY TRANSPORT STRATEGY)



PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

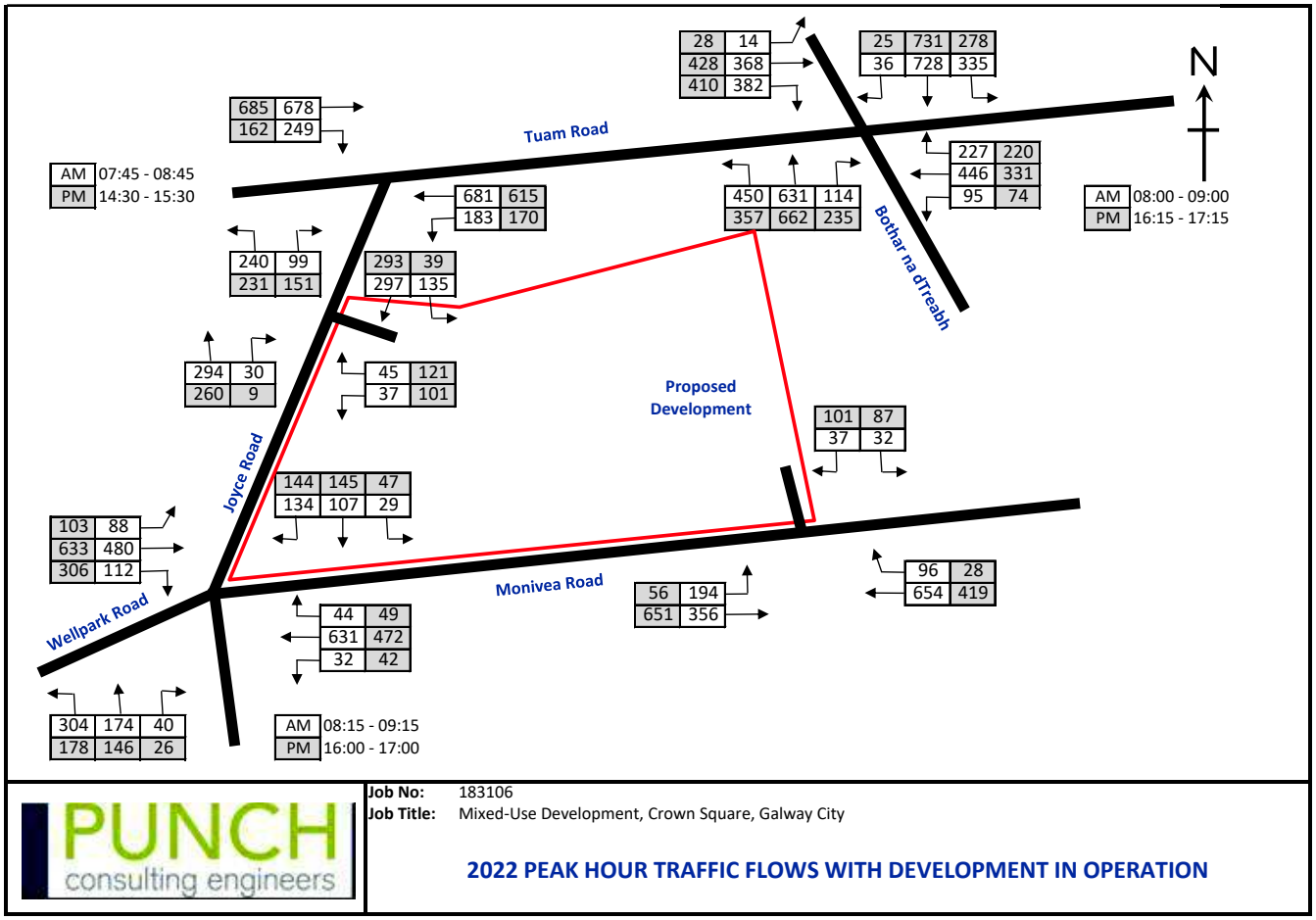
GENERATED TRAFFIC DISTRIBUTION BASED ON GALWAT TRANSPORT STRATEGY POWSCAR ANALYSIS



PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

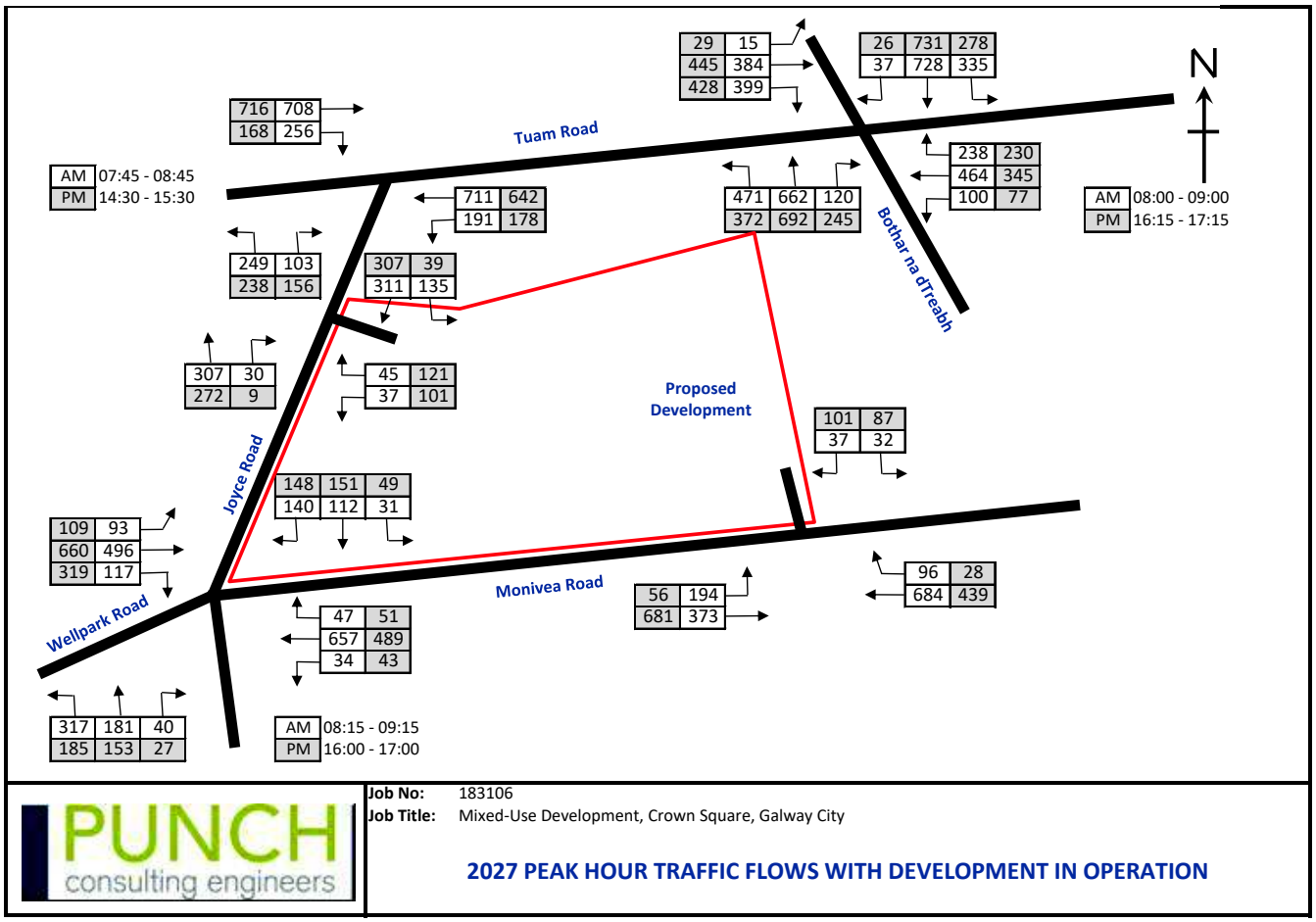
GENERATED TRAFFIC DISTRIBUTION BASED ON GALWAY TRANSPORT STRATEGY POWSCAR ANALYSIS



PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

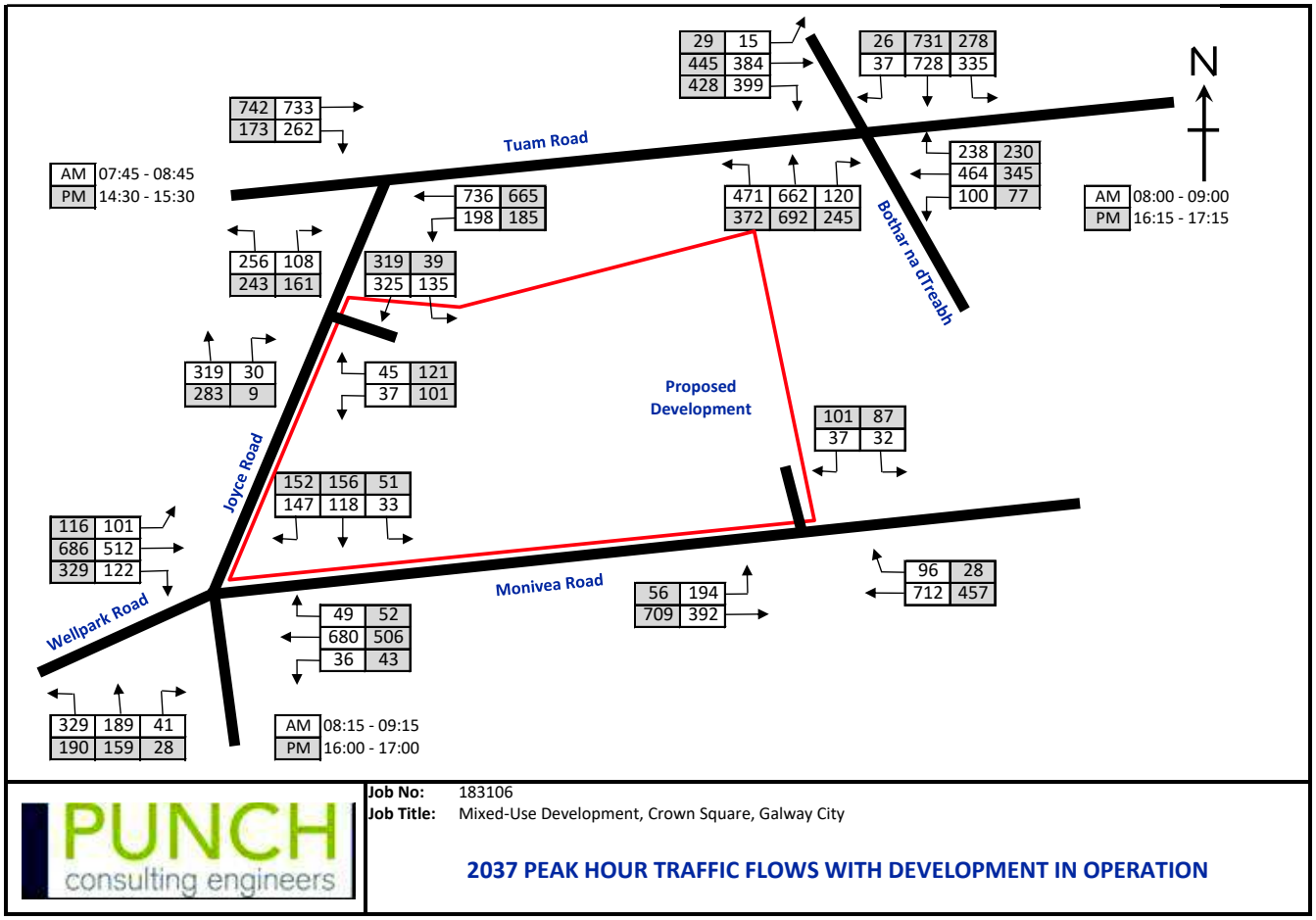
2022 PEAK HOUR TRAFFIC FLOWS WITH DEVELOPMENT IN OPERATION



PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

2027 PEAK HOUR TRAFFIC FLOWS WITH DEVELOPMENT IN OPERATION



PUNCH consulting engineers

Job No: 183106
Job Title: Mixed-Use Development, Crown Square, Galway City

2037 PEAK HOUR TRAFFIC FLOWS WITH DEVELOPMENT IN OPERATION

APPENDIX C

TRICS OUTPUTS

Calculation Reference: AUDIT-363901-180928-0925

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

VEHICLES

Selected regions and areas:

12	**CONNAUGHT**		
	GA	GALWAY	1 days
13	**MUNSTER**		
	WA	WATERFORD	1 days
14	**LEINSTER**		
	LU	LOUTH	2 days
16	**ULSTER (REPUBLIC OF IRELAND)**		
	MG	MONAGHAN	1 days

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

Secondary 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: Number of dwellings
Actual Range: 28 to 52 (units:)
Range Selected by User: 25 to 493 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 03/07/18

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	1 days
Tuesday	1 days
Thursday	2 days
Friday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

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

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:

Residential Zone	3
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:

C3	5 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
15,001 to 20,000	2 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
25,001 to 50,000	2 days
50,001 to 75,000	2 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	1 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	5 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	5 days

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

LIST OF SITES relevant to selection parameters

1 **GA-03-C-01** **FLATS** **GALWAY**
BALLYLOUGHANE ROAD
GALWAY

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 34
Survey date: THURSDAY *31/10/13* *Survey Type: MANUAL*

2 **LU-03-C-01** **BLOCKS OF FLATS** **LOUTH**
DONORE ROAD
DROGHEDA

Edge of Town Centre
Residential Zone
Total Number of dwellings: 52
Survey date: THURSDAY *12/09/13* *Survey Type: MANUAL*

3 **LU-03-C-02** **BLOCK OF FLATS** **LOUTH**
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total Number of dwellings: 33
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

4 **MG-03-C-01** **BLOCK OF FLATS** **MONAGHAN**
MALL ROAD
MONAGHAN

Edge of Town Centre
No Sub Category
Total Number of dwellings: 28
Survey date: FRIDAY *06/09/13* *Survey Type: MANUAL*

5 **WA-03-C-01** **BLOCKS OF FLATS** **WATERFORD**
UPPER YELLOW ROAD
WATERFORD

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 51
Survey date: TUESDAY *12/05/15* *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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CB-03-C-02	UK
CB-03-C-03	UK
NF-03-C-01	UK
SA-03-C-01	UK
SF-03-C-01	UK
SF-03-C-03	UK
SR-03-C-01	UK
SR-03-C-02	UK

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

VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	5	40	0.015	5	40	0.066	5	40	0.081
08:00 - 09:00	5	40	0.045	**5**	**40**	**0.157**	5	40	0.202
09:00 - 10:00	5	40	0.071	5	40	0.116	5	40	0.187
10:00 - 11:00	5	40	0.020	5	40	0.061	5	40	0.081
11:00 - 12:00	5	40	0.086	5	40	0.081	5	40	0.167
12:00 - 13:00	5	40	0.086	5	40	0.091	5	40	0.177
13:00 - 14:00	5	40	0.086	5	40	0.066	5	40	0.152
14:00 - 15:00	5	40	0.076	5	40	0.066	5	40	0.142
15:00 - 16:00	5	40	0.091	5	40	0.096	5	40	0.187
16:00 - 17:00	5	40	0.086	5	40	0.106	5	40	0.192
17:00 - 18:00	**5**	**40**	**0.192**	5	40	0.081	**5**	**40**	**0.273**
18:00 - 19:00	5	40	0.152	5	40	0.101	5	40	0.253
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.006			1.088			2.094

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.

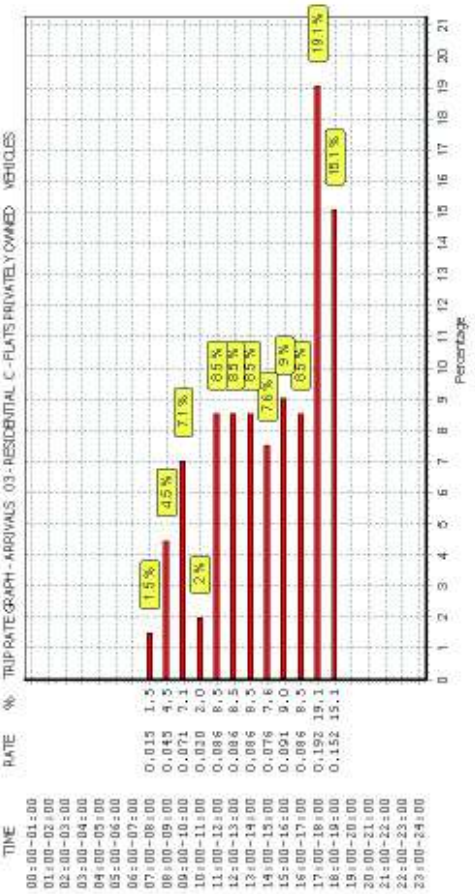
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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.*

Parameter summary

Trip rate parameter range selected:	28 - 52 (units:)
Survey date date range:	01/01/10 - 03/07/18
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	8

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.

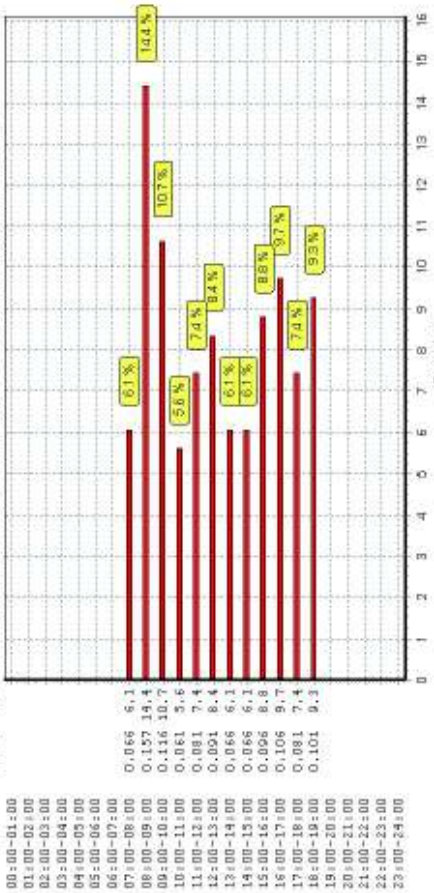
TRIP RATE GRAPH - ARRIVALS 03 - RESIDENTIAL C - FLATS PRIVATELY OWNED VEHICLES



TIME	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	0.015	1.5
08:00 - 09:00	0.045	4.5
09:00 - 10:00	0.071	7.1
10:00 - 11:00	0.020	2.0
11:00 - 12:00	0.086	8.5
12:00 - 13:00	0.086	8.5
13:00 - 14:00	0.086	8.5
14:00 - 15:00	0.076	7.6
15:00 - 16:00	0.091	9.0
16:00 - 17:00	0.086	8.5
17:00 - 18:00	0.192	19.1
18:00 - 19:00	0.152	15.1
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE GRAPH - DEPARTURES 03 - RESIDENTIAL C - FLATS PRIVATELY OWNED VEHICLES



TIME	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	0.066	6.1
08:00 - 09:00	0.157	14.4
09:00 - 10:00	0.116	10.7
10:00 - 11:00	0.061	5.6
11:00 - 12:00	0.081	7.4
12:00 - 13:00	0.091	8.4
13:00 - 14:00	0.066	6.1
14:00 - 15:00	0.066	6.1
15:00 - 16:00	0.096	8.8
16:00 - 17:00	0.106	9.7
17:00 - 18:00	0.081	7.4
18:00 - 19:00	0.101	9.3
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE GRAPH - TOTALS 03 - RESIDENTIAL C - FLATS PRIVATELY OWNED VEHICLES

TIME	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	0.081	3.9
08:00 - 09:00	0.202	9.6
09:00 - 10:00	0.187	8.9
10:00 - 11:00	0.081	3.9
11:00 - 12:00	0.167	8.0
12:00 - 13:00	0.177	8.5
13:00 - 14:00	0.152	7.3
14:00 - 15:00	0.142	6.8
15:00 - 16:00	0.187	8.9
16:00 - 17:00	0.192	9.2
17:00 - 18:00	0.273	13.0
18:00 - 19:00	0.253	12.1
19:00 - 20:00		
20:00 - 21:00		
21:00 - 22:00		
22:00 - 23:00		
23:00 - 24:00		

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	5	40	0.000	5	40	0.000	5	40	0.000
08:00 - 09:00	5	40	0.000	5	40	0.000	5	40	0.000
09:00 - 10:00	**5**	**40**	**0.005**	**5**	**40**	**0.005**	**5**	**40**	**0.010**
10:00 - 11:00	5	40	0.000	5	40	0.000	5	40	0.000
11:00 - 12:00	5	40	0.000	5	40	0.000	5	40	0.000
12:00 - 13:00	5	40	0.000	5	40	0.000	5	40	0.000
13:00 - 14:00	5	40	0.000	5	40	0.000	5	40	0.000
14:00 - 15:00	5	40	0.000	5	40	0.000	5	40	0.000
15:00 - 16:00	5	40	0.000	5	40	0.000	5	40	0.000
16:00 - 17:00	5	40	0.000	5	40	0.000	5	40	0.000
17:00 - 18:00	5	40	0.000	5	40	0.000	5	40	0.000
18:00 - 19:00	5	40	0.000	5	40	0.000	5	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.005			0.010

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.

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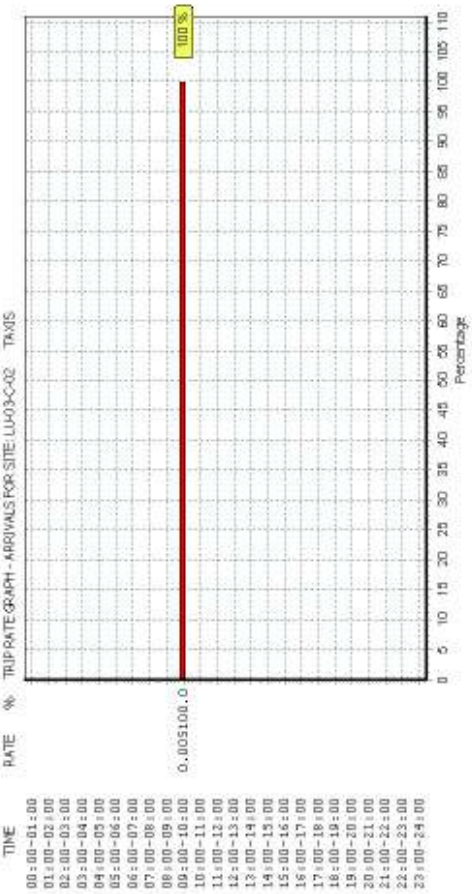
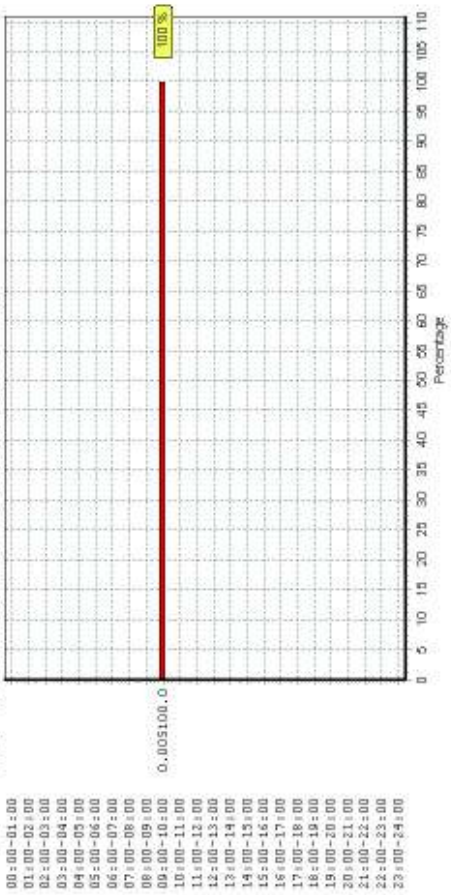


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	5	40	0.000	5	40	0.000	5	40	0.000
08:00 - 09:00	5	40	0.000	5	40	0.000	5	40	0.000
09:00 - 10:00	**5**	**40**	**0.010**	**5**	**40**	**0.005**	**5**	**40**	**0.015**
10:00 - 11:00	5	40	0.000	5	40	0.005	5	40	0.005
11:00 - 12:00	5	40	0.000	5	40	0.000	5	40	0.000
12:00 - 13:00	5	40	0.005	5	40	0.000	5	40	0.005
13:00 - 14:00	5	40	0.000	5	40	0.005	5	40	0.005
14:00 - 15:00	5	40	0.000	5	40	0.000	5	40	0.000
15:00 - 16:00	5	40	0.005	5	40	0.000	5	40	0.005
16:00 - 17:00	5	40	0.000	5	40	0.005	5	40	0.005
17:00 - 18:00	5	40	0.000	5	40	0.000	5	40	0.000
18:00 - 19:00	5	40	0.000	5	40	0.000	5	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.020			0.020			0.040

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.

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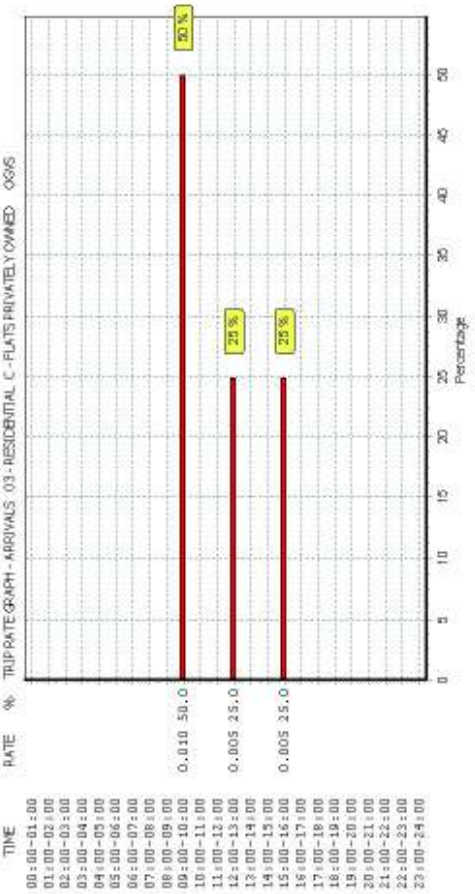

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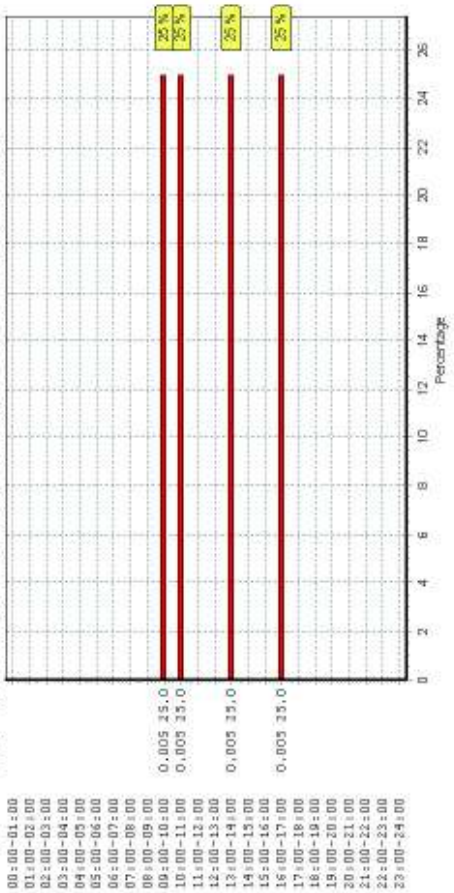

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	5	40	0.005	5	40	0.005	5	40	0.010
08:00 - 09:00	**5**	**40**	**0.010**	**5**	**40**	**0.010**	**5**	**40**	**0.020**
09:00 - 10:00	5	40	0.005	5	40	0.005	5	40	0.010
10:00 - 11:00	5	40	0.005	5	40	0.000	5	40	0.005
11:00 - 12:00	5	40	0.000	5	40	0.000	5	40	0.000
12:00 - 13:00	5	40	0.000	5	40	0.000	5	40	0.000
13:00 - 14:00	5	40	0.000	5	40	0.000	5	40	0.000
14:00 - 15:00	5	40	0.000	5	40	0.000	5	40	0.000
15:00 - 16:00	5	40	0.005	5	40	0.005	5	40	0.010
16:00 - 17:00	5	40	0.005	5	40	0.005	5	40	0.010
17:00 - 18:00	5	40	0.000	5	40	0.000	5	40	0.000
18:00 - 19:00	5	40	0.000	5	40	0.000	5	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.035			0.030			0.065

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.

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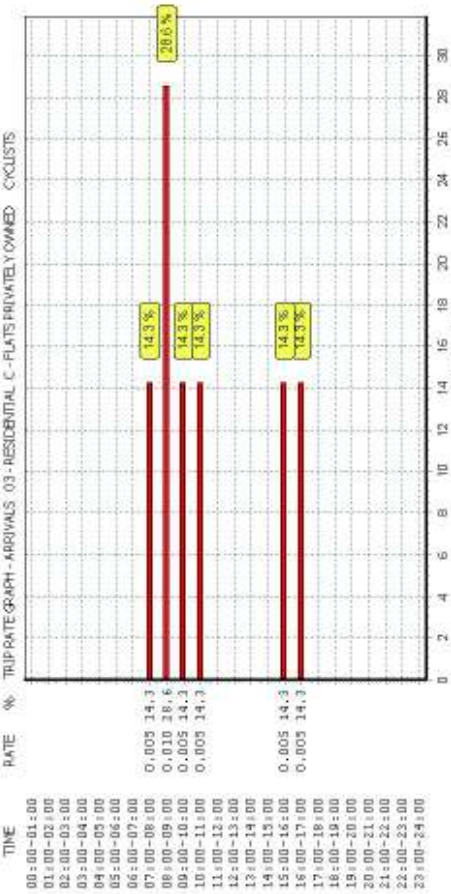

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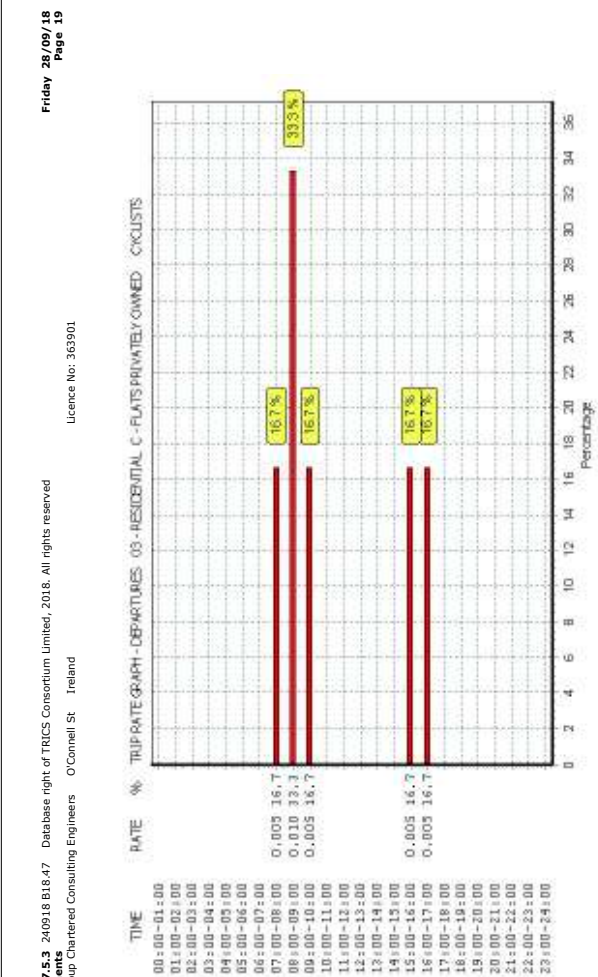

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	5	40	0.005	5	40	0.025	5	40	0.030
08:00 - 09:00	5	40	0.010	**5**	**40**	**0.051**	5	40	0.061
09:00 - 10:00	5	40	0.010	5	40	0.010	5	40	0.020
10:00 - 11:00	5	40	0.015	5	40	0.005	5	40	0.020
11:00 - 12:00	5	40	0.015	5	40	0.035	5	40	0.050
12:00 - 13:00	5	40	0.025	5	40	0.025	5	40	0.050
13:00 - 14:00	5	40	0.040	5	40	0.030	5	40	0.070
14:00 - 15:00	5	40	0.015	5	40	0.010	5	40	0.025
15:00 - 16:00	5	40	0.020	5	40	0.020	5	40	0.040
16:00 - 17:00	**5**	**40**	**0.045**	5	40	0.030	**5**	**40**	**0.075**
17:00 - 18:00	5	40	0.040	5	40	0.030	5	40	0.070
18:00 - 19:00	5	40	0.030	5	40	0.040	5	40	0.070
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.270			0.311			0.581

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.

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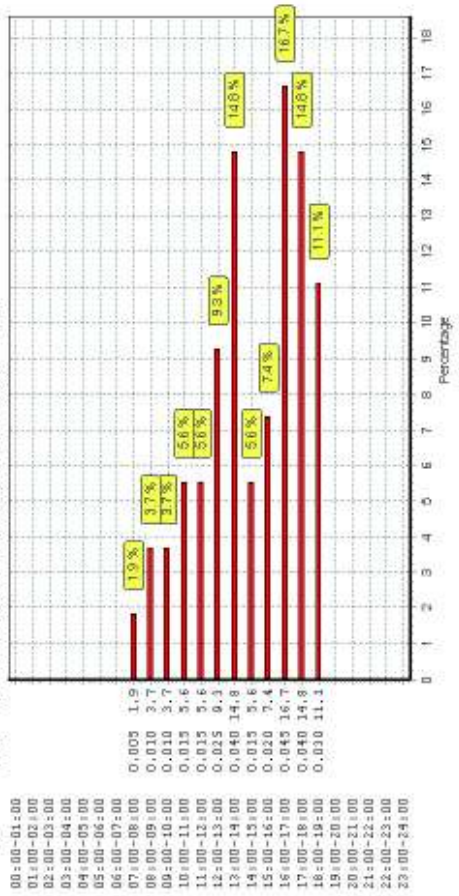

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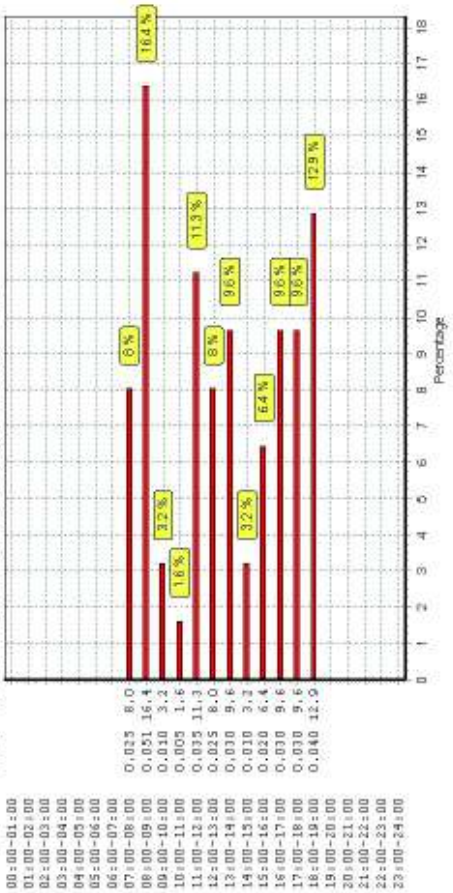

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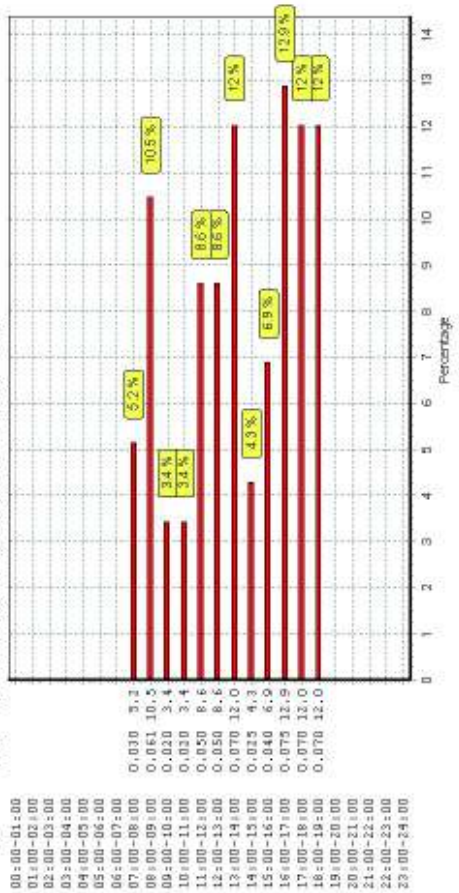

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. DWELLS	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. DWELLS	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. DWELLS	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	40	0.000	5	40	0.000	5	40	0.000
08:00 - 09:00	5	40	0.010	5	40	0.005	5	40	0.015
09:00 - 10:00	5	40	0.005	5	40	0.000	5	40	0.005
10:00 - 11:00	5	40	0.000	5	40	0.000	5	40	0.000
11:00 - 12:00	5	40	0.015	5	40	0.010	5	40	0.025
12:00 - 13:00	5	40	0.000	5	40	0.005	5	40	0.005
13:00 - 14:00	5	40	0.000	5	40	0.000	5	40	0.000
14:00 - 15:00	5	40	0.015	5	40	0.010	5	40	0.025
15:00 - 16:00	5	40	0.010	**5**	**40**	**0.020**	**5**	**40**	**0.030**
16:00 - 17:00	5	40	0.005	5	40	0.010	5	40	0.015
17:00 - 18:00	**5**	**40**	**0.020**	5	40	0.010	5	40	0.030
18:00 - 19:00	5	40	0.005	5	40	0.015	5	40	0.020
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.085			0.085			0.170

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.

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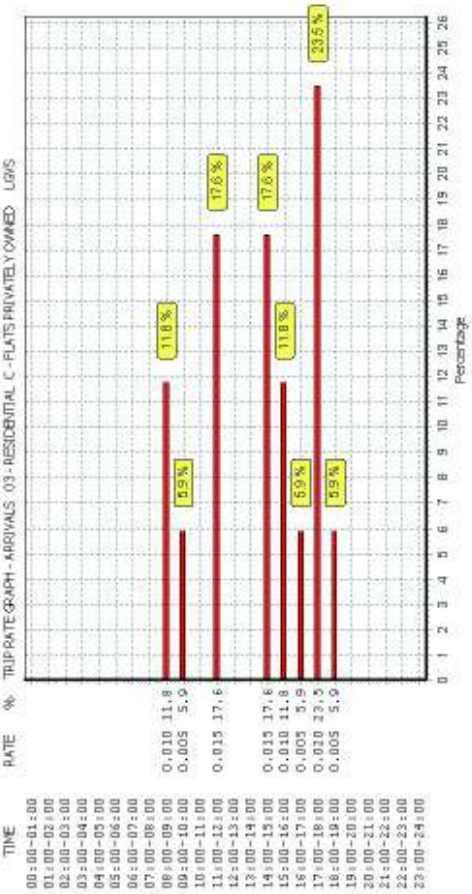

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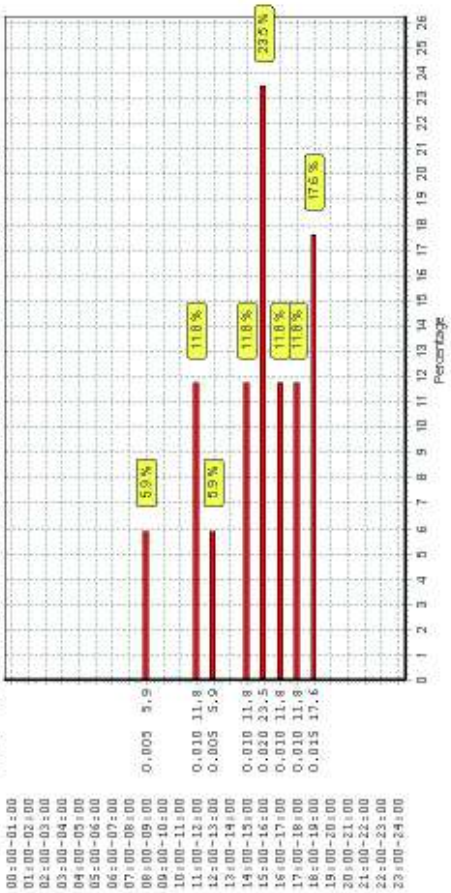

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	5	40	0.000	5	40	0.000	5	40	0.000
08:00 - 09:00	5	40	0.000	5	40	0.000	5	40	0.000
09:00 - 10:00	5	40	0.000	5	40	0.000	5	40	0.000
10:00 - 11:00	5	40	0.000	5	40	0.000	5	40	0.000
11:00 - 12:00	5	40	0.000	5	40	0.000	5	40	0.000
12:00 - 13:00	5	40	0.000	5	40	0.000	5	40	0.000
13:00 - 14:00	5	40	0.000	5	40	0.000	5	40	0.000
14:00 - 15:00	5	40	0.000	5	40	0.000	5	40	0.000
15:00 - 16:00	**5**	**40**	**0.005**	**5**	**40**	**0.005**	**5**	**40**	**0.010**
16:00 - 17:00	5	40	0.000	5	40	0.000	5	40	0.000
17:00 - 18:00	5	40	0.005	5	40	0.005	5	40	0.010
18:00 - 19:00	5	40	0.000	5	40	0.000	5	40	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.010			0.010			0.020

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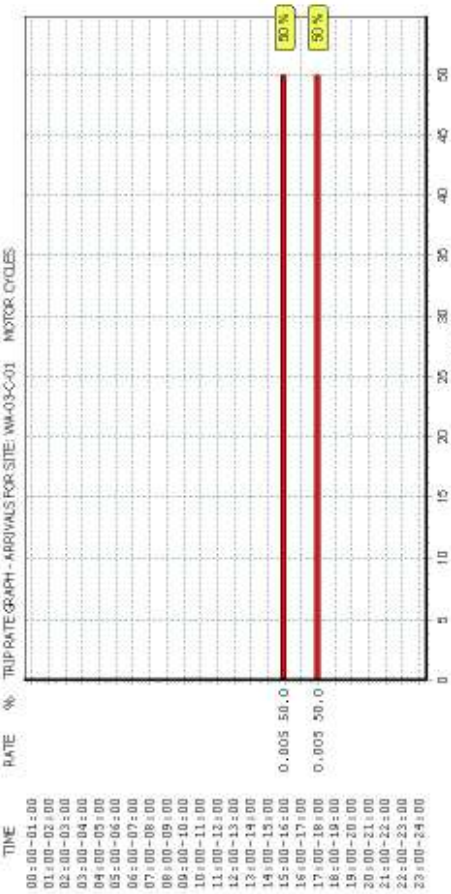
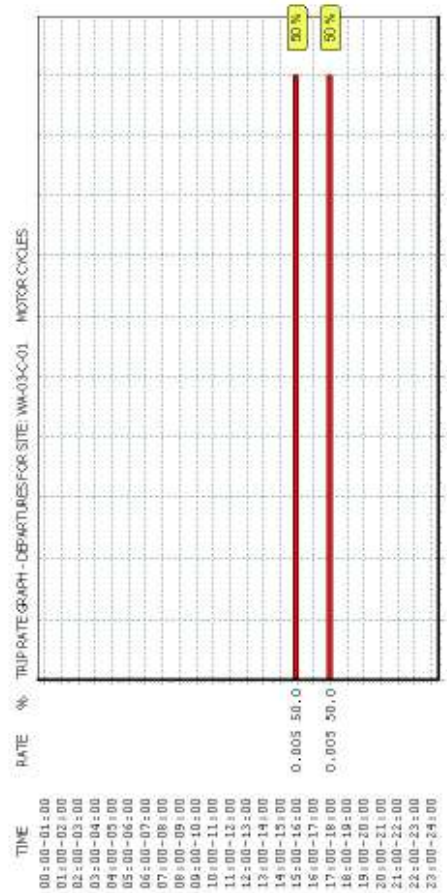


TRICS 7.5.3 240918 B18.47 Database right of TRICS Consortium Limited, 2018. All rights reserved
Apartments
CST Group Chartered Consulting Engineers O'Connell St Ireland Licence No: 363901

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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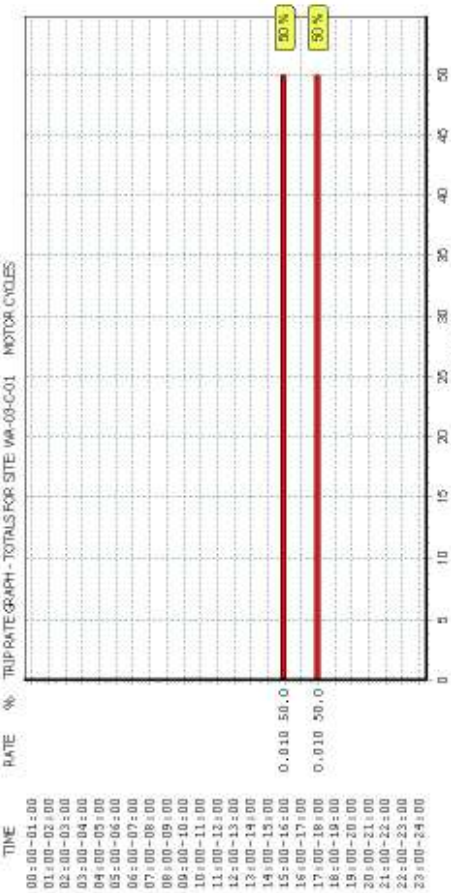

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Calculation Reference: AUDIT-363901-180928-0915

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : K - FITNESS CLUB (PRIVATE)

VEHICLES

Selected regions and areas:

06	**WEST MIDLANDS**		
	SH	SHROPSHIRE	1 days
	WK	WARWICKSHIRE	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	1 days
	WY	WEST YORKSHIRE	1 days
09	**NORTH**		
	CB	CUMBRIA	1 days
10	**WALES**		
	PS	POWYS	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

Secondary 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: 404 to 4500 (units: sqm)
Range Selected by User: 400 to 5000 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 27/09/17

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	3 days
Wednesday	2 days
Thursday	1 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Edge of Town	5

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	2
Built-Up Zone	2
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:

D2	7 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 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	3 days
10,001 to 15,000	1 days
15,001 to 20,000	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	5 days
50,001 to 75,000	1 days
75,001 to 100,000	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	3 days
1.1 to 1.5	3 days
1.6 to 2.0	1 days

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

Travel Plan:

No	7 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	7 days

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

LIST OF SITES relevant to selection parameters

1 **AN-07-K-01** **VIRGIN ACTIVE** **ANTRIM**
BELFAST ROAD
BELFAST
HOLYWOOD
Edge of Town
No Sub Category
Total Gross floor area: 2676 sqm
Survey date: WEDNESDAY 12/10/16 Survey Type: MANUAL

2 **CB-07-K-01** **FITNESS CLUB** **CUMBRIA**
COWPER ROAD
PENRITH
GILWILLY IND. ESTATE
Edge of Town
Industrial Zone
Total Gross floor area: 650 sqm
Survey date: TUESDAY 10/06/14 Survey Type: MANUAL

3 **NY-07-K-01** **FITNESS CLUB** **NORTH YORKSHIRE**
RIVER VIEW ROAD
RIPON

Edge of Town
No Sub Category
Total Gross floor area: 404 sqm
Survey date: TUESDAY 27/09/16 Survey Type: MANUAL

4 **PS-07-K-01** **SPORTS CENTRE** **POWYS**
BROOK STREET
WELSHPOOL

Edge of Town
Residential Zone
Total Gross floor area: 950 sqm
Survey date: MONDAY 11/05/15 Survey Type: MANUAL

5 **SH-07-K-01** **FITNESS, TENNIS & LEISURE** **SHROPSHIRE**
SUNDORNE ROAD
SHREWSBURY

Edge of Town
Residential Zone
Total Gross floor area: 4500 sqm
Survey date: WEDNESDAY 21/05/14 Survey Type: MANUAL

6 **WK-07-K-01** **STRENGTH & FITNESS GYM** **WARWICKSHIRE**
FAR GOSFORD STREET
COVENTRY

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 554 sqm
Survey date: THURSDAY 17/10/13 Survey Type: MANUAL

7 **WY-07-K-02** **FITNESS CLUB** **WEST YORKSHIRE**
GELDERD ROAD
BIRSTALL

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2400 sqm
Survey date: TUESDAY 22/04/14 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 07 - LEISURE/K - FITNESS CLUB (PRIVATE)

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	7	1733	1.450	7	1733	0.132	7	1733	1.582
07:00 - 08:00	7	1733	0.890	7	1733	1.187	7	1733	2.077
08:00 - 09:00	7	1733	1.269	7	1733	1.302	7	1733	2.571
09:00 - 10:00	7	1733	2.176	7	1733	1.129	7	1733	3.305
10:00 - 11:00	7	1733	1.533	7	1733	1.615	7	1733	3.148
11:00 - 12:00	7	1733	0.857	7	1733	1.558	7	1733	2.415
12:00 - 13:00	7	1733	0.956	7	1733	1.310	7	1733	2.266
13:00 - 14:00	7	1733	1.129	7	1733	1.393	7	1733	2.522
14:00 - 15:00	7	1733	1.088	7	1733	0.865	7	1733	1.953
15:00 - 16:00	7	1733	1.591	7	1733	1.203	7	1733	2.794
16:00 - 17:00	7	1733	1.657	7	1733	1.261	7	1733	2.918
17:00 - 18:00	**7**	**1733**	**2.612**	7	1733	1.607	7	1733	4.219
18:00 - 19:00	7	1733	2.316	7	1733	1.978	**7**	**1733**	**4.294**
19:00 - 20:00	7	1733	1.698	**7**	**1733**	**2.283**	7	1733	3.981
20:00 - 21:00	7	1733	0.799	7	1733	1.896	7	1733	2.695
21:00 - 22:00	7	1733	0.140	7	1733	1.269	7	1733	1.409
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			22.161			21.988			44.149

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.

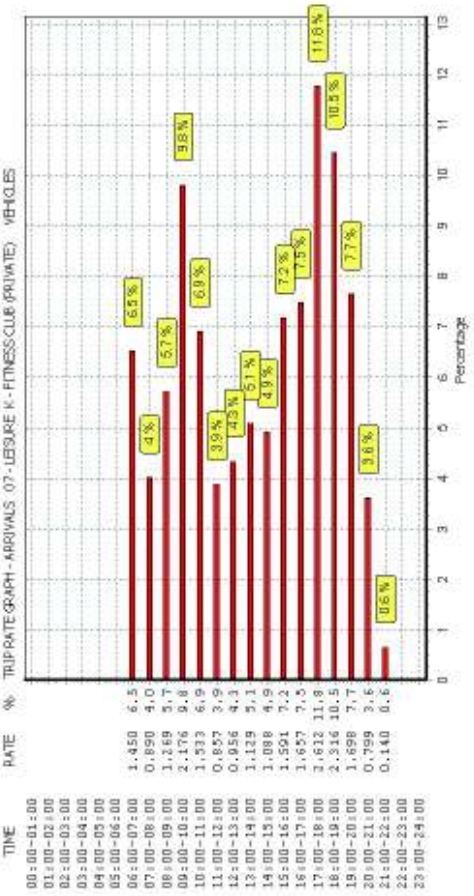
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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.*

Parameter summary

Trip rate parameter range selected:	404 - 4500 (units: sqm)
Survey date date range:	01/01/10 - 27/09/17
Number of weekdays (Monday-Friday):	7
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.

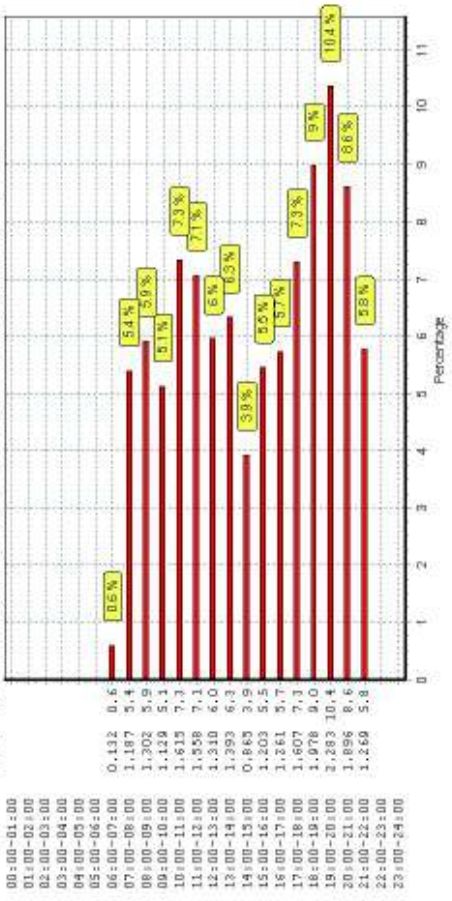
TRIP RATE GRAPH - ARRIVALS 07 - LEISURE K - FITNESS CLUB (PRIVATE) VEHICLES



TIME	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	1.450	6.5
07:00 - 08:00	0.890	4.0
08:00 - 09:00	1.269	5.7
09:00 - 10:00	2.176	9.8
10:00 - 11:00	1.533	6.9
11:00 - 12:00	0.857	3.9
12:00 - 13:00	0.956	4.3
13:00 - 14:00	1.129	5.1
14:00 - 15:00	1.088	4.9
15:00 - 16:00	1.591	7.2
16:00 - 17:00	1.657	7.5
17:00 - 18:00	2.612	11.8
18:00 - 19:00	2.316	10.5
19:00 - 20:00	1.698	7.7
20:00 - 21:00	0.799	3.6
21:00 - 22:00	0.140	0.6
22:00 - 23:00		
23:00 - 24:00		

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE GRAPH - DEPARTURES 07 - LEISURE K - FITNESS CLUB (PRIVATE) VEHICLES



TIME	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	0.132	0.6
07:00 - 08:00	1.187	5.4
08:00 - 09:00	1.302	5.9
09:00 - 10:00	1.129	5.1
10:00 - 11:00	1.613	7.3
11:00 - 12:00	1.558	7.1
12:00 - 13:00	1.310	6.0
13:00 - 14:00	1.389	6.3
14:00 - 15:00	0.863	3.9
15:00 - 16:00	1.203	5.5
16:00 - 17:00	1.261	5.7
17:00 - 18:00	1.607	7.3
18:00 - 19:00	1.978	9.0
19:00 - 20:00	2.283	10.4
20:00 - 21:00	1.896	8.6
21:00 - 22:00	1.269	5.8
22:00 - 23:00		
23:00 - 24:00		

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE GRAPH - TOTALS 07 - LEISURE K - FITNESS CLUB (PRIVATE) VEHICLES

TIME	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	1.582	3.6
07:00 - 08:00	2.077	4.7
08:00 - 09:00	2.571	5.8
09:00 - 10:00	3.305	7.5
10:00 - 11:00	3.148	7.1
11:00 - 12:00	2.415	5.5
12:00 - 13:00	2.266	5.1
13:00 - 14:00	2.532	5.7
14:00 - 15:00	1.953	4.4
15:00 - 16:00	2.794	6.3
16:00 - 17:00	2.918	6.6
17:00 - 18:00	4.219	9.6
18:00 - 19:00	4.294	9.7
19:00 - 20:00	3.991	9.0
20:00 - 21:00	2.695	6.1
21:00 - 22:00	1.409	3.2
22:00 - 23:00		
23:00 - 24:00		

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
07:00 - 08:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
08:00 - 09:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
09:00 - 10:00	7	1733	0.016	7	1733	0.016	7	1733	0.032
10:00 - 11:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
11:00 - 12:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
12:00 - 13:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
13:00 - 14:00	**7**	**1733**	**0.025**	**7**	**1733**	**0.025**	**7**	**1733**	**0.050**
14:00 - 15:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
15:00 - 16:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
16:00 - 17:00	7	1733	0.016	7	1733	0.016	7	1733	0.032
17:00 - 18:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
18:00 - 19:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
19:00 - 20:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
20:00 - 21:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
21:00 - 22:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			0.113			0.113			0.226

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.

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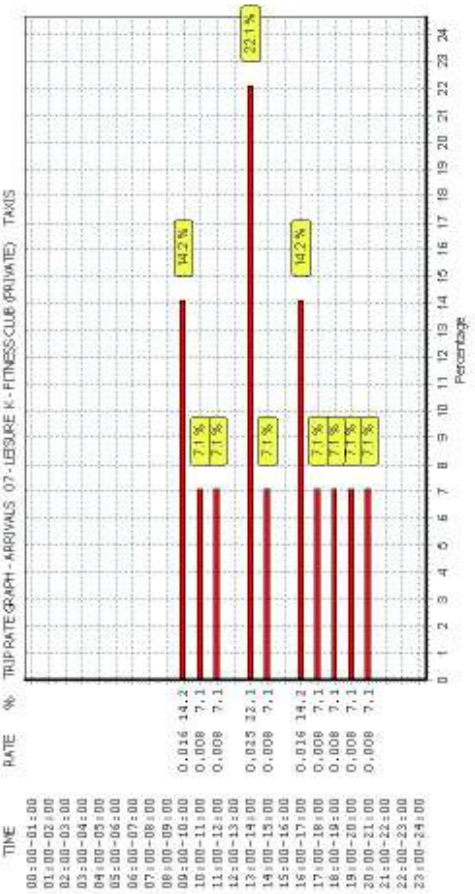
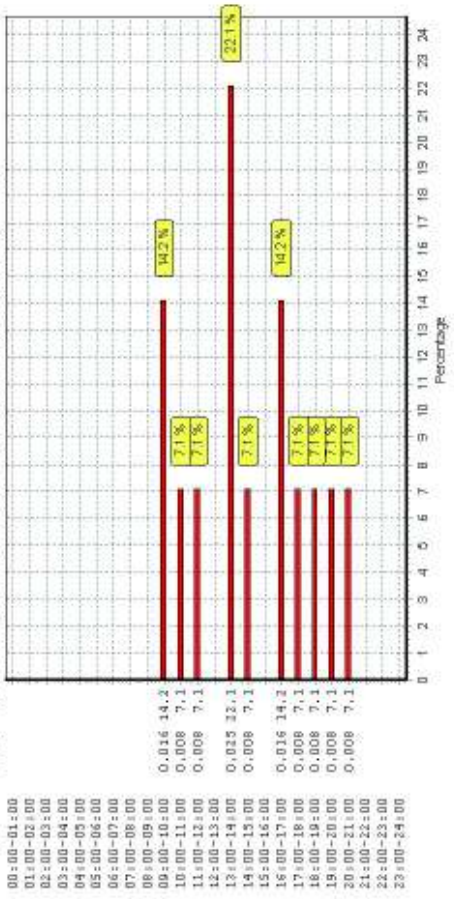


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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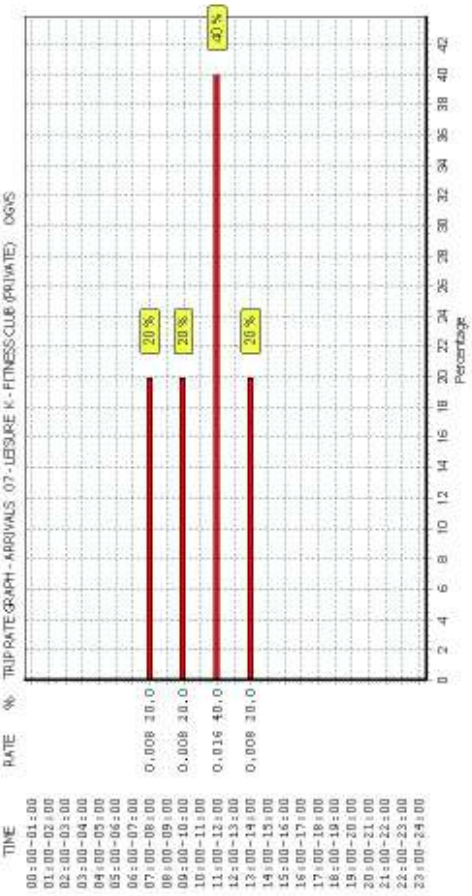
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

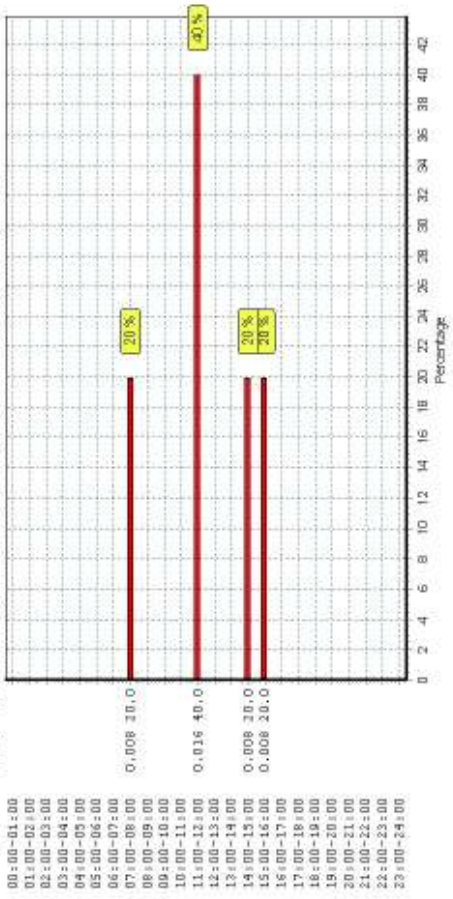
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
07:00 - 08:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
08:00 - 09:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
09:00 - 10:00	7	1733	0.008	7	1733	0.000	7	1733	0.008
10:00 - 11:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
11:00 - 12:00	**7**	**1733**	**0.016**	**7**	**1733**	**0.016**	**7**	**1733**	**0.032**
12:00 - 13:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
13:00 - 14:00	7	1733	0.008	7	1733	0.000	7	1733	0.008
14:00 - 15:00	7	1733	0.000	7	1733	0.008	7	1733	0.008
15:00 - 16:00	7	1733	0.000	7	1733	0.008	7	1733	0.008
16:00 - 17:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
17:00 - 18:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
18:00 - 19:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
19:00 - 20:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
20:00 - 21:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
21:00 - 22:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			0.040			0.040			0.080

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.*



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	7	1733	0.000	7	1733	0.000	7	1733	0.000
07:00 - 08:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
08:00 - 09:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
09:00 - 10:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
10:00 - 11:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
11:00 - 12:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
12:00 - 13:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
13:00 - 14:00	**7**	**1733**	**0.008**	7	1733	0.000	**7**	**1733**	**0.008**
14:00 - 15:00	7	1733	0.008	7	1733	0.000	7	1733	0.008
15:00 - 16:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
16:00 - 17:00	7	1733	0.000	**7**	**1733**	**0.008**	7	1733	0.008
17:00 - 18:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
18:00 - 19:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
19:00 - 20:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
20:00 - 21:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
21:00 - 22:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			0.016			0.008			0.024

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.

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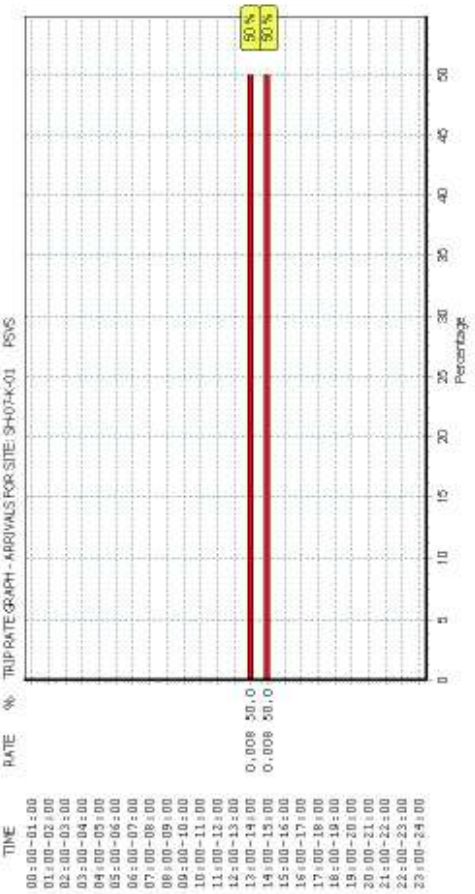
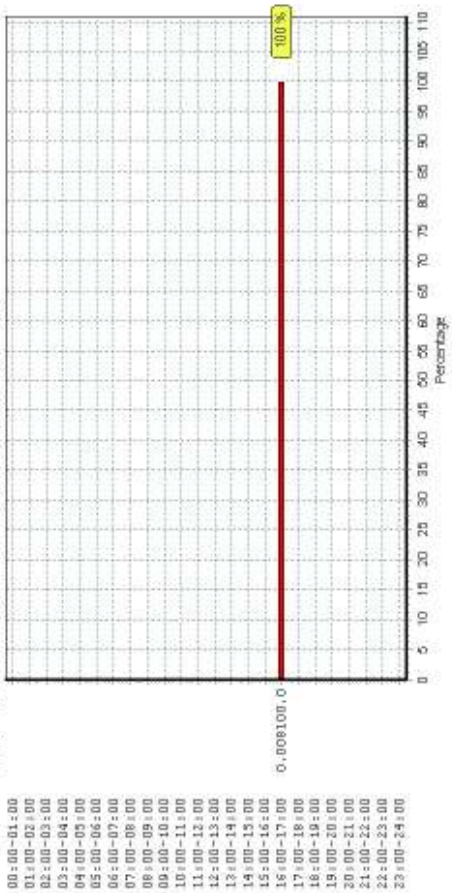


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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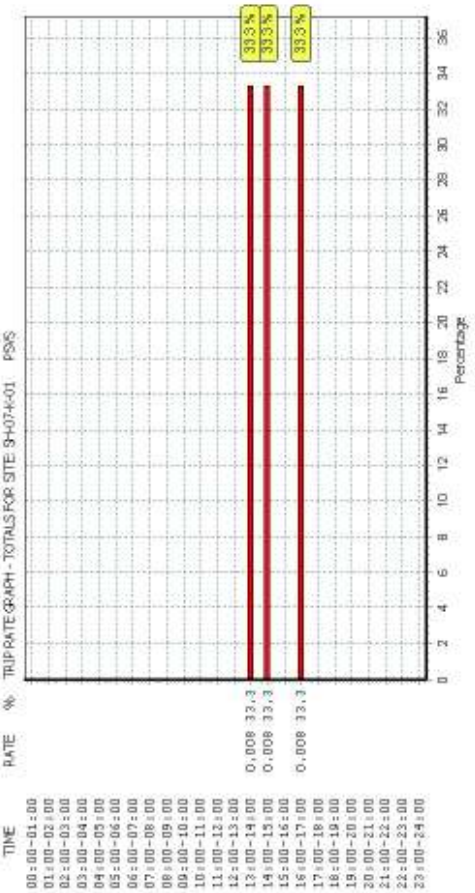

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TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	7	1733	0.016	7	1733	0.008	7	1733	0.024
07:00 - 08:00	7	1733	0.016	7	1733	0.016	7	1733	0.032
08:00 - 09:00	7	1733	0.008	7	1733	0.016	7	1733	0.024
09:00 - 10:00	7	1733	0.016	7	1733	0.000	7	1733	0.016
10:00 - 11:00	7	1733	0.016	7	1733	0.008	7	1733	0.024
11:00 - 12:00	7	1733	0.008	7	1733	0.000	7	1733	0.008
12:00 - 13:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
13:00 - 14:00	7	1733	0.008	7	1733	0.000	7	1733	0.008
14:00 - 15:00	7	1733	0.000	7	1733	0.008	7	1733	0.008
15:00 - 16:00	7	1733	0.033	7	1733	0.008	7	1733	0.041
16:00 - 17:00	7	1733	0.008	7	1733	0.025	7	1733	0.033
17:00 - 18:00	7	1733	0.016	7	1733	0.041	7	1733	0.057
18:00 - 19:00	**7**	**1733**	**0.058**	7	1733	0.016	**7**	**1733**	**0.074**
19:00 - 20:00	7	1733	0.016	7	1733	0.025	7	1733	0.041
20:00 - 21:00	7	1733	0.000	**7**	**1733**	**0.049**	7	1733	0.049
21:00 - 22:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			0.227			0.228			0.455

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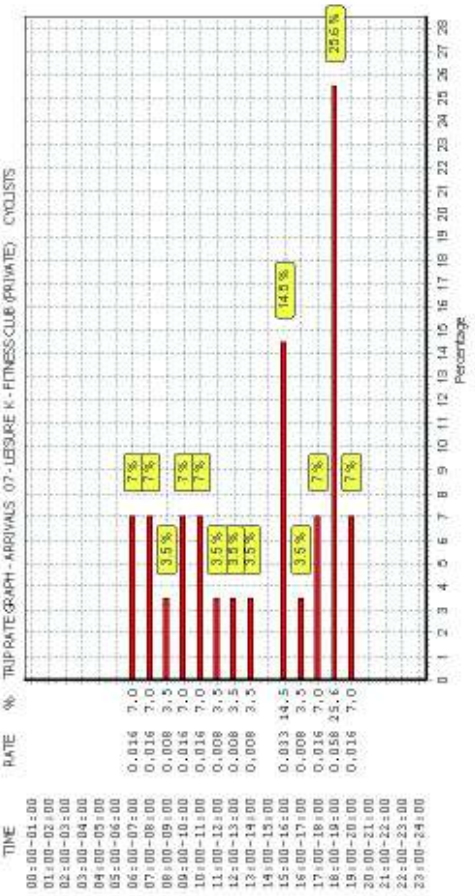

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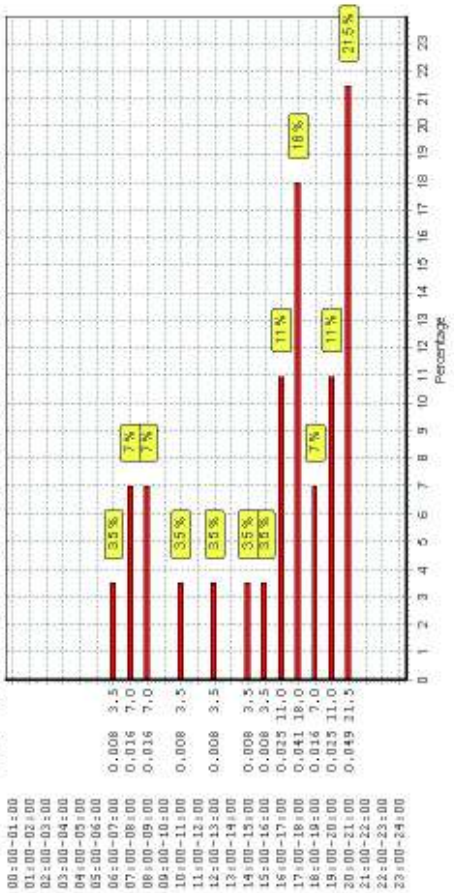

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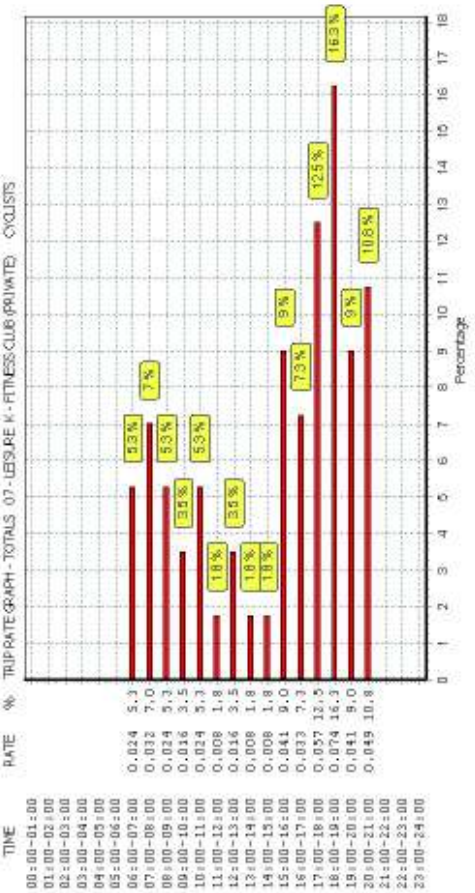

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TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
CARS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	7	1733	0.503	7	1733	0.058	7	1733	0.561
07:00 - 08:00	7	1733	0.272	7	1733	0.371	7	1733	0.643
08:00 - 09:00	7	1733	0.371	7	1733	0.470	7	1733	0.841
09:00 - 10:00	7	1733	0.643	7	1733	0.214	7	1733	0.857
10:00 - 11:00	7	1733	0.527	7	1733	0.503	7	1733	1.030
11:00 - 12:00	7	1733	0.247	7	1733	0.519	7	1733	0.766
12:00 - 13:00	7	1733	0.396	7	1733	0.412	7	1733	0.808
13:00 - 14:00	7	1733	0.346	7	1733	0.494	7	1733	0.840
14:00 - 15:00	7	1733	0.272	7	1733	0.272	7	1733	0.544
15:00 - 16:00	7	1733	0.371	7	1733	0.247	7	1733	0.618
16:00 - 17:00	7	1733	0.338	7	1733	0.338	7	1733	0.676
17:00 - 18:00	7	1733	0.709	7	1733	0.387	7	1733	1.096
18:00 - 19:00	**7**	**1733**	**0.791**	7	1733	0.544	7	1733	1.335
19:00 - 20:00	7	1733	0.643	7	1733	0.733	**7**	**1733**	**1.376**
20:00 - 21:00	7	1733	0.305	**7**	**1733**	**0.824**	7	1733	1.129
21:00 - 22:00	7	1733	0.074	7	1733	0.478	7	1733	0.552
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			6.808			6.864			13.672

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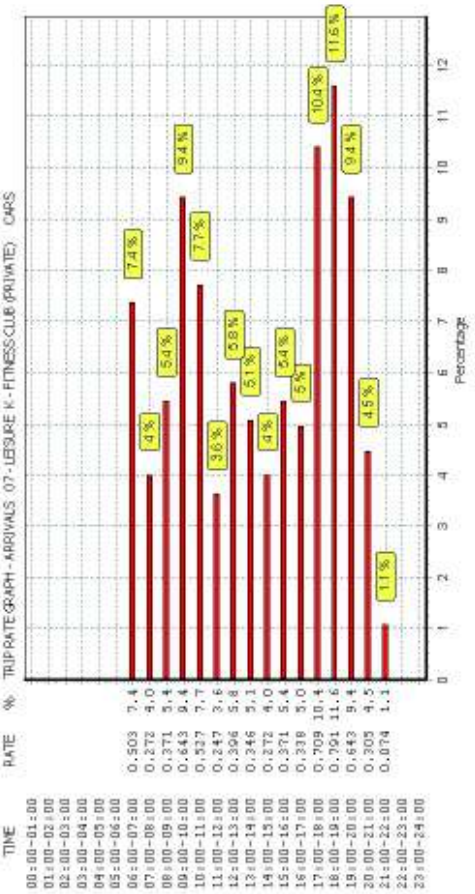

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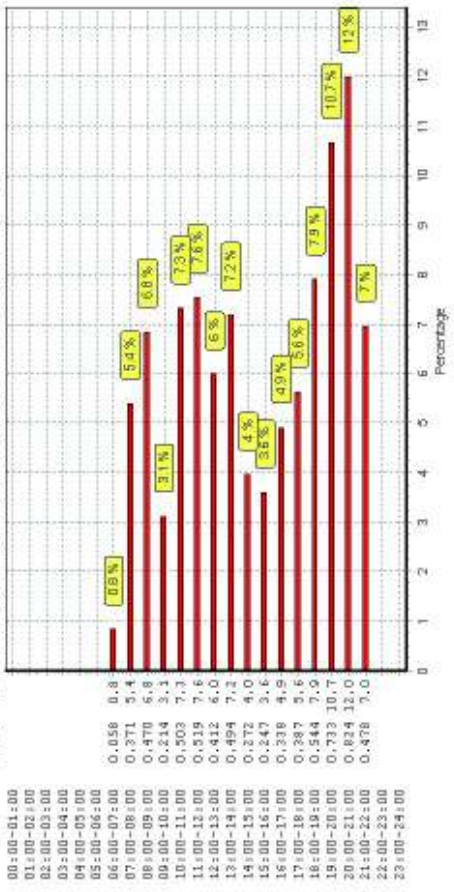

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TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
LGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	7	1733	0.049	7	1733	0.008	7	1733	0.057
07:00 - 08:00	7	1733	0.033	7	1733	0.033	7	1733	0.066
08:00 - 09:00	7	1733	0.041	7	1733	0.008	7	1733	0.049
09:00 - 10:00	7	1733	0.041	7	1733	0.025	7	1733	0.066
10:00 - 11:00	7	1733	0.041	7	1733	0.033	7	1733	0.074
11:00 - 12:00	7	1733	0.033	7	1733	0.049	7	1733	0.082
12:00 - 13:00	7	1733	0.025	7	1733	0.016	7	1733	0.041
13:00 - 14:00	7	1733	0.049	7	1733	0.058	7	1733	0.107
14:00 - 15:00	**7**	**1733**	**0.066**	7	1733	0.049	**7**	**1733**	**0.115**
15:00 - 16:00	7	1733	0.049	7	1733	0.033	7	1733	0.082
16:00 - 17:00	7	1733	0.041	**7**	**1733**	**0.066**	7	1733	0.107
17:00 - 18:00	7	1733	0.058	7	1733	0.049	7	1733	0.107
18:00 - 19:00	7	1733	0.016	7	1733	0.066	7	1733	0.082
19:00 - 20:00	7	1733	0.000	7	1733	0.025	7	1733	0.025
20:00 - 21:00	7	1733	0.000	7	1733	0.008	7	1733	0.008
21:00 - 22:00	7	1733	0.000	7	1733	0.016	7	1733	0.016
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			0.542			0.542			1.084

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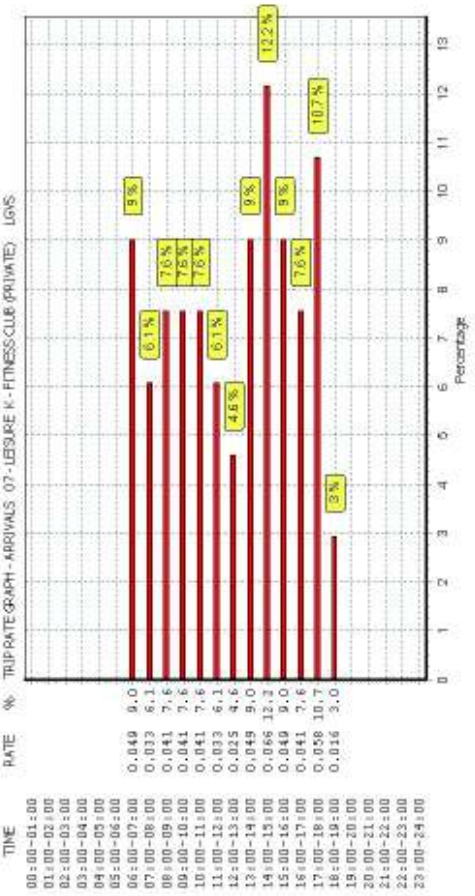

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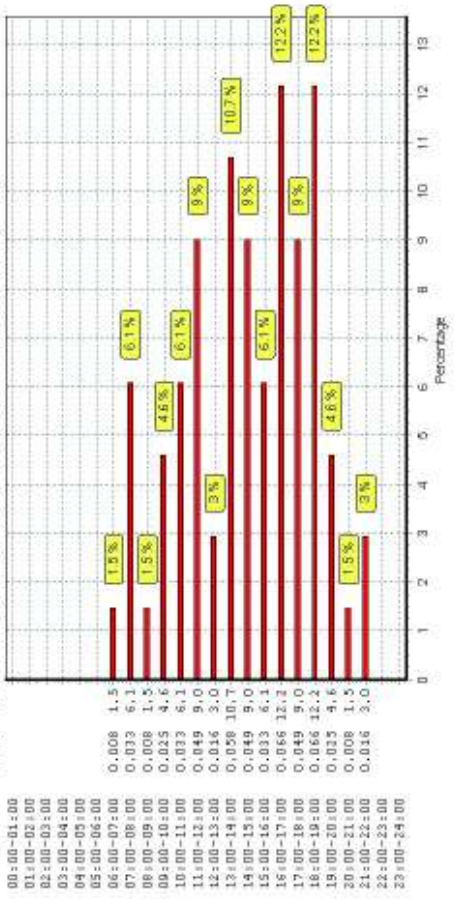

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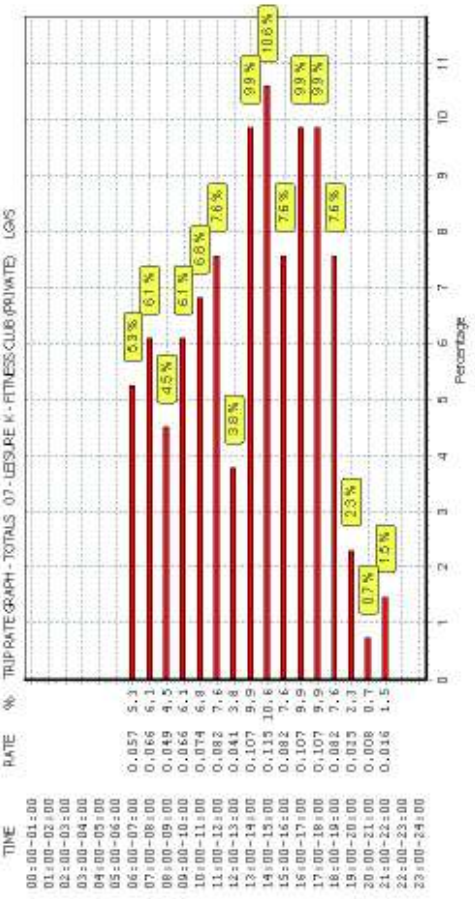

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TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MOTOR CYCLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	7	1733	0.000	7	1733	0.000	7	1733	0.000
07:00 - 08:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
08:00 - 09:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
09:00 - 10:00	7	1733	0.008	7	1733	0.000	7	1733	0.008
10:00 - 11:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
11:00 - 12:00	7	1733	0.000	7	1733	0.008	7	1733	0.008
12:00 - 13:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
13:00 - 14:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
14:00 - 15:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
15:00 - 16:00	7	1733	0.008	7	1733	0.008	7	1733	0.016
16:00 - 17:00	7	1733	0.016	7	1733	0.000	7	1733	0.016
17:00 - 18:00	**7**	**1733**	**0.025**	7	1733	0.000	**7**	**1733**	**0.025**
18:00 - 19:00	7	1733	0.000	**7**	**1733**	**0.016**	7	1733	0.016
19:00 - 20:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
20:00 - 21:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
21:00 - 22:00	7	1733	0.000	7	1733	0.000	7	1733	0.000
22:00 - 23:00	1	404	0.000	1	404	0.000	1	404	0.000
23:00 - 24:00									
Total Rates:			0.057			0.032			0.089

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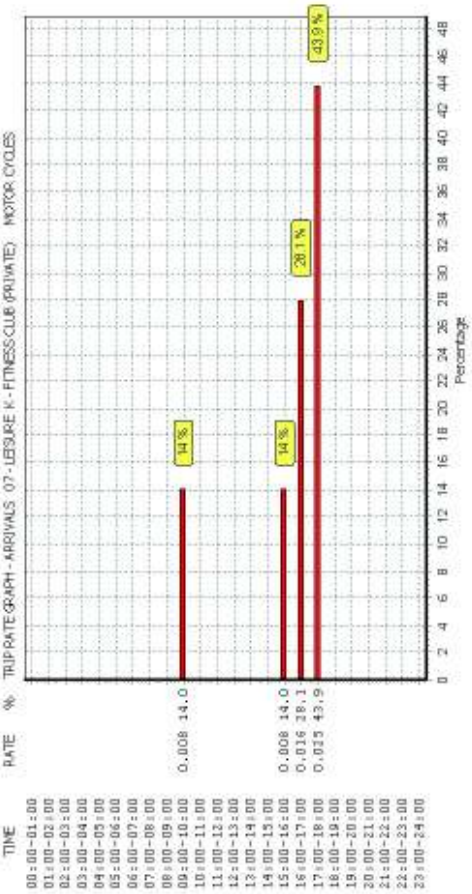

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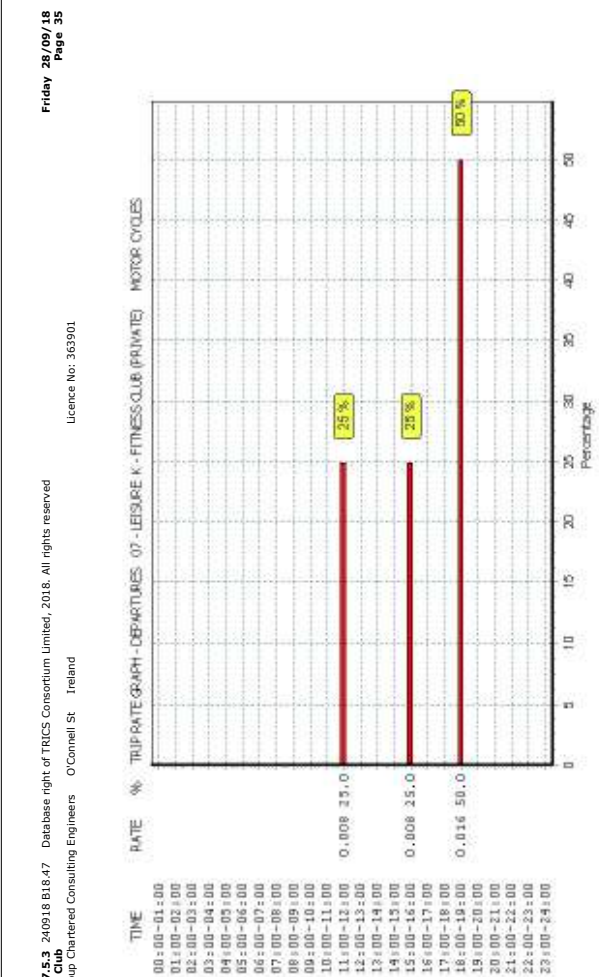

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Calculation Reference: AUDIT-363901-180928-0902

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
Category : G - GP SURGERIES

VEHICLES

Selected regions and areas:

12	**CONNAUGHT**		
	RO	ROSCOMMON	1 days
14	**LEINSTER**		
	CC	CARLOW	1 days
	WC	WICKLOW	1 days
17	**ULSTER (NORTHERN IRELAND)**		
	DE	DERRY	1 days

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

Secondary 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: 200 to 1500 (units: sqm)
Range Selected by User: 200 to 2709 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 14/03/18

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	1 days
Wednesday	1 days
Friday	2 days

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

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

Selected Locations:

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

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:

Commercial Zone	1
Residential Zone	1
Built-Up Zone	1
No Sub Category	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:

D1	4 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
5,001 to 10,000	2 days
10,001 to 15,000	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	2 days
25,001 to 50,000	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	1 days
1.1 to 1.5	3 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	4 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	4 days

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

LIST OF SITES relevant to selection parameters

1 **CC-05-G-01** **GP SURGERY** **CARLOW**
SLEATY ROAD
CARLOW
CARLOW BUSINESS PARK
Edge of Town
Commercial Zone
Total Gross floor area: 1500 sqm
Survey date: FRIDAY *10/06/11* *Survey Type: MANUAL*

2 **DE-05-G-02** **GP SURGERY** **DERRY**
MOUNTSANDEL ROAD
COLERAINE

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1220 sqm
Survey date: FRIDAY *25/10/13* *Survey Type: MANUAL*

3 **RO-05-G-01** **GP SURGERY** **ROSCOMMON**
VALLEY COURT
ATHLONE
BUNNAVALLY
Edge of Town
Residential Zone
Total Gross floor area: 200 sqm
Survey date: WEDNESDAY *24/09/14* *Survey Type: MANUAL*

4 **WC-05-G-01** **GP SURGERY** **WICKLOW**
CHURCH HILL
WICKLOW

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 450 sqm
Survey date: MONDAY *18/10/10* *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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CH-05-G-03	UK
NY-05-G-01	UK
NY-05-G-02	UK
SM-05-G-01	UK
WK-05-G-01	UK

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	843	0.089	4	843	0.000	4	843	0.089
08:00 - 09:00	4	843	1.751	4	843	0.653	4	843	2.404
09:00 - 10:00	4	843	3.620	4	843	2.522	4	843	6.142
10:00 - 11:00	4	843	3.294	4	843	3.769	4	843	7.063
11:00 - 12:00	4	843	3.086	4	843	3.175	4	843	6.261
12:00 - 13:00	4	843	3.175	4	843	3.769	4	843	6.944
13:00 - 14:00	4	843	0.950	4	843	1.246	4	843	2.196
14:00 - 15:00	**4**	**843**	**5.074**	4	843	4.036	**4**	**843**	**9.110**
15:00 - 16:00	4	843	4.036	**4**	**843**	**4.243**	4	843	8.279
16:00 - 17:00	4	843	3.086	4	843	3.353	4	843	6.439
17:00 - 18:00	4	843	1.009	4	843	1.929	4	843	2.938
18:00 - 19:00	4	843	0.030	4	843	0.356	4	843	0.386
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			29.200			29.051			58.251

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.*

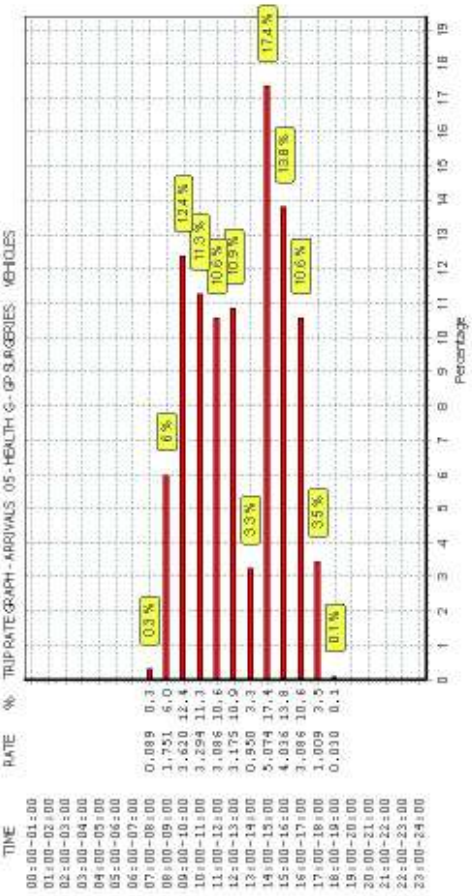
Parameter summary

Trip rate parameter range selected:	200 - 1500 (units: sqm)
Survey date date range:	01/01/10 - 14/03/18
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	5

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.

TRIP RATE GRAPH - ARRIVALS 05 - HEALTH G - GP SURGERIES VEHICLES

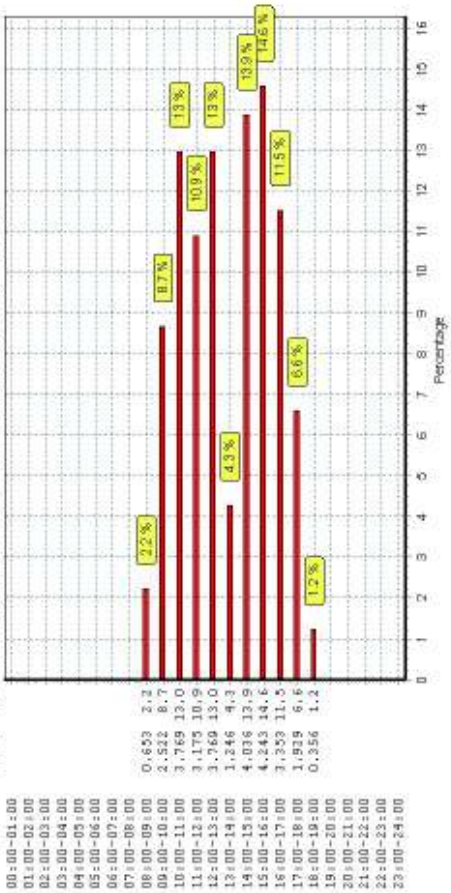
TIME	RATE	%
00:00-01:00		
01:00-02:00		
02:00-03:00		
03:00-04:00		
04:00-05:00		
05:00-06:00		
06:00-07:00		
07:00-08:00	0.089	0.3
08:00-09:00	1.751	6.0
09:00-10:00	3.620	12.4
10:00-11:00	3.294	11.3
11:00-12:00	3.086	10.6
12:00-13:00	3.175	10.9
13:00-14:00	0.950	3.3
14:00-15:00	5.074	17.4
15:00-16:00	4.036	13.8
16:00-17:00	3.086	10.6
17:00-18:00	1.009	3.5
18:00-19:00	0.030	0.1
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE GRAPH - DEPARTURES 05 - HEALTH G - GP SURGERIES VEHICLES

TIME	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	0.653	2.2
08:00-09:00	2.522	8.7
09:00-10:00	3.769	13.0
10:00-11:00	3.175	10.9
11:00-12:00	3.769	13.0
12:00-13:00	1.246	4.3
13:00-14:00	4.036	13.9
14:00-15:00	4.243	14.6
15:00-16:00	3.353	11.5
16:00-17:00	1.939	6.6
17:00-18:00	0.356	1.2
18:00-19:00		
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE GRAPH - TOTALS 05 - HEALTH G - GP SURGERIES VEHICLES

TIME	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	0.089	0.2
08:00-09:00	2.404	4.1
09:00-10:00	6.142	10.5
10:00-11:00	7.063	12.1
11:00-12:00	6.261	10.7
12:00-13:00	6.944	11.9
13:00-14:00	2.196	3.8
14:00-15:00	9.110	15.6
15:00-16:00	8.279	14.2
16:00-17:00	6.439	11.1
17:00-18:00	2.938	5.0
18:00-19:00	0.386	0.7
19:00-20:00		
20:00-21:00		
21:00-22:00		
22:00-23:00		
23:00-24:00		

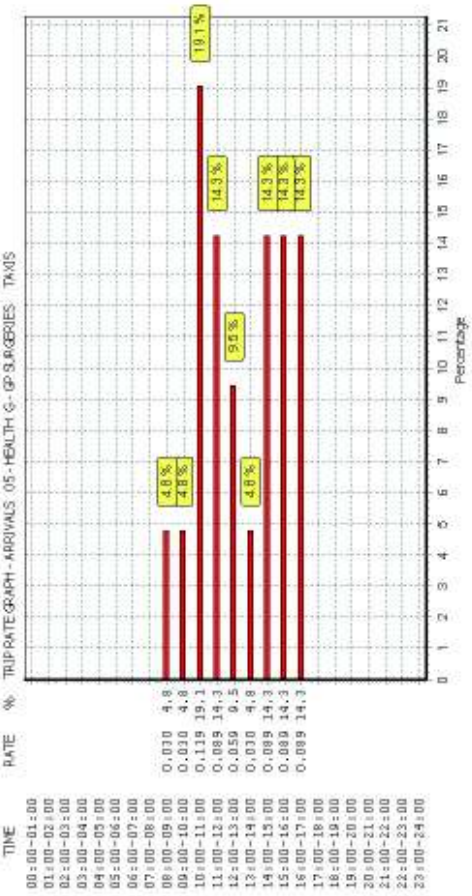
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES
TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

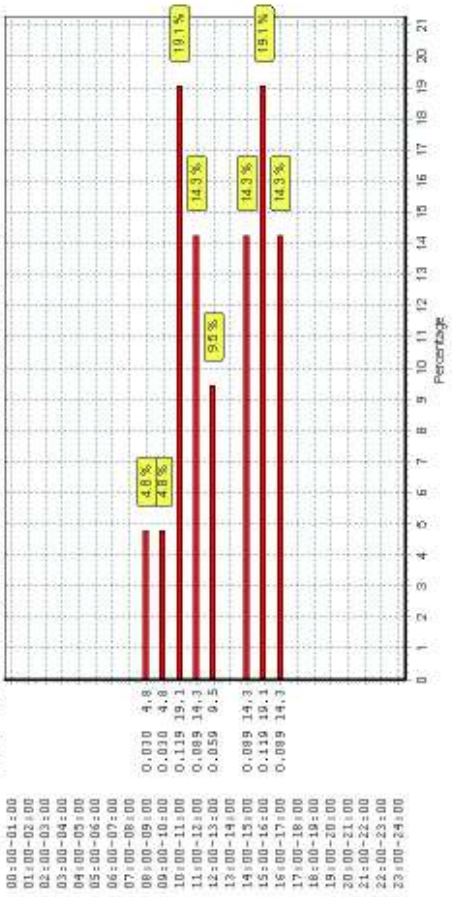
Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	843	0.000	4	843	0.000	4	843	0.000
08:00 - 09:00	4	843	0.030	4	843	0.030	4	843	0.060
09:00 - 10:00	4	843	0.030	4	843	0.030	4	843	0.060
10:00 - 11:00	**4**	**843**	**0.119**	**4**	**843**	**0.119**	**4**	**843**	**0.238**
11:00 - 12:00	4	843	0.089	4	843	0.089	4	843	0.178
12:00 - 13:00	4	843	0.059	4	843	0.059	4	843	0.118
13:00 - 14:00	4	843	0.030	4	843	0.000	4	843	0.030
14:00 - 15:00	4	843	0.089	4	843	0.089	4	843	0.178
15:00 - 16:00	4	843	0.089	4	843	0.119	4	843	0.208
16:00 - 17:00	4	843	0.089	4	843	0.089	4	843	0.178
17:00 - 18:00	4	843	0.000	4	843	0.000	4	843	0.000
18:00 - 19:00	4	843	0.000	4	843	0.000	4	843	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.624			0.624			1.248

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.*



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

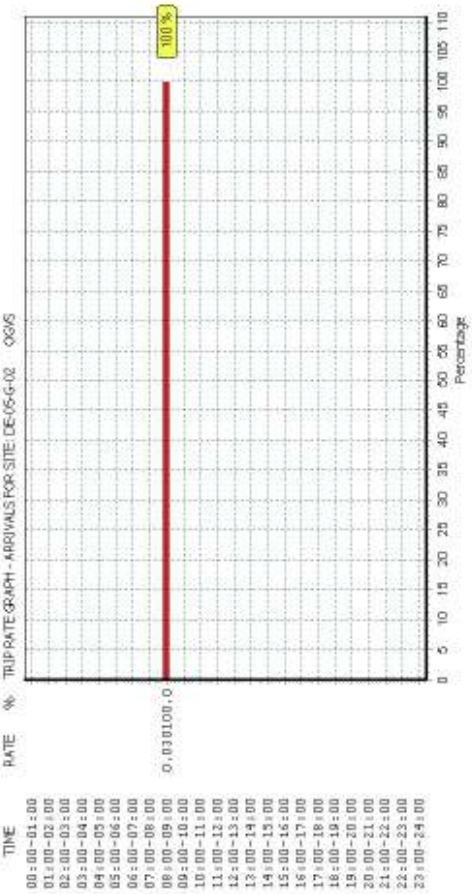
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

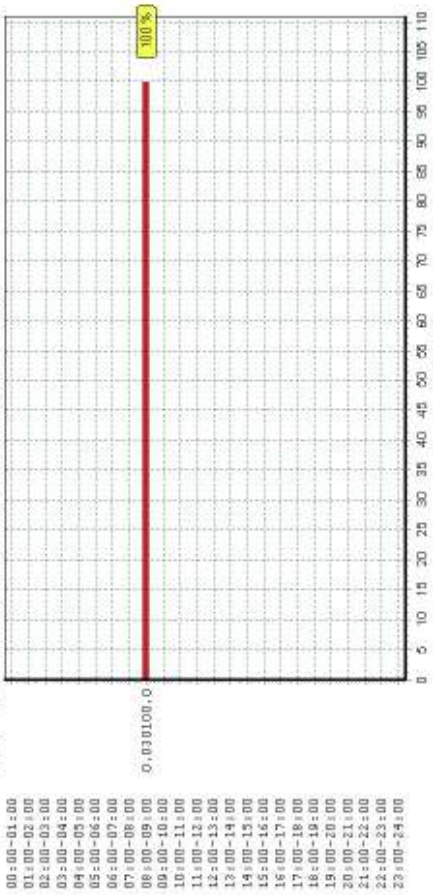
	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	843	0.000	4	843	0.000	4	843	0.000
08:00 - 09:00	**4**	**843**	**0.030**	**4**	**843**	**0.030**	**4**	**843**	**0.060**
09:00 - 10:00	4	843	0.000	4	843	0.000	4	843	0.000
10:00 - 11:00	4	843	0.000	4	843	0.000	4	843	0.000
11:00 - 12:00	4	843	0.000	4	843	0.000	4	843	0.000
12:00 - 13:00	4	843	0.000	4	843	0.000	4	843	0.000
13:00 - 14:00	4	843	0.000	4	843	0.000	4	843	0.000
14:00 - 15:00	4	843	0.000	4	843	0.000	4	843	0.000
15:00 - 16:00	4	843	0.000	4	843	0.000	4	843	0.000
16:00 - 17:00	4	843	0.000	4	843	0.000	4	843	0.000
17:00 - 18:00	4	843	0.000	4	843	0.000	4	843	0.000
18:00 - 19:00	4	843	0.000	4	843	0.000	4	843	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.030			0.030			0.060

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.*



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

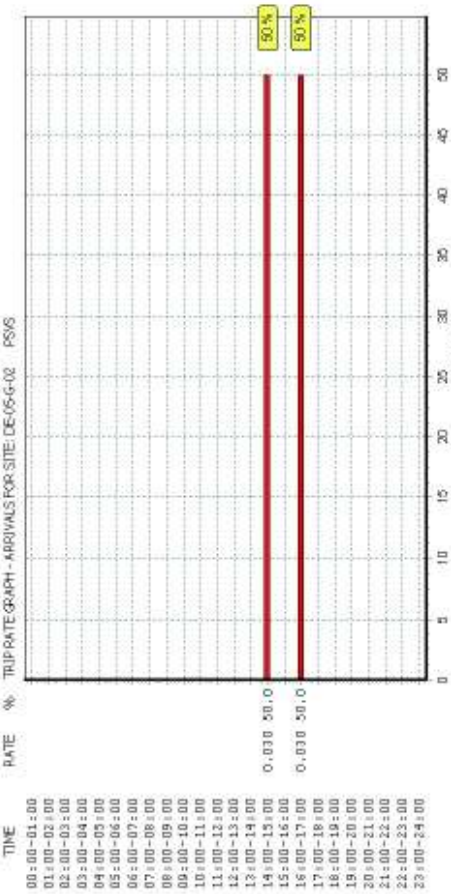
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

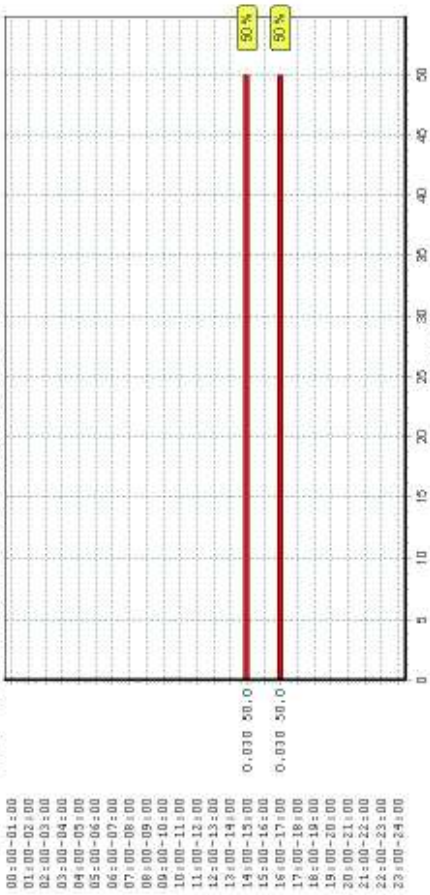
	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	843	0.000	4	843	0.000	4	843	0.000
08:00 - 09:00	4	843	0.000	4	843	0.000	4	843	0.000
09:00 - 10:00	4	843	0.000	4	843	0.000	4	843	0.000
10:00 - 11:00	4	843	0.000	4	843	0.000	4	843	0.000
11:00 - 12:00	4	843	0.000	4	843	0.000	4	843	0.000
12:00 - 13:00	4	843	0.000	4	843	0.000	4	843	0.000
13:00 - 14:00	4	843	0.000	4	843	0.000	4	843	0.000
14:00 - 15:00	**4**	**843**	**0.030**	**4**	**843**	**0.030**	**4**	**843**	**0.060**
15:00 - 16:00	4	843	0.000	4	843	0.000	4	843	0.000
16:00 - 17:00	4	843	0.030	4	843	0.030	4	843	0.060
17:00 - 18:00	4	843	0.000	4	843	0.000	4	843	0.000
18:00 - 19:00	4	843	0.000	4	843	0.000	4	843	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.060			0.060			0.120

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.

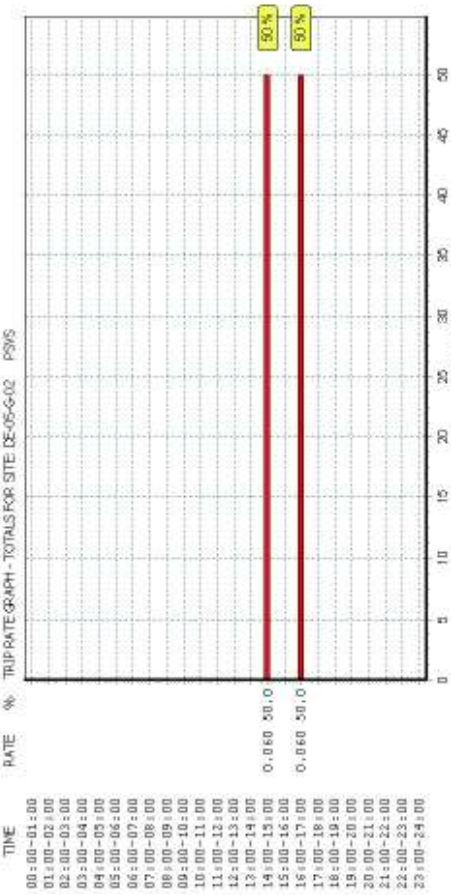
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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.*



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4	843	0.000	4	843	0.000	4	843	0.000
08:00 - 09:00	4	843	0.000	4	843	0.000	4	843	0.000
09:00 - 10:00	4	843	0.030	4	843	0.000	4	843	0.030
10:00 - 11:00	**4**	**843**	**0.059**	**4**	**843**	**0.059**	**4**	**843**	**0.118**
11:00 - 12:00	4	843	0.000	4	843	0.030	4	843	0.030
12:00 - 13:00	4	843	0.000	4	843	0.000	4	843	0.000
13:00 - 14:00	4	843	0.000	4	843	0.000	4	843	0.000
14:00 - 15:00	4	843	0.000	4	843	0.000	4	843	0.000
15:00 - 16:00	4	843	0.000	4	843	0.000	4	843	0.000
16:00 - 17:00	4	843	0.000	4	843	0.000	4	843	0.000
17:00 - 18:00	4	843	0.000	4	843	0.000	4	843	0.000
18:00 - 19:00	4	843	0.000	4	843	0.000	4	843	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.089			0.089			0.178

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.

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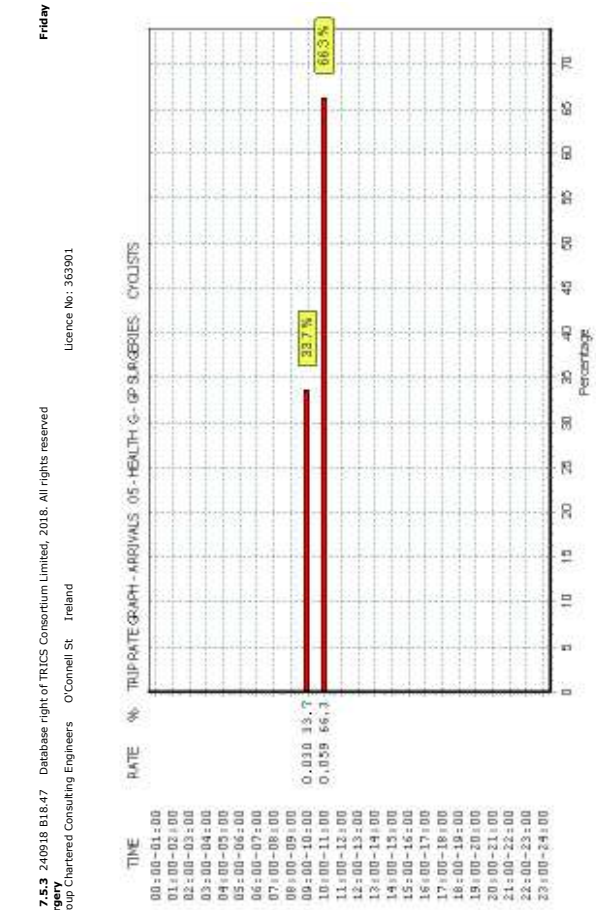

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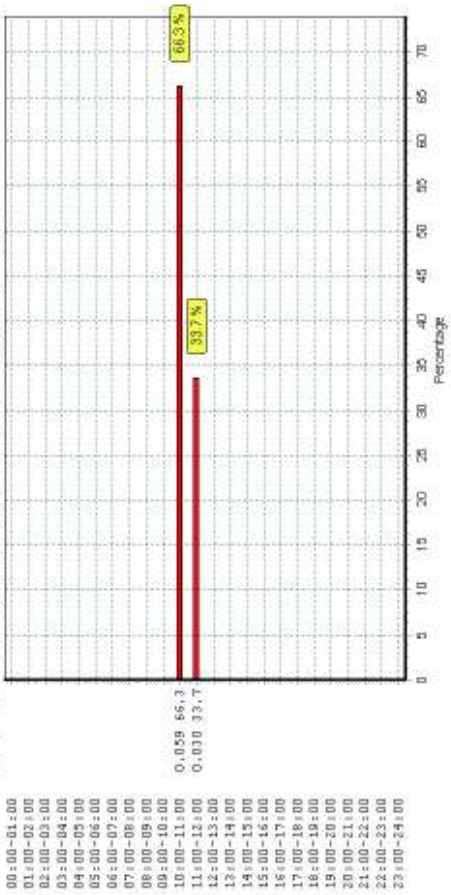
GP Surgery
CST Group Chartered Consulting Engineers O'Connell St Ireland Licence No: 363901

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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Calculation Reference: AUDIT-363901-180928-0934

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : A - HOTELS

VEHICLES

Selected regions and areas:

01	**GREATER LONDON**		
	BE	BEXLEY	1 days
	HD	HILLINGDON	1 days
02	**SOUTH EAST**		
	BU	BUCKINGHAMSHIRE	1 days
04	**EAST ANGLIA**		
	NF	NORFOLK	1 days
12	**CONNAUGHT**		
	CS	SLIGO	1 days

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

Secondary 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: 4607 to 9125 (units: sqm)
Range Selected by User: 4000 to 20000 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 21/03/18

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:

Tuesday	2 days
Wednesday	1 days
Thursday	2 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

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

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:

Residential Zone	2
Built-Up Zone	1
Out of Town	1
No Sub Category	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:

C1	5 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 1 mile:

5,001 to 10,000	2 days
10,001 to 15,000	2 days
15,001 to 20,000	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
100,001 to 125,000	1 days
125,001 to 250,000	3 days

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

Car ownership within 5 miles:

1.1 to 1.5	5 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	5 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	3 days
1b Very poor	1 days
2 Poor	1 days

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

LIST OF SITES relevant to selection parameters

1 **BE-06-A-01** **HOLIDAY INN** **BEXLEY**
SOUTHWOLD ROAD
BEXLEY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 4607 sqm
Survey date: TUESDAY *08/05/12* *Survey Type: MANUAL*

2 **BU-06-A-02** **HOLIDAY INN** **BUCKINGHAMSHIRE**
NEW ROAD
AYLESBURY
WESTON TURVILLE
Edge of Town
Out of Town
Total Gross floor area: 4675 sqm
Survey date: WEDNESDAY *01/10/14* *Survey Type: MANUAL*

3 **CS-06-A-03** **HOTEL** **SLIGO**
STRANDHILL ROAD
SLIGO

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 9125 sqm
Survey date: THURSDAY *31/10/13* *Survey Type: MANUAL*

4 **HD-06-A-02** **NOVOTEL** **HILLINGDON**
CHERRY LANE
WEST DRAYTON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 7592 sqm
Survey date: TUESDAY *15/05/12* *Survey Type: MANUAL*

5 **NF-06-A-02** **HOLIDAY INN** **NORFOLK**
IPSWICH ROAD
NORWICH
HARFORD PARK
Edge of Town
No Sub Category
Total Gross floor area: 5600 sqm
Survey date: THURSDAY *30/09/10* *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 06 - HOTEL, FOOD & DRINK/A - HOTELS

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4607	0.022	1	4607	0.065	1	4607	0.087
07:00 - 08:00	5	6320	0.212	5	6320	0.345	5	6320	0.557
08:00 - 09:00	5	6320	0.231	**5**	**6320**	**0.449**	**5**	**6320**	**0.680**
09:00 - 10:00	5	6320	0.320	5	6320	0.250	5	6320	0.570
10:00 - 11:00	5	6320	0.250	5	6320	0.244	5	6320	0.494
11:00 - 12:00	5	6320	0.215	5	6320	0.272	5	6320	0.487
12:00 - 13:00	5	6320	0.149	5	6320	0.165	5	6320	0.314
13:00 - 14:00	5	6320	0.231	5	6320	0.228	5	6320	0.459
14:00 - 15:00	5	6320	0.244	5	6320	0.231	5	6320	0.475
15:00 - 16:00	5	6320	0.250	5	6320	0.285	5	6320	0.535
16:00 - 17:00	5	6320	0.282	5	6320	0.250	5	6320	0.532
17:00 - 18:00	5	6320	0.351	5	6320	0.218	5	6320	0.569
18:00 - 19:00	**5**	**6320**	**0.367**	5	6320	0.244	5	6320	0.611
19:00 - 20:00	5	6320	0.364	5	6320	0.313	5	6320	0.677
20:00 - 21:00	5	6320	0.222	5	6320	0.225	5	6320	0.447
21:00 - 22:00	5	6320	0.095	5	6320	0.203	5	6320	0.298
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.805			3.987			7.792

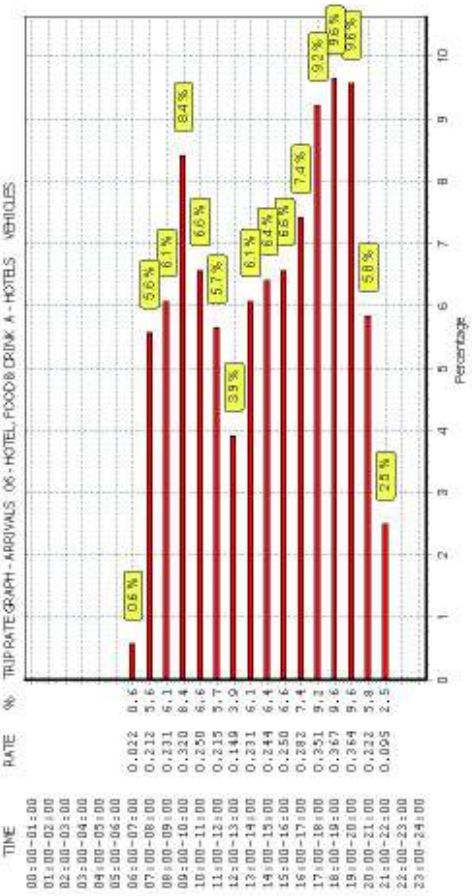
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.*

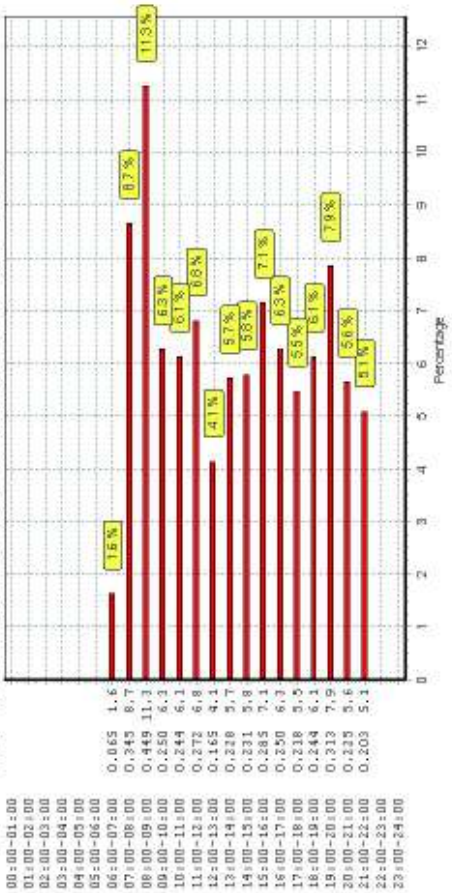
Parameter summary

Trip rate parameter range selected:	4607 - 9125 (units: sqm)
Survey date date range:	01/01/10 - 21/03/18
Number of weekdays (Monday-Friday):	5
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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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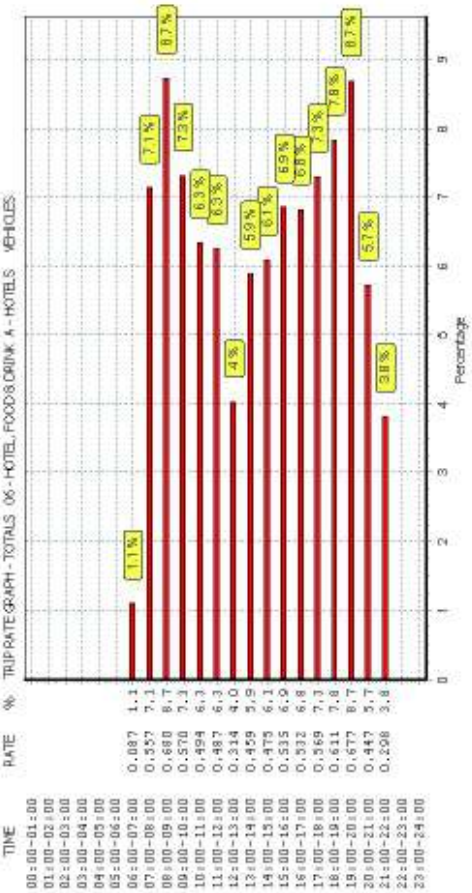

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TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4607	0.000	1	4607	0.000	1	4607	0.000
07:00 - 08:00	5	6320	0.025	5	6320	0.025	5	6320	0.050
08:00 - 09:00	**5**	**6320**	**0.035**	**5**	**6320**	**0.028**	**5**	**6320**	**0.063**
09:00 - 10:00	5	6320	0.013	5	6320	0.016	5	6320	0.029
10:00 - 11:00	5	6320	0.003	5	6320	0.003	5	6320	0.006
11:00 - 12:00	5	6320	0.000	5	6320	0.003	5	6320	0.003
12:00 - 13:00	5	6320	0.003	5	6320	0.003	5	6320	0.006
13:00 - 14:00	5	6320	0.009	5	6320	0.003	5	6320	0.012
14:00 - 15:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
15:00 - 16:00	5	6320	0.009	5	6320	0.009	5	6320	0.018
16:00 - 17:00	5	6320	0.009	5	6320	0.013	5	6320	0.022
17:00 - 18:00	5	6320	0.006	5	6320	0.009	5	6320	0.015
18:00 - 19:00	5	6320	0.019	5	6320	0.013	5	6320	0.032
19:00 - 20:00	5	6320	0.013	5	6320	0.019	5	6320	0.032
20:00 - 21:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
21:00 - 22:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.162			0.162			0.324

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.

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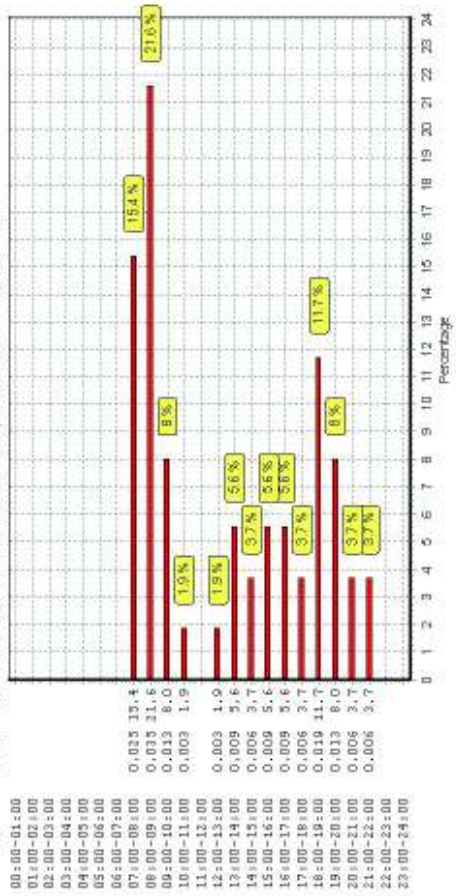

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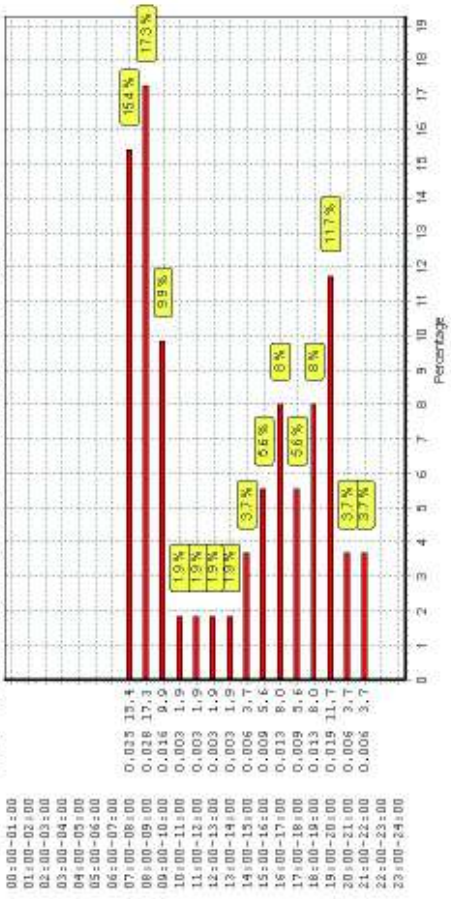

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TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4607	0.000	1	4607	0.000	1	4607	0.000
07:00 - 08:00	5	6320	0.003	5	6320	0.000	5	6320	0.003
08:00 - 09:00	**5**	**6320**	**0.006**	**5**	**6320**	**0.009**	**5**	**6320**	**0.015**
09:00 - 10:00	5	6320	0.000	5	6320	0.003	5	6320	0.003
10:00 - 11:00	5	6320	0.006	5	6320	0.003	5	6320	0.009
11:00 - 12:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
12:00 - 13:00	5	6320	0.003	5	6320	0.003	5	6320	0.006
13:00 - 14:00	5	6320	0.003	5	6320	0.006	5	6320	0.009
14:00 - 15:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
15:00 - 16:00	5	6320	0.003	5	6320	0.000	5	6320	0.003
16:00 - 17:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
17:00 - 18:00	5	6320	0.000	5	6320	0.003	5	6320	0.003
18:00 - 19:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
19:00 - 20:00	5	6320	0.003	5	6320	0.000	5	6320	0.003
20:00 - 21:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
21:00 - 22:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.045			0.045			0.090

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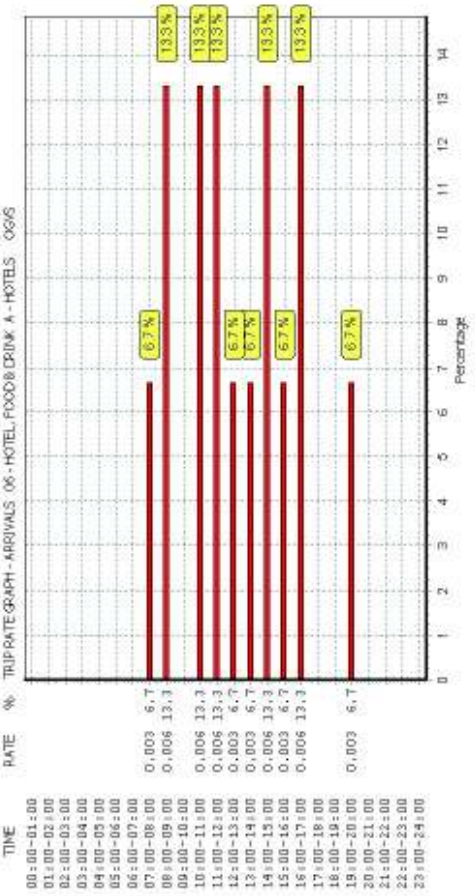

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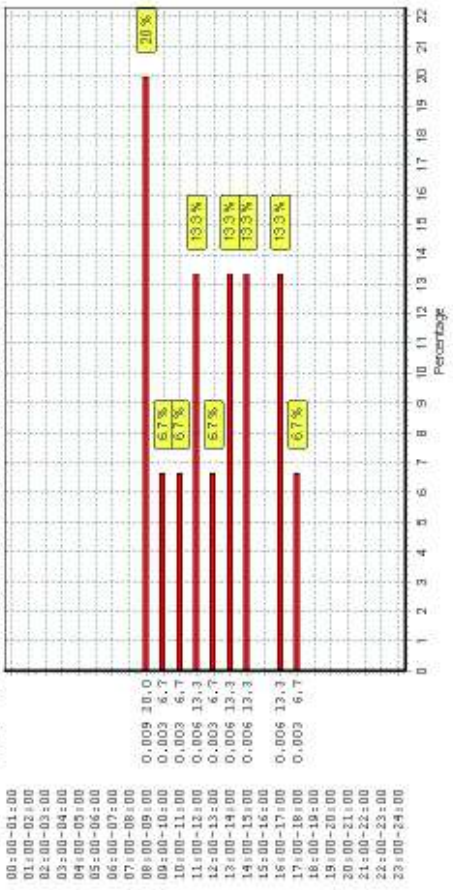

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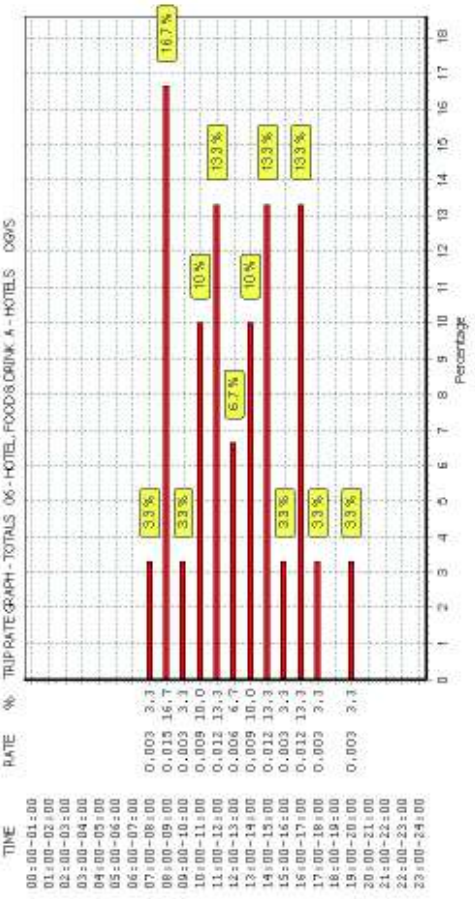

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TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4607	0.000	1	4607	0.000	1	4607	0.000
07:00 - 08:00	**5**	**6320**	**0.006**	**5**	**6320**	**0.006**	**5**	**6320**	**0.012**
08:00 - 09:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
09:00 - 10:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
10:00 - 11:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
11:00 - 12:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
12:00 - 13:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
13:00 - 14:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
14:00 - 15:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
15:00 - 16:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
16:00 - 17:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
17:00 - 18:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
18:00 - 19:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
19:00 - 20:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
20:00 - 21:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
21:00 - 22:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.006			0.006			0.012

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.

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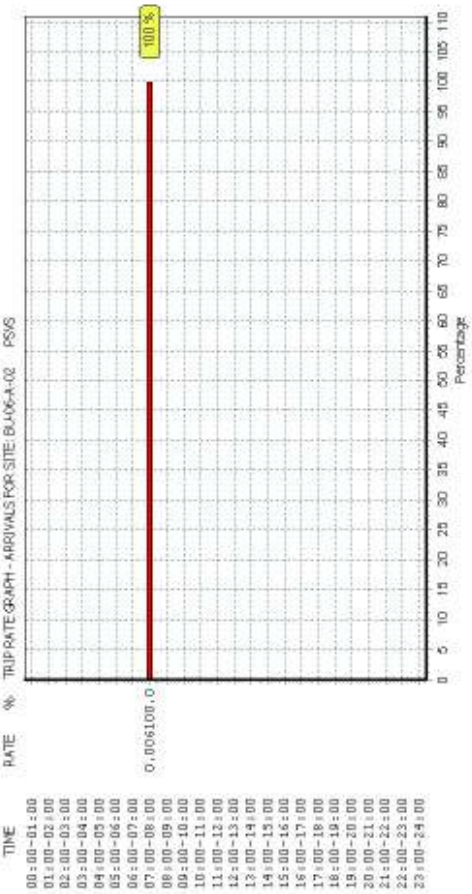
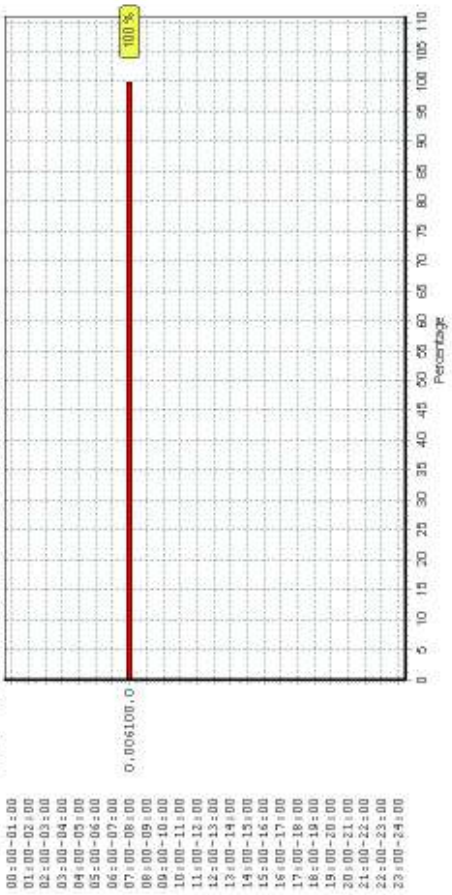


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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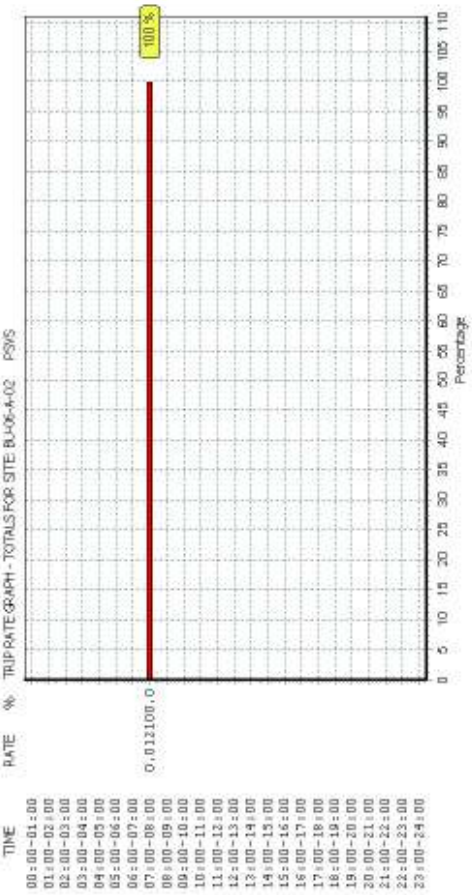

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	4607	0.000	1	4607	0.000	1	4607	0.000
07:00 - 08:00	**5**	**6320**	**0.013**	5	6320	0.000	5	6320	0.013
08:00 - 09:00	5	6320	0.009	5	6320	0.003	5	6320	0.012
09:00 - 10:00	5	6320	0.003	5	6320	0.000	5	6320	0.003
10:00 - 11:00	5	6320	0.003	5	6320	0.009	5	6320	0.012
11:00 - 12:00	5	6320	0.000	5	6320	0.006	5	6320	0.006
12:00 - 13:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
13:00 - 14:00	5	6320	0.006	5	6320	0.000	5	6320	0.006
14:00 - 15:00	5	6320	0.003	**5**	**6320**	**0.022**	**5**	**6320**	**0.025**
15:00 - 16:00	5	6320	0.003	5	6320	0.009	5	6320	0.012
16:00 - 17:00	5	6320	0.006	5	6320	0.006	5	6320	0.012
17:00 - 18:00	5	6320	0.003	5	6320	0.003	5	6320	0.006
18:00 - 19:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
19:00 - 20:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
20:00 - 21:00	5	6320	0.000	5	6320	0.000	5	6320	0.000
21:00 - 22:00	5	6320	0.003	5	6320	0.000	5	6320	0.003
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.052			0.058			0.110

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.

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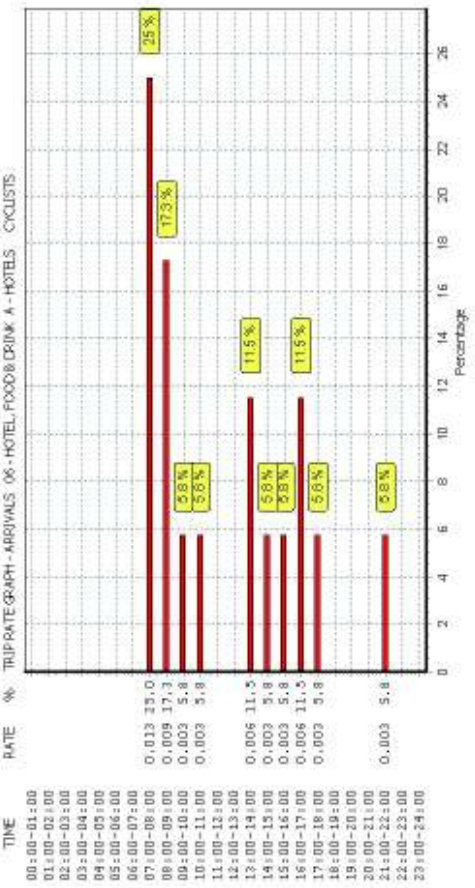

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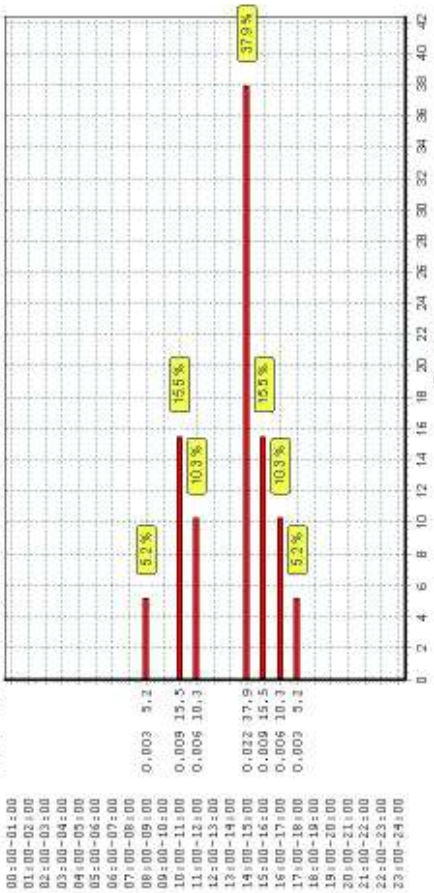

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Calculation Reference: AUDIT-363901-180928-0916

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE

VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	KC	KENT	1 days
	SC	SURREY	1 days
03	**SOUTH WEST**		
	DC	DORSET	1 days
13	**MUNSTER**		
	CR	CORK	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

Secondary 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: 8600 to 39230 (units: sqm)
Range Selected by User: 8500 to 60000 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 26/06/18

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	3 days
Tuesday	1 days
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

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

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:

Commercial Zone	1
Built-Up Zone	2
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:

B1	5 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 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	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
75,001 to 100,000	1 days
125,001 to 250,000	3 days

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

Car ownership within 5 miles:

1.1 to 1.5	3 days
1.6 to 2.0	2 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	3 days
No	2 days

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

PTAL Rating:

No PTAL Present	5 days

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

LIST OF SITES relevant to selection parameters

1 **AN-02-A-04** **OFFICE** **ANTRIM**
CHURCH ROAD
NEWTOWNABBEY
DUNANNEY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 11736 sqm
Survey date: THURSDAY 17/06/10 Survey Type: MANUAL

2 **CR-02-A-01** **STATISTICS OFFICES** **CORK**
MAHON CRESCENT
CORK

Edge of Town
No Sub Category
Total Gross floor area: 8600 sqm
Survey date: MONDAY 23/06/14 Survey Type: MANUAL

3 **DC-02-A-09** **COUNCIL OFFICES** **DORSET**
THE GROVE
DORCHESTER

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 11664 sqm
Survey date: MONDAY 28/11/11 Survey Type: MANUAL

4 **KC-02-A-11** **COUNTY HALL** **KENT**
SANDLING ROAD
MAIDSTONE

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 32793 sqm
Survey date: MONDAY 17/10/11 Survey Type: MANUAL

5 **SC-02-A-16** **BANK OF AMERICA** **SURREY**
STANHOPE ROAD
CAMBERLEY

Edge of Town
Commercial Zone
Total Gross floor area: 39230 sqm
Survey date: TUESDAY 10/05/11 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/A - OFFICE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS 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	5	20805	0.093	5	20805	0.008	5	20805	0.101
07:30 - 08:00	5	20805	0.277	5	20805	0.019	5	20805	0.296
08:00 - 08:30	5	20805	0.395	5	20805	0.020	5	20805	0.415
08:30 - 09:00	5	20805	0.486	5	20805	0.062	5	20805	0.548
09:00 - 09:30	**5**	**20805**	**0.501**	5	20805	0.071	5	20805	0.572
09:30 - 10:00	5	20805	0.301	5	20805	0.084	5	20805	0.385
10:00 - 10:30	5	20805	0.182	5	20805	0.079	5	20805	0.261
10:30 - 11:00	5	20805	0.141	5	20805	0.067	5	20805	0.208
11:00 - 11:30	5	20805	0.133	5	20805	0.109	5	20805	0.242
11:30 - 12:00	5	20805	0.097	5	20805	0.099	5	20805	0.196
12:00 - 12:30	5	20805	0.096	5	20805	0.087	5	20805	0.183
12:30 - 13:00	5	20805	0.105	5	20805	0.150	5	20805	0.255
13:00 - 13:30	5	20805	0.145	5	20805	0.112	5	20805	0.257
13:30 - 14:00	5	20805	0.134	5	20805	0.083	5	20805	0.217
14:00 - 14:30	5	20805	0.124	5	20805	0.098	5	20805	0.222
14:30 - 15:00	5	20805	0.096	5	20805	0.099	5	20805	0.195
15:00 - 15:30	5	20805	0.067	5	20805	0.132	5	20805	0.199
15:30 - 16:00	5	20805	0.072	5	20805	0.187	5	20805	0.259
16:00 - 16:30	5	20805	0.054	5	20805	0.405	5	20805	0.459
16:30 - 17:00	5	20805	0.062	5	20805	0.402	5	20805	0.464
17:00 - 17:30	5	20805	0.039	**5**	**20805**	**0.568**	**5**	**20805**	**0.607**
17:30 - 18:00	5	20805	0.033	5	20805	0.288	5	20805	0.321
18:00 - 18:30	5	20805	0.016	5	20805	0.206	5	20805	0.222
18:30 - 19:00	5	20805	0.003	5	20805	0.097	5	20805	0.100
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:			3.652			3.532			7.184

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.

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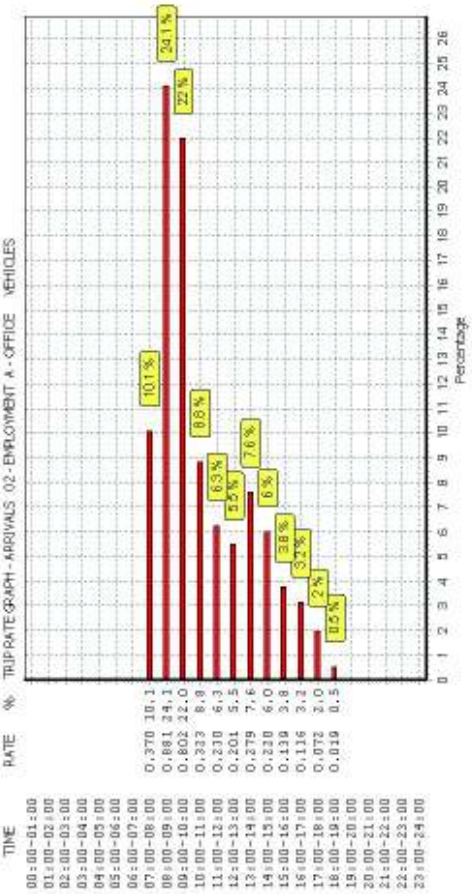
Parameter summary

Trip rate parameter range selected:	8600 - 39230 (units: sqm)
Survey date date range:	01/01/10 - 26/06/18
Number of weekdays (Monday-Friday):	5
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.



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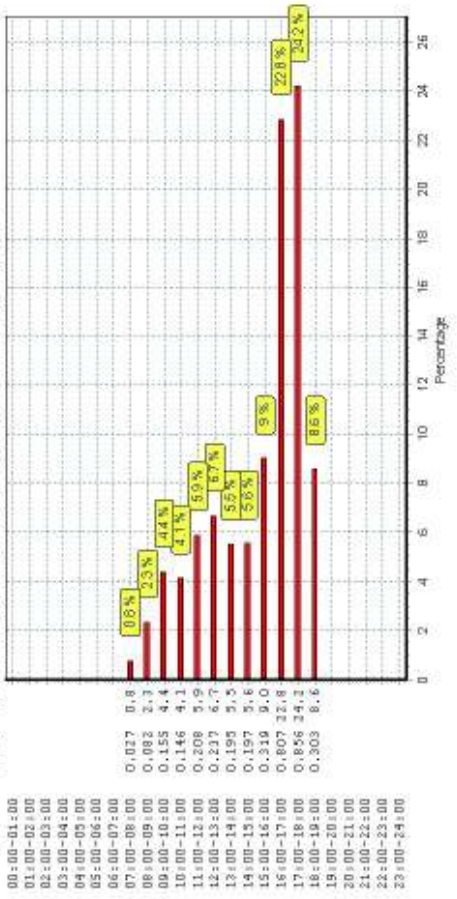

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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS 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	5	20805	0.002	5	20805	0.002	5	20805	0.004
07:30 - 08:00	**5**	**20805**	**0.005**	**5**	**20805**	**0.005**	**5**	**20805**	**0.010**
08:00 - 08:30	5	20805	0.002	5	20805	0.002	5	20805	0.004
08:30 - 09:00	5	20805	0.001	5	20805	0.001	5	20805	0.002
09:00 - 09:30	5	20805	0.005	5	20805	0.005	5	20805	0.010
09:30 - 10:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
10:00 - 10:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
10:30 - 11:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
11:00 - 11:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
11:30 - 12:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
12:00 - 12:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
12:30 - 13:00	5	20805	0.002	5	20805	0.002	5	20805	0.004
13:00 - 13:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
13:30 - 14:00	5	20805	0.002	5	20805	0.002	5	20805	0.004
14:00 - 14:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
14:30 - 15:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
15:00 - 15:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
15:30 - 16:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
16:00 - 16:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
16:30 - 17:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
17:00 - 17:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
17:30 - 18:00	5	20805	0.002	5	20805	0.001	5	20805	0.003
18:00 - 18:30	5	20805	0.001	5	20805	0.002	5	20805	0.003
18:30 - 19:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
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:			0.025			0.025			0.050

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.

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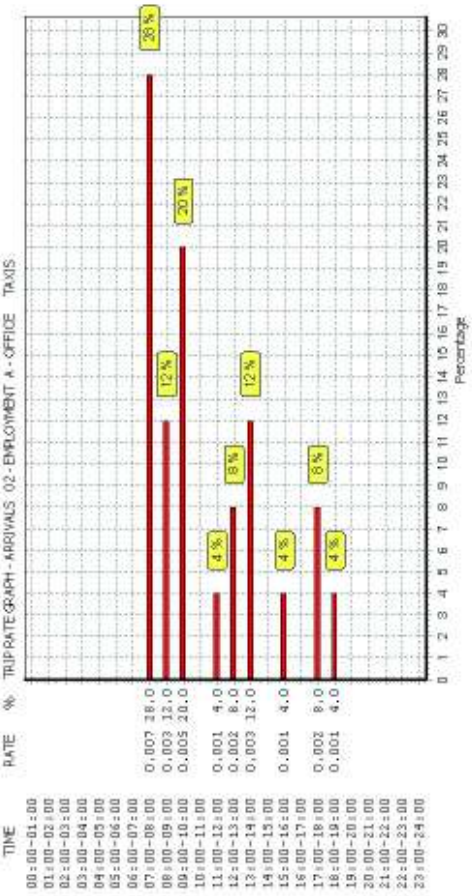
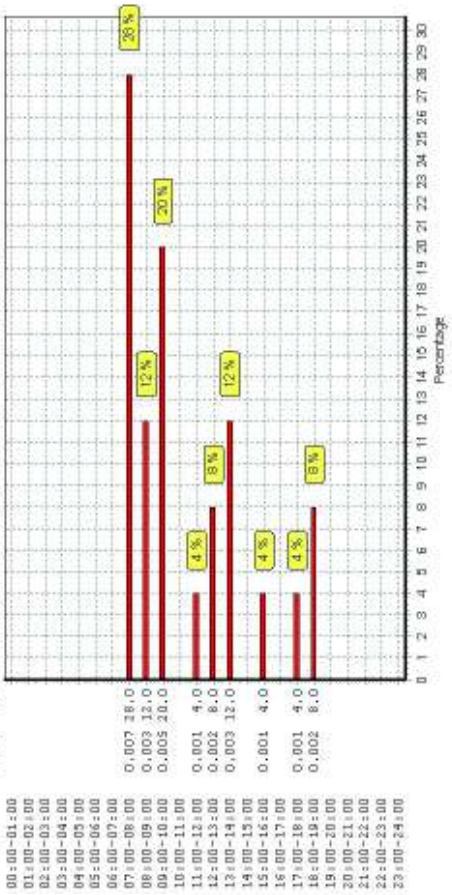


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS 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	5	20805	0.002	5	20805	0.000	5	20805	0.002
07:30 - 08:00	5	20805	0.001	5	20805	0.003	5	20805	0.004
08:00 - 08:30	5	20805	0.003	5	20805	0.003	5	20805	0.006
08:30 - 09:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
09:00 - 09:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
09:30 - 10:00	5	20805	0.002	5	20805	0.001	5	20805	0.003
10:00 - 10:30	**5**	**20805**	**0.005**	**5**	**20805**	**0.004**	**5**	**20805**	**0.009**
10:30 - 11:00	5	20805	0.001	5	20805	0.002	5	20805	0.003
11:00 - 11:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
11:30 - 12:00	5	20805	0.001	5	20805	0.002	5	20805	0.003
12:00 - 12:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
12:30 - 13:00	5	20805	0.001	5	20805	0.000	5	20805	0.001
13:00 - 13:30	5	20805	0.000	5	20805	0.001	5	20805	0.001
13:30 - 14:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
14:00 - 14:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
14:30 - 15:00	5	20805	0.001	5	20805	0.001	5	20805	0.002
15:00 - 15:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
15:30 - 16:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
16:00 - 16:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
16:30 - 17:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
17:00 - 17:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
17:30 - 18:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
18:00 - 18:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
18:30 - 19:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
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:			0.022			0.022			0.044

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.

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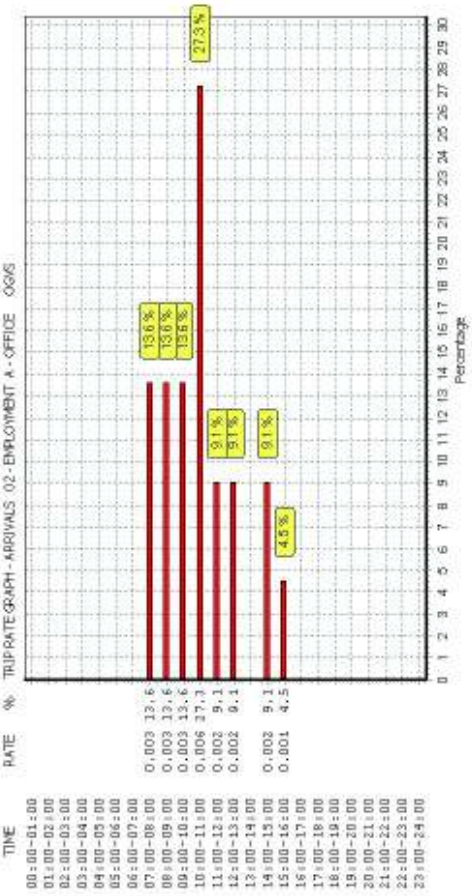

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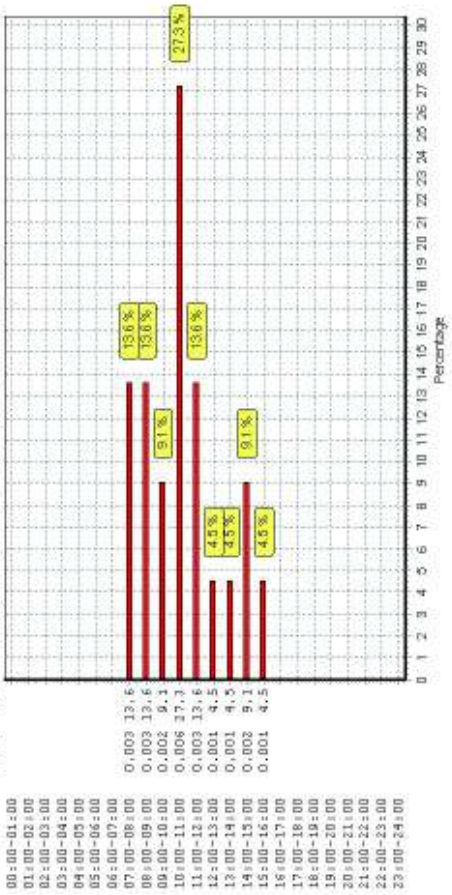

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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS 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	5	20805	0.000	5	20805	0.000	5	20805	0.000
07:30 - 08:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
08:00 - 08:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
08:30 - 09:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
09:00 - 09:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
09:30 - 10:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
10:00 - 10:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
10:30 - 11:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
11:00 - 11:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
11:30 - 12:00	**5**	**20805**	**0.001**	**5**	**20805**	**0.001**	**5**	**20805**	**0.002**
12:00 - 12:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
12:30 - 13:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
13:00 - 13:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
13:30 - 14:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
14:00 - 14:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
14:30 - 15:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
15:00 - 15:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
15:30 - 16:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
16:00 - 16:30	5	20805	0.001	5	20805	0.001	5	20805	0.002
16:30 - 17:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
17:00 - 17:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
17:30 - 18:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
18:00 - 18:30	5	20805	0.000	5	20805	0.000	5	20805	0.000
18:30 - 19:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
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:			0.002			0.002			0.004

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.

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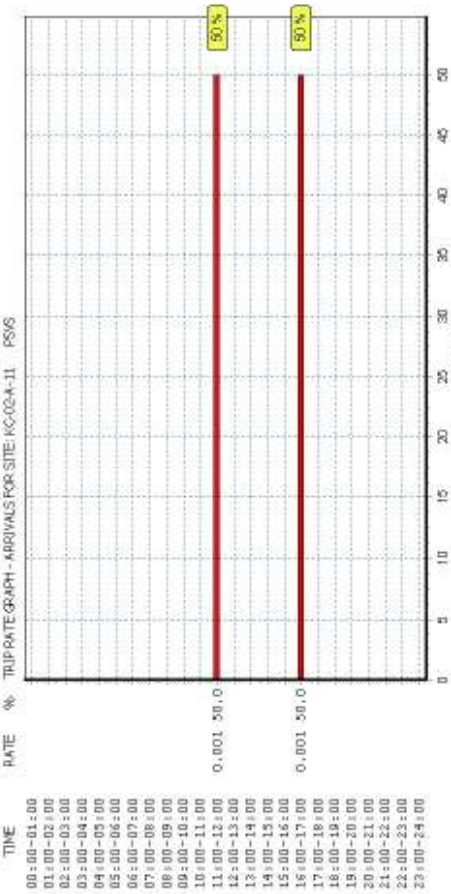

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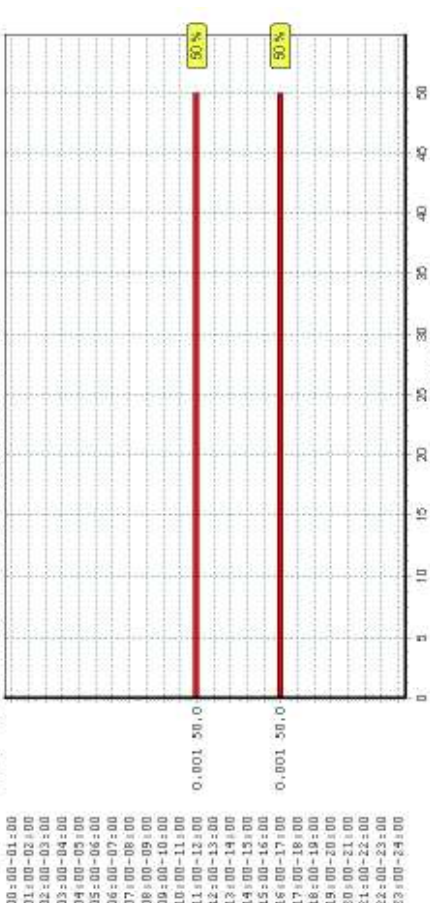
Offices
CST Group Chartered Consulting Engineers O'Connell St Ireland

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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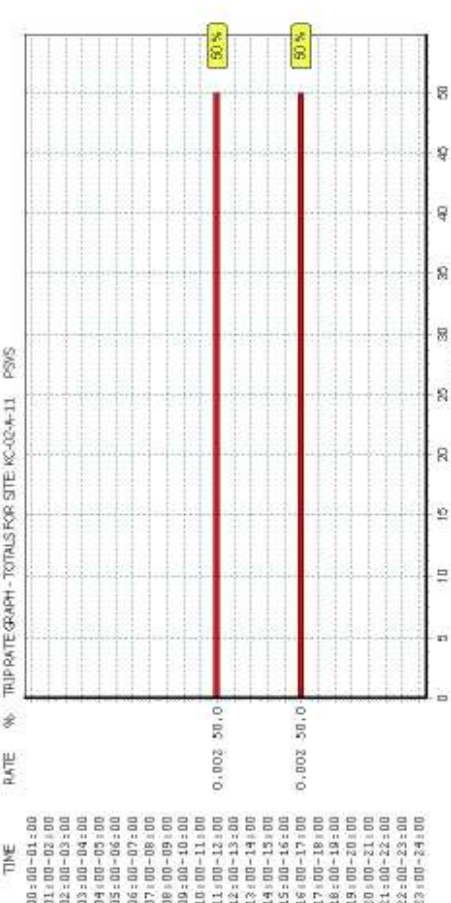

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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. GFA	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. GFA	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. GFA	TOTALS 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	5	20805	0.000	5	20805	0.000	5	20805	0.000
07:30 - 08:00	5	20805	0.003	5	20805	0.002	5	20805	0.005
08:00 - 08:30	5	20805	0.006	5	20805	0.000	5	20805	0.006
08:30 - 09:00	**5**	**20805**	**0.014**	5	20805	0.000	**5**	**20805**	**0.014**
09:00 - 09:30	5	20805	0.010	5	20805	0.000	5	20805	0.010
09:30 - 10:00	5	20805	0.005	5	20805	0.000	5	20805	0.005
10:00 - 10:30	5	20805	0.001	5	20805	0.000	5	20805	0.001
10:30 - 11:00	5	20805	0.002	5	20805	0.000	5	20805	0.002
11:00 - 11:30	5	20805	0.001	5	20805	0.002	5	20805	0.003
11:30 - 12:00	5	20805	0.000	5	20805	0.000	5	20805	0.000
12:00 - 12:30	5	20805	0.000	5	20805	0.001	5	20805	0.001
12:30 - 13:00	5	20805	0.001	5	20805	0.001	5	20805	0.002
13:00 - 13:30	5	20805	0.002	5	20805	0.000	5	20805	0.002
13:30 - 14:00	5	20805	0.002	5	20805	0.002	5	20805	0.004
14:00 - 14:30	5	20805	0.001	5	20805	0.002	5	20805	0.003
14:30 - 15:00	5	20805	0.001	5	20805	0.004	5	20805	0.005
15:00 - 15:30	5	20805	0.001	5	20805	0.002	5	20805	0.003
15:30 - 16:00	5	20805	0.000	5	20805	0.001	5	20805	0.001
16:00 - 16:30	5	20805	0.001	5	20805	0.003	5	20805	0.004
16:30 - 17:00	5	20805	0.001	5	20805	0.007	5	20805	0.008
17:00 - 17:30	5	20805	0.001	**5**	**20805**	**0.012**	5	20805	0.013
17:30 - 18:00	5	20805	0.003	5	20805	0.008	5	20805	0.011
18:00 - 18:30	5	20805	0.001	5	20805	0.004	5	20805	0.005
18:30 - 19:00	5	20805	0.000	5	20805	0.006	5	20805	0.006
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:			0.057			0.057			0.114

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.

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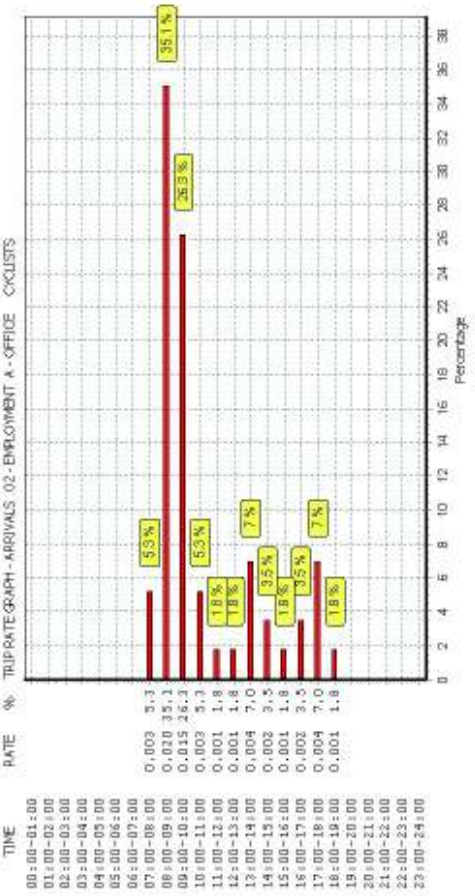

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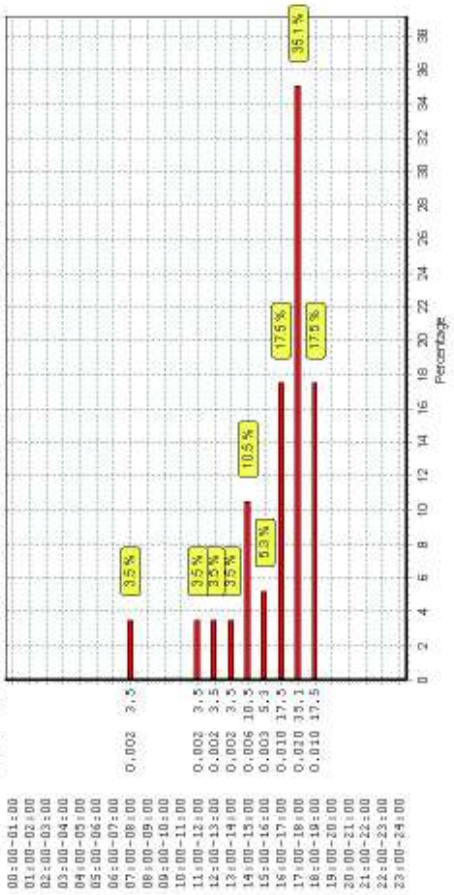

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APPENDIX D1

JUNCTION ANALYSIS OUTPUTS

JOYCE'S ROAD AND TUAM ROAD EXISTING PRIORITY CONTROLLED T-JUNCTION (PICADY)

PICADY

GUI Version: 5.1 AD
Analysis Program Release: 4.0 (SEPT 2008)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	I:\..\PICADY\118241 Existing Tuam Rd_Joyce Rd T-Junction 2018 10 04 jn.vpi
Date Run	19 October 2018
Time Run	12:15:36
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Tuam Road East	100
Arm B	Joyce Road	100
Arm C	Tuam Road West	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	Tuam Road/Joyce Road T-junction
Location	Crown Square, Galway
Date	19 October 2018
Enumerator	J Noone
Job Number	183106
Status	TIA
Client	Crown Square Developments Ltd
Description	-

Geometric Data

Geometric Parameters

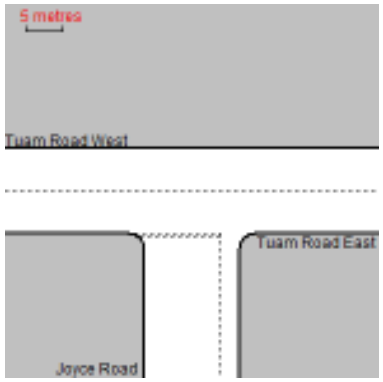
Parameter	Minor Arm B
Major Road Carriageway Width (m)	9.00
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	10.00
Minor Road Width 5m Back from Junction (m)	9.00
Minor Road Width 10m Back from Junction (m)	6.80
Minor Road Width 15m Back from Junction (m)	6.80
Minor Road Width 20m Back from Junction (m)	6.50
Minor Road Derived Flare Length (PCU)	3.000
Minor Road Visibility To Right (m)	20
Minor Road Visibility To Left (m)	20
Major Road Right Turn Visibility (m)	90
Major Road Right Turn Blocks Traffic	Yes

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	0.000	0.000	0.000	0.000	0.000
B-C	0.000	0.000	0.000	-	-
C-B	626.083	0.211	0.211	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:30-09:00	90	15
Second Modelling Period	14:15-15:45	90	15

ODTAB Turning Counts

Demand Set: 2018 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	139.0	658.0
Arm B	82.0	0.0	201.0
Arm C	655.0	148.0	0.0

Demand Set: 2018 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	153.0	595.0
Arm B	112.0	0.0	140.0
Arm C	662.0	130.0	0.0

Demand Set: 2022 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	144.0	681.0
Arm B	86.0	0.0	208.0
Arm C	678.0	153.0	0.0

Demand Set: 2022 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	158.0	615.0
Arm B	116.0	0.0	145.0
Arm C	685.0	135.0	0.0

Demand Set: 2027 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	151.0	711.0
Arm B	90.0	0.0	217.0
Arm C	708.0	160.0	0.0

Demand Set: 2027 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	166.0	642.0
Arm B	121.0	0.0	151.0
Arm C	716.0	141.0	0.0

Demand Set: 2037 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	159.0	736.0
Arm B	95.0	0.0	224.0
Arm C	733.0	166.0	0.0

Demand Set: 2037 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	174.0	665.0
Arm B	126.0	0.0	157.0
Arm C	742.0	145.0	0.0

ODTAB Synthesised Flows

Demand Set: 2018 AM without Dev
Modelling Period: 07:30-09:00

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	07:45	9.962	08:15	14.944	08:45	9.962
Arm B	07:45	3.537	08:15	5.306	08:45	3.537
Arm C	07:45	10.038	08:15	15.056	08:45	10.038

Heavy Vehicles Percentages

Demand Set: 2018 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2018 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2022 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2022 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2027 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2027 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2037 AM without Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2037 PM without Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

Queues & Delays

Demand Set: 2018 AM without Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	1.03	4.15	0.248	-	0.00	0.32	-	4.5	0.32
	B-C	2.52	8.59	0.294	-	0.00	0.41	-	5.8	0.16
	C-AB	1.86	7.38	0.252	-	0.00	0.35	-	5.2	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.74	-	-	-	-	-	-	-	-
	A-C	8.26	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	1.23	3.50	0.351	-	0.32	0.52	-	7.3	0.44
	B-C	3.01	7.91	0.381	-	0.41	0.60	-	8.7	0.20
	C-AB	2.22	6.97	0.318	-	0.35	0.52	-	7.8	0.21
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.08	-	-	-	-	-	-	-	-
	A-C	9.86	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	1.50	2.54	0.593	-	0.52	1.28	-	16.5	0.88
	B-C	3.69	6.78	0.544	-	0.60	1.14	-	15.9	0.32
	C-AB	2.72	6.40	0.424	-	0.52	0.93	-	13.7	0.27
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.55	-	-	-	-	-	-	-	-
	A-C	12.07	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	1.50	2.52	0.596	-	1.28	1.37	-	20.0	0.96
	B-C	3.69	6.69	0.551	-	1.14	1.19	-	17.6	0.33
	C-AB	2.72	6.40	0.424	-	0.93	0.96	-	14.7	0.27
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.55	-	-	-	-	-	-	-	-
	A-C	12.07	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	1.23	3.49	0.352	-	1.37	0.57	-	9.5	0.46
	B-C	3.01	7.86	0.383	-	1.19	0.63	-	10.1	0.21
	C-AB	2.22	6.97	0.318	-	0.96	0.55	-	8.4	0.21
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.08	-	-	-	-	-	-	-	-
	A-C	9.86	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	1.03	4.14	0.249	-	0.57	0.34	-	5.4	0.32
	B-C	2.52	8.56	0.294	-	0.63	0.42	-	6.6	0.17
	C-AB	1.86	7.38	0.252	-	0.55	0.37	-	5.6	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.74	-	-	-	-	-	-	-	-
	A-C	8.26	-	-	-	-	-	-	-	-

Demand Set: 2018 PM without Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.41	4.62	0.304	-	0.00	0.42	-	5.9	0.31
	B-C	1.76	8.17	0.215	-	0.00	0.27	-	3.9	0.16
	C-AB	1.63	7.51	0.217	-	0.00	0.29	-	4.2	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.92	-	-	-	-	-	-	-	-
	A-C	7.47	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.68	3.97	0.423	-	0.42	0.70	-	9.8	0.43
	B-C	2.10	7.50	0.280	-	0.27	0.38	-	5.5	0.18
	C-AB	1.95	7.12	0.273	-	0.29	0.41	-	6.1	0.19
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.29	-	-	-	-	-	-	-	-
	A-C	8.91	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.06	3.05	0.673	-	0.70	1.75	-	22.3	0.88
	B-C	2.57	6.05	0.425	-	0.38	0.72	-	10.1	0.28
	C-AB	2.39	6.59	0.362	-	0.41	0.68	-	10.0	0.24
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.81	-	-	-	-	-	-	-	-
	A-C	10.92	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.06	3.05	0.675	-	1.75	1.89	-	27.5	0.98
	B-C	2.57	5.90	0.436	-	0.72	0.75	-	11.1	0.30
	C-AB	2.39	6.59	0.362	-	0.68	0.69	-	10.5	0.24
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.81	-	-	-	-	-	-	-	-
	A-C	10.92	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.68	3.96	0.424	-	1.89	0.77	-	13.1	0.47
	B-C	2.10	7.43	0.282	-	0.75	0.40	-	6.3	0.19
	C-AB	1.95	7.12	0.273	-	0.69	0.43	-	6.5	0.19
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.29	-	-	-	-	-	-	-	-
	A-C	8.91	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.41	4.61	0.305	-	0.77	0.45	-	7.2	0.32
	B-C	1.76	8.14	0.216	-	0.40	0.28	-	4.3	0.16
	C-AB	1.63	7.51	0.217	-	0.43	0.30	-	4.5	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.92	-	-	-	-	-	-	-	-
	A-C	7.47	-	-	-	-	-	-	-	-

Demand Set: 2022 AM without Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	1.08	4.04	0.267	-	0.00	0.35	-	4.9	0.33
	B-C	2.61	8.46	0.309	-	0.00	0.44	-	6.3	0.17
	C-AB	1.92	7.30	0.263	-	0.00	0.38	-	5.5	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.81	-	-	-	-	-	-	-	-
	A-C	8.54	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	1.29	3.37	0.383	-	0.35	0.59	-	8.2	0.47
	B-C	3.12	7.73	0.403	-	0.44	0.66	-	9.5	0.22
	C-AB	2.29	6.88	0.333	-	0.38	0.56	-	8.4	0.22
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.16	-	-	-	-	-	-	-	-
	A-C	10.20	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	1.58	2.34	0.673	-	0.59	1.69	-	21.0	1.11
	B-C	3.82	6.36	0.600	-	0.66	1.41	-	19.3	0.38
	C-AB	2.81	6.29	0.446	-	0.56	1.05	-	15.4	0.28
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.64	-	-	-	-	-	-	-	-
	A-C	12.50	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	1.58	2.32	0.680	-	1.69	1.88	-	27.0	1.28
	B-C	3.82	6.18	0.618	-	1.41	1.54	-	22.5	0.42
	C-AB	2.81	6.29	0.446	-	1.05	1.09	-	16.7	0.29
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.64	-	-	-	-	-	-	-	-
	A-C	12.50	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	1.29	3.33	0.387	-	1.88	0.66	-	11.5	0.53
	B-C	3.12	7.70	0.404	-	1.54	0.70	-	11.2	0.22
	C-AB	2.29	6.88	0.333	-	1.09	0.60	-	9.2	0.22
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.16	-	-	-	-	-	-	-	-
	A-C	10.20	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	1.08	4.03	0.268	-	0.66	0.38	-	6.0	0.34
	B-C	2.61	8.43	0.310	-	0.70	0.46	-	7.1	0.17
	C-AB	1.92	7.30	0.263	-	0.60	0.39	-	6.0	0.19
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.81	-	-	-	-	-	-	-	-
	A-C	8.54	-	-	-	-	-	-	-	-

Demand Set: 2022 PM without Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.46	4.50	0.323	-	0.00	0.46	-	6.4	0.32
	B-C	1.82	8.06	0.226	-	0.00	0.29	-	4.1	0.16
	C-AB	1.69	7.44	0.228	-	0.00	0.31	-	4.5	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.98	-	-	-	-	-	-	-	-
	A-C	7.72	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.74	3.83	0.454	-	0.46	0.79	-	10.9	0.47
	B-C	2.17	7.34	0.296	-	0.29	0.41	-	6.0	0.19
	C-AB	2.02	7.04	0.287	-	0.31	0.44	-	6.6	0.20
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.37	-	-	-	-	-	-	-	-
	A-C	9.21	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.13	2.88	0.740	-	0.79	2.24	-	27.5	1.08
	B-C	2.66	5.53	0.481	-	0.41	0.89	-	12.3	0.34
	C-AB	2.48	6.49	0.381	-	0.44	0.76	-	11.2	0.25
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.90	-	-	-	-	-	-	-	-
	A-C	11.29	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.13	2.86	0.743	-	2.24	2.50	-	35.9	1.27
	B-C	2.66	5.24	0.507	-	0.89	0.99	-	14.4	0.38
	C-AB	2.48	6.49	0.381	-	0.76	0.77	-	11.8	0.25
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.90	-	-	-	-	-	-	-	-
	A-C	11.29	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.74	3.82	0.455	-	2.50	0.88	-	15.5	0.53
	B-C	2.17	7.23	0.301	-	0.99	0.44	-	7.0	0.20
	C-AB	2.02	7.04	0.287	-	0.77	0.46	-	7.1	0.20
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.37	-	-	-	-	-	-	-	-
	A-C	9.21	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.46	4.49	0.324	-	0.88	0.49	-	7.9	0.33
	B-C	1.82	8.03	0.227	-	0.44	0.30	-	4.6	0.16
	C-AB	1.69	7.44	0.228	-	0.46	0.32	-	4.8	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.98	-	-	-	-	-	-	-	-
	A-C	7.72	-	-	-	-	-	-	-	-

Demand Set: 2027 AM without Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	1.13	3.89	0.291	-	0.00	0.40	-	5.5	0.36
	B-C	2.72	8.30	0.328	-	0.00	0.48	-	6.8	0.18
	C-AB	2.01	7.20	0.279	-	0.00	0.41	-	6.1	0.19
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.89	-	-	-	-	-	-	-	-
	A-C	8.92	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	1.35	3.19	0.423	-	0.40	0.69	-	9.6	0.53
	B-C	3.25	7.51	0.433	-	0.48	0.74	-	10.6	0.23
	C-AB	2.40	6.76	0.355	-	0.41	0.64	-	9.5	0.23
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.26	-	-	-	-	-	-	-	-
	A-C	10.65	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	1.65	2.07	0.799	-	0.69	2.58	-	29.7	1.59
	B-C	3.98	5.58	0.714	-	0.74	2.21	-	28.5	0.56
	C-AB	2.94	6.15	0.477	-	0.64	1.25	-	18.3	0.31
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.77	-	-	-	-	-	-	-	-
	A-C	13.05	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	1.65	2.01	0.821	-	2.58	3.23	-	44.2	2.16
	B-C	3.98	4.99	0.797	-	2.21	3.23	-	43.1	0.86
	C-AB	2.94	6.15	0.477	-	1.25	1.30	-	20.1	0.31
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.77	-	-	-	-	-	-	-	-
	A-C	13.05	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	1.35	3.13	0.431	-	3.23	0.81	-	15.9	0.67
	B-C	3.25	7.40	0.439	-	3.23	0.81	-	14.0	0.26
	C-AB	2.40	6.76	0.355	-	1.30	0.68	-	10.5	0.23
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.26	-	-	-	-	-	-	-	-
	A-C	10.65	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	1.13	3.87	0.291	-	0.81	0.42	-	6.9	0.37
	B-C	2.72	8.27	0.329	-	0.81	0.50	-	7.8	0.18
	C-AB	2.01	7.20	0.279	-	0.68	0.43	-	6.6	0.19
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.89	-	-	-	-	-	-	-	-
	A-C	8.92	-	-	-	-	-	-	-	-

Demand Set: 2027 PM without Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.52	4.35	0.349	-	0.00	0.52	-	7.1	0.34
	B-C	1.89	7.92	0.239	-	0.00	0.31	-	4.4	0.16
	C-AB	1.77	7.35	0.241	-	0.00	0.33	-	4.9	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.08	-	-	-	-	-	-	-	-
	A-C	8.06	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.81	3.64	0.498	-	0.52	0.93	-	12.7	0.53
	B-C	2.26	7.11	0.318	-	0.31	0.46	-	6.6	0.21
	C-AB	2.11	6.93	0.305	-	0.33	0.49	-	7.3	0.21
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.49	-	-	-	-	-	-	-	-
	A-C	9.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.22	2.63	0.844	-	0.93	3.28	-	37.4	1.48
	B-C	2.77	4.53	0.612	-	0.46	1.45	-	19.0	0.53
	C-AB	2.59	6.36	0.407	-	0.49	0.87	-	12.8	0.26
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.05	-	-	-	-	-	-	-	-
	A-C	11.78	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.22	2.61	**0.852**	-	3.28	4.00	-	55.3	1.98
	B-C	2.77	3.77	0.734	-	1.45	2.33	-	30.7	0.89
	C-AB	2.59	6.36	0.407	-	0.87	0.90	-	13.7	0.27
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.05	-	-	-	-	-	-	-	-
	A-C	11.78	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.81	3.63	0.500	-	4.00	1.07	-	21.3	0.68
	B-C	2.26	6.86	0.330	-	2.33	0.50	-	8.6	0.23
	C-AB	2.11	6.93	0.305	-	0.90	0.51	-	7.9	0.21
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.49	-	-	-	-	-	-	-	-
	A-C	9.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.52	4.34	0.350	-	1.07	0.56	-	9.0	0.36
	B-C	1.89	7.87	0.241	-	0.50	0.32	-	5.0	0.17
	C-AB	1.77	7.35	0.241	-	0.51	0.35	-	5.2	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.08	-	-	-	-	-	-	-	-
	A-C	8.06	-	-	-	-	-	-	-	-

Demand Set: 2037 AM without Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	1.19	3.76	0.317	-	0.00	0.45	-	6.1	0.38
	B-C	2.81	8.15	0.345	-	0.00	0.52	-	7.3	0.18
	C-AB	2.08	7.12	0.293	-	0.00	0.45	-	6.6	0.20
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.00	-	-	-	-	-	-	-	-
	A-C	9.23	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	1.42	3.00	0.474	-	0.45	0.84	-	11.4	0.61
	B-C	3.36	7.34	0.457	-	0.52	0.82	-	11.6	0.25
	C-AB	2.49	6.66	0.374	-	0.45	0.71	-	10.5	0.24
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.38	-	-	-	-	-	-	-	-
	A-C	11.03	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	1.74	1.80	**0.969**	-	0.84	4.41	-	45.2	2.48
	B-C	4.11	4.16	**0.987**	-	0.82	7.09	-	71.2	1.53
	C-AB	3.05	6.02	0.506	-	0.71	1.46	-	21.4	0.33
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.92	-	-	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	1.74	1.78	**0.977**	-	4.41	6.22	-	80.6	3.72
	B-C	4.11	4.02	**1.024**	-	7.09	11.34	-	139.9	2.70
	C-AB	3.05	6.02	0.506	-	1.46	1.53	-	23.9	0.34
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.92	-	-	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	1.42	2.90	0.492	-	6.22	1.07	-	29.6	1.08
	B-C	3.36	6.95	0.483	-	11.34	0.97	-	33.2	0.43
	C-AB	2.49	6.66	0.374	-	1.53	0.76	-	11.8	0.25
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.38	-	-	-	-	-	-	-	-
	A-C	11.03	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	1.19	3.75	0.318	-	1.07	0.48	-	7.9	0.40
	B-C	2.81	8.10	0.347	-	0.97	0.54	-	8.5	0.19
	C-AB	2.08	7.12	0.293	-	0.76	0.47	-	7.2	0.20
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.00	-	-	-	-	-	-	-	-
	A-C	9.23	-	-	-	-	-	-	-	-

Demand Set: 2037 PM without Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.58	4.22	0.374	-	0.00	0.58	-	7.9	0.37
	B-C	1.97	7.78	0.253	-	0.00	0.33	-	4.8	0.17
	C-AB	1.82	7.27	0.250	-	0.00	0.35	-	5.2	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.18	-	-	-	-	-	-	-	-
	A-C	8.34	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.89	3.49	0.541	-	0.58	1.09	-	14.7	0.60
	B-C	2.35	6.87	0.342	-	0.33	0.51	-	7.3	0.22
	C-AB	2.17	6.83	0.318	-	0.35	0.53	-	7.9	0.21
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.61	-	-	-	-	-	-	-	-
	A-C	9.96	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.31	2.41	**0.958**	-	1.09	4.91	-	51.5	2.06
	B-C	2.88	3.09	**0.931**	-	0.51	4.85	-	50.4	1.54
	C-AB	2.66	6.24	0.426	-	0.53	0.98	-	14.3	0.28
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.19	-	-	-	-	-	-	-	-
	A-C	12.20	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.31	2.40	**0.964**	-	4.91	6.76	-	88.5	3.07
	B-C	2.88	2.91	**0.989**	-	4.85	7.70	-	95.8	2.66
	C-AB	2.66	6.24	0.426	-	0.98	1.01	-	15.4	0.28
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.19	-	-	-	-	-	-	-	-
	A-C	12.20	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.89	3.45	0.548	-	6.76	1.34	-	34.7	1.01
	B-C	2.35	6.33	0.372	-	7.70	0.61	-	17.4	0.32
	C-AB	2.17	6.83	0.318	-	1.01	0.56	-	8.6	0.22
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.61	-	-	-	-	-	-	-	-
	A-C	9.96	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.58	4.21	0.375	-	1.34	0.62	-	10.2	0.39
	B-C	1.97	7.72	0.255	-	0.61	0.35	-	5.4	0.17
	C-AB	1.82	7.27	0.250	-	0.56	0.37	-	5.6	0.18
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.18	-	-	-	-	-	-	-	-
	A-C	8.34	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: 2018 AM without Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	112.9	75.2	63.1	0.6	63.1	0.6
B-C	276.7	184.4	64.6	0.2	64.7	0.2
C-AB	203.7	135.8	55.3	0.3	55.3	0.3
C-A	-	-	-	-	-	-
A-B	191.3	127.5	-	-	-	-
A-C	905.7	603.8	-	-	-	-
All	**2591.8**	**1727.9**	**183.0**	**0.1**	**183.1**	**0.1**

Demand Set: 2018 PM without Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	154.2	102.8	85.8	0.6	85.8	0.6
B-C	192.7	128.5	41.2	0.2	41.2	0.2
C-AB	178.9	119.3	41.8	0.2	41.8	0.2
C-A	-	-	-	-	-	-
A-B	210.6	140.4	-	-	-	-
A-C	819.0	546.0	-	-	-	-
All	**2466.6**	**1644.4**	**168.8**	**0.1**	**168.9**	**0.1**

Demand Set: 2022 AM without Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	118.4	78.9	78.6	0.7	78.6	0.7
B-C	286.3	190.9	75.8	0.3	75.8	0.3
C-AB	210.6	140.4	61.2	0.3	61.2	0.3
C-A	-	-	-	-	-	-
A-B	198.2	132.1	-	-	-	-
A-C	937.3	624.9	-	-	-	-
All	**2684.0**	**1789.4**	**215.6**	**0.1**	**215.6**	**0.1**

Demand Set: 2022 PM without Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	159.7	106.4	104.2	0.7	104.2	0.7
B-C	199.6	133.1	48.4	0.2	48.4	0.2
C-AB	185.8	123.9	45.9	0.2	45.9	0.2
C-A	-	-	-	-	-	-
A-B	217.5	145.0	-	-	-	-
A-C	846.5	564.3	-	-	-	-
All	**2551.9**	**1701.3**	**198.5**	**0.1**	**198.5**	**0.1**

Demand Set: 2027 AM without Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	123.9	82.6	111.6	0.9	111.7	0.9
B-C	298.7	199.1	110.9	0.4	110.9	0.4
C-AB	220.2	146.8	71.0	0.3	71.0	0.3
C-A	-	-	-	-	-	-
A-B	207.8	138.6	-	-	-	-
A-C	978.6	652.4	-	-	-	-
All	**2803.8**	**1869.2**	**293.5**	**0.1**	**293.6**	**0.1**

Demand Set: 2027 PM without Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	166.5	111.0	142.9	0.9	142.9	0.9
B-C	207.8	138.6	74.4	0.4	74.4	0.4
C-AB	194.1	129.4	51.9	0.3	51.9	0.3
C-A	-	-	-	-	-	-
A-B	228.5	152.3	-	-	-	-
A-C	883.7	589.1	-	-	-	-
All	**2666.1**	**1777.4**	**269.1**	**0.1**	**269.2**	**0.1**

Demand Set: 2037 AM without Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	130.8	87.2	180.9	1.4	180.9	1.4
B-C	308.3	205.5	271.8	0.9	271.8	0.9
C-AB	228.5	152.3	81.3	0.4	81.3	0.4
C-A	-	-	-	-	-	-
A-B	218.9	145.9	-	-	-	-
A-C	1013.0	675.4	-	-	-	-
All	**2908.4**	**1938.9**	**533.9**	**0.2**	**534.0**	**0.2**

Demand Set: 2037 PM without Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	173.4	115.6	207.5	1.2	207.6	1.2
B-C	216.1	144.1	181.1	0.8	181.2	0.8
C-AB	199.6	133.1	57.0	0.3	57.0	0.3
C-A	-	-	-	-	-	-
A-B	239.5	159.7	-	-	-	-
A-C	915.3	610.2	-	-	-	-
All	**2765.2**	**1843.5**	**445.6**	**0.2**	**445.7**	**0.2**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful

APPENDIX D2

JUNCTION ANALYSIS OUTPUTS

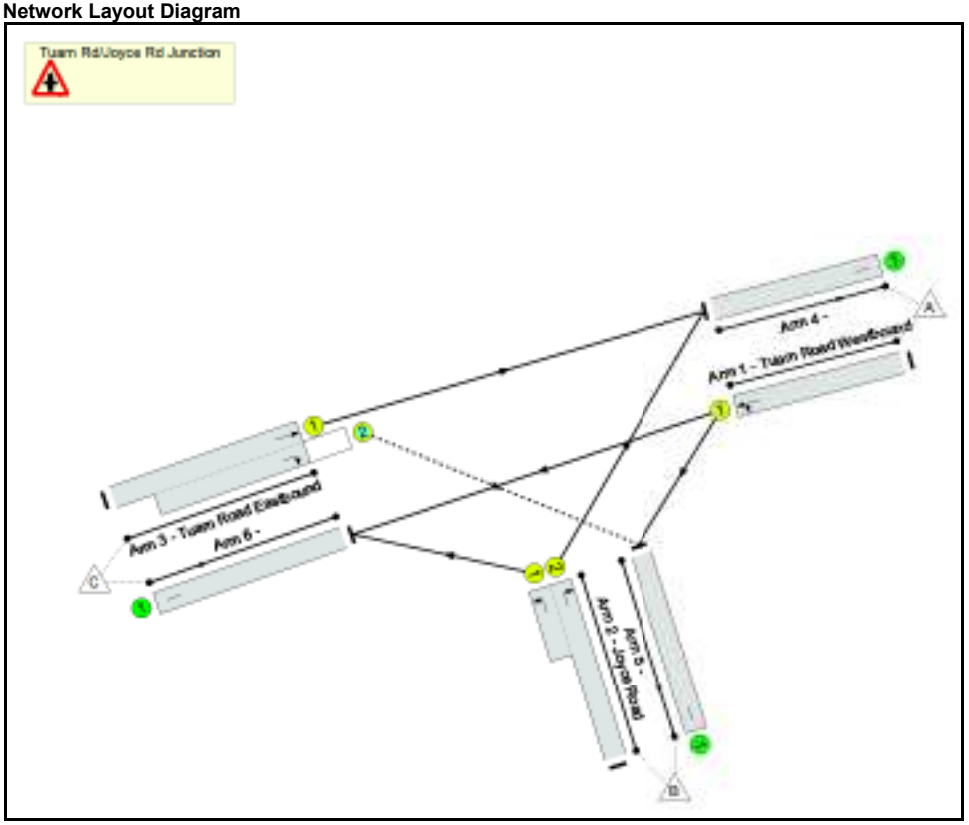
PROPOSED JOYCE'S ROAD AND TUAM ROAD SIGNALISED T-JUNCTION (LINSIG)

Full Input Data And Results

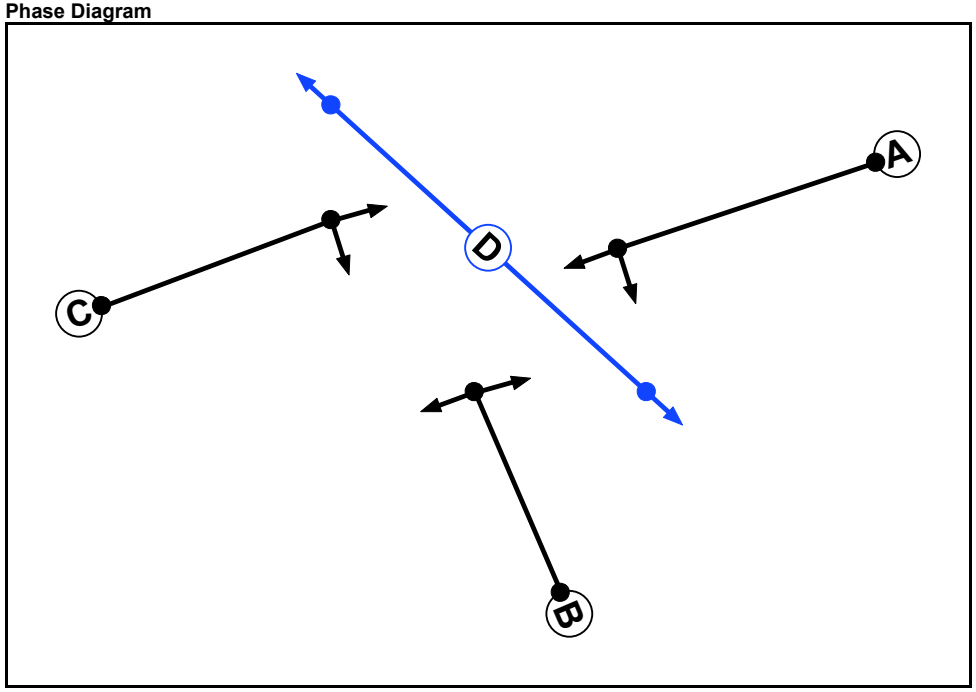
User and Project Details

Project:	**Crown Square**
Title:	**Tuam Rd/Joyce Rd Junction**
File name:	118241 Tuam Rd_Joyce Rd LinSig Analysis Mitigation 2018 10 31 jn.lsg3x
Author:	J Noone
Company:	Punch Consulting Engineers

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Pedestrian		8	8

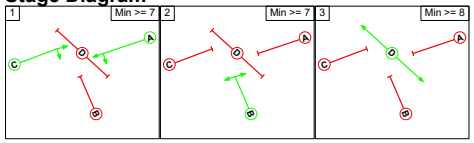
Phase Intergreens Matrix

		Starting Phase			
		A	B	C	D
Terminating Phase	A		5	-	8
	B	5		5	8
	C	-	5		8
	D	18	18	18	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B
3	D

Stage Diagram



Lane Input Data

Junction: Tuam Rd/Joyce Rd Junction

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Tuam Road Westbound)	U	A	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 5 Left	17.00
											Arm 6 Ahead	Inf
2/1 (Joyce Road)	U	B	2	3	5.0	Geom	-	3.50	0.00	Y	Arm 6 Left	9.00
2/2 (Joyce Road)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Right	22.00
3/1 (Tuam Road Eastbound)	U	C	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 4 Ahead	Inf
3/2 (Tuam Road Eastbound)	O	C	2	3	13.0	Geom	-	3.00	0.00	Y	Arm 5 Right	9.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 AM without Dev'	08:15	09:15	01:00	
2: '2018 PM without Dev'	16:00	17:00	01:00	
3: '2022 AM without Dev'	08:15	09:15	01:00	
4: '2022 PM without Dev'	16:00	17:00	01:00	
5: '2027 AM without Dev'	08:15	09:15	01:00	
6: '2027 PM without Dev'	16:00	17:00	01:00	
7: '2037 AM without Dev'	08:15	09:15	01:00	
8: '2037 PM without Dev'	16:00	17:00	01:00	
11: '2022 AM with Dev'	08:15	09:15	01:00	F3+F9
12: '2022 PM with Dev'	16:00	17:00	01:00	F4+F10
13: '2027 AM with Dev'	08:15	09:15	01:00	F5+F9
14: '2027 PM with Dev'	16:00	17:00	01:00	F6+F10
15: '2037 AM with Dev'	08:15	09:15	01:00	F7+F9
16: '2037 PM with Dev'	16:00	17:00	01:00	F8+F10

Full Input Data And Results

Traffic Flows, Desired

Scenario 1: '2018 AM without Dev' (FG1: '2018 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	139	658	797
	B	82	0	201	283
	C	655	148	0	803
	Tot.	737	287	859	1883

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	153	595	748
	B	112	0	140	252
	C	662	130	0	792
	Tot.	774	283	735	1792

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	144	681	825
	B	86	0	208	294
	C	678	153	0	831
	Tot.	764	297	889	1950

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	158	615	773
	B	116	0	145	261
	C	685	135	0	820
	Tot.	801	293	760	1854

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	151	711	862
	B	90	0	217	307
	C	708	160	0	868
	Tot.	798	311	928	2037

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	166	642	808
	B	121	0	151	272
	C	716	141	0	857
	Tot.	837	307	793	1937

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	159	736	895
	B	95	0	224	319
	C	733	166	0	899
	Tot.	828	325	960	2113

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	174	665	839
	B	126	0	157	283
	C	742	145	0	887
	Tot.	868	319	822	2009

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	183	681	864
	B	99	0	240	339
	C	678	249	0	927
	Tot.	777	432	921	2130

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	169	615	784
	B	151	0	231	382
	C	685	163	0	848
	Tot.	836	332	846	2014

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	190	711	901
	B	103	0	249	352
	C	708	256	0	964
	Tot.	811	446	960	2217

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	177	642	819
	B	156	0	237	393
	C	716	169	0	885
	Tot.	872	346	879	2097

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	198	736	934
	B	108	0	256	364
	C	733	262	0	995
	Tot.	841	460	992	2293

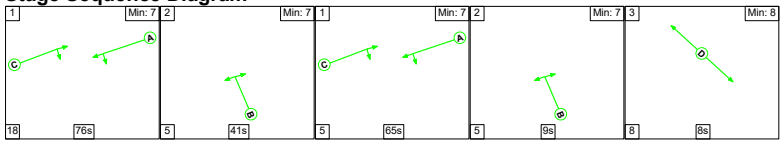
Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	185	665	850
	B	161	0	243	404
	C	742	173	0	915
	Tot.	903	358	908	2169

Full Input Data And Results

Scenario 1: '2018 AM without Dev' (FG1: '2018 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

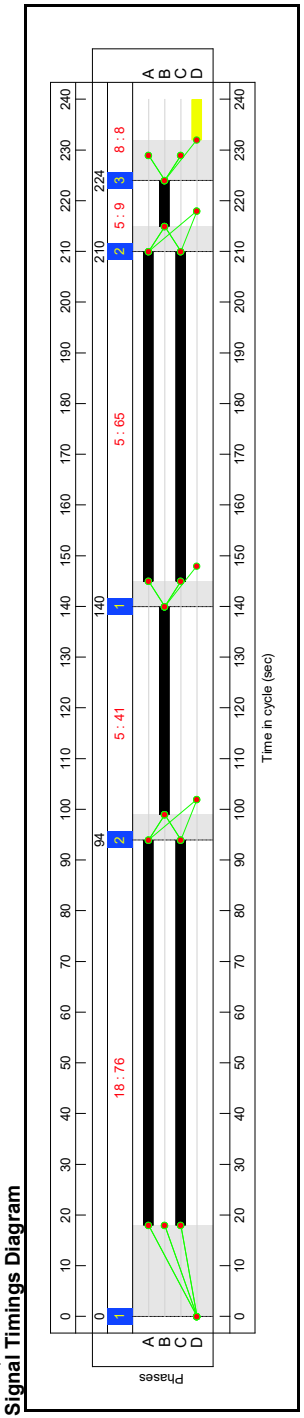


Stage Timings

Stage	1	2	1	2	3
Duration	76	41	65	9	8
Change Point	0	94	140	210	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**66.2%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**66.2%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	141	-	797	2034	1212	65.8%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	50		283	1840:1684	427	66.2%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	141		803	1925:1641	1217	66.0%
4/1		U	N/A	N/A	-		-	-	-	737	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	287	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	859	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	**-**	**-**	**147**	**0**	**1**	**10.2**	**2.9**	**1.0**	**14.0**	**-**	**-**	**-**	**-**
Tuam Rd/Joyce Rd Junction	**-**	**-**	**147**	**0**	**1**	**10.2**	**2.9**	**1.0**	**14.0**	**-**	**-**	**-**	**-**
1/1	797	797	-	-	-	3.6	1.0	-	4.5	20.5	18.2	1.0	19.1
2/2+2/1	283	283	-	-	-	3.4	1.0	-	4.4	55.6	8.3	1.0	9.2
3/1+3/2	803	803	147	0	1	3.2	1.0	1.0	5.1	23.0	13.9	1.0	14.9
4/1	737	737	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	287	287	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	859	859	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

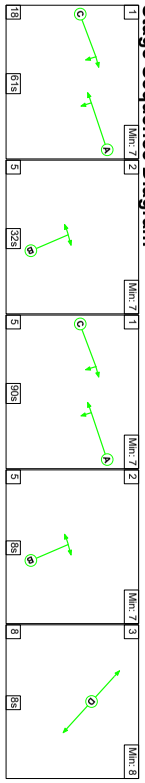
PRC for Signalled Lanes (%): 35.9
PRC Over All Lanes (%): 35.9

Total Delay for Signalled Lanes (pcuHr): 14.02
Total Delay Over All Lanes(pcuHr): 14.02

Cycle Time (s): 240

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')

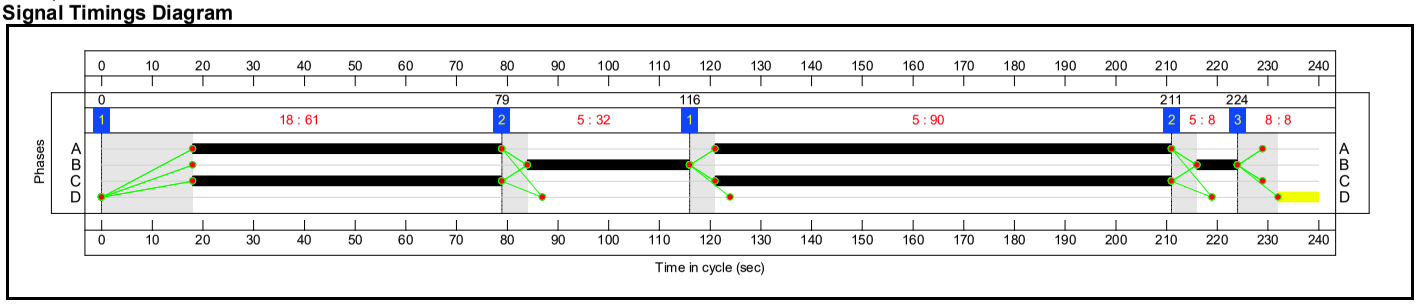
Stage Sequence Diagram



Stage Timings

Change Point	Duration	Stage
0	61	1
79	32	2
116	90	1
211	8	2
224	8	3

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**61.6%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**61.6%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	151	-	748	2028	1293	57.9%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	40		252	1840:1684	409	61.6%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	151		792	1925:1641	1286	61.6%
4/1		U	N/A	N/A	-		-	-	-	774	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	283	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	735	1	Inf	0.0%

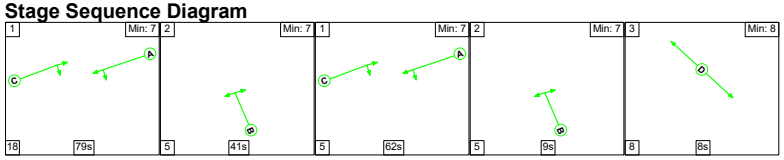
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**129**	**0**	**1**	**8.2**	**2.3**	**0.6**	**11.1**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**129**	**0**	**1**	**8.2**	**2.3**	**0.6**	**11.1**	-	-	-	-
1/1	748	748	-	-	-	2.6	0.7	-	3.3	15.8	15.0	0.7	15.6
2/2+2/1	252	252	-	-	-	3.1	0.8	-	3.9	55.4	4.2	0.8	5.0
3/1+3/2	792	792	129	0	1	2.5	0.8	0.6	3.9	17.7	12.9	0.8	13.7
4/1	774	774	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	283	283	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	735	735	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 46.1 Total Delay for Signalled Lanes (pcuHr): 11.07
PRC Over All Lanes (%): 46.1 Total Delay Over All Lanes(pcuHr): 11.07 Cycle Time (s): 240

Full Input Data And Results

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

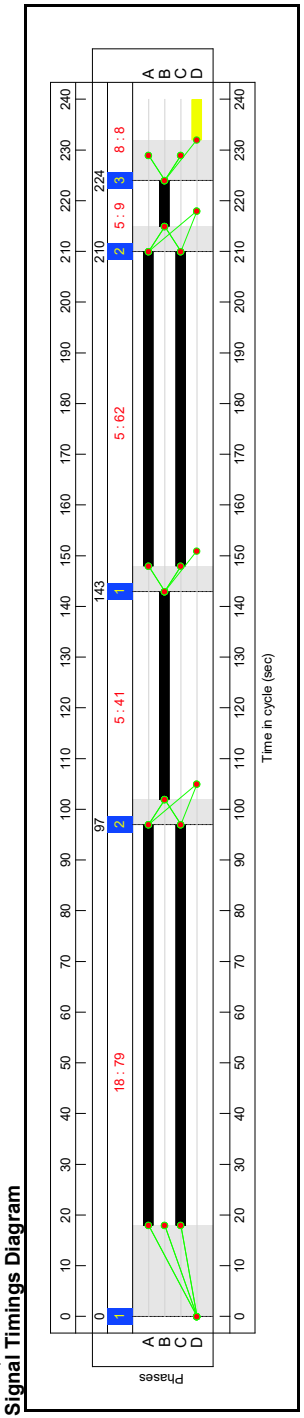


Stage Timings

Stage	1	2	1	2	3
Duration	79	41	62	9	8
Change Point	0	97	143	210	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**68.7%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**68.7%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	141	-	825	2034	1212	68.1%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	50		294	1840:1684	428	68.7%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	141		831	1925:1641	1216	68.3%
4/1		U	N/A	N/A	-		-	-	-	764	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	297	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	889	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	**-**	**-**	**145**	**0**	**8**	**10.8**	**3.2**	**1.1**	**15.1**	**-**	**-**	**-**	**-**
Tuam Rd/Joyce Rd Junction	**-**	**-**	**145**	**0**	**8**	**10.8**	**3.2**	**1.1**	**15.1**	**-**	**-**	**-**	**-**
1/1	825	825	-	-	-	3.8	1.1	-	4.8	21.1	19.3	1.1	20.3
2/2+2/1	294	294	-	-	-	3.6	1.1	-	4.7	57.4	9.0	1.1	10.1
3/1+3/2	831	831	145	0	8	3.4	1.1	1.1	5.5	24.0	15.1	1.1	16.1
4/1	764	764	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	297	297	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	889	889	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

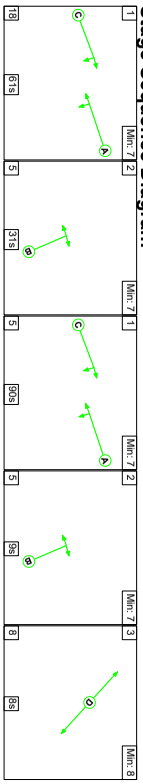
C1

PRC for Signalled Lanes (%): 31.1 | Total Delay for Signalled Lanes (pcuHr): 15.06

PRC Over All Lanes (%): 31.1 | Total Delay Over All Lanes(pcuHr): 15.06 | Cycle Time (s): 240

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')

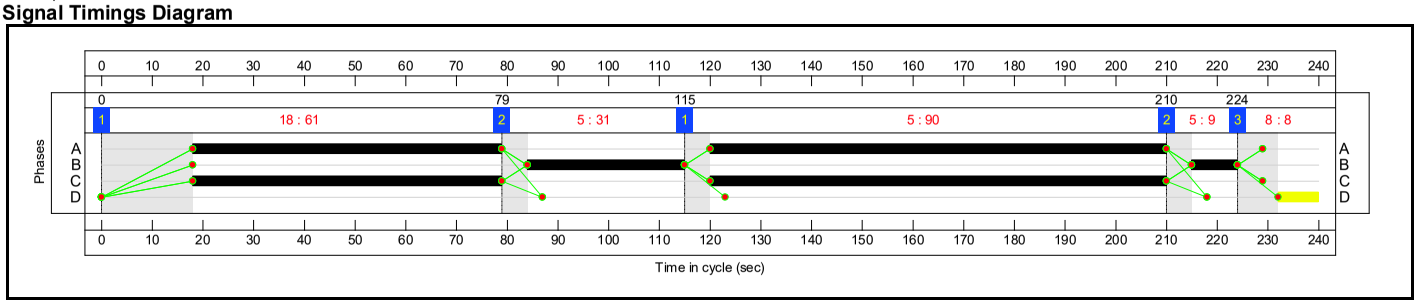
Stage Sequence Diagram



Stage Timings

Stage	Duration	Change Point
1	61	0
2	31	79
1	90	115
2	9	210
3	8	224

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**63.8%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**63.8%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	151	-	773	2028	1293	59.8%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	40		261	1840:1684	414	63.0%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	151		820	1925:1641	1286	63.8%
4/1		U	N/A	N/A	-		-	-	-	801	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	293	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	760	1	Inf	0.0%

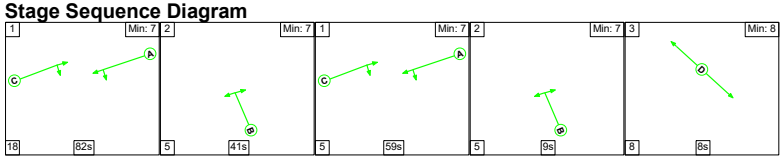
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**134**	**0**	**1**	**8.6**	**2.5**	**0.7**	**11.7**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**134**	**0**	**1**	**8.6**	**2.5**	**0.7**	**11.7**	-	-	-	-
1/1	773	773	-	-	-	2.8	0.7	-	3.5	16.3	16.1	0.7	16.8
2/2+2/1	261	261	-	-	-	3.2	0.8	-	4.0	55.8	4.4	0.8	5.2
3/1+3/2	820	820	134	0	1	2.7	0.9	0.7	4.2	18.5	14.1	0.9	15.0
4/1	801	801	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	760	760	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 41.1 Total Delay for Signalled Lanes (pcuHr): 11.74
PRC Over All Lanes (%): 41.1 Total Delay Over All Lanes(pcuHr): 11.74 Cycle Time (s): 240

Full Input Data And Results

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

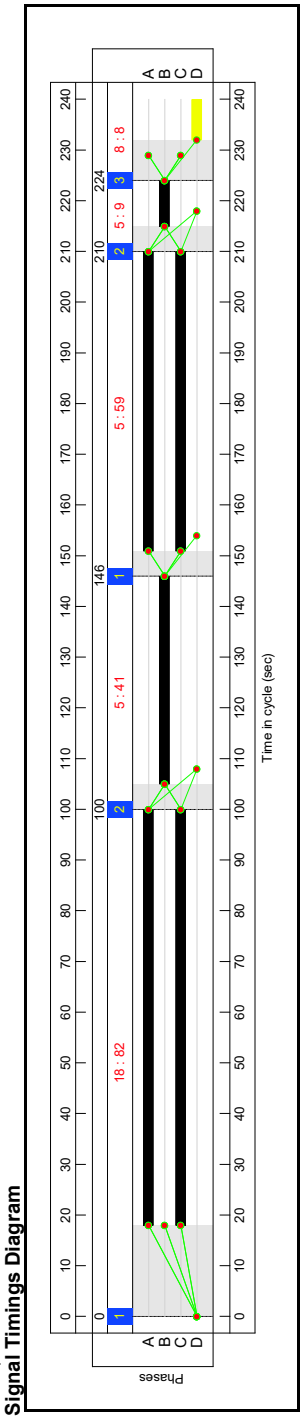


Stage Timings

Stage	1	2	1	2	3
Duration	82	41	59	9	8
Change Point	0	100	146	210	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**71.7%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**71.7%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	141	-	862	2034	1212	71.1%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	50		307	1840:1684	428	71.7%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	141		868	1925:1641	1217	71.3%
4/1		U	N/A	N/A	-		-	-	-	798	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	311	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	928	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	**-**	**-**	**134**	**0**	**26**	**11.6**	**3.7**	**1.3**	**16.6**	**-**	**-**	**-**	**-**
Tuam Rd/Joyce Rd Junction	**-**	**-**	**134**	**0**	**26**	**11.6**	**3.7**	**1.3**	**16.6**	**-**	**-**	**-**	**-**
1/1	862	862	-	-	-	4.1	1.2	-	5.3	22.1	20.6	1.2	21.8
2/2+2/1	307	307	-	-	-	3.9	1.2	-	5.1	59.9	10.0	1.2	11.2
3/1+3/2	868	868	134	0	26	3.6	1.2	1.3	6.1	25.5	16.6	1.2	17.9
4/1	798	798	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	928	928	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

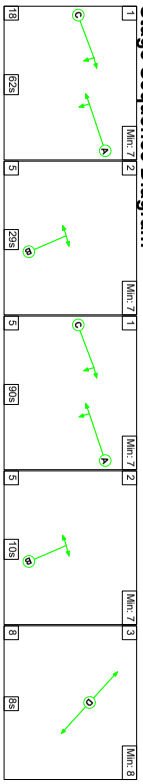
C1

PRC for Signalled Lanes (%): 25.6 | Total Delay for Signalled Lanes (pcuHr): 16.56

PRC Over All Lanes (%): 25.6 | Total Delay Over All Lanes(pcuHr): 16.56 | Cycle Time (s): 240

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

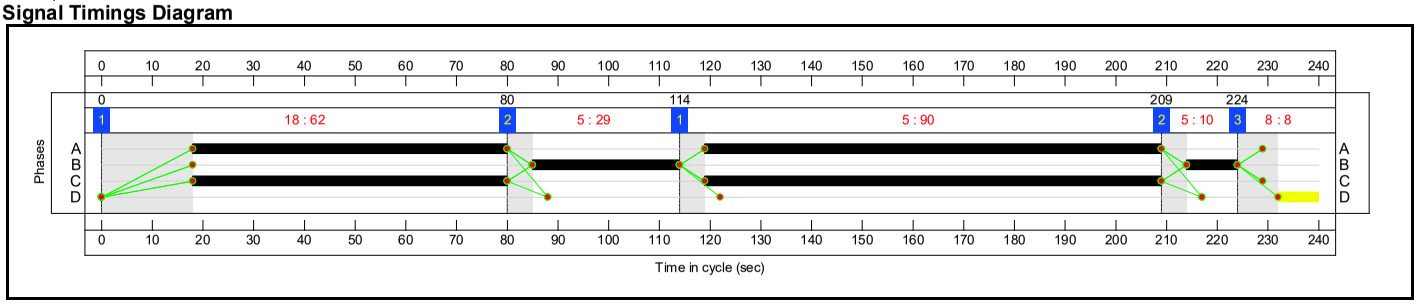


Stage Timings

Stage		Duration	Change Point
1		62	0
2		29	80
1		90	114
2		10	209
3		8	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**66.5%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**66.5%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	152	-	808	2028	1301	62.1%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	39		272	1840:1684	409	66.5%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	152		857	1925:1641	1293	66.3%
4/1		U	N/A	N/A	-		-	-	-	837	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	307	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	793	1	Inf	0.0%

Full Input Data And Results

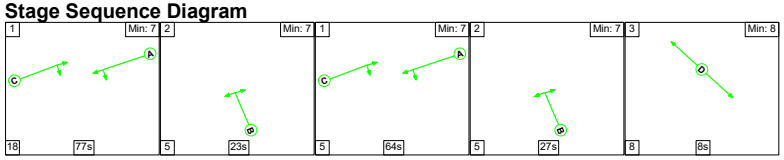
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**140**	**0**	**1**	**9.1**	**2.8**	**0.8**	**12.7**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**140**	**0**	**1**	**9.1**	**2.8**	**0.8**	**12.7**	-	-	-	-
1/1	808	808	-	-	-	2.9	0.8	-	3.7	16.6	17.7	0.8	18.5
2/2+2/1	272	272	-	-	-	3.4	1.0	-	4.4	57.8	4.6	1.0	5.6
3/1+3/2	857	857	140	0	1	2.8	1.0	0.8	4.6	19.2	15.9	1.0	16.8
4/1	837	837	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	307	307	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	793	793	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 35.2 Total Delay for Signalled Lanes (pcuHr): 12.65
PRC Over All Lanes (%): 35.2 Total Delay Over All Lanes(pcuHr): 12.65 Cycle Time (s): 240

Full Input Data And Results

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

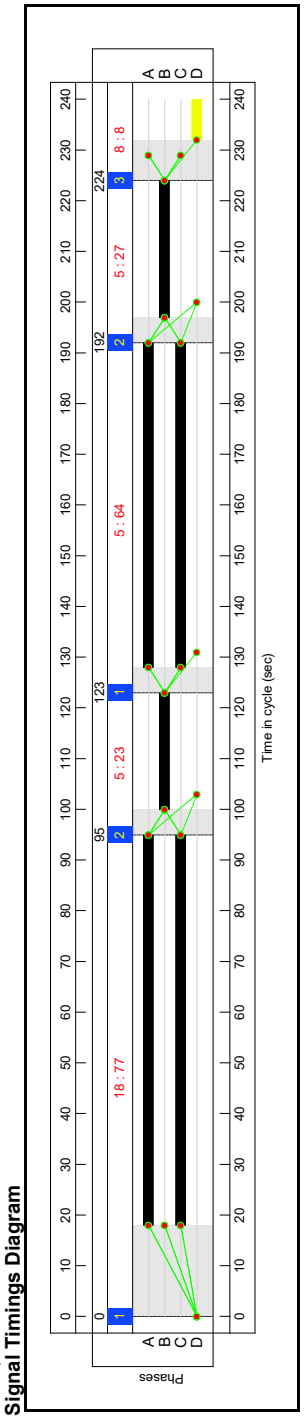


Stage Timings

Stage	1	2	1	2	3
Duration	77	23	64	27	8
Change Point	0	95	123	192	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**74.8%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**74.8%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	141	-	895	2033	1211	73.9%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	50		319	1840:1684	430	74.3%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	141		899	1925:1641	1202	74.8%
4/1		U	N/A	N/A	-		-	-	-	828	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	325	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	960	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	**-**	**-**	**124**	**0**	**42**	**13.5**	**4.3**	**1.4**	**19.1**	**-**	**-**	**-**	**-**
Tuam Rd/Joyce Rd Junction	**-**	**-**	**124**	**0**	**42**	**13.5**	**4.3**	**1.4**	**19.1**	**-**	**-**	**-**	**-**
1/1	895	895	-	-	-	4.9	1.4	-	6.3	25.2	28.8	1.4	30.2
2/2+2/1	319	319	-	-	-	3.9	1.4	-	5.3	60.2	9.9	1.4	11.3
3/1+3/2	899	899	124	0	42	4.7	1.5	1.4	7.6	30.3	25.0	1.5	26.5
4/1	828	828	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	325	325	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	960	960	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

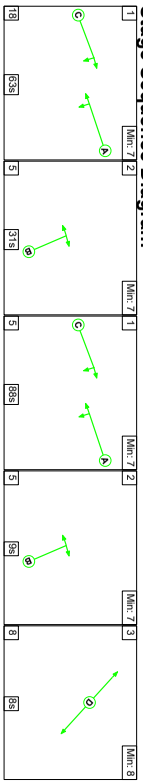
C1

PRC for Signalled Lanes (%): 20.4 | Total Delay for Signalled Lanes (pcuHr): 19.15

PRC Over All Lanes (%): 20.4 | Total Delay Over All Lanes(pcuHr): 19.15 | Cycle Time (s): 240

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')

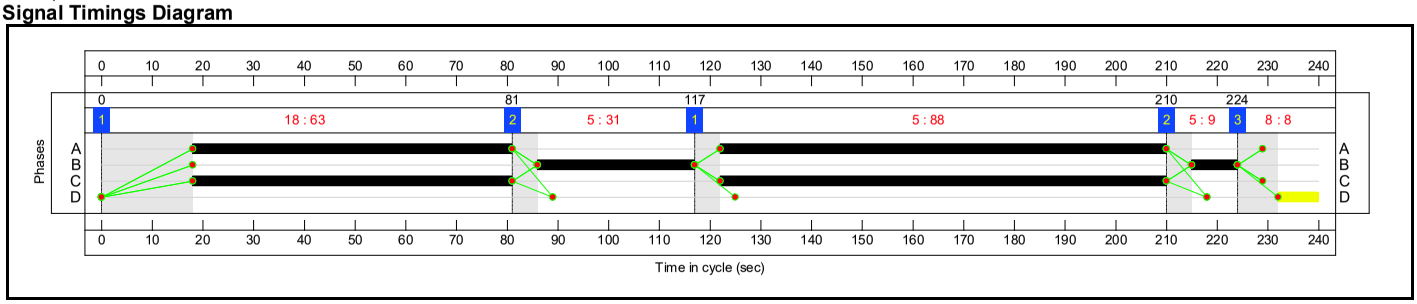
Stage Sequence Diagram



Stage Timings

Stage		Duration	Change Point
1		63	0
2		31	81
1		88	117
2		9	210
3		8	224

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**69.0%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**69.0%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	151	-	839	2028	1293	64.9%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	40		283	1840:1684	415	68.2%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	151		887	1925:1641	1285	69.0%
4/1		U	N/A	N/A	-		-	-	-	868	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	319	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	822	1	Inf	0.0%

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**144**	**0**	**1**	**9.7**	**3.1**	**0.9**	**13.7**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**144**	**0**	**1**	**9.7**	**3.1**	**0.9**	**13.7**	-	-	-	-
1/1	839	839	-	-	-	3.2	0.9	-	4.1	17.5	18.6	0.9	19.6
2/2+2/1	283	283	-	-	-	3.5	1.1	-	4.6	58.0	4.8	1.1	5.9
3/1+3/2	887	887	144	0	1	3.0	1.1	0.9	5.0	20.4	16.9	1.1	18.0
4/1	868	868	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	822	822	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 30.4
PRC Over All Lanes (%): 30.4

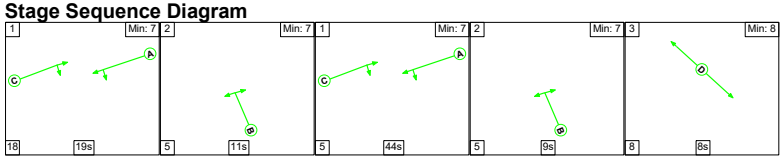
Total Delay for Signalled Lanes (pcuHr): 13.67
Total Delay Over All Lanes(pcuHr): 13.67

Cycle Time (s): 240

Full Input Data And Results

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

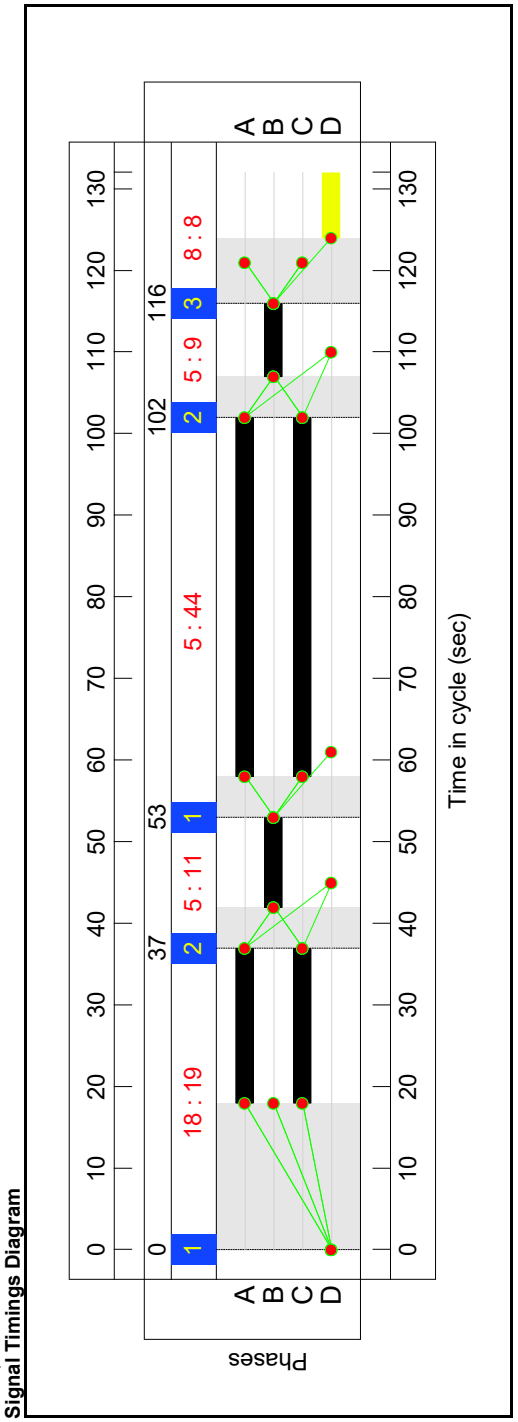


Stage Timings

Stage	1	2	1	2	3
Duration	19	11	44	9	8
Change Point	0	37	53	102	116

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**87.8%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**87.8%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	63	-	864	2027	998	86.6%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	20		339	1840:1684	386	87.8%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	63		927	1925:1641	1060	87.5%
4/1		U	N/A	N/A	-		-	-	-	777	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	432	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	921	1	Inf	0.0%

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**56**	**0**	**156**	**14.5**	**9.6**	**1.4**	**25.4**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**56**	**0**	**156**	**14.5**	**9.6**	**1.4**	**25.4**	-	-	-	-
1/1	864	864	-	-	-	5.4	3.1	-	8.5	35.4	16.6	3.1	19.7
2/2+2/1	339	339	-	-	-	2.5	3.2	-	5.6	59.8	4.4	3.2	7.6
3/1+3/2	927	891	56	0	156	6.6	3.3	1.4	11.3	43.9	14.0	3.3	17.4
4/1	777	777	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	396	396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	921	921	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

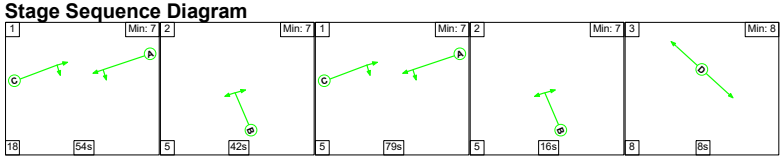
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	2.5	Total Delay for Signalled Lanes (pcuHr):	25.43			
	PRC Over All Lanes (%):	2.5	Total Delay Over All Lanes(pcuHr):	25.43	Cycle Time (s):	132	

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

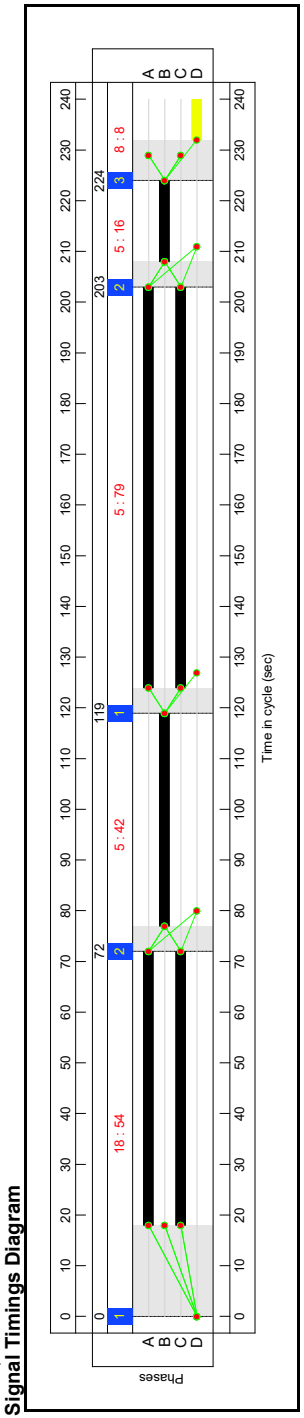


Stage Timings

Stage	1	2	1	2	3
Duration	54	42	79	16	8
Change Point	0	72	119	203	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**73.2%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**73.2%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	133	-	784	2026	1140	68.8%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	58		382	1840:1684	524	72.9%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	133		848	1925:1641	1158	73.2%
4/1		U	N/A	N/A	-		-	-	-	836	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	332	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	846	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	**-**	**-**	**139**	**0**	**24**	**12.3**	**3.8**	**1.1**	**17.2**	**-**	**-**	**-**	**-**
Tuam Rd/Joyce Rd Junction	**-**	**-**	**139**	**0**	**24**	**12.3**	**3.8**	**1.1**	**17.2**	**-**	**-**	**-**	**-**
1/1	784	784	-	-	-	4.1	1.1	-	5.2	23.8	19.2	1.1	20.3
2/2+2/1	382	382	-	-	-	4.1	1.3	-	5.4	51.3	8.4	1.3	9.7
3/1+3/2	848	848	139	0	24	4.1	1.4	1.1	6.6	28.1	17.2	1.4	18.6
4/1	836	836	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	846	846	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

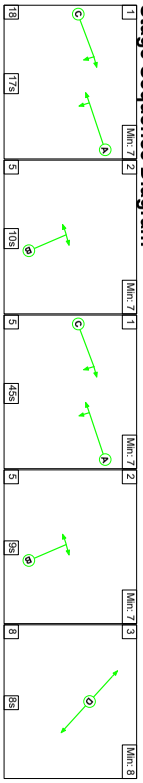
C1

PRC for Signalled Lanes (%): 22.9 | Total Delay for Signalled Lanes (pcuHr): 17.24

PRC Over All Lanes (%): 22.9 | Total Delay Over All Lanes(pcuHr): 17.24 | Cycle Time (s): 240

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')

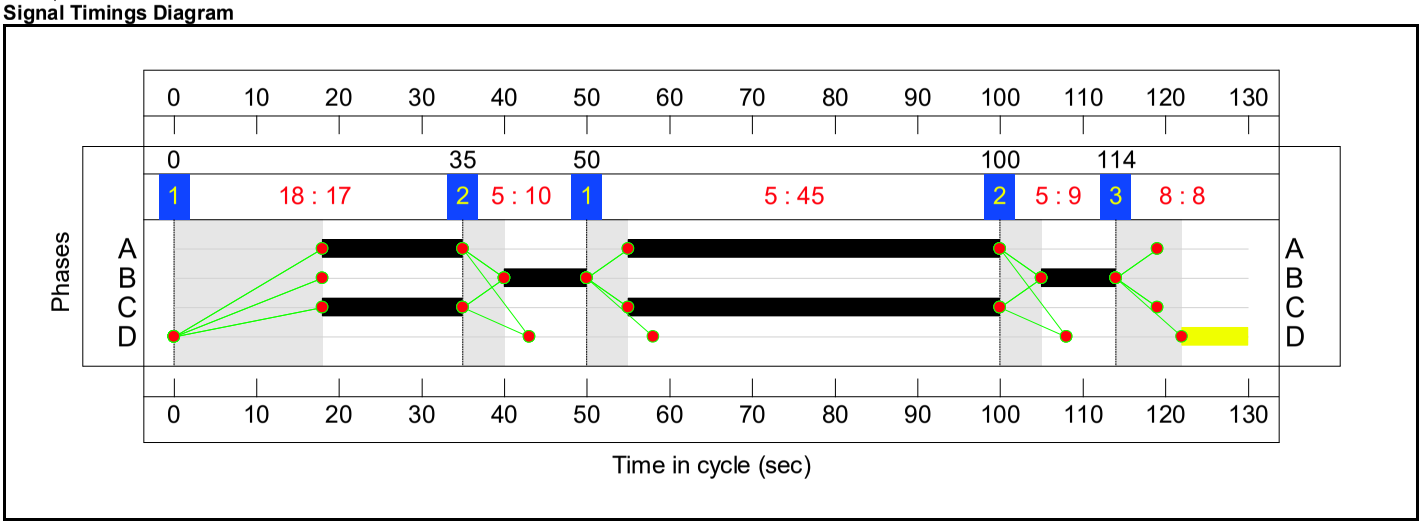
Stage Sequence Diagram



Stage Timings

Change Point	Duration	Stage
0	17	1
35	10	2
50	45	1
100	9	2
114	8	3

Signal Timings Diagram



Full Input Data And Results

Network Results

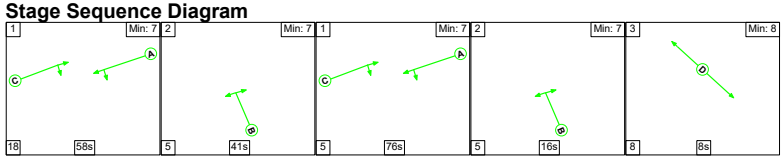
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.1%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.1%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	62	-	901	2027	998	90.3%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	19		352	1840:1684	379	92.9%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	62		964	1925:1641	1035	93.1%
4/1		U	N/A	N/A	-		-	-	-	811	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	446	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	960	1	Inf	0.0%

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**39**	**0**	**159**	**17.2**	**14.9**	**1.4**	**33.5**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**39**	**0**	**159**	**17.2**	**14.9**	**1.4**	**33.5**	-	-	-	-
1/1	901	901	-	-	-	6.1	4.3	-	10.3	41.3	19.4	4.3	23.7
2/2+2/1	352	352	-	-	-	2.5	4.8	-	7.4	75.4	4.4	4.8	9.2
3/1+3/2	964	906	39	0	159	8.6	5.8	1.4	15.8	59.1	15.9	5.8	21.8
4/1	811	811	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	388	388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	960	960	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	-3.5	Total Delay for Signalled Lanes (pcuHr):	33.52
	PRC Over All Lanes (%):	-3.5	Total Delay Over All Lanes(pcuHr):	33.52
			Cycle Time (s):	130

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

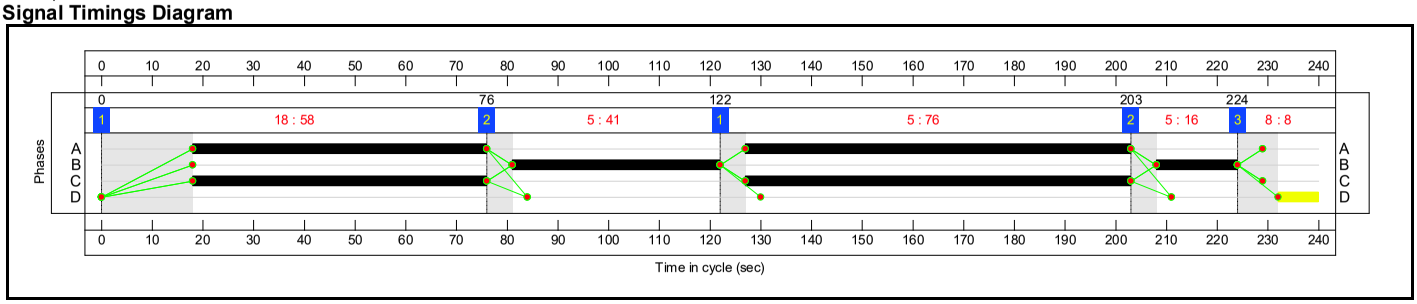


Stage Timings

Stage	1	2	1	2	3
Duration	58	41	76	16	8
Change Point	0	76	122	203	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**76.0%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**76.0%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	134	-	819	2026	1148	71.3%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	57		393	1840:1684	517	76.0%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	134		885	1925:1641	1165	75.9%
4/1		U	N/A	N/A	-		-	-	-	872	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	346	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	879	1	Inf	0.0%

Full Input Data And Results

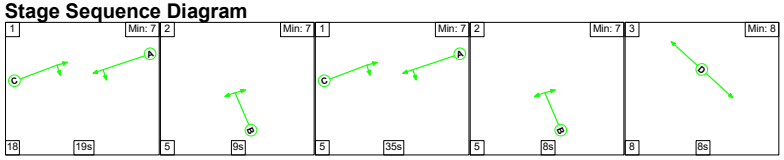
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**139**	**0**	**30**	**13.0**	**4.3**	**1.3**	**18.6**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**139**	**0**	**30**	**13.0**	**4.3**	**1.3**	**18.6**	-	-	-	-
1/1	819	819	-	-	-	4.3	1.2	-	5.5	24.4	20.5	1.2	21.7
2/2+2/1	393	393	-	-	-	4.3	1.5	-	5.9	53.8	9.4	1.5	10.9
3/1+3/2	885	885	139	0	30	4.4	1.6	1.3	7.2	29.4	18.9	1.6	20.5
4/1	872	872	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	346	346	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 18.5 Total Delay for Signalled Lanes (pcuHr): 18.64
PRC Over All Lanes (%): 18.5 Total Delay Over All Lanes(pcuHr): 18.64 Cycle Time (s): 240

Full Input Data And Results

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

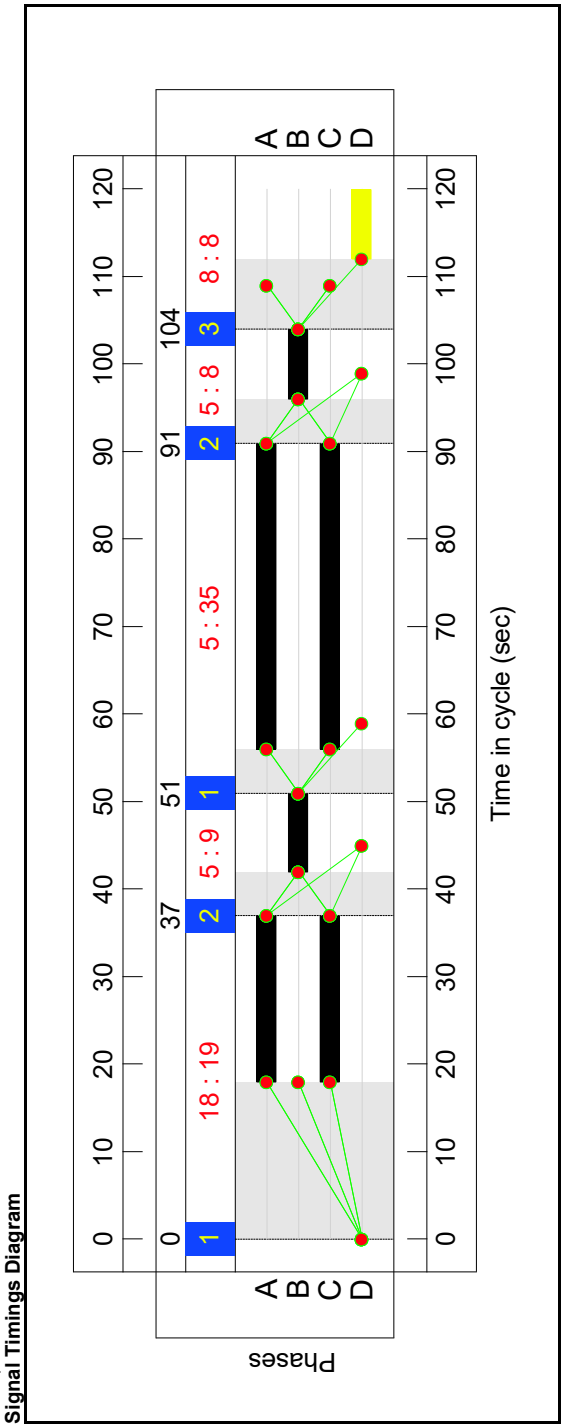


Stage Timings

Stage	1	2	1	2	3
Duration	19	9	35	8	8
Change Point	0	37	51	91	104

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**98.7%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**98.7%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	54	-	934	2027	946	98.7%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	17		364	1840:1684	379	96.0%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	54		995	1925:1641	1027	96.9%
4/1		U	N/A	N/A	-		-	-	-	841	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	460	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	992	1	Inf	0.0%

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	-	-	**4**	**0**	**176**	**19.1**	**28.7**	**1.3**	**49.2**	-	-	-	-
Tuam Rd/Joyce Rd Junction	-	-	**4**	**0**	**176**	**19.1**	**28.7**	**1.3**	**49.2**	-	-	-	-
1/1	934	934	-	-	-	6.5	12.6	-	19.1	73.7	19.4	12.6	31.9
2/2+2/1	364	364	-	-	-	2.5	6.5	-	9.0	89.2	4.8	6.5	11.2
3/1+3/2	995	913	4	0	176	10.1	9.7	1.3	21.1	76.2	16.9	9.7	26.5
4/1	841	841	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	378	378	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	992	992	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

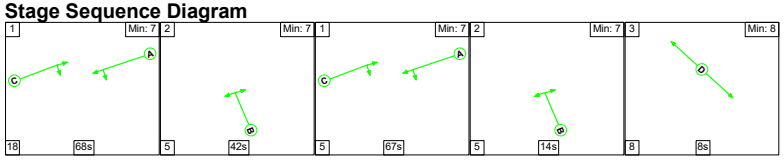
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	-9.7	Total Delay for Signalled Lanes (pcuHr):	49.19		
	PRC Over All Lanes (%):	-9.7	Total Delay Over All Lanes(pcuHr):	49.19	Cycle Time (s):	120

Full Input Data And Results

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

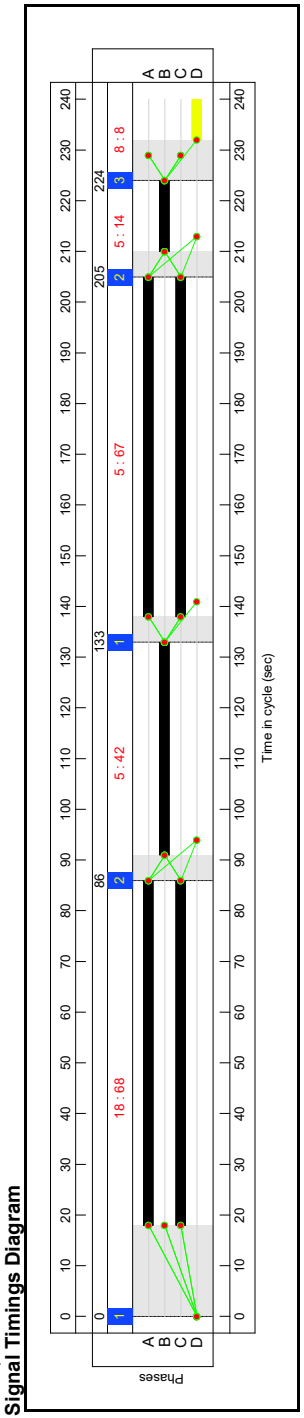


Stage Timings

Stage	1	2	1	2	3
Duration	68	42	67	14	8
Change Point	0	86	133	205	224

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**79.1%**
Tuam Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**79.1%**
1/1	Tuam Road Westbound Left Ahead	U	N/A	N/A	A		2	135	-	850	2026	1157	73.5%
2/2+2/1	Joyce Road Right Left	U	N/A	N/A	B		2	56		404	1840:1684	511	79.1%
3/1+3/2	Tuam Road Eastbound Ahead Right	U+O	N/A	N/A	C		2	135		915	1925:1641	1164	78.6%
4/1		U	N/A	N/A	-		-	-	-	903	1	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	358	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	908	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Tuam Rd/Joyce Rd Junction	**-**	**-**	**132**	**0**	**41**	**13.7**	**5.0**	**1.4**	**20.2**	**-**	**-**	**-**	**-**
Tuam Rd/Joyce Rd Junction	**-**	**-**	**132**	**0**	**41**	**13.7**	**5.0**	**1.4**	**20.2**	**-**	**-**	**-**	**-**
1/1	850	850	-	-	-	4.5	1.4	-	5.9	24.9	21.0	1.4	22.4
2/2+2/1	404	404	-	-	-	4.7	1.8	-	6.5	57.8	11.2	1.8	13.0
3/1+3/2	915	915	132	0	41	4.6	1.8	1.4	7.8	30.8	19.4	1.8	21.2
4/1	903	903	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	358	358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	908	908	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 13.8
PRC Over All Lanes (%): 13.8

Total Delay for Signalled Lanes (pcuHr): 20.18
Total Delay Over All Lanes(pcuHr): 20.18

Cycle Time (s): 240

APPENDIX D3

JUNCTION ANALYSIS OUTPUTS

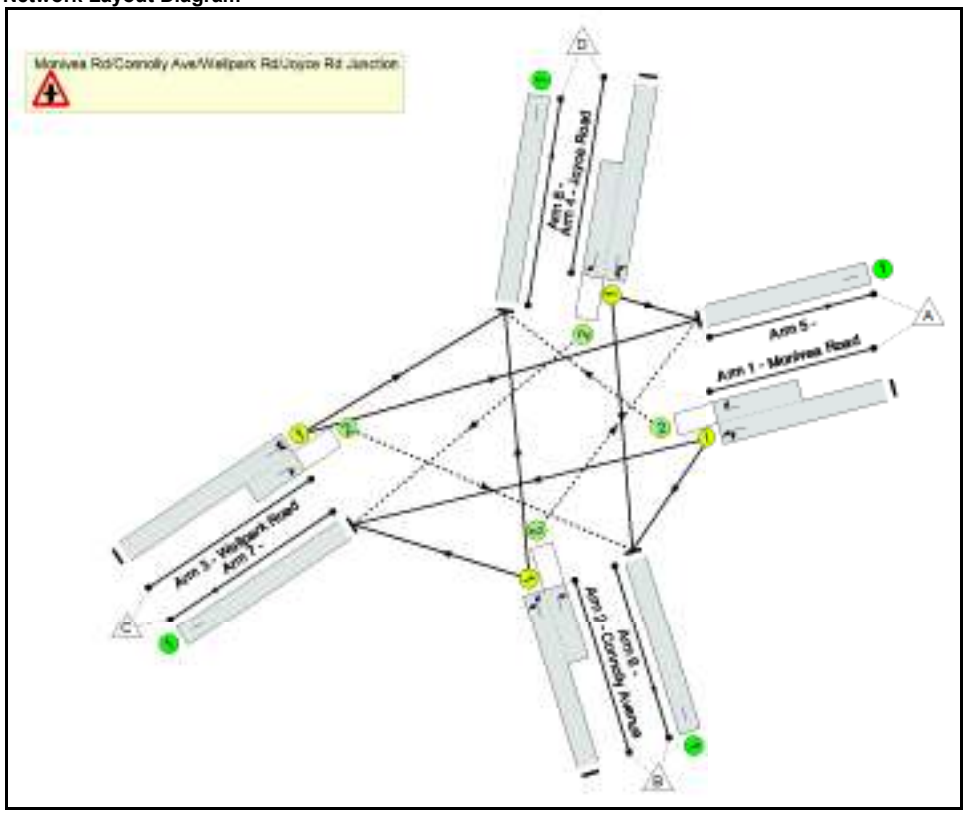
MONIVEA RD/CONNOLLY AVE/WELLPARK RD/JOYCE'S RD SIGNALISED CROSSROADS JUNCTION EXISTING LAYOUT (LINSIG)

Full Input Data And Results

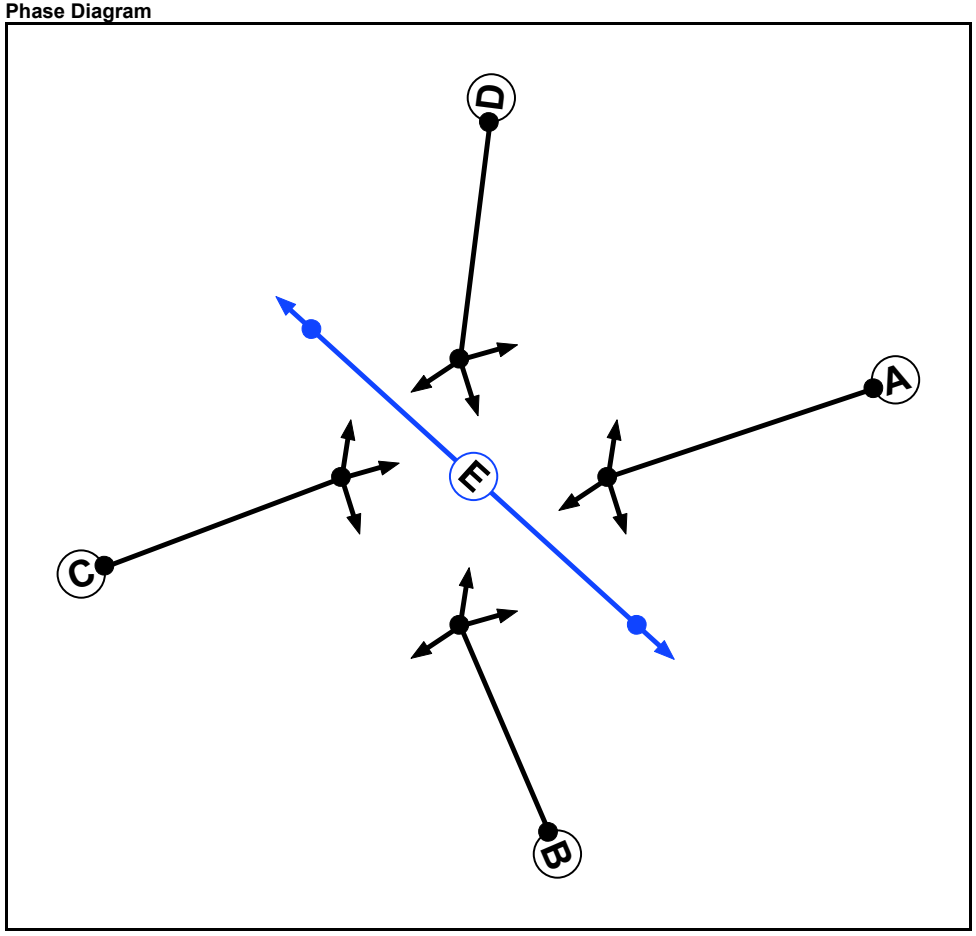
User and Project Details

Project:	**Crown Square**
Title:	**Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction**
File name:	118241 Monivea Rd_Connolly Ave_Wellpark Rd_Joyce Rd LinSig Analysis 2018 10 01 jn.lsg3x
Author:	J Noone
Company:	Punch Consulting Engineers

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		5	5

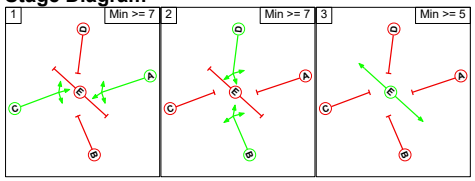
Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	E
Terminating Phase	A		8	-	8	9
	B	8		8	-	10
	C	-	8		8	9
	D	8	-	8		10
	E	14	12	11	12	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B D
3	E

Stage Diagram



Full Input Data And Results

Lane Input Data

Junction: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Monivea Road)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Left	15.00
											Arm 7 Ahead	Inf
1/2 (Monivea Road)	O	A	2	3	6.0	Geom	-	3.00	0.00	Y	Arm 8 Right	10.00
2/1 (Connolly Avenue)	U	B	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 7 Left	11.00
											Arm 8 Ahead	60.00
2/2 (Connolly Avenue)	O	B	2	3	5.5	Geom	-	3.00	0.00	Y	Arm 5 Right	18.00
3/1 (Wellpark Road)	U	C	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	40.00
3/2 (Wellpark Road)	O	C	2	3	4.0	Geom	-	2.90	0.00	Y	Arm 6 Right	10.00
4/1 (Joyce Road)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	10.00
											Arm 6 Ahead	70.00
4/2 (Joyce Road)	O	D	2	3	8.0	Geom	-	3.50	0.00	Y	Arm 7 Right	33.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 AM without Dev'	08:15	09:15	01:00	
2: '2018 PM without Dev'	16:00	17:00	01:00	
3: '2022 AM without Dev'	08:15	09:15	01:00	
4: '2022 PM without Dev'	16:00	17:00	01:00	
5: '2027 AM without Dev'	08:15	09:15	01:00	
6: '2027 PM without Dev'	16:00	17:00	01:00	
7: '2037 AM without Dev'	08:15	09:15	01:00	
8: '2037 PM without Dev'	16:00	17:00	01:00	
11: '2022 AM with Dev'	08:15	09:15	01:00	F3+F9
12: '2022 PM with Dev'	16:00	17:00	01:00	F4+F10
13: '2027 AM with Dev'	08:15	09:15	01:00	F5+F9
14: '2027 PM with Dev'	16:00	17:00	01:00	F6+F10
15: '2037 AM with Dev'	08:15	09:15	01:00	F7+F9
16: '2037 PM with Dev'	16:00	17:00	01:00	F8+F10

Traffic Flows, Desired

Scenario 1: '2018 AM without Dev' (FG1: '2018 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	21	568	43	632
	B	9	0	293	138	440
	C	305	108	0	83	496
	D	28	93	102	0	223
	Tot.	342	222	963	264	1791

Full Input Data And Results

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	14	343	47	404
	B	17	0	172	132	321
	C	565	295	0	99	959
	D	46	114	68	0	228
	Tot.	628	423	583	278	1912

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	22	588	44	654
	B	9	0	304	143	456
	C	317	112	0	88	517
	D	29	97	107	0	233
	Tot.	355	231	999	275	1860

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	356	49	420
	B	18	0	178	137	333
	C	586	306	0	103	995
	D	47	118	71	0	236
	Tot.	651	439	605	289	1984

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	24	614	47	685
	B	10	0	317	151	478
	C	333	117	0	93	543
	D	31	102	113	0	246
	Tot.	374	243	1044	291	1952

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	373	51	439
	B	19	0	185	144	348
	C	613	319	0	109	1041
	D	49	123	74	0	246
	Tot.	681	457	632	304	2074

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	26	637	49	712
	B	11	0	329	159	499
	C	348	122	0	101	571
	D	33	108	120	0	261
	Tot.	392	256	1086	309	2043

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	389	52	457
	B	20	0	190	151	361
	C	639	329	0	116	1084
	D	51	129	78	0	258
	Tot.	710	474	657	319	2160

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	32	631	44	707
	B	39	0	304	173	516
	C	480	112	0	88	680
	D	29	107	134	0	270
	Tot.	548	251	1069	305	2173

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	472	49	563
	B	27	0	178	146	351
	C	633	306	0	103	1042
	D	47	145	144	0	336
	Tot.	707	493	794	298	2292

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	34	657	47	738
	B	40	0	317	181	538
	C	496	117	0	93	706
	D	31	112	140	0	283
	Tot.	567	263	1114	321	2265

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	489	51	582
	B	28	0	185	153	366
	C	660	319	0	109	1088
	D	49	150	147	0	346
	Tot.	737	511	821	313	2382

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

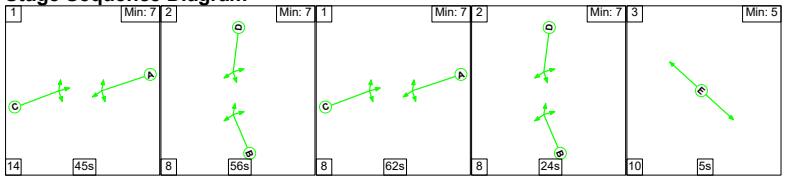
		Destination				
		A	B	C	D	Tot.
Origin	A	0	36	680	49	765
	B	41	0	329	189	559
	C	511	122	0	101	734
	D	33	118	147	0	298
	Tot.	585	276	1156	339	2356

Full Input Data And Results

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	43	505	52	600
	B	29	0	190	160	379
	C	686	329	0	116	1131
	D	51	156	151	0	358
	Tot.	766	528	846	328	2468

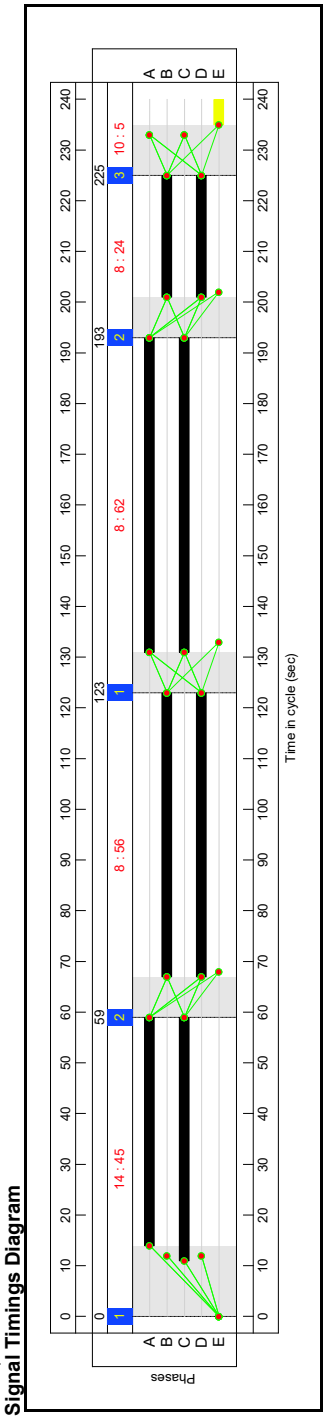
Scenario 1: '2018 AM without Dev' (FG1: '2018 AM without Dev', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

Stage	1	2	1	2	3
Duration	45	56	62	24	5
Change Point	0	59	123	193	225

Full Input Data And Results
Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**72.0%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**72.0%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		632	1908:1665	878	72.0%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	80		440	1758:1768	612	71.9%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	110		496	1920:1657	896	55.4%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	80		223	1869:1880	449	49.7%
5/1		U	N/A	N/A	-		-	-	-	342	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	222	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	963	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	264	1	Inf	0.0%

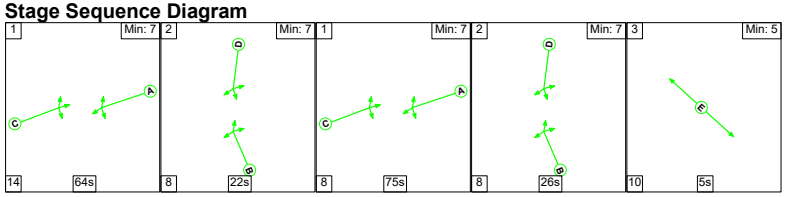
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**217**	**0**	**45**	**13.6**	**3.6**	**1.3**	**18.6**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**217**	**0**	**45**	**13.6**	**3.6**	**1.3**	**18.6**	-	-	-	-
1/1+1/2	632	632	43	0	0	4.6	1.3	0.1	5.9	33.8	17.8	1.3	19.1
2/1+2/2	440	440	9	0	0	4.2	1.3	0.0	5.5	44.8	12.8	1.3	14.1
3/1+3/2	496	496	107	0	1	3.1	0.6	0.7	4.4	31.7	11.8	0.6	12.5
4/1+4/2	223	223	58	0	44	1.7	0.5	0.6	2.8	45.4	2.9	0.5	3.4
5/1	342	342	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	222	222	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	963	963	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 25.0 Total Delay for Signalled Lanes (pcuHr): 18.60
PRC Over All Lanes (%): 25.0 Total Delay Over All Lanes(pcuHr): 18.60 Cycle Time (s): 240

Full Input Data And Results

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

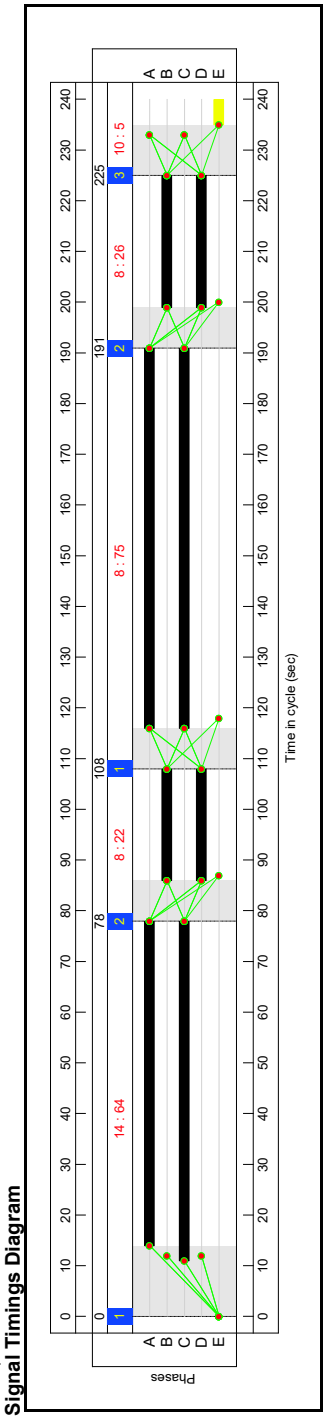


Stage Timings

Stage	1	2	1	2	3
Duration	64	22	75	26	5
Change Point	0	78	108	191	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**82.5%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**82.5%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	139		404	1908:1665	1134	35.6%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		321	1778:1768	389	82.5%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		959	1924:1657	1166	82.2%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		228	1857:1880	457	49.9%
5/1		U	N/A	N/A	-		-	-	-	628	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	423	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	583	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	278	1	Inf	0.0%

Full Input Data And Results

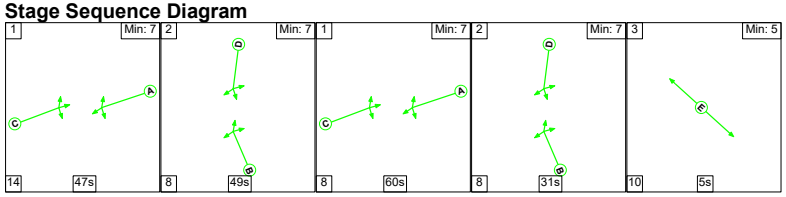
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**399**	**0**	**28**	**13.0**	**5.2**	**1.0**	**19.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**399**	**0**	**28**	**13.0**	**5.2**	**1.0**	**19.2**	-	-	-	-
1/1+1/2	404	404	47	0	0	1.5	0.3	0.2	2.0	17.8	7.7	0.3	8.0
2/1+2/2	321	321	17	0	0	4.0	2.2	0.0	6.3	70.4	10.4	2.2	12.6
3/1+3/2	959	959	293	0	2	4.9	2.3	0.4	7.5	28.1	28.6	2.3	30.9
4/1+4/2	228	228	43	0	25	2.6	0.5	0.3	3.4	53.9	4.8	0.5	5.3
5/1	628	628	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	423	423	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	583	583	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 9.1 Total Delay for Signalled Lanes (pcuHr): 19.18
PRC Over All Lanes (%): 9.1 Total Delay Over All Lanes(pcuHr): 19.18 Cycle Time (s): 240

Full Input Data And Results

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

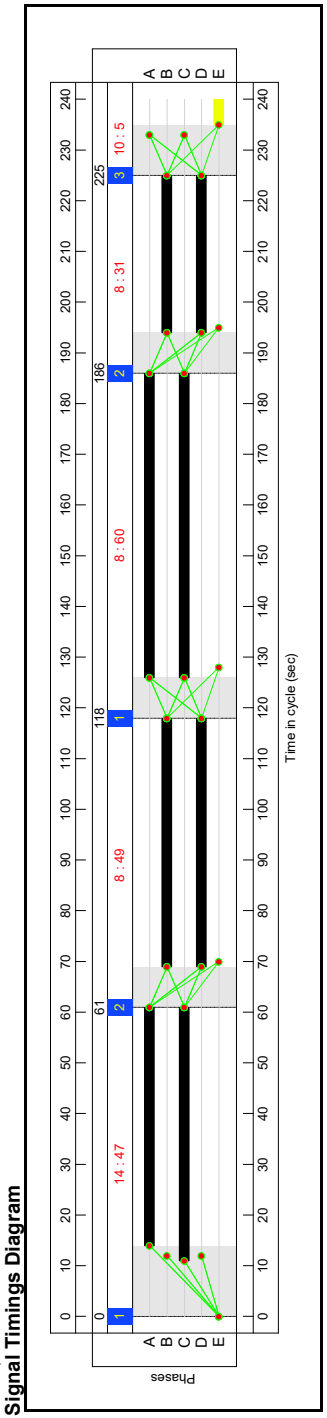


Stage Timings

Stage	1	2	1	2	3
Duration	47	49	60	31	5
Change Point	0	61	118	186	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**74.5%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**74.5%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		654	1908:1665	878	74.5%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	80		456	1758:1768	613	74.4%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	110		517	1919:1657	895	57.7%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	80		233	1870:1880	399	58.4%
5/1		U	N/A	N/A	-		-	-	-	355	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	231	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	999	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	275	1	Inf	0.0%

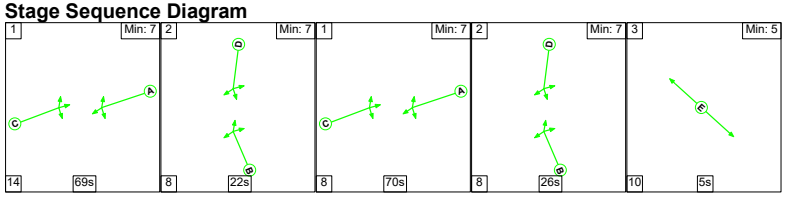
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**239**	**0**	**33**	**14.3**	**4.2**	**1.5**	**20.0**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**239**	**0**	**33**	**14.3**	**4.2**	**1.5**	**20.0**	-	-	-	-
1/1+1/2	654	654	44	0	0	4.8	1.4	0.1	6.3	34.8	17.7	1.4	19.2
2/1+2/2	456	456	9	0	0	4.4	1.4	0.0	5.9	46.2	13.8	1.4	15.3
3/1+3/2	517	517	103	0	9	3.2	0.7	0.7	4.6	32.4	11.2	0.7	11.9
4/1+4/2	233	233	83	0	24	1.8	0.7	0.7	3.2	49.6	3.1	0.7	3.8
5/1	355	355	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	231	231	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	999	999	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 20.8 Total Delay for Signalled Lanes (pcuHr): 20.04
PRC Over All Lanes (%): 20.8 Total Delay Over All Lanes(pcuHr): 20.04 Cycle Time (s): 240

Full Input Data And Results

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

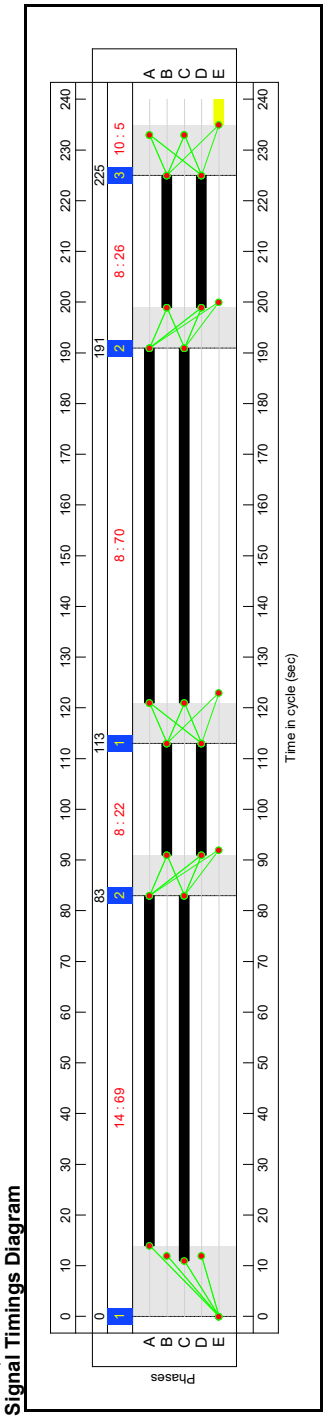


Stage Timings

Stage	1	2	1	2	3
Duration	69	22	70	26	5
Change Point	0	83	113	191	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**85.5%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**85.5%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	139		420	1907:1665	1134	37.1%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		333	1779:1768	390	85.5%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		995	1924:1657	1166	85.3%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		236	1857:1880	457	51.7%
5/1		U	N/A	N/A	-		-	-	-	651	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	439	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	605	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	289	1	Inf	0.0%

Full Input Data And Results

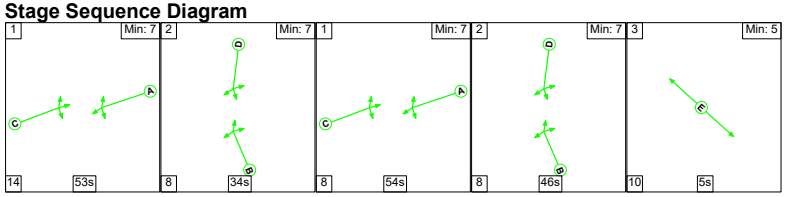
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**403**	**0**	**41**	**13.8**	**6.3**	**1.1**	**21.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**403**	**0**	**41**	**13.8**	**6.3**	**1.1**	**21.2**	-	-	-	-
1/1+1/2	420	420	49	0	0	1.6	0.3	0.3	2.1	18.3	8.2	0.3	8.5
2/1+2/2	333	333	18	0	0	4.3	2.7	0.0	7.0	75.4	11.4	2.7	14.1
3/1+3/2	995	995	303	0	3	5.3	2.8	0.4	8.5	30.6	31.1	2.8	33.9
4/1+4/2	236	236	33	0	38	2.7	0.5	0.4	3.6	54.8	5.3	0.5	5.8
5/1	651	651	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	605	605	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 5.3 Total Delay for Signalled Lanes (pcuHr): 21.16
PRC Over All Lanes (%): 5.3 Total Delay Over All Lanes(pcuHr): 21.16 Cycle Time (s): 240

Full Input Data And Results

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

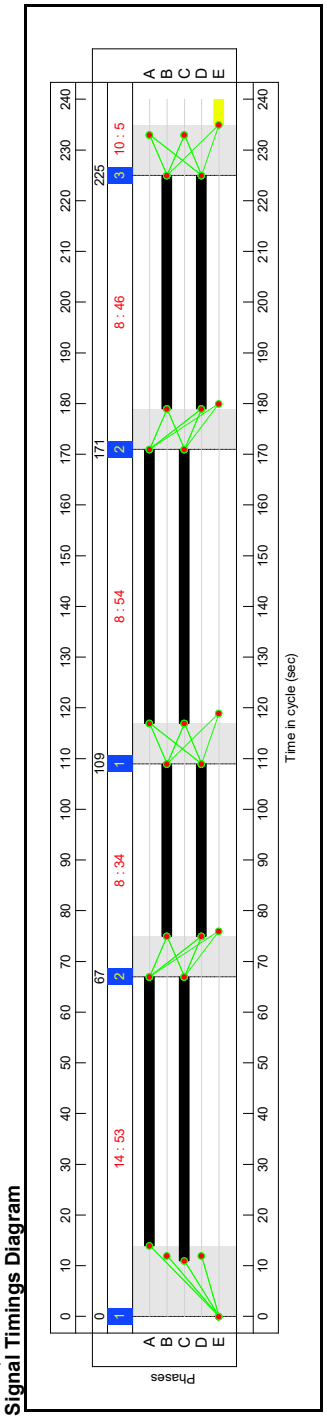


Stage Timings

Stage	1	2	1	2	3
Duration	53	34	54	46	5
Change Point	0	67	109	171	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**78.0%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**78.0%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		685	1908:1665	878	78.0%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	80		478	1758:1768	613	77.9%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	110		543	1919:1657	895	60.7%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	80		246	1869:1880	364	67.6%
5/1		U	N/A	N/A	-		-	-	-	374	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	243	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1044	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	291	1	Inf	0.0%

Full Input Data And Results

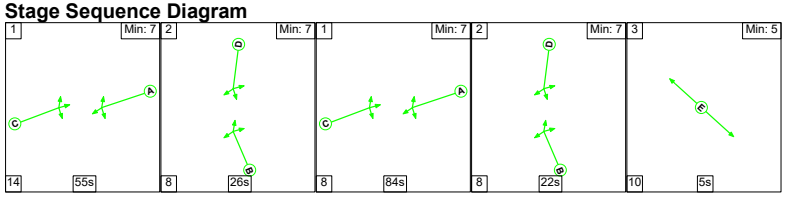
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**212**	**0**	**75**	**16.4**	**5.3**	**1.7**	**23.3**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**212**	**0**	**75**	**16.4**	**5.3**	**1.7**	**23.3**	-	-	-	-
1/1+1/2	685	685	47	0	0	5.5	1.7	0.1	7.3	38.5	23.5	1.7	25.3
2/1+2/2	478	478	10	0	0	4.8	1.7	0.0	6.5	49.0	15.8	1.7	17.5
3/1+3/2	543	543	78	0	39	3.7	0.8	0.8	5.3	35.2	15.3	0.8	16.1
4/1+4/2	246	246	77	0	36	2.3	1.0	0.8	4.1	60.5	4.1	1.0	5.1
5/1	374	374	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	243	243	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1044	1044	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	291	291	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 15.4 Total Delay for Signalled Lanes (pcuHr): 23.27
PRC Over All Lanes (%): 15.4 Total Delay Over All Lanes(pcuHr): 23.27 Cycle Time (s): 240

Full Input Data And Results

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

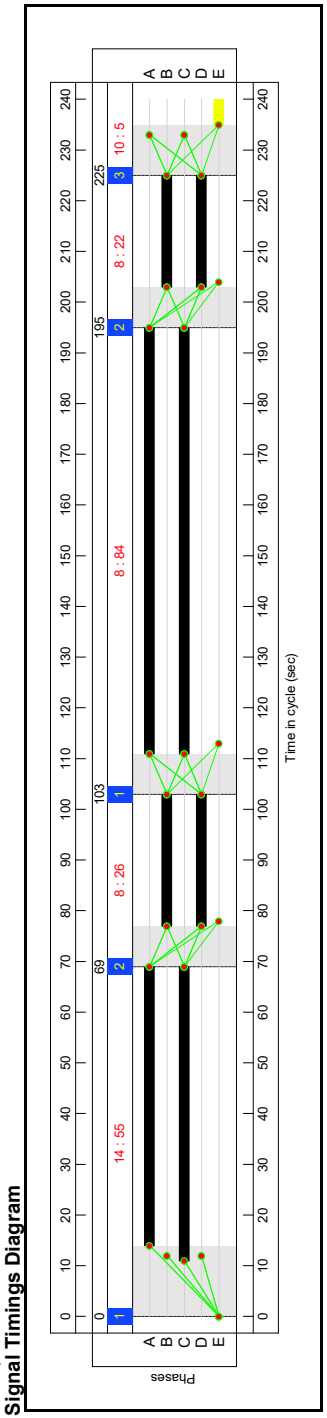


Stage Timings

Stage	1	2	1	2	3
Duration	55	26	84	22	5
Change Point	0	69	103	195	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**89.3%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**89.3%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	139		439	1908:1665	1134	38.7%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		348	1779:1768	390	89.3%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		1041	1924:1657	1166	89.3%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		246	1857:1880	390	63.0%
5/1		U	N/A	N/A	-		-	-	-	681	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	457	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	632	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	304	1	Inf	0.0%

Full Input Data And Results

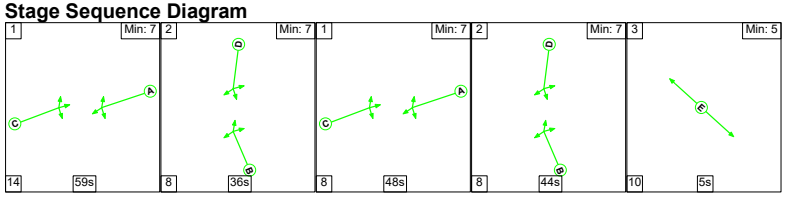
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**400**	**0**	**63**	**14.7**	**8.6**	**1.2**	**24.6**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**400**	**0**	**63**	**14.7**	**8.6**	**1.2**	**24.6**	-	-	-	-
1/1+1/2	439	439	38	0	13	1.6	0.3	0.3	2.2	18.3	8.1	0.3	8.4
2/1+2/2	348	348	19	0	0	4.5	3.6	0.0	8.0	83.2	11.4	3.6	14.9
3/1+3/2	1041	1041	315	0	4	5.9	3.9	0.4	10.2	35.4	32.1	3.9	36.0
4/1+4/2	246	246	29	0	45	2.8	0.8	0.4	4.0	59.2	5.2	0.8	6.1
5/1	681	681	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 0.8 Total Delay for Signalled Lanes (pcuHr): 24.55
PRC Over All Lanes (%): 0.8 Total Delay Over All Lanes(pcuHr): 24.55 Cycle Time (s): 240

Full Input Data And Results

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

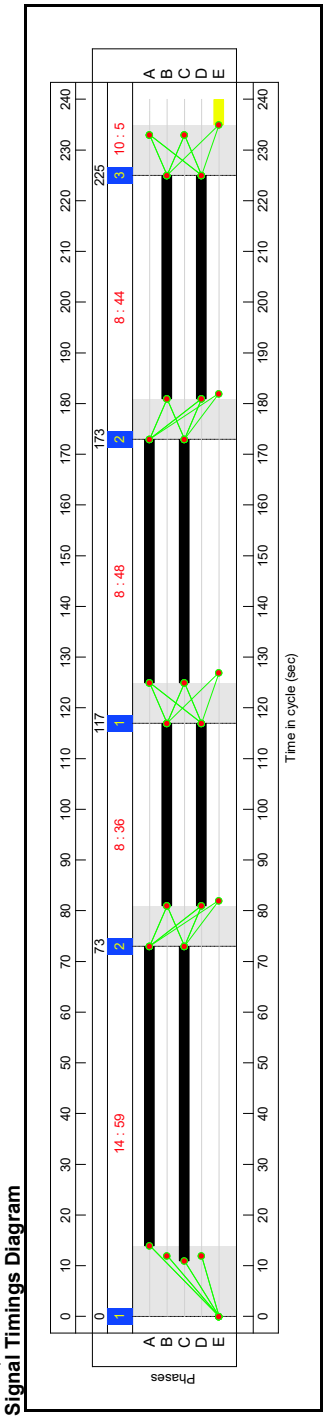


Stage Timings

Stage	1	2	1	2	3
Duration	59	36	48	44	5
Change Point	0	73	117	173	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**81.2%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**81.2%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		712	1908:1665	878	81.1%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	80		499	1759:1768	615	81.2%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	110		571	1919:1657	832	68.6%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	80		261	1869:1880	350	74.7%
5/1		U	N/A	N/A	-		-	-	-	392	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	256	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1086	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	309	1	Inf	0.0%

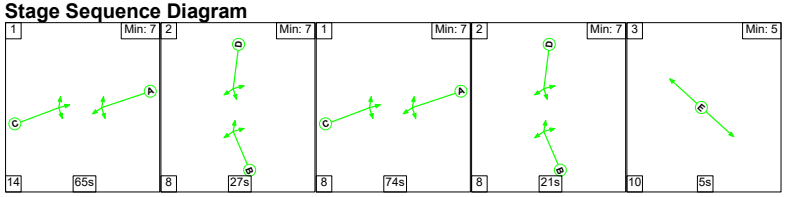
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**225**	**0**	**77**	**17.7**	**6.7**	**1.8**	**26.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**225**	**0**	**77**	**17.7**	**6.7**	**1.8**	**26.2**	-	-	-	-
1/1+1/2	712	712	49	0	0	5.8	2.1	0.1	8.0	40.2	24.5	2.1	26.6
2/1+2/2	499	499	11	0	0	5.2	2.1	0.0	7.3	52.5	18.0	2.1	20.1
3/1+3/2	571	571	90	0	32	4.0	1.1	0.9	6.0	37.6	16.0	1.1	17.1
4/1+4/2	261	261	76	0	44	2.7	1.4	0.8	5.0	69.0	4.6	1.4	6.0
5/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1086	1086	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 10.8 Total Delay for Signalled Lanes (pcuHr): 26.21
PRC Over All Lanes (%): 10.8 Total Delay Over All Lanes(pcuHr): 26.21 Cycle Time (s): 240

Full Input Data And Results

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

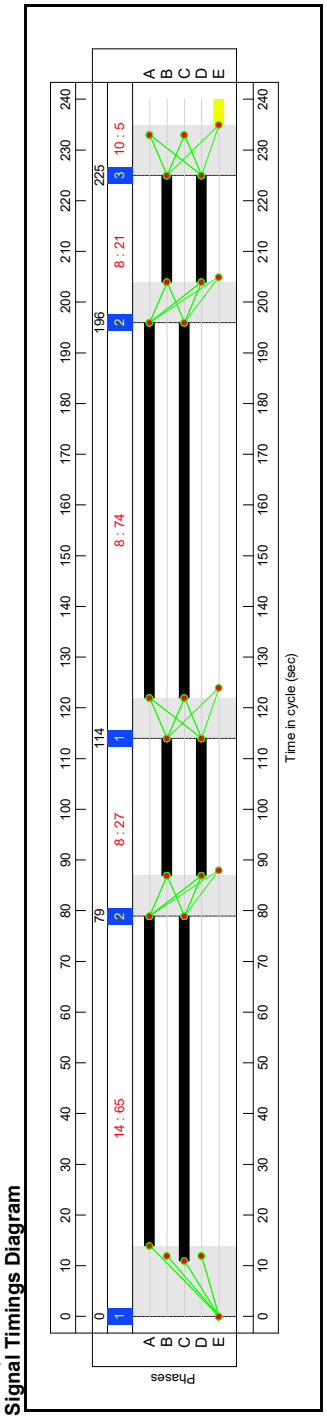


Stage Timings

Stage	1	2	1	2	3
Duration	65	27	74	21	5
Change Point	0	79	114	196	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.0%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.0%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	139		457	1907:1665	1133	40.3%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		361	1780:1768	390	92.6%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		1084	1924:1657	1166	93.0%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		258	1858:1880	298	86.7%
5/1		U	N/A	N/A	-		-	-	-	710	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	474	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	657	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	319	1	Inf	0.0%

Full Input Data And Results

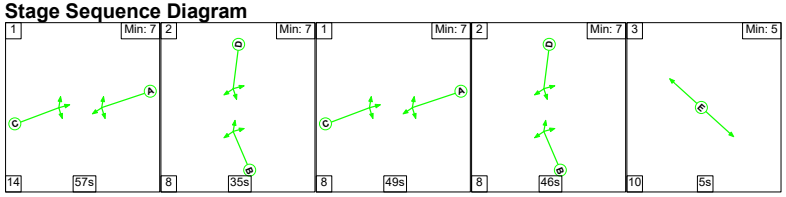
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**406**	**0**	**73**	**15.4**	**13.7**	**1.3**	**30.5**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**406**	**0**	**73**	**15.4**	**13.7**	**1.3**	**30.5**	-	-	-	-
1/1+1/2	457	457	40	0	12	1.7	0.3	0.4	2.4	18.9	8.4	0.3	8.7
2/1+2/2	361	361	20	0	0	4.7	4.7	0.0	9.4	93.8	12.2	4.7	16.9
3/1+3/2	1084	1084	325	0	4	6.1	5.8	0.5	12.4	41.2	34.7	5.8	40.5
4/1+4/2	258	258	21	0	57	2.9	2.8	0.5	6.2	87.0	5.6	2.8	8.4
5/1	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	474	474	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -3.3 Total Delay for Signalled Lanes (pcuHr): 30.45
PRC Over All Lanes (%): -3.3 Total Delay Over All Lanes(pcuHr): 30.45 Cycle Time (s): 240

Full Input Data And Results

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

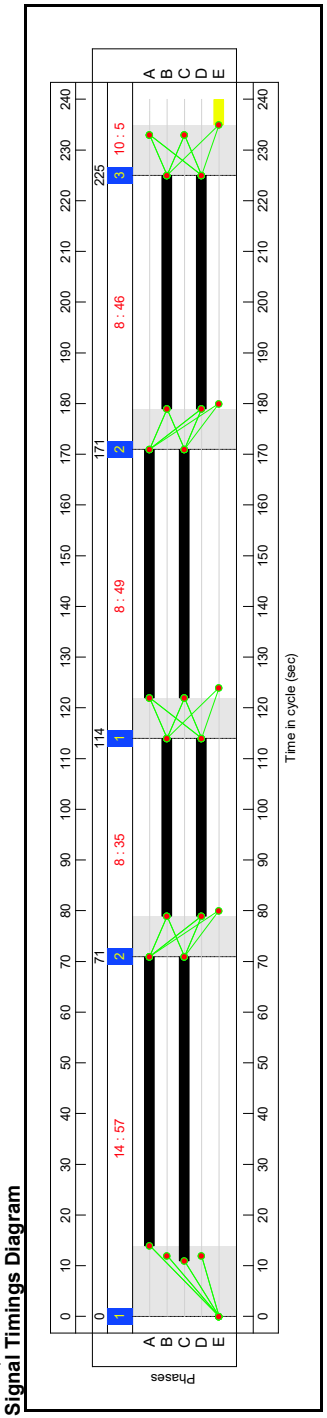


Stage Timings

Stage	1	2	1	2	3
Duration	57	35	49	46	5
Change Point	0	71	114	171	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**81.4%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**81.4%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	106		707	1906:1665	869	81.4%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	81		516	1766:1768	635	81.3%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	109		680	1924:1657	901	75.5%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	81		270	1873:1880	342	79.0%
5/1		U	N/A	N/A	-		-	-	-	548	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	251	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1069	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	305	1	Inf	0.0%

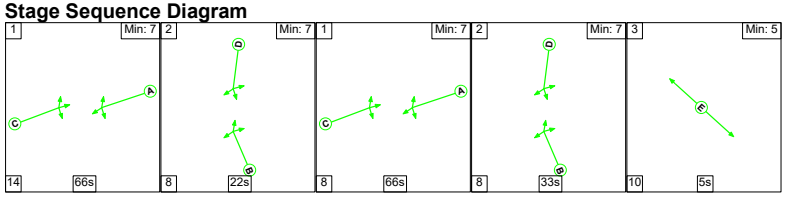
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**248**	**0**	**81**	**19.3**	**7.5**	**1.8**	**28.6**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**248**	**0**	**81**	**19.3**	**7.5**	**1.8**	**28.6**	-	-	-	-
1/1+1/2	707	707	44	0	0	5.9	2.1	0.2	8.2	41.6	24.9	2.1	27.1
2/1+2/2	516	516	38	0	1	5.2	2.1	0.0	7.3	51.2	18.0	2.1	20.1
3/1+3/2	680	680	78	0	34	5.2	1.5	0.8	7.5	39.5	21.9	1.5	23.4
4/1+4/2	270	270	87	0	47	3.0	1.8	0.9	5.7	75.7	5.5	1.8	7.3
5/1	548	548	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1069	1069	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 10.6 Total Delay for Signalled Lanes (pcuHr): 28.65
PRC Over All Lanes (%): 10.6 Total Delay Over All Lanes(pcuHr): 28.65 Cycle Time (s): 240

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

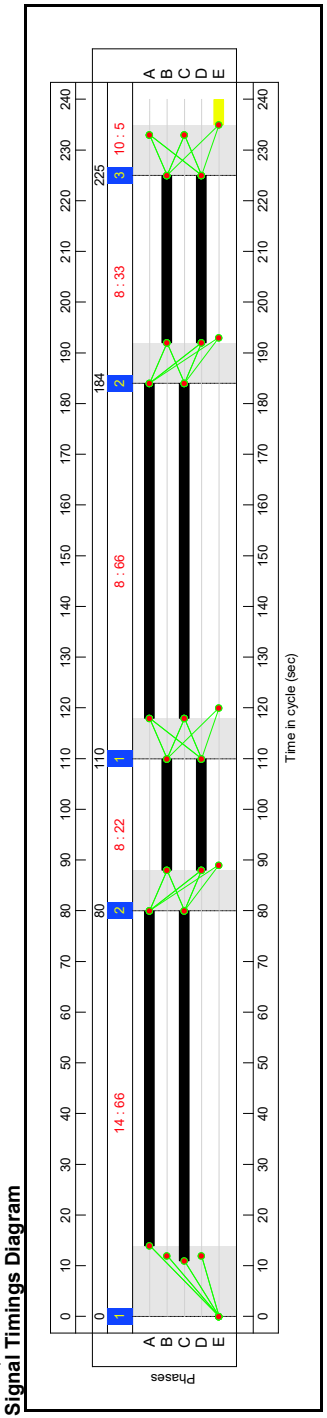


Stage Timings

Stage	1	2	1	2	3
Duration	66	22	66	33	5
Change Point	0	80	110	184	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.6%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.6%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	132		563	1899:1665	1073	52.5%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	55		351	1781:1768	446	78.7%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	135		1042	1925:1657	1101	94.6%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	55		336	1866:1880	356	94.3%
5/1		U	N/A	N/A	-		-	-	-	707	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	493	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	794	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	298	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**414**	**0**	**112**	**19.5**	**14.8**	**1.9**	**36.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**414**	**0**	**112**	**19.5**	**14.8**	**1.9**	**36.2**	-	-	-	-
1/1+1/2	563	563	30	0	19	2.7	0.6	0.4	3.7	23.7	14.4	0.6	15.0
2/1+2/2	351	351	26	0	1	4.2	1.8	0.0	6.0	61.8	11.7	1.8	13.5
3/1+3/2	1042	1042	286	0	20	7.8	7.1	0.9	15.8	54.5	38.6	7.1	45.7
4/1+4/2	336	336	72	0	72	4.7	5.4	0.6	10.7	114.9	6.5	5.4	11.9
5/1	707	707	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	794	794	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	298	298	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -5.1
PRC Over All Lanes (%): -5.1

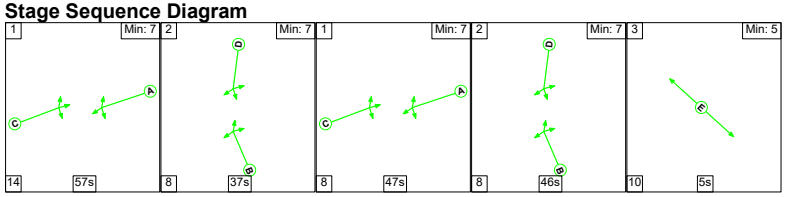
Total Delay for Signalled Lanes (pcuHr): 36.23
Total Delay Over All Lanes(pcuHr): 36.23

Cycle Time (s): 240

Full Input Data And Results

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

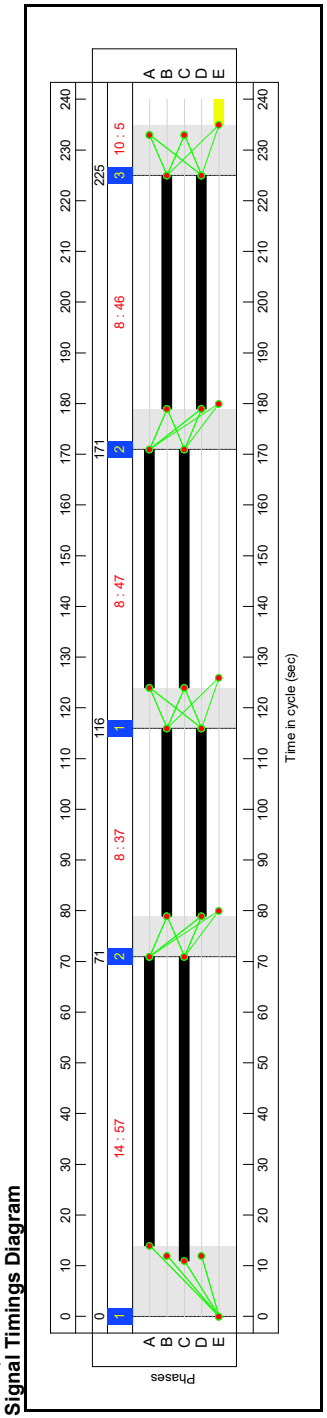


Stage Timings

Stage	1	2	1	2	3
Duration	57	37	47	46	5
Change Point	0	71	116	171	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**86.5%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**86.5%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	104		738	1906:1665	853	86.5%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	83		538	1766:1768	650	82.8%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	107		706	1924:1657	884	79.9%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	83		283	1873:1880	331	85.6%
5/1		U	N/A	N/A	-		-	-	-	567	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	263	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1114	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	321	1	Inf	0.0%

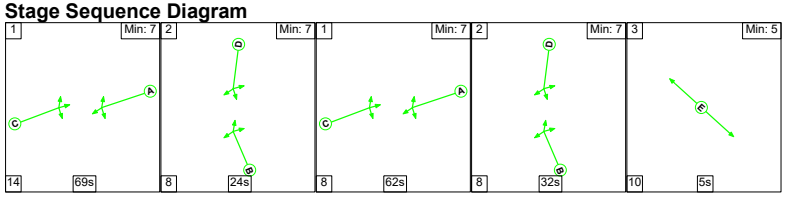
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**234**	**0**	**110**	**21.0**	**10.0**	**2.1**	**33.0**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**234**	**0**	**110**	**21.0**	**10.0**	**2.1**	**33.0**	-	-	-	-
1/1+1/2	738	738	47	0	0	6.4	3.0	0.2	9.7	47.2	26.7	3.0	29.7
2/1+2/2	538	538	39	0	1	5.5	2.3	0.0	7.8	52.3	19.1	2.3	21.5
3/1+3/2	706	706	67	0	50	5.8	1.9	1.0	8.7	44.4	23.3	1.9	25.3
4/1+4/2	283	283	81	0	59	3.3	2.7	0.9	6.8	87.1	6.0	2.7	8.7
5/1	567	567	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1114	1114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	321	321	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 4.1 Total Delay for Signalled Lanes (pcuHr): 33.04
PRC Over All Lanes (%): 4.1 Total Delay Over All Lanes(pcuHr): 33.04 Cycle Time (s): 240

Full Input Data And Results

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

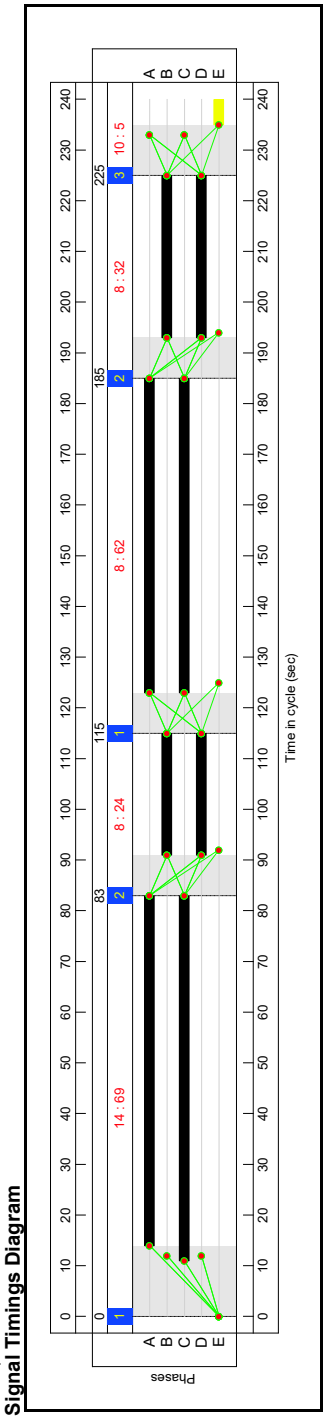


Stage Timings

Stage	1	2	1	2	3
Duration	69	24	62	32	5
Change Point	0	83	115	185	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**100.2%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**100.2%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	131		582	1900:1665	1065	54.6%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	56		366	1782:1768	454	80.7%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	134		1088	1925:1657	1086	100.1%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	56		346	1866:1880	345	100.2%
5/1		U	N/A	N/A	-		-	-	-	737	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	511	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	821	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	313	1	Inf	0.0%

Full Input Data And Results

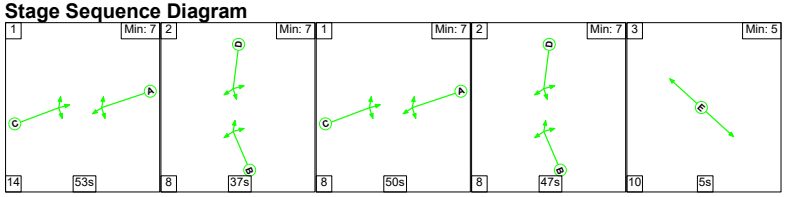
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**414**	**0**	**130**	**21.6**	**29.0**	**2.1**	**52.7**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**414**	**0**	**130**	**21.6**	**29.0**	**2.1**	**52.7**	-	-	-	-
1/1+1/2	582	582	24	0	27	2.9	0.6	0.5	3.9	24.3	14.9	0.6	15.5
2/1+2/2	366	366	27	0	1	4.4	2.0	0.0	6.5	63.8	12.8	2.0	14.8
3/1+3/2	1088	1088	298	0	21	9.3	16.9	0.9	27.1	89.7	41.0	16.9	57.8
4/1+4/2	346	346	66	0	81	5.0	9.5	0.6	15.1	157.4	6.8	9.5	16.3
5/1	737	737	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	821	821	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	313	313	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -11.4 Total Delay for Signalled Lanes (pcuHr): 52.65
PRC Over All Lanes (%): -11.4 Total Delay Over All Lanes(pcuHr): 52.65 Cycle Time (s): 240

Full Input Data And Results

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

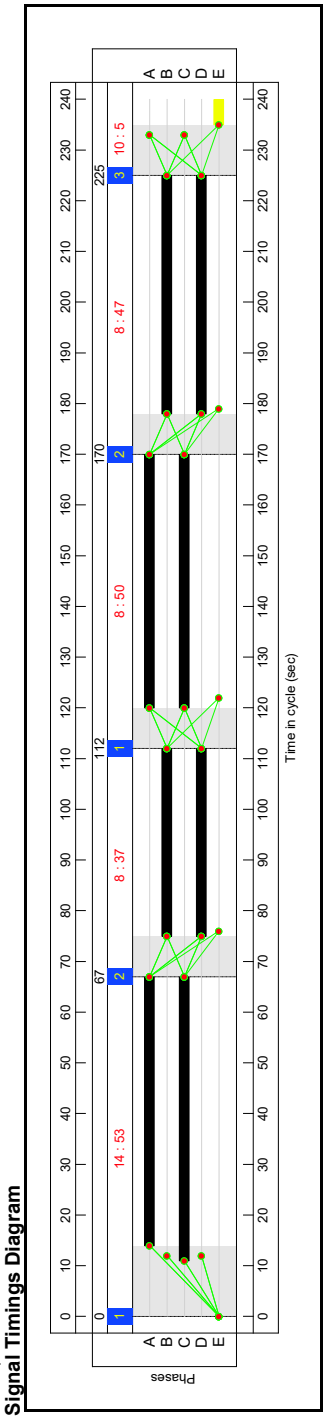


Stage Timings

Stage	1	2	1	2	3
Duration	53	37	50	47	5
Change Point	0	67	112	170	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**96.3%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**96.3%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	103		765	1905:1665	845	90.5%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	84		559	1766:1768	657	85.1%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	106		734	1923:1657	789	93.0%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	84		298	1872:1880	309	96.3%
5/1		U	N/A	N/A	-		-	-	-	585	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	276	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1156	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	339	1	Inf	0.0%

Full Input Data And Results

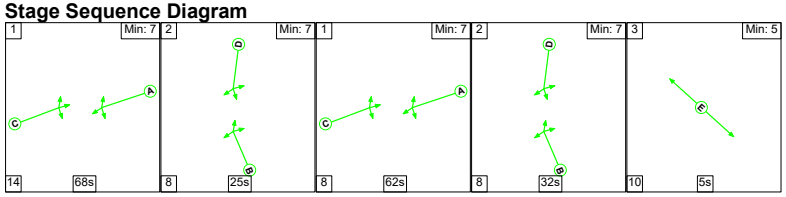
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**205**	**0**	**154**	**22.8**	**18.8**	**2.3**	**44.0**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**205**	**0**	**154**	**22.8**	**18.8**	**2.3**	**44.0**	-	-	-	-
1/1+1/2	765	765	48	0	1	7.0	4.3	0.3	11.6	54.4	28.7	4.3	33.0
2/1+2/2	559	559	40	0	1	5.7	2.7	0.0	8.4	54.2	19.3	2.7	22.0
3/1+3/2	734	734	47	0	75	6.6	5.6	1.1	13.3	65.0	25.1	5.6	30.6
4/1+4/2	298	298	70	0	77	3.5	6.2	1.0	10.7	129.4	6.7	6.2	13.0
5/1	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	276	276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1156	1156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -7.0 Total Delay for Signalled Lanes (pcuHr): 43.95
PRC Over All Lanes (%): -7.0 Total Delay Over All Lanes(pcuHr): 43.95 Cycle Time (s): 240

Full Input Data And Results

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

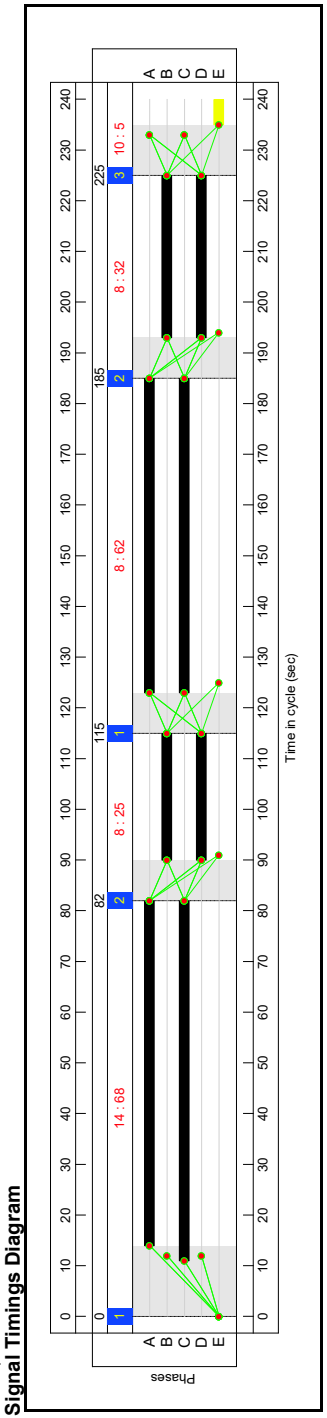


Stage Timings

Stage	1	2	1	2	3
Duration	68	25	62	32	5
Change Point	0	82	115	185	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**105.7%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**105.7%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	130		600	1900:1665	1057	56.7%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	57		379	1783:1768	461	82.2%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	133		1131	1925:1657	1074	105.3%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	57		358	1866:1880	339	105.7%
5/1		U	N/A	N/A	-		-	-	-	766	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	528	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	846	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	328	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**400**	**0**	**136**	**29.0**	**54.7**	**2.1**	**85.8**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**400**	**0**	**136**	**29.0**	**54.7**	**2.1**	**85.8**	-	-	-	-
1/1+1/2	600	600	26	0	26	3.0	0.7	0.4	4.1	24.7	15.6	0.7	16.3
2/1+2/2	379	379	28	0	1	4.6	2.2	0.0	6.8	64.7	13.2	2.2	15.4
3/1+3/2	1131	1074	284	0	28	15.6	36.4	1.0	53.0	168.8	45.8	36.4	82.1
4/1+4/2	358	350	62	0	81	5.7	15.4	0.6	21.8	219.4	7.6	15.4	23.0
5/1	731	731	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	838	838	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	322	322	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -17.4 Total Delay for Signalled Lanes (pcuHr): 85.78
PRC Over All Lanes (%): -17.4 Total Delay Over All Lanes(pcuHr): 85.78 Cycle Time (s): 240

APPENDIX D4

JUNCTION ANALYSIS OUTPUTS

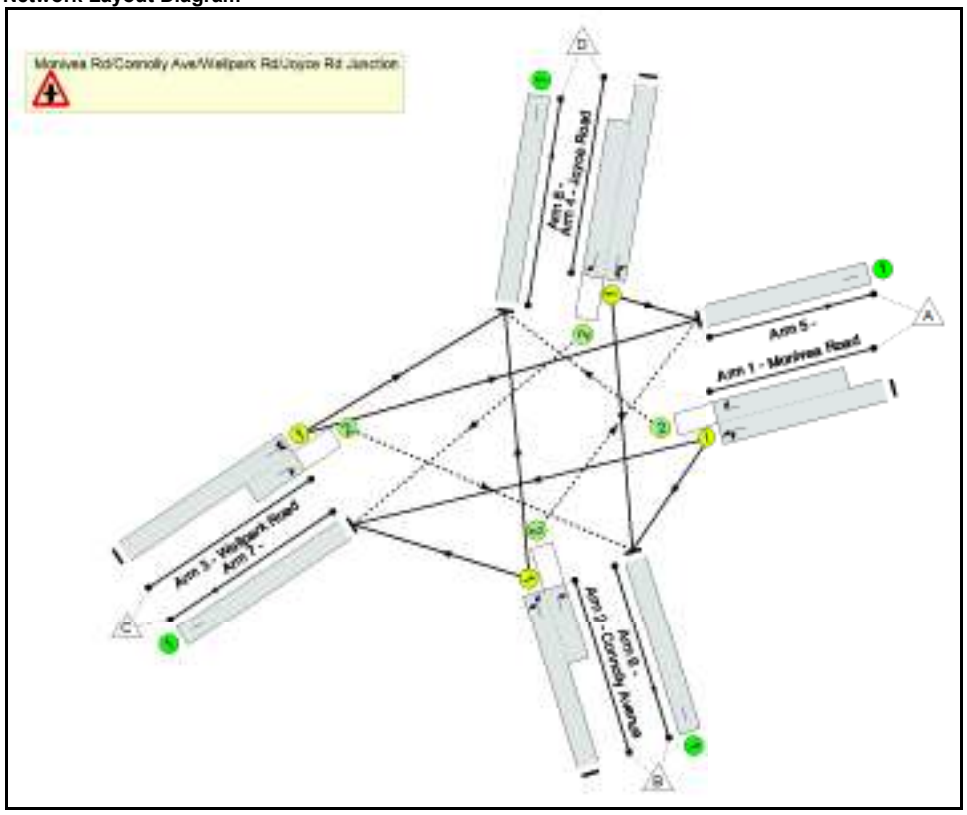
MONIVEA RD/CONNOLLY AVE/WELLPARK RD/JOYCE'S RD SIGNALISED CROSSROADS JUNCTION PROPOSED LAYOUT (LINSIG)

Full Input Data And Results

User and Project Details

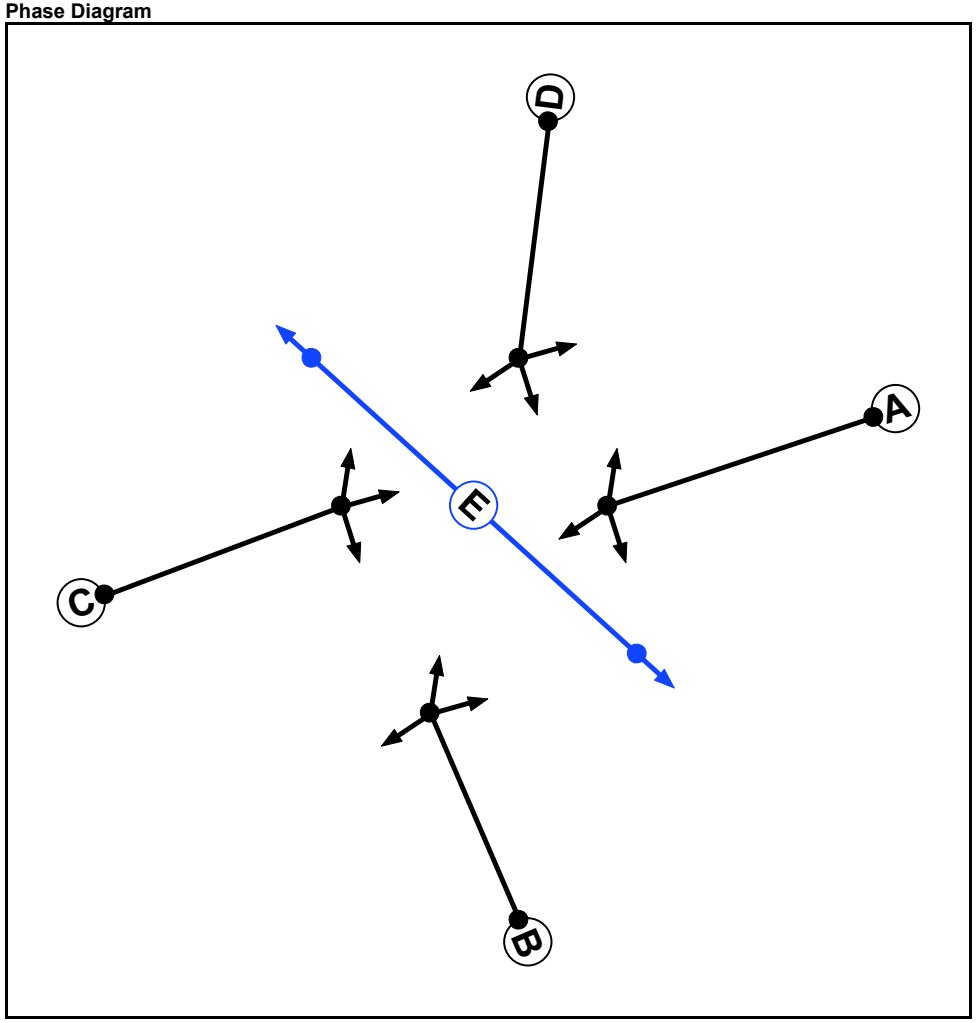
Project:	**Crown Square**
Title:	**Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction**
File name:	118241 Monivea Rd_Connolly Ave_Wellpark Rd_Joyce Rd LinSig Analysis Punch Design 2018 10 31 jn.lsg3x
Author:	J Noone
Company:	Punch Consulting Engineers

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		5	5

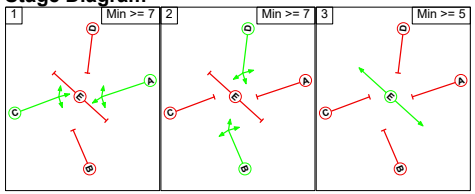
Phase Intergreens Matrix

		Starting Phase				
		A	B	C	D	E
Terminating Phase	A		8	-	8	9
	B	8		8	-	10
	C	-	8		8	9
	D	8	-	8		10
	E	12	12	11	11	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B D
3	E

Stage Diagram



Full Input Data And Results

Lane Input Data

Junction: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Monivea Road)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Left	15.00
											Arm 7 Ahead	Inf
1/2 (Monivea Road)	O	A	2	3	10.2	Geom	-	3.25	0.00	Y	Arm 8 Right	10.00
2/1 (Connolly Avenue)	U	B	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 7 Left	11.00
											Arm 8 Ahead	60.00
2/2 (Connolly Avenue)	O	B	2	3	5.5	Geom	-	3.00	0.00	Y	Arm 5 Right	18.00
3/1 (Wellpark Road)	U	C	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
											Arm 8 Left	40.00
3/2 (Wellpark Road)	O	C	2	3	4.0	Geom	-	2.90	0.00	Y	Arm 6 Right	10.00
4/1 (Joyce Road)	U	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	10.00
											Arm 6 Ahead	70.00
4/2 (Joyce Road)	O	D	2	3	12.0	Geom	-	3.25	0.00	Y	Arm 7 Right	33.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 AM without Dev'	08:15	09:15	01:00	
2: '2018 PM without Dev'	16:00	17:00	01:00	
3: '2022 AM without Dev'	08:15	09:15	01:00	
4: '2022 PM without Dev'	16:00	17:00	01:00	
5: '2027 AM without Dev'	08:15	09:15	01:00	
6: '2027 PM without Dev'	16:00	17:00	01:00	
7: '2037 AM without Dev'	08:15	09:15	01:00	
8: '2037 PM without Dev'	16:00	17:00	01:00	
11: '2022 AM with Dev'	08:15	09:15	01:00	F3+F9
12: '2022 PM with Dev'	16:00	17:00	01:00	F4+F10
13: '2027 AM with Dev'	08:15	09:15	01:00	F5+F9
14: '2027 PM with Dev'	16:00	17:00	01:00	F6+F10
15: '2037 AM with Dev'	08:15	09:15	01:00	F7+F9
16: '2037 PM with Dev'	16:00	17:00	01:00	F8+F10

Traffic Flows, Desired

Scenario 1: '2018 AM without Dev' (FG10: 'PM Traffic Generated by Development', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	27	116	0	143
	B	9	0	0	9	18
	C	47	0	0	0	47
	D	0	27	73	0	100
	Tot.	56	54	189	9	308

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	14	343	47	404
	B	17	0	172	132	321
	C	565	295	0	99	959
	D	46	114	68	0	228
	Tot.	628	423	583	278	1912

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	22	588	44	654
	B	9	0	304	143	456
	C	317	112	0	88	517
	D	29	97	107	0	233
	Tot.	355	231	999	275	1860

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	356	49	420
	B	18	0	178	137	333
	C	586	306	0	103	995
	D	47	118	71	0	236
	Tot.	651	439	605	289	1984

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	24	614	47	685
	B	10	0	317	151	478
	C	333	117	0	93	543
	D	31	102	113	0	246
	Tot.	374	243	1044	291	1952

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	15	373	51	439
	B	19	0	185	144	348
	C	613	319	0	109	1041
	D	49	123	74	0	246
	Tot.	681	457	632	304	2074

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	26	637	49	712
	B	11	0	329	159	499
	C	348	122	0	101	571
	D	33	108	120	0	261
	Tot.	392	256	1086	309	2043

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	389	52	457
	B	20	0	190	151	361
	C	639	329	0	116	1084
	D	51	129	78	0	258
	Tot.	710	474	657	319	2160

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	32	631	44	707
	B	39	0	304	173	516
	C	480	112	0	88	680
	D	29	107	134	0	270
	Tot.	548	251	1069	305	2173

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	472	49	563
	B	27	0	178	146	351
	C	633	306	0	103	1042
	D	47	145	144	0	336
	Tot.	707	493	794	298	2292

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	34	657	47	738
	B	40	0	317	181	538
	C	496	117	0	93	706
	D	31	112	140	0	283
	Tot.	567	263	1114	321	2265

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	489	51	582
	B	28	0	185	153	366
	C	660	319	0	109	1088
	D	49	150	147	0	346
	Tot.	737	511	821	313	2382

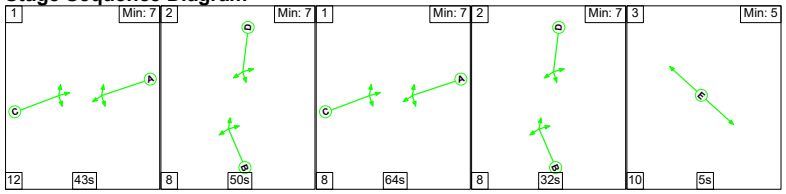
Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	36	680	49	765
	B	41	0	329	189	559
	C	511	122	0	101	734
	D	33	118	147	0	298
	Tot.	585	276	1156	339	2356

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	43	505	52	600
	B	29	0	190	160	379
	C	686	329	0	116	1131
	D	51	156	151	0	358
	Tot.	766	528	846	328	2468

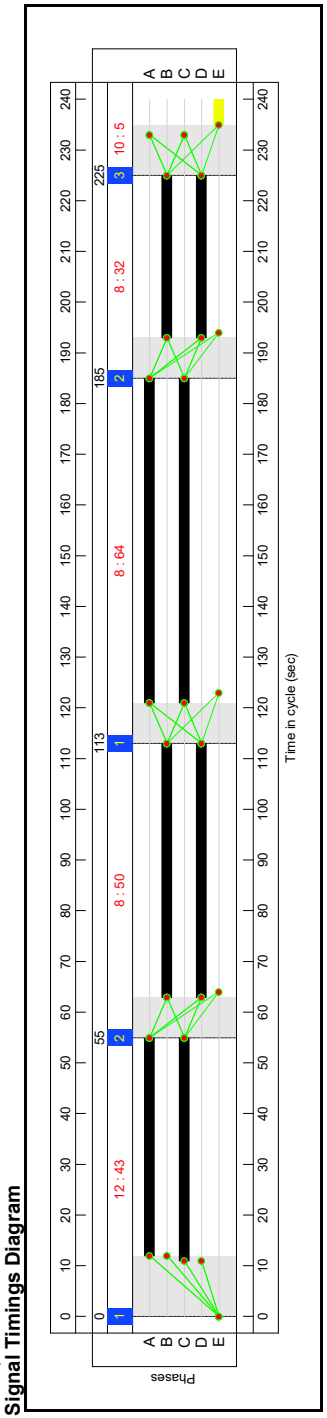
Scenario 1: '2018 AM without Dev' (FG10: 'PM Traffic Generated by Development', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

Stage	1	2	1	2	3
Duration	43	50	64	32	5
Change Point	0	55	113	185	225

Full Input Data And Results
Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**70.9%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**70.9%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		632	1933:1687	892	70.9%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	82		440	1758:1768	628	70.1%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	108		496	1920:1657	880	56.3%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	82		223	1846:1856	453	49.2%
5/1		U	N/A	N/A	-		-	-	-	342	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	222	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	963	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	264	1	Inf	0.0%

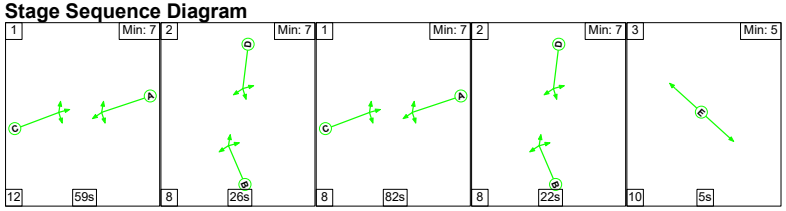
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**236**	**0**	**26**	**13.4**	**3.5**	**1.4**	**18.3**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**236**	**0**	**26**	**13.4**	**3.5**	**1.4**	**18.3**	-	-	-	-
1/1+1/2	632	632	43	0	0	4.5	1.2	0.1	5.8	33.1	16.1	1.2	17.3
2/1+2/2	440	440	9	0	0	4.1	1.2	0.0	5.3	43.0	12.6	1.2	13.8
3/1+3/2	496	496	102	0	6	3.1	0.6	0.6	4.4	32.0	10.7	0.6	11.4
4/1+4/2	223	223	82	0	20	1.7	0.5	0.6	2.8	44.8	2.8	0.5	3.3
5/1	342	342	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	222	222	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	963	963	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1
PRC for Signalled Lanes (%): 27.0
PRC Over All Lanes (%): 27.0
Total Delay for Signalled Lanes (pcuHr): 18.25
Total Delay Over All Lanes(pcuHr): 18.25
Cycle Time (s): 240

Full Input Data And Results

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

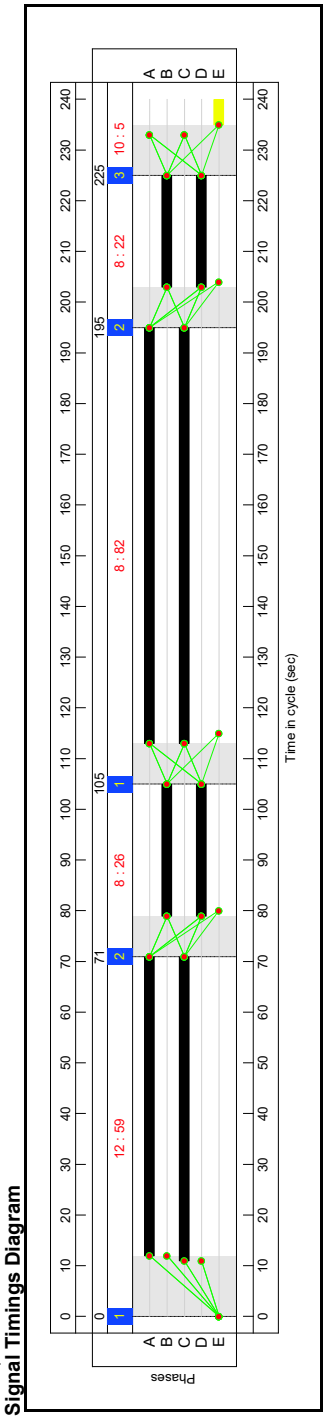


Stage Timings

Stage	1	2	1	2	3
Duration	59	26	82	22	5
Change Point	0	71	105	195	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**82.5%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**82.5%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	141		404	1932:1687	1175	34.4%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		321	1778:1768	389	82.5%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		959	1924:1657	1166	82.2%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		228	1833:1856	485	47.0%
5/1		U	N/A	N/A	-		-	-	-	628	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	423	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	583	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	278	1	Inf	0.0%

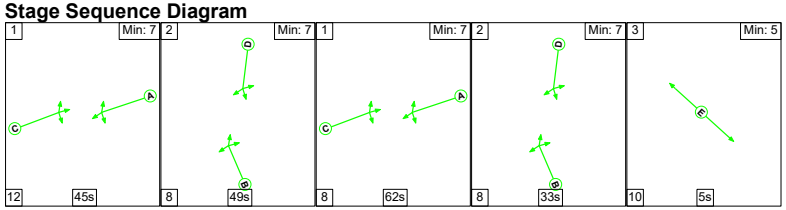
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**404**	**0**	**23**	**12.6**	**5.2**	**0.9**	**18.7**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**404**	**0**	**23**	**12.6**	**5.2**	**0.9**	**18.7**	-	-	-	-
1/1+1/2	404	404	47	0	0	1.4	0.3	0.3	1.9	16.7	6.7	0.3	7.0
2/1+2/2	321	321	17	0	0	4.0	2.2	0.0	6.3	70.2	10.0	2.2	12.2
3/1+3/2	959	959	293	0	2	4.7	2.3	0.3	7.2	27.2	26.5	2.3	28.7
4/1+4/2	228	228	48	0	20	2.6	0.4	0.3	3.4	52.9	4.7	0.4	5.2
5/1	628	628	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	423	423	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	583	583	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	278	278	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 9.1 Total Delay for Signalled Lanes (pcuHr): 18.73
PRC Over All Lanes (%): 9.1 Total Delay Over All Lanes(pcuHr): 18.73 Cycle Time (s): 240

Full Input Data And Results

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

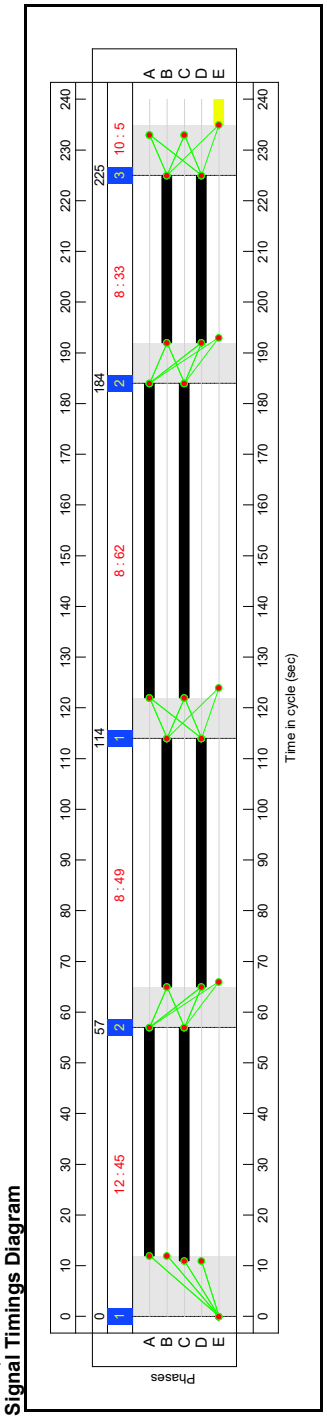


Stage Timings

Stage	1	2	1	2	3
Duration	45	49	62	33	5
Change Point	0	57	114	184	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**73.4%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**73.4%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		654	1933:1687	891	73.4%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	82		456	1758:1768	628	72.7%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	108		517	1919:1657	880	58.8%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	82		233	1846:1856	426	54.7%
5/1		U	N/A	N/A	-		-	-	-	355	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	231	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	999	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	275	1	Inf	0.0%

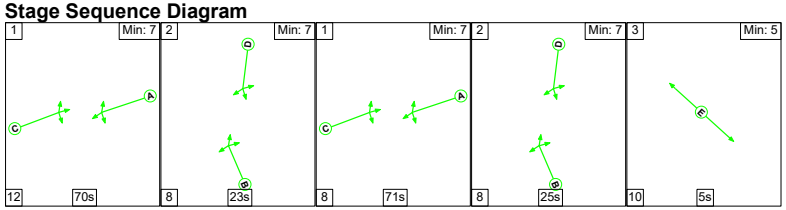
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**241**	**0**	**31**	**14.1**	**4.0**	**1.5**	**19.6**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**241**	**0**	**31**	**14.1**	**4.0**	**1.5**	**19.6**	-	-	-	-
1/1+1/2	654	654	44	0	0	4.7	1.4	0.1	6.2	34.2	17.2	1.4	18.6
2/1+2/2	456	456	9	0	0	4.3	1.3	0.0	5.6	44.3	13.2	1.3	14.5
3/1+3/2	517	517	101	0	11	3.3	0.7	0.7	4.7	33.0	11.5	0.7	12.2
4/1+4/2	233	233	87	0	20	1.8	0.6	0.7	3.0	47.1	2.9	0.6	3.5
5/1	355	355	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	231	231	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	999	999	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 22.7 Total Delay for Signalled Lanes (pcuHr): 19.61
PRC Over All Lanes (%): 22.7 Total Delay Over All Lanes(pcuHr): 19.61 Cycle Time (s): 240

Full Input Data And Results

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

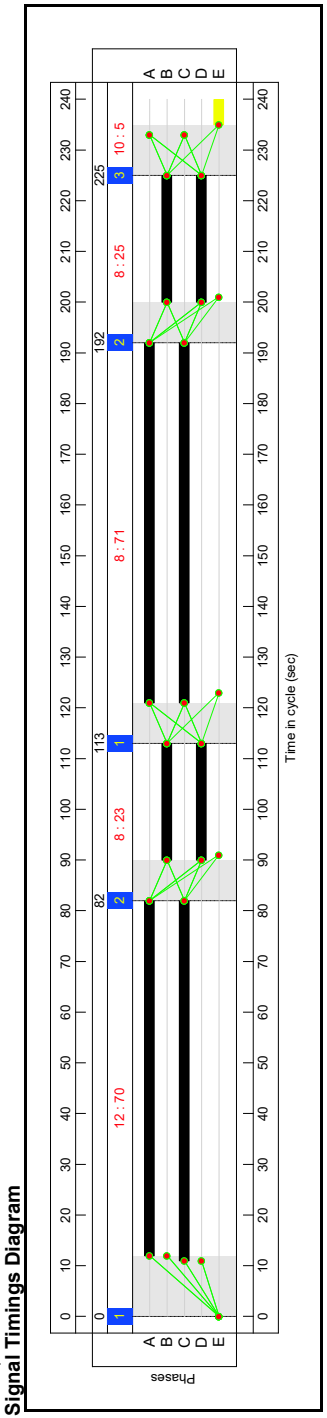


Stage Timings

Stage	1	2	1	2	3
Duration	70	23	71	25	5
Change Point	0	82	113	192	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**85.5%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**85.5%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	141		420	1932:1687	1175	35.8%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		333	1779:1768	390	85.5%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		995	1924:1657	1166	85.3%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		236	1834:1856	464	50.9%
5/1		U	N/A	N/A	-		-	-	-	651	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	439	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	605	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	289	1	Inf	0.0%

Full Input Data And Results

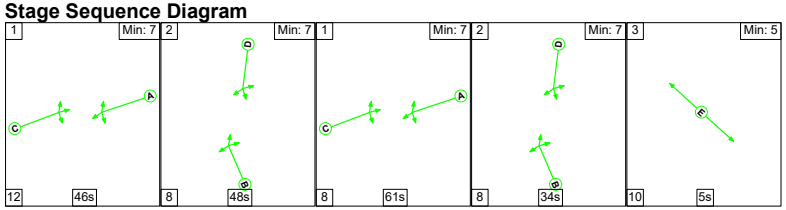
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**409**	**0**	**35**	**13.6**	**6.3**	**1.0**	**20.9**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**409**	**0**	**35**	**13.6**	**6.3**	**1.0**	**20.9**	-	-	-	-
1/1+1/2	420	420	49	0	0	1.5	0.3	0.3	2.0	17.4	7.5	0.3	7.8
2/1+2/2	333	333	18	0	0	4.3	2.7	0.0	7.0	75.3	11.3	2.7	14.0
3/1+3/2	995	995	303	0	3	5.2	2.8	0.3	8.3	30.1	30.6	2.8	33.4
4/1+4/2	236	236	39	0	32	2.7	0.5	0.4	3.6	54.6	5.2	0.5	5.7
5/1	651	651	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	605	605	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 5.3 Total Delay for Signalled Lanes (pcuHr): 20.89
PRC Over All Lanes (%): 5.3 Total Delay Over All Lanes(pcuHr): 20.89 Cycle Time (s): 240

Full Input Data And Results

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

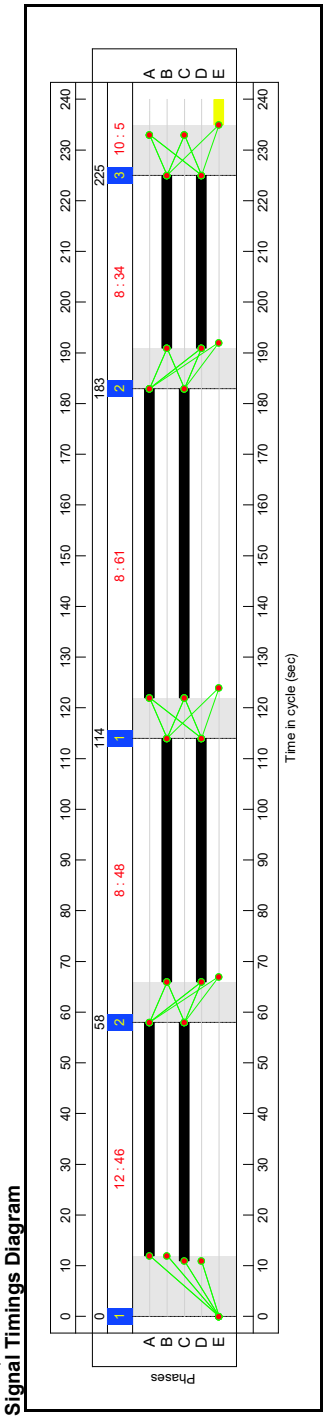


Stage Timings

Stage	1	2	1	2	3
Duration	46	48	61	34	5
Change Point	0	58	114	183	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**76.8%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**76.8%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		685	1933:1687	892	76.8%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	82		478	1758:1768	628	76.1%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	108		543	1919:1657	880	61.7%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	82		246	1845:1856	391	63.0%
5/1		U	N/A	N/A	-		-	-	-	374	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	243	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1044	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	291	1	Inf	0.0%

Full Input Data And Results

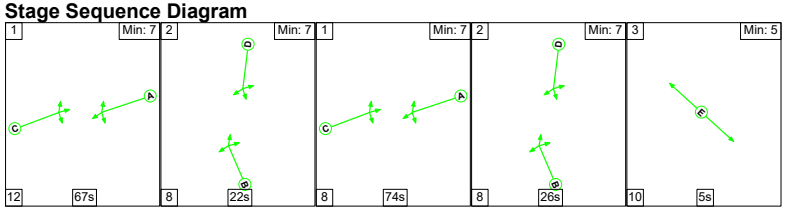
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**239**	**0**	**48**	**15.1**	**4.8**	**1.7**	**21.7**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**239**	**0**	**48**	**15.1**	**4.8**	**1.7**	**21.7**	-	-	-	-
1/1+1/2	685	685	47	0	0	5.1	1.6	0.1	6.9	36.0	18.8	1.6	20.5
2/1+2/2	478	478	10	0	0	4.6	1.6	0.0	6.1	46.3	14.2	1.6	15.8
3/1+3/2	543	543	95	0	22	3.6	0.8	0.8	5.2	34.3	12.8	0.8	13.6
4/1+4/2	246	246	88	0	25	1.9	0.8	0.8	3.5	51.1	3.2	0.8	4.0
5/1	374	374	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	243	243	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1044	1044	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	291	291	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 17.2 Total Delay for Signalled Lanes (pcuHr): 21.66
PRC Over All Lanes (%): 17.2 Total Delay Over All Lanes(pcuHr): 21.66 Cycle Time (s): 240

Full Input Data And Results

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

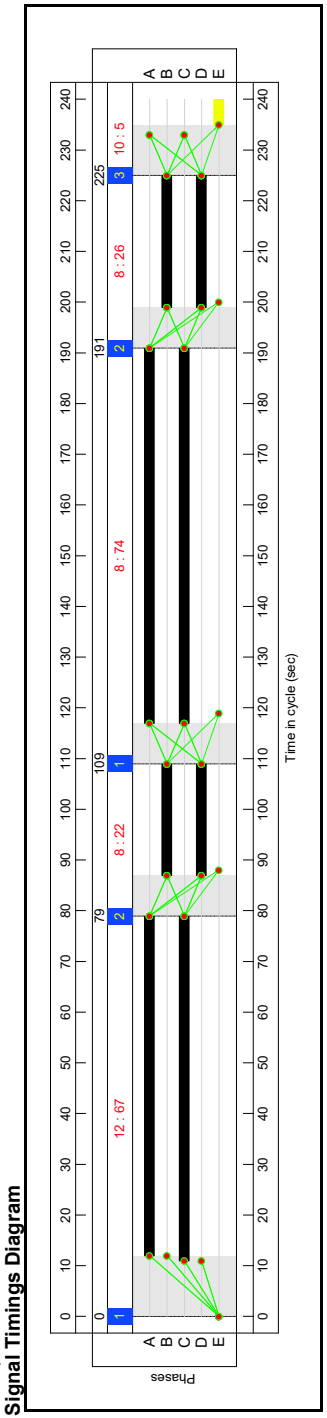


Stage Timings

Stage	1	2	1	2	3
Duration	67	22	74	26	5
Change Point	0	79	109	191	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**89.3%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**89.3%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	141		439	1933:1687	1175	37.4%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		348	1779:1768	390	89.3%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		1041	1924:1657	1166	89.3%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		246	1834:1856	423	58.1%
5/1		U	N/A	N/A	-		-	-	-	681	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	457	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	632	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	304	1	Inf	0.0%

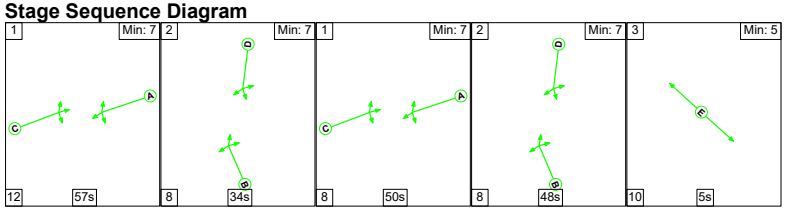
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**405**	**0**	**58**	**14.6**	**8.5**	**1.1**	**24.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**405**	**0**	**58**	**14.6**	**8.5**	**1.1**	**24.2**	-	-	-	-
1/1+1/2	439	439	41	0	10	1.5	0.3	0.4	2.2	18.1	8.1	0.3	8.4
2/1+2/2	348	348	19	0	0	4.5	3.6	0.0	8.1	83.3	11.6	3.6	15.1
3/1+3/2	1041	1041	315	0	4	5.8	3.9	0.4	10.1	34.9	34.7	3.9	38.6
4/1+4/2	246	246	30	0	44	2.8	0.7	0.4	3.9	57.0	5.3	0.7	6.0
5/1	681	681	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 0.8 Total Delay for Signalled Lanes (pcuHr): 24.23
PRC Over All Lanes (%): 0.8 Total Delay Over All Lanes(pcuHr): 24.23 Cycle Time (s): 240

Full Input Data And Results

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

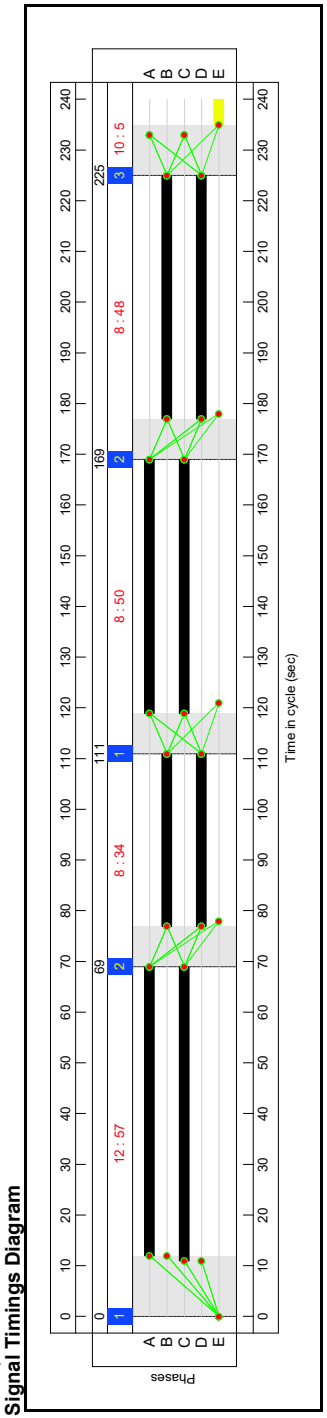


Stage Timings

Stage	1	2	1	2	3
Duration	57	34	50	48	5
Change Point	0	69	111	169	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**79.9%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**79.9%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	107		712	1932:1687	892	79.9%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	82		499	1759:1768	629	79.3%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	108		571	1919:1657	864	66.1%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	82		261	1845:1856	377	69.3%
5/1		U	N/A	N/A	-		-	-	-	392	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	256	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1086	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	309	1	Inf	0.0%

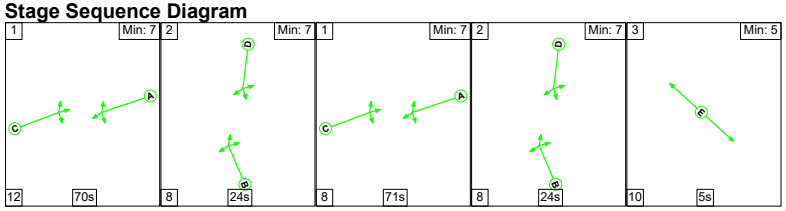
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**218**	**0**	**84**	**17.5**	**5.9**	**1.8**	**25.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**218**	**0**	**84**	**17.5**	**5.9**	**1.8**	**25.2**	-	-	-	-
1/1+1/2	712	712	49	0	0	5.8	1.9	0.2	7.9	39.7	24.6	1.9	26.5
2/1+2/2	499	499	11	0	0	5.0	1.9	0.0	6.9	49.5	17.2	1.9	19.1
3/1+3/2	571	571	84	0	38	4.2	1.0	0.8	6.0	37.8	17.0	1.0	18.0
4/1+4/2	261	261	74	0	45	2.6	1.1	0.8	4.5	62.1	4.4	1.1	5.5
5/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1086	1086	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 12.7 Total Delay for Signalled Lanes (pcuHr): 25.21
PRC Over All Lanes (%): 12.7 Total Delay Over All Lanes(pcuHr): 25.21 Cycle Time (s): 240

Full Input Data And Results

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

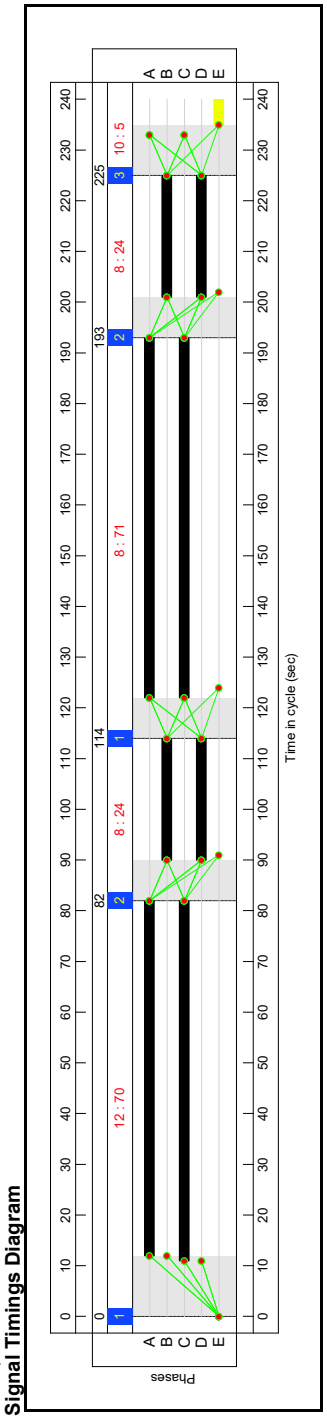


Stage Timings

Stage	1	2	1	2	3
Duration	70	24	71	24	5
Change Point	0	82	114	193	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.0%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.0%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	141		457	1932:1687	1174	38.9%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	48		361	1780:1768	390	92.6%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	142		1084	1924:1657	1166	93.0%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	48		258	1834:1856	321	80.5%
5/1		U	N/A	N/A	-		-	-	-	710	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	474	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	657	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	319	1	Inf	0.0%

Full Input Data And Results

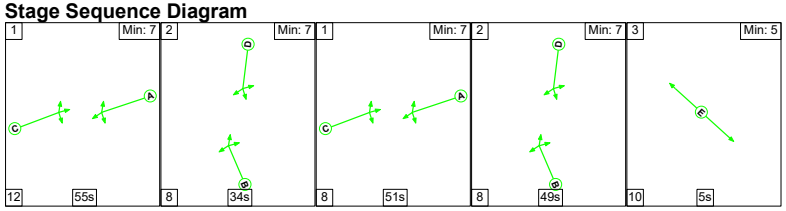
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**401**	**0**	**78**	**15.5**	**12.8**	**1.3**	**29.6**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**401**	**0**	**78**	**15.5**	**12.8**	**1.3**	**29.6**	-	-	-	-
1/1+1/2	457	457	36	0	16	1.6	0.3	0.4	2.3	18.4	8.2	0.3	8.5
2/1+2/2	361	361	20	0	0	4.7	4.7	0.0	9.4	94.0	12.5	4.7	17.2
3/1+3/2	1084	1084	325	0	4	6.3	5.8	0.4	12.5	41.5	36.8	5.8	42.6
4/1+4/2	258	258	20	0	58	3.0	1.9	0.5	5.4	74.7	5.8	1.9	7.7
5/1	710	710	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	474	474	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	657	657	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -3.3 Total Delay for Signalled Lanes (pcuHr): 29.61
PRC Over All Lanes (%): -3.3 Total Delay Over All Lanes(pcuHr): 29.61 Cycle Time (s): 240

Full Input Data And Results

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

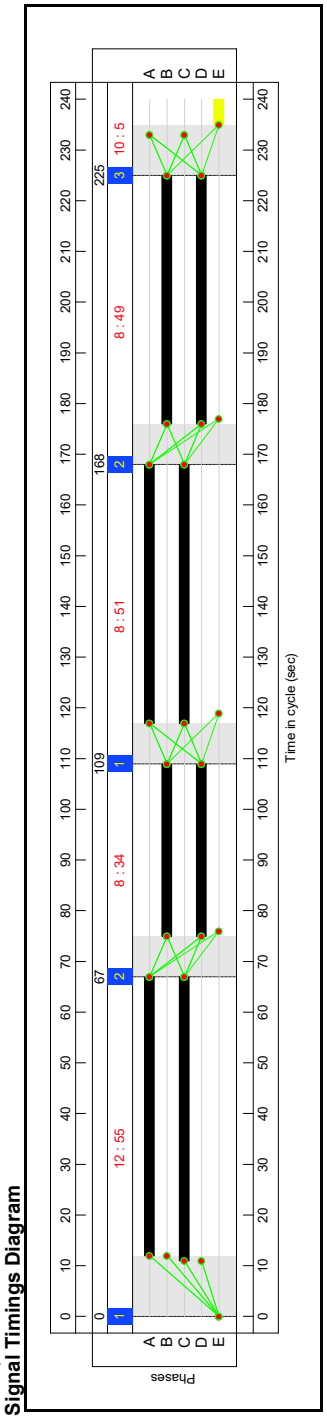


Stage Timings

Stage	1	2	1	2	3
Duration	55	34	51	49	5
Change Point	0	67	109	168	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**80.2%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**80.2%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	106		707	1931:1687	881	80.2%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	83		516	1766:1768	650	79.4%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	107		680	1924:1657	886	76.8%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	83		270	1850:1856	359	75.3%
5/1		U	N/A	N/A	-		-	-	-	548	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	251	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1069	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	305	1	Inf	0.0%

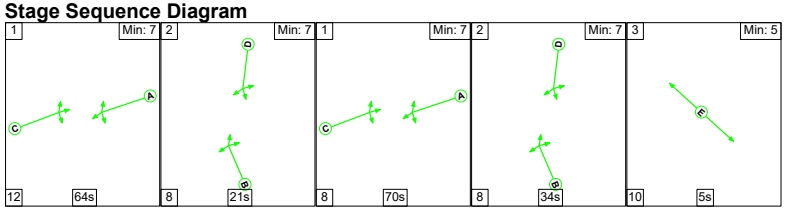
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**246**	**0**	**83**	**19.1**	**7.0**	**1.8**	**27.9**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**246**	**0**	**83**	**19.1**	**7.0**	**1.8**	**27.9**	-	-	-	-
1/1+1/2	707	707	44	0	0	5.8	2.0	0.2	8.0	40.9	24.7	2.0	26.6
2/1+2/2	516	516	39	0	0	5.0	1.9	0.0	6.9	48.3	17.2	1.9	19.1
3/1+3/2	680	680	74	0	38	5.4	1.6	0.7	7.8	41.0	22.8	1.6	24.5
4/1+4/2	270	270	90	0	44	2.9	1.5	0.8	5.2	69.3	5.4	1.5	6.9
5/1	548	548	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1069	1069	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 12.2 Total Delay for Signalled Lanes (pcuHr): 27.90
PRC Over All Lanes (%): 12.2 Total Delay Over All Lanes(pcuHr): 27.90 Cycle Time (s): 240

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

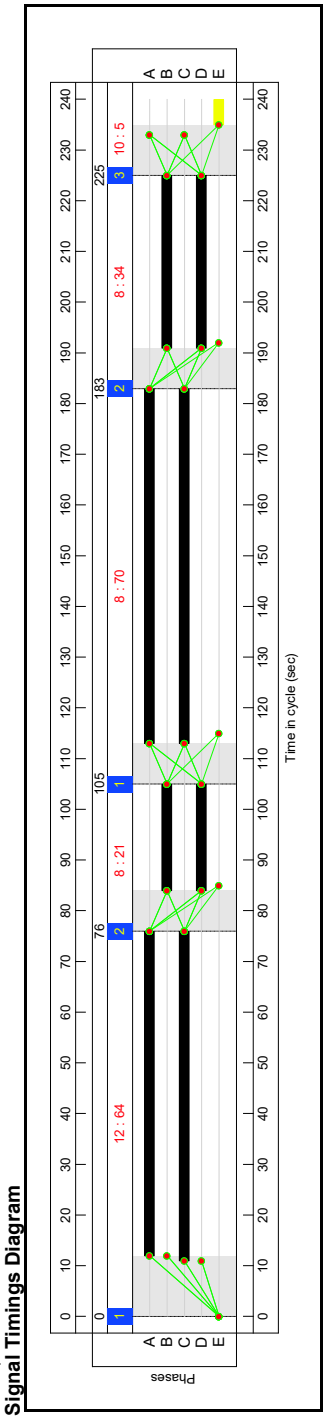


Stage Timings

Stage	1	2	1	2	3
Duration	64	21	70	34	5
Change Point	0	76	105	183	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.0%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.0%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	134		563	1924:1687	1108	50.8%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	55		351	1781:1768	446	78.7%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	135		1042	1925:1657	1112	93.7%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	55		336	1843:1856	357	94.0%
5/1		U	N/A	N/A	-		-	-	-	707	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	493	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	794	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	298	1	Inf	0.0%

Full Input Data And Results

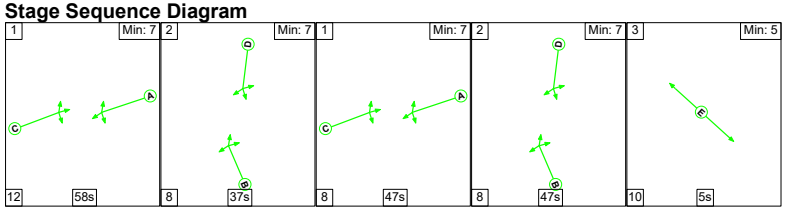
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**418**	**0**	**108**	**19.5**	**13.9**	**1.9**	**35.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**418**	**0**	**108**	**19.5**	**13.9**	**1.9**	**35.2**	-	-	-	-
1/1+1/2	563	563	27	0	22	2.6	0.5	0.5	3.6	22.8	13.6	0.5	14.1
2/1+2/2	351	351	26	0	1	4.2	1.8	0.0	6.0	61.5	11.2	1.8	13.0
3/1+3/2	1042	1042	292	0	14	8.0	6.3	0.8	15.1	52.3	37.7	6.3	44.0
4/1+4/2	336	336	72	0	72	4.6	5.3	0.6	10.5	112.7	6.5	5.3	11.8
5/1	707	707	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	794	794	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	298	298	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -4.5 Total Delay for Signalled Lanes (pcuHr): 35.23
PRC Over All Lanes (%): -4.5 Total Delay Over All Lanes(pcuHr): 35.23 Cycle Time (s): 240

Full Input Data And Results

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

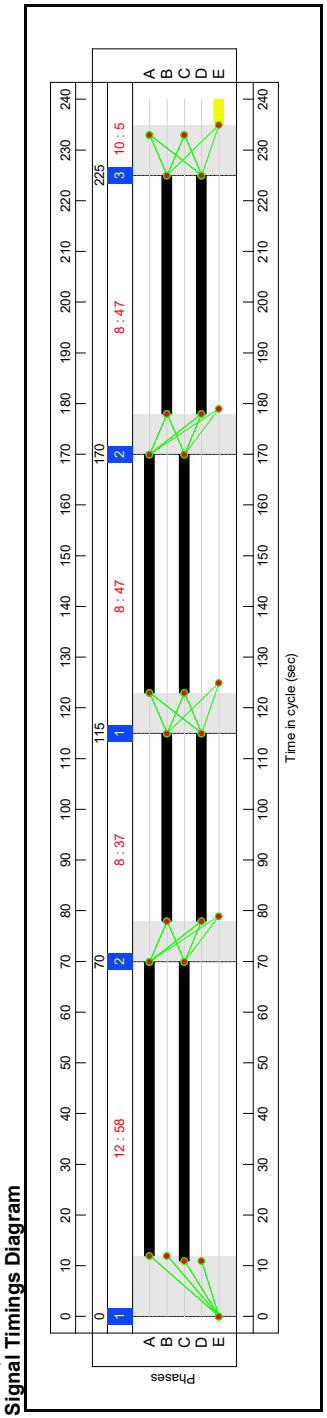


Stage Timings

Stage	1	2	1	2	3
Duration	58	37	47	47	5
Change Point	0	70	115	170	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**84.4%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**84.4%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	105		738	1931:1687	874	84.4%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	84		538	1766:1768	657	81.9%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	106		706	1924:1657	878	80.4%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	84		283	1849:1856	340	83.1%
5/1		U	N/A	N/A	-		-	-	-	567	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	263	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1114	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	321	1	Inf	0.0%

Full Input Data And Results

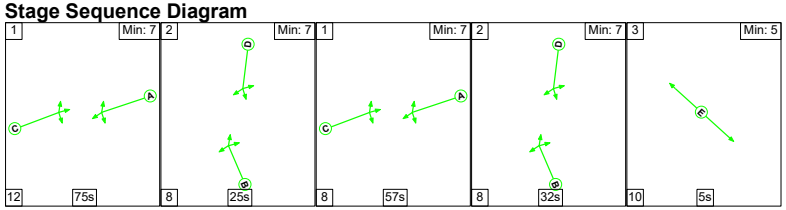
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**249**	**0**	**95**	**20.5**	**9.1**	**2.0**	**31.6**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**249**	**0**	**95**	**20.5**	**9.1**	**2.0**	**31.6**	-	-	-	-
1/1+1/2	738	738	47	0	0	6.2	2.6	0.3	9.1	44.4	25.8	2.6	28.4
2/1+2/2	538	538	39	0	1	5.3	2.2	0.0	7.5	50.5	18.8	2.2	21.0
3/1+3/2	706	706	77	0	40	5.7	2.0	0.8	8.6	43.7	23.5	2.0	25.5
4/1+4/2	283	283	86	0	54	3.2	2.3	0.9	6.4	81.5	5.9	2.3	8.2
5/1	567	567	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1114	1114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	321	321	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 6.6 Total Delay for Signalled Lanes (pcuHr): 31.62
PRC Over All Lanes (%): 6.6 Total Delay Over All Lanes(pcuHr): 31.62 Cycle Time (s): 240

Full Input Data And Results

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

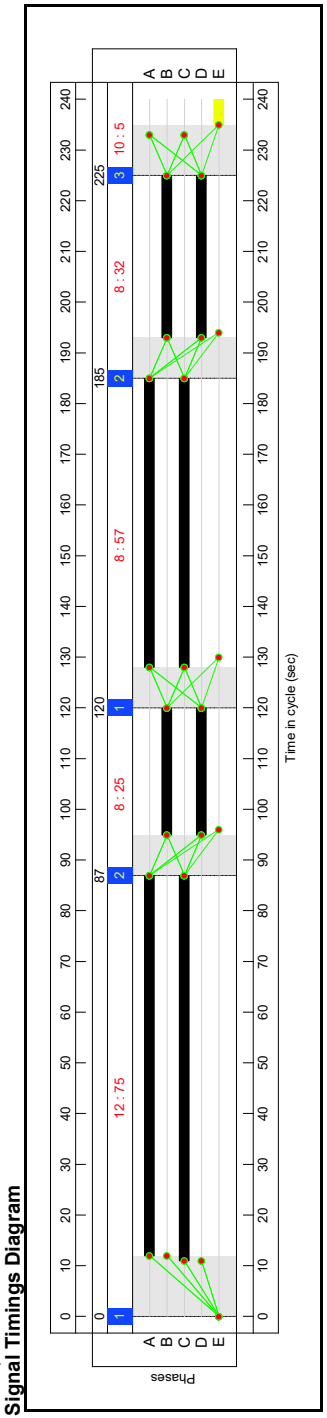


Stage Timings

Stage	1	2	1	2	3
Duration	75	25	57	32	5
Change Point	0	87	120	185	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**99.2%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**99.2%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	132		582	1925:1687	1093	53.2%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	57		366	1782:1768	461	79.4%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	133		1088	1925:1657	1096	99.2%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	57		346	1842:1856	358	96.7%
5/1		U	N/A	N/A	-		-	-	-	737	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	511	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	821	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	313	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**431**	**0**	**114**	**20.8**	**23.8**	**2.1**	**46.7**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**431**	**0**	**114**	**20.8**	**23.8**	**2.1**	**46.7**	-	-	-	-
1/1+1/2	582	582	18	0	33	2.7	0.6	0.6	3.9	24.0	13.9	0.6	14.5
2/1+2/2	366	366	27	0	1	4.5	1.9	0.0	6.4	62.7	13.3	1.9	15.1
3/1+3/2	1088	1088	315	0	4	8.6	14.5	0.9	24.0	79.4	42.2	14.5	56.7
4/1+4/2	346	346	71	0	76	5.0	6.8	0.6	12.4	129.5	6.7	6.8	13.5
5/1	737	737	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	821	821	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	313	313	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -10.3
PRC Over All Lanes (%): -10.3

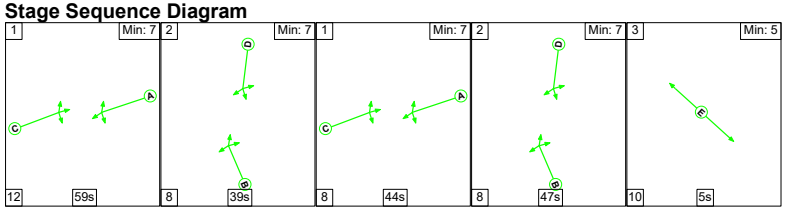
Total Delay for Signalled Lanes (pcuHr): 46.70
Total Delay Over All Lanes(pcuHr): 46.70

Cycle Time (s): 240

Full Input Data And Results

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

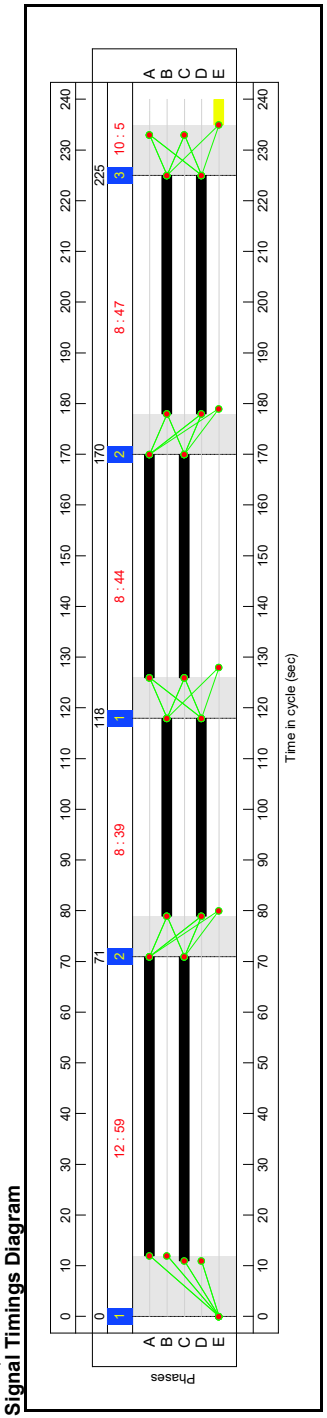


Stage Timings

Stage	1	2	1	2	3
Duration	59	39	44	47	5
Change Point	0	71	118	170	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**90.1%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**90.1%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	103		765	1930:1687	858	89.2%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	86		559	1766:1768	671	83.3%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	104		734	1923:1657	838	87.6%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	86		298	1848:1856	331	90.1%
5/1		U	N/A	N/A	-		-	-	-	585	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	276	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	1156	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	339	1	Inf	0.0%

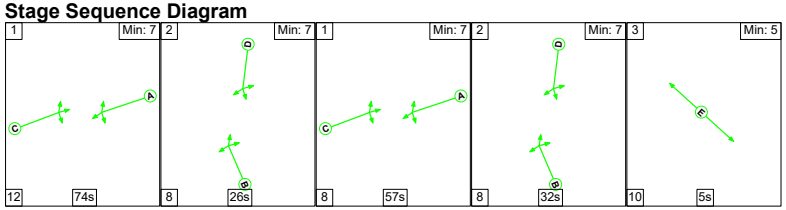
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**221**	**0**	**138**	**22.4**	**13.2**	**2.3**	**37.9**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**221**	**0**	**138**	**22.4**	**13.2**	**2.3**	**37.9**	-	-	-	-
1/1+1/2	765	765	49	0	0	6.7	3.8	0.3	10.9	51.1	27.4	3.8	31.2
2/1+2/2	559	559	40	0	1	5.6	2.4	0.0	8.1	51.9	20.2	2.4	22.6
3/1+3/2	734	734	52	0	70	6.5	3.3	1.0	10.8	52.8	25.1	3.3	28.4
4/1+4/2	298	298	80	0	67	3.5	3.7	1.0	8.2	98.8	6.6	3.7	10.3
5/1	585	585	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	276	276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	1156	1156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -0.1 Total Delay for Signalled Lanes (pcuHr): 37.87
PRC Over All Lanes (%): -0.1 Total Delay Over All Lanes(pcuHr): 37.87 Cycle Time (s): 240

Full Input Data And Results

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

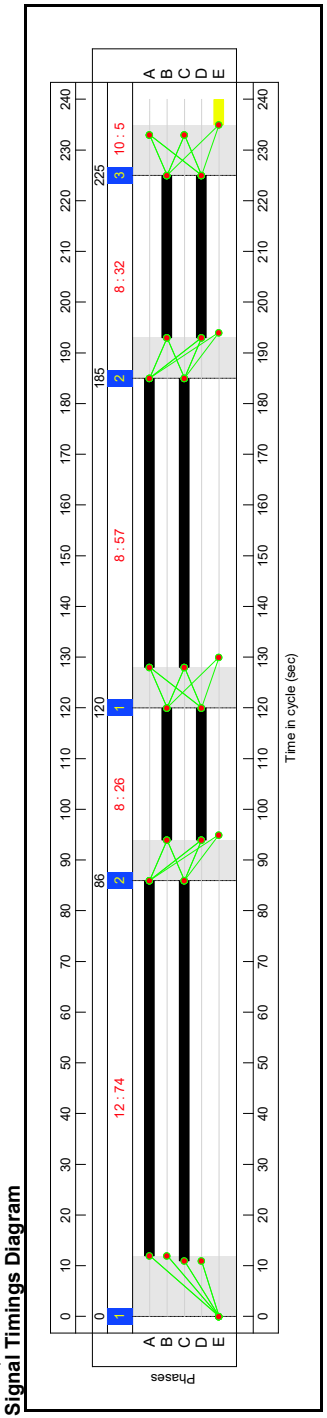


Stage Timings

Stage	1	2	1	2	3
Duration	74	26	57	32	5
Change Point	0	86	120	185	225

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**103.9%**
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	-	-	-	-	-	-	-	-	-	-	**103.9%**
1/1+1/2	Monivea Road Left Ahead Right	U+O	N/A	N/A	A		2	131		600	1925:1687	1085	55.3%
2/1+2/2	Connolly Avenue Right Left Ahead	U+O	N/A	N/A	B		2	58		379	1783:1768	469	80.9%
3/1+3/2	Wellpark Road Ahead Right Left	U+O	N/A	N/A	C		2	132		1131	1925:1657	1088	103.9%
4/1+4/2	Joyce Road Left Ahead Right	U+O	N/A	N/A	D		2	58		358	1842:1856	349	102.5%
5/1		U	N/A	N/A	-		-	-	-	766	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	528	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	846	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	328	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**404**	**0**	**141**	**26.8**	**45.1**	**2.3**	**74.2**	-	-	-	-
Monivea Rd/Connolly Ave/Wellpark Rd/Joyce Rd Junction	-	-	**404**	**0**	**141**	**26.8**	**45.1**	**2.3**	**74.2**	-	-	-	-
1/1+1/2	600	600	9	0	43	2.9	0.6	0.6	4.1	24.8	14.5	0.6	15.1
2/1+2/2	379	379	28	0	1	4.6	2.0	0.0	6.7	63.5	13.8	2.0	15.8
3/1+3/2	1131	1088	301	0	15	13.8	30.6	1.0	45.3	144.2	46.4	30.6	77.0
4/1+4/2	358	354	66	0	81	5.5	11.9	0.6	18.1	181.6	7.3	11.9	19.2
5/1	740	740	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	842	842	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	324	324	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -15.5 Total Delay for Signalled Lanes (pcuHr): 74.17
PRC Over All Lanes (%): -15.5 Total Delay Over All Lanes(pcuHr): 74.17 Cycle Time (s): 240

APPENDIX D5

JUNCTION ANALYSIS OUTPUTS

PROPOSED DEVELOPMENT JUNCTION ONTO MONIVEA ROAD (PICADY)

PICADY

GUI Version: 5.1 AD
Analysis Program Release: 4.0 (SEPT 2008)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	I:\..\PICADY\118241 Monivea Road Development Access 2018 10 01 jn.vpi
Date Run	31 October 2018
Time Run	14:16:20
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Monivea Road West	100
Arm B	Development	100
Arm C	Monivea Road East	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	Monivea Road Access to Crown Square
Location	Crown Square, Galway City
Date	31 October 2018
Enumerator	J Noone
Job Number	183106
Status	TIA
Client	Crown Square Developments Ltd
Description	-

Geometric Data

Geometric Parameters

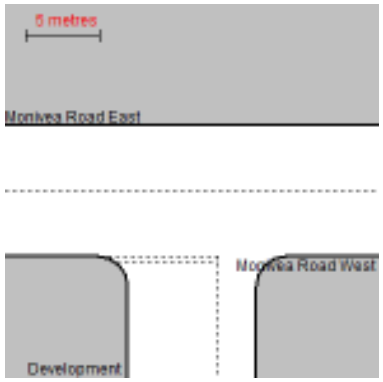
Parameter	Minor Arm B
Major Road Carriageway Width (m)	6.50
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road First Lane Width (m)	3.00
Minor Road Second Lane Width (m)	3.00
Minor Road Visibility To Right (m)	10
Minor Road Visibility To Left (m)	10
Major Road Right Turn Visibility (m)	215
Major Road Right Turn Blocks Traffic	Yes

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	485.856	0.087	0.219	0.138	0.313
B-C	630.232	0.094	0.239	-	-
C-B	698.472	0.265	0.265	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	08:00-09:30	90	15
Second Modelling Period	15:45-17:15	90	15

ODTAB Turning Counts

Demand Set: 2022 AM with Dev
Modelling Period: 08:00-09:30

From/To	Arm A	Arm B	Arm C
Arm A	0.0	194.0	356.0
Arm B	37.0	0.0	32.0
Arm C	654.0	96.0	0.0

Demand Set: 2022 PM with Dev
Modelling Period: 15:45-17:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	56.0	651.0
Arm B	101.0	0.0	87.0
Arm C	419.0	28.0	0.0

Demand Set: 2027 AM with Dev
Modelling Period: 08:00-09:30

From/To	Arm A	Arm B	Arm C
Arm A	0.0	194.0	373.0
Arm B	37.0	0.0	32.0
Arm C	684.0	96.0	0.0

Demand Set: 2037 AM with Dev
Modelling Period: 08:00-09:30

From/To	Arm A	Arm B	Arm C
Arm A	0.0	194.0	392.0
Arm B	37.0	0.0	32.0
Arm C	712.0	96.0	0.0

Demand Set: 2027 PM with Dev
Modelling Period: 15:45-17:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	56.0	681.0
Arm B	101.0	0.0	87.0
Arm C	439.0	28.0	0.0

Demand Set: 2037 PM with Dev
Modelling Period: 15:45-17:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	56.0	709.0
Arm B	101.0	0.0	87.0
Arm C	457.0	28.0	0.0

ODTAB Synthesised Flows

Demand Set: 2022 AM with Dev
Modelling Period: 08:00-09:30

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:15	6.875	08:45	10.313	09:15	6.875
Arm B	08:15	0.863	08:45	1.294	09:15	0.863
Arm C	08:15	9.375	08:45	14.063	09:15	9.375

Heavy Vehicles Percentages

Demand Set: 2022 AM with Dev
Modelling Period: 08:00-09:30

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2022 PM with Dev
Modelling Period: 15:45-17:15

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2027 AM with Dev
Modelling Period: 08:00-09:30

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2037 AM with Dev
Modelling Period: 08:00-09:30

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2027 PM with Dev
Modelling Period: 15:45-17:15

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2037 PM with Dev
Modelling Period: 15:45-17:15

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

Queues & Delays

Demand Set: 2022 AM with Dev
Modelling Period: 08:00-09:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.46	4.67	0.099	-	0.00	0.11	-	1.5	0.24
	B-C	0.40	8.05	0.050	-	0.00	0.05	-	0.8	0.13
	C-AB	1.20	8.76	0.138	-	0.00	0.18	-	2.6	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.43	-	-	-	-	-	-	-	-
	A-C	4.47	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.55	4.14	0.134	-	0.11	0.15	-	2.2	0.28
	B-C	0.48	7.73	0.062	-	0.05	0.07	-	1.0	0.14
	C-AB	1.44	8.40	0.171	-	0.18	0.24	-	3.7	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.91	-	-	-	-	-	-	-	-
	A-C	5.33	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.68	3.42	0.199	-	0.15	0.24	-	3.4	0.36
	B-C	0.59	7.27	0.081	-	0.07	0.09	-	1.3	0.15
	C-AB	1.76	7.91	0.223	-	0.24	0.37	-	5.6	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.56	-	-	-	-	-	-	-	-
	A-C	6.53	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.68	3.41	0.199	-	0.24	0.24	-	3.6	0.37
	B-C	0.59	7.26	0.081	-	0.09	0.09	-	1.3	0.15
	C-AB	1.76	7.91	0.223	-	0.37	0.38	-	5.7	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.56	-	-	-	-	-	-	-	-
	A-C	6.53	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	0.55	4.14	0.134	-	0.24	0.16	-	2.5	0.28
	B-C	0.48	7.72	0.062	-	0.09	0.07	-	1.0	0.14
	C-AB	1.44	8.40	0.171	-	0.38	0.25	-	3.8	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.91	-	-	-	-	-	-	-	-
	A-C	5.33	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-A	0.46	4.66	0.100	-	0.16	0.11	-	1.8	0.24
	B-C	0.40	8.04	0.050	-	0.07	0.05	-	0.8	0.13
	C-AB	1.20	8.76	0.138	-	0.25	0.18	-	2.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.43	-	-	-	-	-	-	-	-
	A-C	4.47	-	-	-	-	-	-	-	-

Demand Set: 2022 PM with Dev
Modelling Period: 15:45-17:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:45-16:00	B-A	1.27	4.68	0.271	-	0.00	0.36	-	5.0	0.29
	B-C	1.09	7.02	0.155	-	0.00	0.18	-	2.6	0.17
	C-AB	0.35	8.23	0.043	-	0.00	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.70	-	-	-	-	-	-	-	-
	A-C	8.17	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:00-16:15	B-A	1.51	4.16	0.364	-	0.36	0.55	-	7.8	0.37
	B-C	1.30	6.48	0.201	-	0.18	0.25	-	3.6	0.19
	C-AB	0.42	7.78	0.054	-	0.05	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.84	-	-	-	-	-	-	-	-
	A-C	9.75	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:15-16:30	B-A	1.85	3.44	0.539	-	0.55	1.08	-	14.6	0.60
	B-C	1.60	5.69	0.281	-	0.25	0.38	-	5.5	0.24
	C-AB	0.51	7.15	0.072	-	0.06	0.08	-	1.2	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.03	-	-	-	-	-	-	-	-
	A-C	11.95	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:30-16:45	B-A	1.85	3.44	0.539	-	1.08	1.12	-	16.6	0.63
	B-C	1.60	5.67	0.281	-	0.38	0.39	-	5.8	0.25
	C-AB	0.51	7.15	0.072	-	0.08	0.08	-	1.3	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.03	-	-	-	-	-	-	-	-
	A-C	11.95	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	1.51	4.16	0.364	-	1.12	0.59	-	9.6	0.39
	B-C	1.30	6.46	0.202	-	0.39	0.26	-	4.0	0.19
	C-AB	0.42	7.78	0.054	-	0.08	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.84	-	-	-	-	-	-	-	-
	A-C	9.75	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	1.27	4.68	0.271	-	0.59	0.38	-	6.0	0.30
	B-C	1.09	7.01	0.156	-	0.26	0.19	-	2.9	0.17
	C-AB	0.35	8.23	0.043	-	0.06	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.70	-	-	-	-	-	-	-	-
	A-C	8.17	-	-	-	-	-	-	-	-

Demand Set: 2027 AM with Dev
Modelling Period: 08:00-09:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.46	4.57	0.102	-	0.00	0.11	-	1.6	0.24
	B-C	0.40	7.99	0.050	-	0.00	0.05	-	0.8	0.13
	C-AB	1.20	8.70	0.138	-	0.00	0.18	-	2.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.43	-	-	-	-	-	-	-	-
	A-C	4.68	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.55	4.02	0.138	-	0.11	0.16	-	2.3	0.29
	B-C	0.48	7.66	0.063	-	0.05	0.07	-	1.0	0.14
	C-AB	1.44	8.33	0.173	-	0.18	0.25	-	3.7	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.91	-	-	-	-	-	-	-	-
	A-C	5.59	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.68	3.27	0.208	-	0.16	0.25	-	3.6	0.38
	B-C	0.59	7.18	0.082	-	0.07	0.09	-	1.3	0.15
	C-AB	1.76	7.83	0.225	-	0.25	0.39	-	5.7	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.56	-	-	-	-	-	-	-	-
	A-C	6.84	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.68	3.27	0.208	-	0.25	0.26	-	3.8	0.39
	B-C	0.59	7.17	0.082	-	0.09	0.09	-	1.3	0.15
	C-AB	1.76	7.83	0.225	-	0.39	0.39	-	5.9	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.56	-	-	-	-	-	-	-	-
	A-C	6.84	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	0.55	4.02	0.138	-	0.26	0.16	-	2.6	0.29
	B-C	0.48	7.66	0.063	-	0.09	0.07	-	1.0	0.14
	C-AB	1.44	8.33	0.173	-	0.39	0.26	-	3.9	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.91	-	-	-	-	-	-	-	-
	A-C	5.59	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-A	0.46	4.56	0.102	-	0.16	0.12	-	1.8	0.24
	B-C	0.40	7.99	0.050	-	0.07	0.05	-	0.8	0.13
	C-AB	1.20	8.70	0.138	-	0.26	0.19	-	2.8	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.43	-	-	-	-	-	-	-	-
	A-C	4.68	-	-	-	-	-	-	-	-

Demand Set: 2037 AM with Dev
Modelling Period: 08:00-09:30

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.46	4.47	0.104	-	0.00	0.11	-	1.6	0.25
	B-C	0.40	7.93	0.051	-	0.00	0.05	-	0.8	0.13
	C-AB	1.20	8.64	0.139	-	0.00	0.18	-	2.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.43	-	-	-	-	-	-	-	-
	A-C	4.92	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.55	3.90	0.142	-	0.11	0.16	-	2.3	0.30
	B-C	0.48	7.59	0.063	-	0.05	0.07	-	1.0	0.14
	C-AB	1.44	8.26	0.174	-	0.18	0.25	-	3.8	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.91	-	-	-	-	-	-	-	-
	A-C	5.87	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.68	3.12	0.217	-	0.16	0.27	-	3.8	0.41
	B-C	0.59	7.08	0.083	-	0.07	0.09	-	1.3	0.15
	C-AB	1.76	7.74	0.228	-	0.25	0.40	-	5.9	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.56	-	-	-	-	-	-	-	-
	A-C	7.19	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.68	3.12	0.217	-	0.27	0.27	-	4.1	0.41
	B-C	0.59	7.08	0.083	-	0.09	0.09	-	1.3	0.15
	C-AB	1.76	7.74	0.228	-	0.40	0.40	-	6.1	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	3.56	-	-	-	-	-	-	-	-
	A-C	7.19	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	0.55	3.90	0.142	-	0.27	0.17	-	2.7	0.30
	B-C	0.48	7.58	0.063	-	0.09	0.07	-	1.0	0.14
	C-AB	1.44	8.26	0.174	-	0.40	0.26	-	4.0	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.91	-	-	-	-	-	-	-	-
	A-C	5.87	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:15-09:30	B-A	0.46	4.46	0.104	-	0.17	0.12	-	1.8	0.25
	B-C	0.40	7.93	0.051	-	0.07	0.05	-	0.8	0.13
	C-AB	1.20	8.64	0.139	-	0.26	0.19	-	2.8	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.43	-	-	-	-	-	-	-	-
	A-C	4.92	-	-	-	-	-	-	-	-

Demand Set: 2027 PM with Dev
Modelling Period: 15:45-17:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:45-16:00	B-A	1.27	4.56	0.278	-	0.00	0.37	-	5.2	0.30
	B-C	1.09	6.92	0.158	-	0.00	0.18	-	2.6	0.17
	C-AB	0.35	8.13	0.043	-	0.00	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.70	-	-	-	-	-	-	-	-
	A-C	8.54	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:00-16:15	B-A	1.51	4.02	0.377	-	0.37	0.58	-	8.2	0.39
	B-C	1.30	6.36	0.205	-	0.18	0.25	-	3.7	0.20
	C-AB	0.42	7.66	0.055	-	0.05	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.84	-	-	-	-	-	-	-	-
	A-C	10.20	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:15-16:30	B-A	1.85	3.27	0.567	-	0.58	1.19	-	15.9	0.67
	B-C	1.60	5.53	0.289	-	0.25	0.40	-	5.7	0.25
	C-AB	0.51	7.00	0.073	-	0.06	0.08	-	1.3	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.03	-	-	-	-	-	-	-	-
	A-C	12.50	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:30-16:45	B-A	1.85	3.27	0.567	-	1.19	1.25	-	18.4	0.70
	B-C	1.60	5.51	0.290	-	0.40	0.40	-	6.0	0.26
	C-AB	0.51	7.00	0.073	-	0.08	0.09	-	1.3	0.15
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.03	-	-	-	-	-	-	-	-
	A-C	12.50	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	1.51	4.02	0.377	-	1.25	0.63	-	10.3	0.41
	B-C	1.30	6.33	0.206	-	0.40	0.26	-	4.1	0.20
	C-AB	0.42	7.66	0.055	-	0.09	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.84	-	-	-	-	-	-	-	-
	A-C	10.20	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	1.27	4.56	0.278	-	0.63	0.39	-	6.3	0.31
	B-C	1.09	6.91	0.158	-	0.26	0.19	-	2.9	0.17
	C-AB	0.35	8.13	0.043	-	0.06	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.70	-	-	-	-	-	-	-	-
	A-C	8.54	-	-	-	-	-	-	-	-

Demand Set: 2037 PM with Dev
Modelling Period: 15:45-17:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:45-16:00	B-A	1.27	4.45	0.284	-	0.00	0.39	-	5.4	0.31
	B-C	1.09	6.83	0.160	-	0.00	0.19	-	2.7	0.17
	C-AB	0.35	8.04	0.044	-	0.00	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.70	-	-	-	-	-	-	-	-
	A-C	8.90	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:00-16:15	B-A	1.51	3.89	0.389	-	0.39	0.61	-	8.6	0.42
	B-C	1.30	6.25	0.209	-	0.19	0.26	-	3.8	0.20
	C-AB	0.42	7.55	0.056	-	0.05	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.84	-	-	-	-	-	-	-	-
	A-C	10.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:15-16:30	B-A	1.85	3.11	0.596	-	0.61	1.32	-	17.4	0.74
	B-C	1.60	5.38	0.297	-	0.26	0.41	-	5.9	0.26
	C-AB	0.51	6.87	0.075	-	0.06	0.09	-	1.3	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.03	-	-	-	-	-	-	-	-
	A-C	13.01	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:30-16:45	B-A	1.85	3.11	0.596	-	1.32	1.39	-	20.4	0.79
	B-C	1.60	5.35	0.298	-	0.41	0.42	-	6.2	0.27
	C-AB	0.51	6.87	0.075	-	0.09	0.09	-	1.3	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.03	-	-	-	-	-	-	-	-
	A-C	13.01	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	1.51	3.89	0.389	-	1.39	0.66	-	11.0	0.44
	B-C	1.30	6.22	0.210	-	0.42	0.27	-	4.2	0.20
	C-AB	0.42	7.55	0.056	-	0.09	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.84	-	-	-	-	-	-	-	-
	A-C	10.62	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	1.27	4.45	0.285	-	0.66	0.41	-	6.5	0.32
	B-C	1.09	6.82	0.160	-	0.27	0.19	-	3.0	0.17
	C-AB	0.35	8.04	0.044	-	0.06	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.70	-	-	-	-	-	-	-	-
	A-C	8.90	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: 2022 AM with Dev
Modelling Period: 08:00-09:30

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	50.9	34.0	15.0	0.3	15.0	0.3
B-C	44.0	29.4	6.1	0.1	6.1	0.1
C-AB	132.1	88.1	24.2	0.2	24.2	0.2
C-A	-	-	-	-	-	-
A-B	267.0	178.0	-	-	-	-
A-C	490.0	326.7	-	-	-	-
All	**1884.3**	**1256.2**	**45.3**	**0.0**	**45.3**	**0.0**

Demand Set: 2022 PM with Dev
Modelling Period: 15:45-17:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	139.0	92.7	59.6	0.4	59.7	0.4
B-C	119.7	79.8	24.4	0.2	24.4	0.2
C-AB	38.5	25.7	5.6	0.1	5.6	0.1
C-A	-	-	-	-	-	-
A-B	77.1	51.4	-	-	-	-
A-C	896.1	597.4	-	-	-	-
All	**1847.2**	**1231.4**	**89.6**	**0.0**	**89.7**	**0.0**

Demand Set: 2027 AM with Dev
Modelling Period: 08:00-09:30

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	50.9	34.0	15.7	0.3	15.7	0.3
B-C	44.0	29.4	6.2	0.1	6.2	0.1
C-AB	132.1	88.1	24.7	0.2	24.7	0.2
C-A	-	-	-	-	-	-
A-B	267.0	178.0	-	-	-	-
A-C	513.4	342.3	-	-	-	-
All	**1949.0**	**1299.3**	**46.6**	**0.0**	**46.6**	**0.0**

Demand Set: 2037 AM with Dev
Modelling Period: 08:00-09:30

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	50.9	34.0	16.3	0.3	16.3	0.3
B-C	44.0	29.4	6.3	0.1	6.3	0.1
C-AB	132.1	88.1	25.4	0.2	25.4	0.2
C-A	-	-	-	-	-	-
A-B	267.0	178.0	-	-	-	-
A-C	539.6	359.7	-	-	-	-
All	**2013.7**	**1342.5**	**48.0**	**0.0**	**48.0**	**0.0**

Demand Set: 2027 PM with Dev
Modelling Period: 15:45-17:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	139.0	92.7	64.2	0.5	64.2	0.5
B-C	119.7	79.8	25.1	0.2	25.1	0.2
C-AB	38.5	25.7	5.8	0.1	5.8	0.1
C-A	-	-	-	-	-	-
A-B	77.1	51.4	-	-	-	-
A-C	937.3	624.9	-	-	-	-
All	**1916.0**	**1277.3**	**95.1**	**0.0**	**95.1**	**0.0**

Demand Set: 2037 PM with Dev
Modelling Period: 15:45-17:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	139.0	92.7	69.2	0.5	69.3	0.5
B-C	119.7	79.8	25.8	0.2	25.8	0.2
C-AB	38.5	25.7	5.9	0.2	5.9	0.2
C-A	-	-	-	-	-	-
A-B	77.1	51.4	-	-	-	-
A-C	975.9	650.6	-	-	-	-
All	**1979.3**	**1319.5**	**100.9**	**0.1**	**101.0**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful

APPENDIX D6

JUNCTION ANALYSIS OUTPUTS

PROPOSED DEVELOPMENT JUNCTION ONTO JOYCE'S ROAD (PICADY)

PICADY

GUI Version: 5.1 AD
Analysis Program Release: 4.0 (SEPT 2008)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
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Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	I:\..\PICADY\118241 Joyce Road Development Access 2018 10 01 jn.vpi
Date Run	31 October 2018
Time Run	14:31:40
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	Joyce Road North	100
Arm B	Development	100
Arm C	Joyce Road South	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	Joyce Road Access to Crown Square
Location	Crown Square, Galway City
Date	31 October 2018
Enumerator	J Noone
Job Number	183106
Status	TIA
Client	Crown Square Developments Ltd
Description	-

Geometric Data

Geometric Parameters

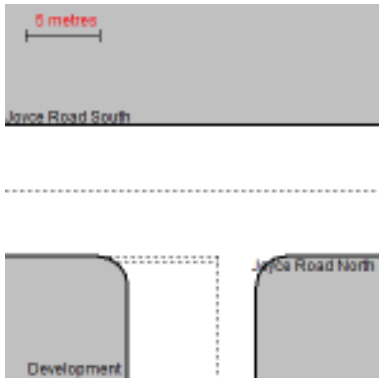
Parameter	Minor Arm B
Major Road Carriageway Width (m)	6.50
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road First Lane Width (m)	3.00
Minor Road Second Lane Width (m)	3.00
Minor Road Visibility To Right (m)	10
Minor Road Visibility To Left (m)	10
Major Road Right Turn Visibility (m)	90
Major Road Right Turn Blocks Traffic	Yes

Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	485.856	0.087	0.219	0.138	0.313
B-C	630.232	0.094	0.239	-	-
C-B	626.083	0.237	0.237	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:30-09:00	90	15
Second Modelling Period	14:15-15:45	90	15

ODTAB Turning Counts

Demand Set: 2022 AM with Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	135.0	297.0
Arm B	45.0	0.0	37.0
Arm C	294.0	30.0	0.0

Demand Set: 2022 PM with Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	39.0	293.0
Arm B	121.0	0.0	101.0
Arm C	260.0	9.0	0.0

Demand Set: 2027 AM with Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	135.0	311.0
Arm B	45.0	0.0	37.0
Arm C	307.0	30.0	0.0

Demand Set: 2037 AM with Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	135.0	325.0
Arm B	45.0	0.0	37.0
Arm C	319.0	30.0	0.0

Demand Set: 2027 PM with Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	39.0	307.0
Arm B	121.0	0.0	101.0
Arm C	272.0	9.0	0.0

Demand Set: 2037 PM with Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	0.0	39.0	319.0
Arm B	121.0	0.0	101.0
Arm C	283.0	9.0	0.0

ODTAB Synthesised Flows

Demand Set: 2022 AM with Dev
Modelling Period: 07:30-09:00

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	07:45	5.400	08:15	8.100	08:45	5.400
Arm B	07:45	1.025	08:15	1.537	08:45	1.025
Arm C	07:45	4.050	08:15	6.075	08:45	4.050

Heavy Vehicles Percentages

Demand Set: 2022 AM with Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2022 PM with Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2027 AM with Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2037 AM with Dev
Modelling Period: 07:30-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2027 PM with Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Demand Set: 2037 PM with Dev
Modelling Period: 14:15-15:45

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

Queues & Delays

Demand Set: 2022 AM with Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	0.56	5.77	0.098	-	0.00	0.11	-	1.5	0.19
	B-C	0.46	8.29	0.056	-	0.00	0.06	-	0.9	0.13
	C-AB	0.38	8.20	0.046	-	0.00	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.69	-	-	-	-	-	-	-	-
	A-C	3.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	0.67	5.46	0.123	-	0.11	0.14	-	2.0	0.21
	B-C	0.55	8.04	0.069	-	0.06	0.07	-	1.1	0.13
	C-AB	0.45	7.95	0.057	-	0.05	0.06	-	0.9	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.02	-	-	-	-	-	-	-	-
	A-C	4.45	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.83	5.04	0.164	-	0.14	0.19	-	2.8	0.24
	B-C	0.68	7.68	0.088	-	0.07	0.10	-	1.4	0.14
	C-AB	0.55	7.60	0.072	-	0.06	0.08	-	1.2	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.48	-	-	-	-	-	-	-	-
	A-C	5.45	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.83	5.04	0.164	-	0.19	0.19	-	2.9	0.24
	B-C	0.68	7.68	0.088	-	0.10	0.10	-	1.4	0.14
	C-AB	0.55	7.60	0.072	-	0.08	0.08	-	1.2	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.48	-	-	-	-	-	-	-	-
	A-C	5.45	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.67	5.46	0.123	-	0.19	0.14	-	2.2	0.21
	B-C	0.55	8.03	0.069	-	0.10	0.07	-	1.1	0.13
	C-AB	0.45	7.95	0.057	-	0.08	0.06	-	0.9	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.02	-	-	-	-	-	-	-	-
	A-C	4.45	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.56	5.77	0.098	-	0.14	0.11	-	1.7	0.19
	B-C	0.46	8.29	0.056	-	0.07	0.06	-	0.9	0.13
	C-AB	0.38	8.20	0.046	-	0.06	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.69	-	-	-	-	-	-	-	-
	A-C	3.73	-	-	-	-	-	-	-	-

Demand Set: 2022 PM with Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.52	6.03	0.252	-	0.00	0.33	-	4.7	0.22
	B-C	1.27	8.08	0.157	-	0.00	0.18	-	2.6	0.15
	C-AB	0.11	8.50	0.013	-	0.00	0.01	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.49	-	-	-	-	-	-	-	-
	A-C	3.68	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.81	5.77	0.314	-	0.33	0.45	-	6.4	0.25
	B-C	1.51	7.77	0.195	-	0.18	0.24	-	3.5	0.16
	C-AB	0.13	8.31	0.016	-	0.01	0.02	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.58	-	-	-	-	-	-	-	-
	A-C	4.39	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.22	5.41	0.410	-	0.45	0.67	-	9.5	0.31
	B-C	1.85	7.35	0.252	-	0.24	0.33	-	4.8	0.18
	C-AB	0.17	8.04	0.021	-	0.02	0.02	-	0.3	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.72	-	-	-	-	-	-	-	-
	A-C	5.38	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.22	5.41	0.410	-	0.67	0.68	-	10.2	0.31
	B-C	1.85	7.34	0.253	-	0.33	0.34	-	5.0	0.18
	C-AB	0.17	8.04	0.021	-	0.02	0.02	-	0.3	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.72	-	-	-	-	-	-	-	-
	A-C	5.38	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.81	5.77	0.314	-	0.68	0.47	-	7.4	0.25
	B-C	1.51	7.77	0.195	-	0.34	0.25	-	3.8	0.16
	C-AB	0.13	8.31	0.016	-	0.02	0.02	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.58	-	-	-	-	-	-	-	-
	A-C	4.39	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.52	6.03	0.252	-	0.47	0.34	-	5.3	0.22
	B-C	1.27	8.07	0.157	-	0.25	0.19	-	2.9	0.15
	C-AB	0.11	8.50	0.013	-	0.02	0.01	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.49	-	-	-	-	-	-	-	-
	A-C	3.68	-	-	-	-	-	-	-	-

Demand Set: 2027 AM with Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	0.56	5.71	0.099	-	0.00	0.11	-	1.5	0.19
	B-C	0.46	8.25	0.056	-	0.00	0.06	-	0.9	0.13
	C-AB	0.38	8.16	0.046	-	0.00	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.69	-	-	-	-	-	-	-	-
	A-C	3.90	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	0.67	5.39	0.125	-	0.11	0.14	-	2.0	0.21
	B-C	0.55	7.98	0.069	-	0.06	0.07	-	1.1	0.13
	C-AB	0.45	7.90	0.057	-	0.05	0.06	-	0.9	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.02	-	-	-	-	-	-	-	-
	A-C	4.66	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.83	4.95	0.167	-	0.14	0.20	-	2.8	0.24
	B-C	0.68	7.62	0.089	-	0.07	0.10	-	1.4	0.14
	C-AB	0.55	7.54	0.073	-	0.06	0.08	-	1.2	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.48	-	-	-	-	-	-	-	-
	A-C	5.71	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.83	4.95	0.167	-	0.20	0.20	-	3.0	0.24
	B-C	0.68	7.61	0.089	-	0.10	0.10	-	1.5	0.14
	C-AB	0.55	7.54	0.073	-	0.08	0.08	-	1.2	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.48	-	-	-	-	-	-	-	-
	A-C	5.71	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.67	5.39	0.125	-	0.20	0.15	-	2.3	0.21
	B-C	0.55	7.98	0.069	-	0.10	0.08	-	1.2	0.13
	C-AB	0.45	7.90	0.057	-	0.08	0.06	-	0.9	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.02	-	-	-	-	-	-	-	-
	A-C	4.66	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.56	5.71	0.099	-	0.15	0.11	-	1.7	0.19
	B-C	0.46	8.24	0.056	-	0.08	0.06	-	0.9	0.13
	C-AB	0.38	8.16	0.046	-	0.06	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.69	-	-	-	-	-	-	-	-
	A-C	3.90	-	-	-	-	-	-	-	-

Demand Set: 2037 AM with Dev
Modelling Period: 07:30-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:30-07:45	B-A	0.56	5.65	0.100	-	0.00	0.11	-	1.6	0.20
	B-C	0.46	8.20	0.057	-	0.00	0.06	-	0.9	0.13
	C-AB	0.38	8.12	0.046	-	0.00	0.05	-	0.7	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.69	-	-	-	-	-	-	-	-
	A-C	4.08	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	0.67	5.32	0.127	-	0.11	0.14	-	2.1	0.22
	B-C	0.55	7.93	0.070	-	0.06	0.07	-	1.1	0.14
	C-AB	0.45	7.85	0.057	-	0.05	0.06	-	0.9	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.02	-	-	-	-	-	-	-	-
	A-C	4.87	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	0.83	4.86	0.170	-	0.14	0.20	-	2.9	0.25
	B-C	0.68	7.55	0.090	-	0.07	0.10	-	1.4	0.15
	C-AB	0.55	7.48	0.074	-	0.06	0.08	-	1.2	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.48	-	-	-	-	-	-	-	-
	A-C	5.96	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	0.83	4.86	0.170	-	0.20	0.20	-	3.0	0.25
	B-C	0.68	7.55	0.090	-	0.10	0.10	-	1.5	0.15
	C-AB	0.55	7.48	0.074	-	0.08	0.08	-	1.3	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.48	-	-	-	-	-	-	-	-
	A-C	5.96	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	0.67	5.32	0.127	-	0.20	0.15	-	2.3	0.22
	B-C	0.55	7.93	0.070	-	0.10	0.08	-	1.2	0.14
	C-AB	0.45	7.85	0.057	-	0.08	0.06	-	1.0	0.14
	C-A	-	-	-	-	-	-	-	-	-
	A-B	2.02	-	-	-	-	-	-	-	-
	A-C	4.87	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	0.56	5.65	0.100	-	0.15	0.11	-	1.7	0.20
	B-C	0.46	8.20	0.057	-	0.08	0.06	-	0.9	0.13
	C-AB	0.38	8.12	0.046	-	0.06	0.05	-	0.8	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	1.69	-	-	-	-	-	-	-	-
	A-C	4.08	-	-	-	-	-	-	-	-

Demand Set: 2027 PM with Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.52	5.97	0.254	-	0.00	0.33	-	4.7	0.22
	B-C	1.27	8.04	0.158	-	0.00	0.19	-	2.7	0.15
	C-AB	0.11	8.46	0.013	-	0.00	0.01	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.49	-	-	-	-	-	-	-	-
	A-C	3.85	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.81	5.70	0.318	-	0.33	0.46	-	6.6	0.26
	B-C	1.51	7.72	0.196	-	0.19	0.24	-	3.5	0.16
	C-AB	0.13	8.26	0.016	-	0.01	0.02	-	0.3	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.58	-	-	-	-	-	-	-	-
	A-C	4.60	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.22	5.33	0.417	-	0.46	0.69	-	9.8	0.32
	B-C	1.85	7.28	0.255	-	0.24	0.34	-	4.9	0.18
	C-AB	0.17	7.98	0.021	-	0.02	0.02	-	0.3	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.72	-	-	-	-	-	-	-	-
	A-C	5.63	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.22	5.33	0.417	-	0.69	0.70	-	10.5	0.32
	B-C	1.85	7.27	0.255	-	0.34	0.34	-	5.1	0.18
	C-AB	0.17	7.98	0.021	-	0.02	0.02	-	0.3	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.72	-	-	-	-	-	-	-	-
	A-C	5.63	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.81	5.70	0.318	-	0.70	0.48	-	7.5	0.26
	B-C	1.51	7.71	0.196	-	0.34	0.25	-	3.8	0.16
	C-AB	0.13	8.26	0.016	-	0.02	0.02	-	0.3	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.58	-	-	-	-	-	-	-	-
	A-C	4.60	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.52	5.97	0.254	-	0.48	0.35	-	5.4	0.23
	B-C	1.27	8.03	0.158	-	0.25	0.19	-	2.9	0.15
	C-AB	0.11	8.46	0.013	-	0.02	0.01	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.49	-	-	-	-	-	-	-	-
	A-C	3.85	-	-	-	-	-	-	-	-

Demand Set: 2037 PM with Dev
Modelling Period: 14:15-15:45

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:15-14:30	B-A	1.52	5.92	0.256	-	0.00	0.34	-	4.8	0.22
	B-C	1.27	8.00	0.158	-	0.00	0.19	-	2.7	0.15
	C-AB	0.11	8.42	0.013	-	0.00	0.01	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.49	-	-	-	-	-	-	-	-
	A-C	4.00	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:30-14:45	B-A	1.81	5.64	0.322	-	0.34	0.46	-	6.7	0.26
	B-C	1.51	7.67	0.197	-	0.19	0.24	-	3.5	0.16
	C-AB	0.13	8.21	0.016	-	0.01	0.02	-	0.3	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.58	-	-	-	-	-	-	-	-
	A-C	4.78	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
14:45-15:00	B-A	2.22	5.25	0.423	-	0.46	0.71	-	10.0	0.33
	B-C	1.85	7.22	0.257	-	0.24	0.34	-	4.9	0.19
	C-AB	0.17	7.93	0.021	-	0.02	0.02	-	0.3	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.72	-	-	-	-	-	-	-	-
	A-C	5.85	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:00-15:15	B-A	2.22	5.25	0.423	-	0.71	0.72	-	10.7	0.33
	B-C	1.85	7.21	0.257	-	0.34	0.34	-	5.1	0.19
	C-AB	0.17	7.93	0.021	-	0.02	0.02	-	0.3	0.13
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.72	-	-	-	-	-	-	-	-
	A-C	5.85	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:15-15:30	B-A	1.81	5.64	0.322	-	0.72	0.49	-	7.7	0.26
	B-C	1.51	7.66	0.197	-	0.34	0.25	-	3.9	0.16
	C-AB	0.13	8.21	0.016	-	0.02	0.02	-	0.3	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.58	-	-	-	-	-	-	-	-
	A-C	4.78	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
15:30-15:45	B-A	1.52	5.92	0.257	-	0.49	0.35	-	5.5	0.23
	B-C	1.27	7.99	0.159	-	0.25	0.19	-	2.9	0.15
	C-AB	0.11	8.42	0.013	-	0.02	0.01	-	0.2	0.12
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.49	-	-	-	-	-	-	-	-
	A-C	4.00	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: 2022 AM with Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	61.9	41.3	13.2	0.2	13.2	0.2
B-C	50.9	34.0	6.8	0.1	6.8	0.1
C-AB	41.3	27.5	5.8	0.1	5.8	0.1
C-A	-	-	-	-	-	-
A-B	185.8	123.9	-	-	-	-
A-C	408.8	272.5	-	-	-	-
All	**1153.4**	**769.0**	**25.8**	**0.0**	**25.8**	**0.0**

Demand Set: 2022 PM with Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	166.5	111.0	43.6	0.3	43.6	0.3
B-C	139.0	92.7	22.7	0.2	22.7	0.2
C-AB	12.4	8.3	1.5	0.1	1.5	0.1
C-A	-	-	-	-	-	-
A-B	53.7	35.8	-	-	-	-
A-C	403.3	268.9	-	-	-	-
All	**1132.8**	**755.2**	**67.8**	**0.1**	**67.8**	**0.1**

Demand Set: 2027 AM with Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	61.9	41.3	13.4	0.2	13.4	0.2
B-C	50.9	34.0	6.9	0.1	6.9	0.1
C-AB	41.3	27.5	5.8	0.1	5.8	0.1
C-A	-	-	-	-	-	-
A-B	185.8	123.9	-	-	-	-
A-C	428.1	285.4	-	-	-	-
All	**1190.6**	**793.7**	**26.1**	**0.0**	**26.1**	**0.0**

Demand Set: 2037 AM with Dev
Modelling Period: 07:30-09:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	61.9	41.3	13.6	0.2	13.6	0.2
B-C	50.9	34.0	7.0	0.1	7.0	0.1
C-AB	41.3	27.5	5.9	0.1	5.9	0.1
C-A	-	-	-	-	-	-
A-B	185.8	123.9	-	-	-	-
A-C	447.3	298.2	-	-	-	-
All	**1226.4**	**817.6**	**26.4**	**0.0**	**26.4**	**0.0**

Demand Set: 2027 PM with Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	166.5	111.0	44.5	0.3	44.5	0.3
B-C	139.0	92.7	22.9	0.2	22.9	0.2
C-AB	12.4	8.3	1.5	0.1	1.5	0.1
C-A	-	-	-	-	-	-
A-B	53.7	35.8	-	-	-	-
A-C	422.6	281.7	-	-	-	-
All	**1168.6**	**779.1**	**68.9**	**0.1**	**68.9**	**0.1**

Demand Set: 2037 PM with Dev
Modelling Period: 14:15-15:45

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	166.5	111.0	45.3	0.3	45.3	0.3
B-C	139.0	92.7	23.1	0.2	23.1	0.2
C-AB	12.4	8.3	1.6	0.1	1.6	0.1
C-A	-	-	-	-	-	-
A-B	53.7	35.8	-	-	-	-
A-C	439.1	292.7	-	-	-	-
All	**1200.2**	**800.2**	**69.9**	**0.1**	**70.0**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful

APPENDIX D7

JUNCTION ANALYSIS OUTPUTS

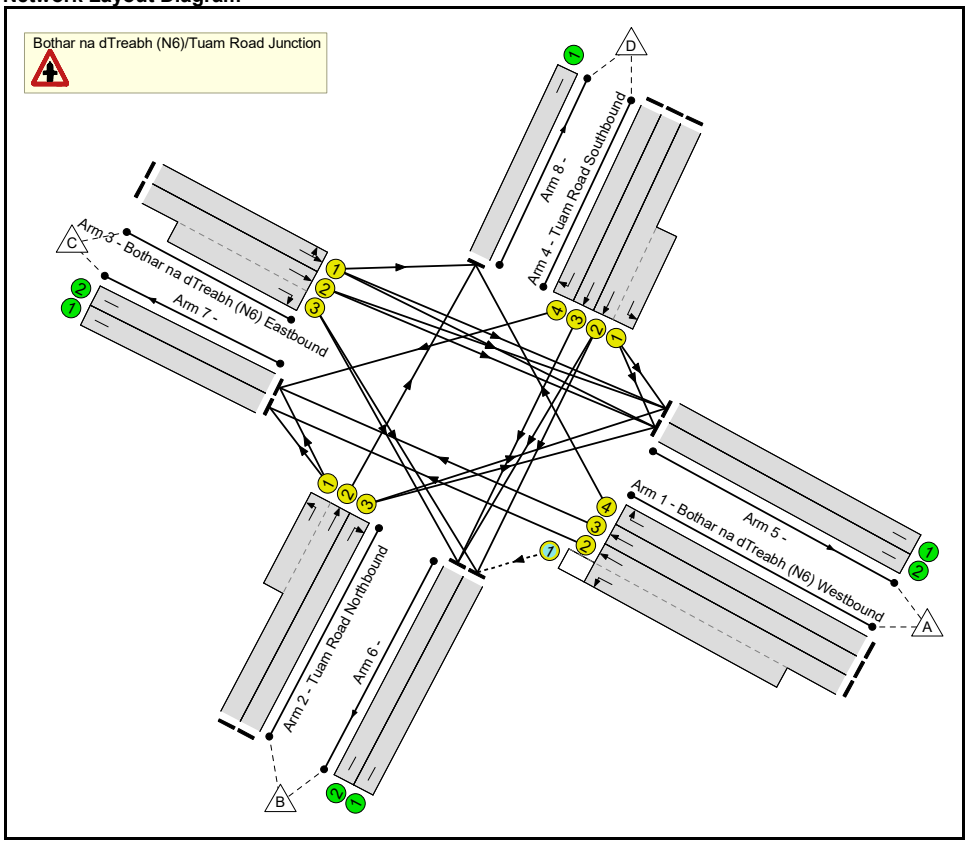
N6 BOTHAR NA DTREABH/R336 TUAM RD/N83 TUAM RD SIGNALISED CROSSROADS (LINSIG)

Full Input Data And Results

User and Project Details

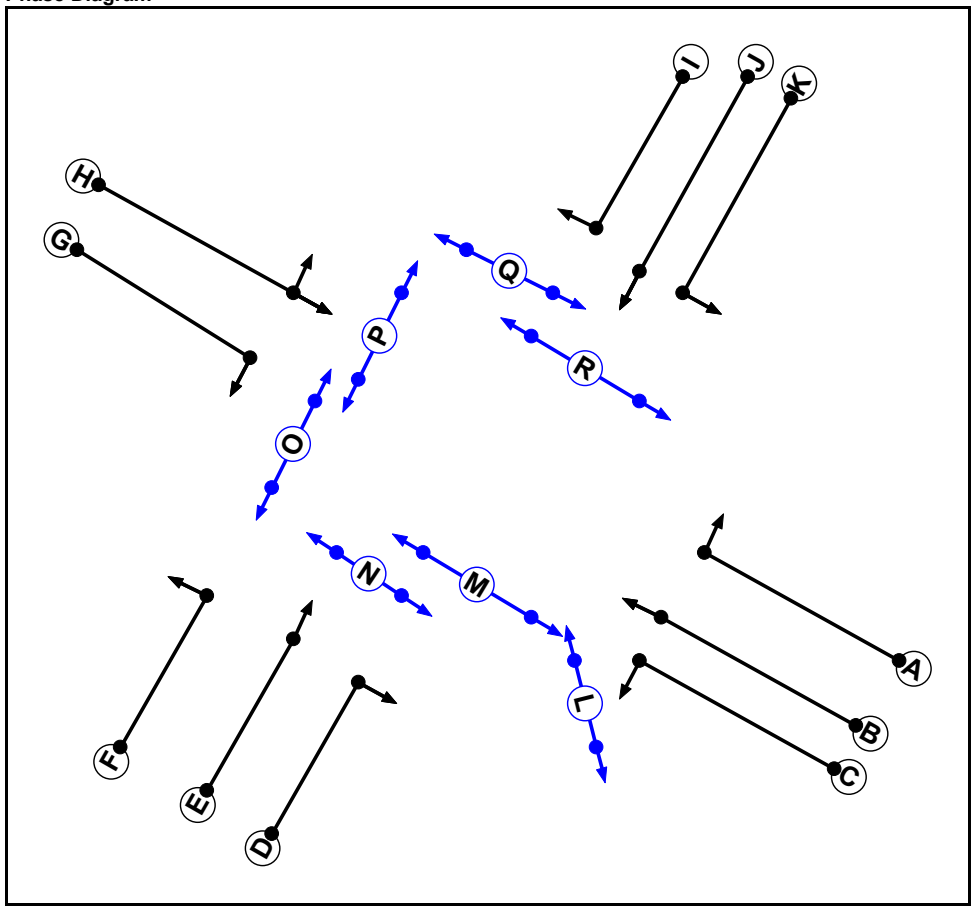
Project:	**Crown Square**
Title:	**N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction**
File name:	118241 Bothar na dTreabh_Tuam Rd LinSig Analysis Individual All Green on Tuam Rd 2018 10 30 jn.lsg3x
Author:	J Noone
Company:	Punch Consulting Engineers

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Traffic		7	7
I	Traffic		7	7
J	Traffic		7	7
K	Traffic		7	7
L	Pedestrian		3	3
M	Pedestrian		4	4
N	Pedestrian		6	6
O	Pedestrian		4	4
P	Pedestrian		5	5
Q	Pedestrian		3	3
R	Pedestrian		8	8

Full Input Data And Results

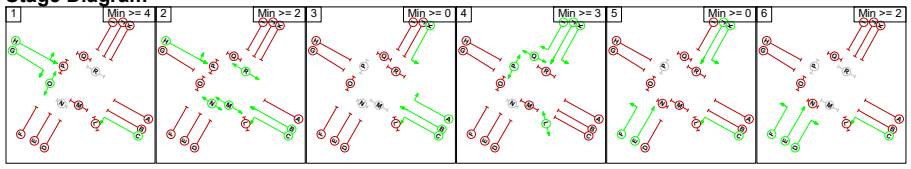
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
A		-	-	5	5	-	-	5	5	5	-	-	-	-	-	-	9	-
B	-		-	5	5	7	5	-	5	5	-	-	-	-	9	-	-	-
C	-	-		-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
D	5	5	-		-	-	5	5	-	6	8	-	-	5	-	-	-	-
E	5	5	-	-		-	6	7	5	-	-	-	-	5	-	-	10	-
F	-	5	-	-	-		-	-	5	-	-	-	-	5	7	-	-	-
G	-	5	-	5	5	-		-	5	5	-	-	8	-	-	5	-	-
H	5	-	-	5	5	-	-		5	6	7	-	-	-	-	5	7	-
I	5	5	-	-	5	7	5	5		-	-	-	-	-	9	-	-	5
J	5	5	-	5	-	-	5	5	-		-	-	9	-	-	-	-	5
K	-	-	-	5	-	-	-	5	-	-		-	-	-	-	-	-	5
L	-	-	7	-	-	-	-	-	-	-	-		-	-	-	-	-	-
M	-	-	-	-	-	-	9	-	-	9	-	-		-	-	-	-	-
N	-	-	-	13	13	13	-	-	-	-	-	-	-		-	-	-	-
O	-	10	-	-	-	10	-	-	10	-	-	-	-	-		-	-	-
P	-	-	-	-	-	-	11	11	-	-	-	-	-	-	-		-	-
Q	7	-	-	-	7	-	-	7	-	-	-	-	-	-	-	-		-
R	-	-	-	-	-	-	-	-	18	18	18	-	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	C G H O
2	B C H M N R
3	A B C K
4	I J K L P Q
5	C E F J K
6	C D E F

Stage Diagram



Lane Input Data

Junction: Bothar na dTreabh (N6)/Tuam Road Junction

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Bothar na dTreabh (N6) Westbound)	O	C	2	3	17.0	Geom	-	3.00	0.00	Y	Arm 6 Left	70.00
1/2 (Bothar na dTreabh (N6) Westbound)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 7 Ahead	Inf
1/3 (Bothar na dTreabh (N6) Westbound)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 7 Ahead	Inf
1/4 (Bothar na dTreabh (N6) Westbound)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 8 Right	15.00
2/1 (Tuam Road Northbound)	U	F	2	3	7.0	Geom	-	3.00	0.00	Y	Arm 7 Left	12.00
2/2 (Tuam Road Northbound)	U	E	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 8 Ahead	Inf
2/3 (Tuam Road Northbound)	U	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Right	15.00
3/1 (Bothar na dTreabh (N6) Eastbound)	U	H	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead Arm 8 Left	Inf 12.00
3/2 (Bothar na dTreabh (N6) Eastbound)	U	H	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
3/3 (Bothar na dTreabh (N6) Eastbound)	U	G	2	3	10.0	Geom	-	3.00	0.00	Y	Arm 6 Right	15.00
4/1 (Tuam Road Southbound)	U	K	2	3	7.0	Geom	-	3.00	0.00	Y	Arm 5 Left	12.00
4/2 (Tuam Road Southbound)	U	J	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
4/3 (Tuam Road Southbound)	U	J	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
4/4 (Tuam Road Southbound)	U	I	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 7 Right	15.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 AM without Dev'	08:00	09:00	01:00	
2: '2018 PM without Dev'	16:15	17:15	01:00	
3: '2022 AM without Dev'	08:00	09:00	01:00	
4: '2022 PM without Dev'	16:15	17:15	01:00	
5: '2027 AM without Dev'	08:00	09:00	01:00	
6: '2027 PM without Dev'	16:15	17:15	01:00	
7: '2037 AM without Dev'	08:00	09:00	01:00	
8: '2037 PM without Dev'	16:15	17:15	01:00	
11: '2022 AM with Dev'	08:00	09:00	01:00	F3+F9
12: '2022 PM with Dev'	16:15	17:15	01:00	F4+F10
13: '2027 AM with Dev'	08:00	09:00	01:00	F5+F9
14: '2027 PM with Dev'	16:15	17:15	01:00	F6+F10
15: '2037 AM with Dev'	08:00	09:00	01:00	F7+F9
16: '2037 PM with Dev'	16:15	17:15	01:00	F8+F10

Traffic Flows, Desired

Scenario 1: '2018 AM without Dev' (FG1: '2018 AM without Dev', Plan 1: 'Network Control Plan 1')

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	434	608	110	1152
	B	368	0	13	343	724
	C	728	34	0	335	1097
	D	92	393	218	0	703
	Tot.	1188	861	839	788	3676

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	345	640	226	1211
	B	396	0	27	379	802
	C	731	24	0	278	1033
	D	72	309	213	0	594
	Tot.	1199	678	880	883	3640

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	450	631	114	1195
	B	382	0	14	355	751
	C	728	36	0	335	1099
	D	95	407	227	0	729
	Tot.	1205	893	872	804	3774

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	357	662	235	1254
	B	410	0	28	392	830
	C	731	25	0	278	1034
	D	74	320	220	0	614
	Tot.	1215	702	910	905	3732

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	471	662	120	1253
	B	399	0	15	371	785
	C	728	37	0	335	1100
	D	100	425	238	0	763
	Tot.	1227	933	915	826	3901

Full Input Data And Results

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	372	692	245	1309
	B	428	0	29	410	867
	C	731	26	0	278	1035
	D	77	334	230	0	641
	Tot.	1236	732	951	933	3852

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	491	693	126	1310
	B	414	0	16	384	814
	C	728	38	0	335	1101
	D	106	441	249	0	796
	Tot.	1248	970	958	845	4021

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	385	717	255	1357
	B	444	0	30	426	900
	C	731	27	0	278	1036
	D	80	345	237	0	662
	Tot.	1255	757	984	959	3955

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	450	631	114	1195
	B	382	0	14	368	764
	C	728	36	0	335	1099
	D	95	446	227	0	768
	Tot.	1205	932	872	817	3826

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	357	662	235	1254
	B	410	0	28	427	865
	C	731	25	0	278	1034
	D	85	320	220	0	625
	Tot.	1226	702	910	940	3778

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	471	662	120	1253
	B	399	0	15	384	798
	C	728	37	0	335	1100
	D	100	464	238	0	802
	Tot.	1227	972	915	839	3953

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	372	692	245	1309
	B	428	0	29	445	902
	C	731	26	0	278	1035
	D	88	334	230	0	652
	Tot.	1247	732	951	968	3898

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

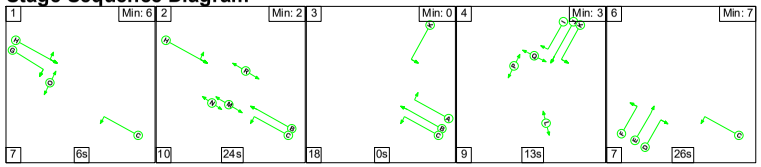
		Destination				
		A	B	C	D	Tot.
Origin	A	0	491	693	126	1310
	B	414	0	16	397	827
	C	728	38	0	335	1101
	D	106	480	249	0	835
	Tot.	1248	1009	958	858	4073

Full Input Data And Results

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	385	717	255	1357
	B	444	0	30	461	935
	C	731	27	0	278	1036
	D	91	345	237	0	673
	Tot.	1266	757	984	994	4001

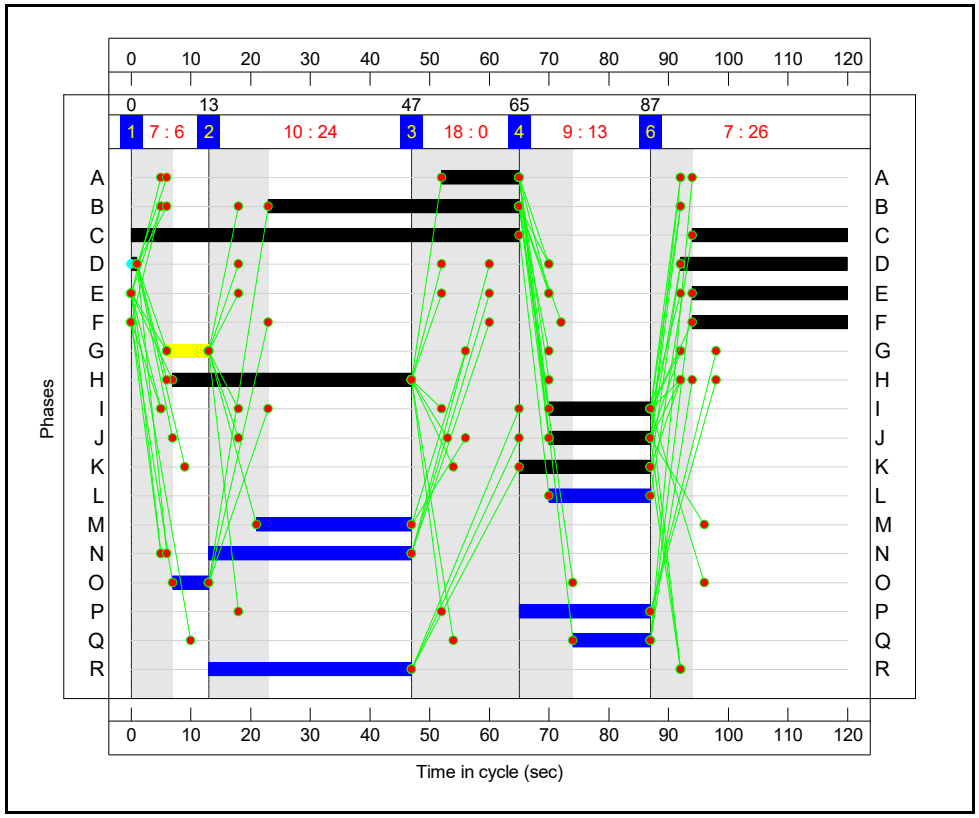
Scenario 1: '2018 AM without Dev' (FG1: '2018 AM without Dev', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	24	0	13	26
Change Point	0	13	47	65	87

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**86.9%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**86.9%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	42:91		671	1915:1875	883	76.0%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	42	-	371	1915	686	54.1%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	110	1741	203	54.2%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	26		356	1915:1702	440	80.8%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	29	-	368	1741	435	84.5%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	40	-	517	1772	605	85.4%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	40:7		580	1915:1741	668	86.9%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	17:22		291	1915:1702	384	75.8%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	17	-	194	1915	287	67.5%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	17	-	218	1741	261	83.5%
5/1		U	N/A	N/A	-		-	-	-	211	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	977	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	552	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	309	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	249	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	590	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	788	1	Inf	0.0%

Full Input Data And Results

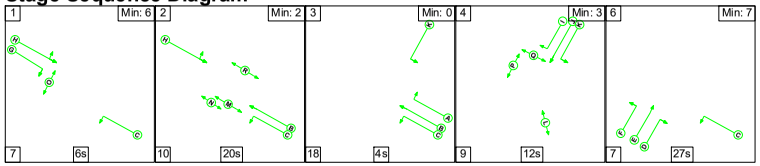
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**45**	**381**	**7**	**36.7**	**17.9**	**0.5**	**55.1**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**45**	**381**	**7**	**36.7**	**17.9**	**0.5**	**55.1**	**-**	**-**	**-**	**-**
1/2+1/1	671	671	45	381	7	2.5	1.6	0.5	4.5	24.0	6.1	1.6	7.7
1/3	371	371	-	-	-	3.2	0.6	-	3.7	36.3	9.8	0.6	10.4
1/4	110	110	-	-	-	1.5	0.6	-	2.1	69.1	3.5	0.6	4.0
2/2+2/1	356	356	-	-	-	4.3	2.0	-	6.3	64.2	10.9	2.0	12.9
2/3	368	368	-	-	-	4.4	2.5	-	6.9	67.7	11.7	2.5	14.2
3/1	517	517	-	-	-	5.3	2.8	-	8.0	55.9	15.9	2.8	18.7
3/2+3/3	580	580	-	-	-	6.2	3.1	-	9.3	57.8	17.4	3.1	20.5
4/2+4/1	291	291	-	-	-	3.7	1.5	-	5.3	65.0	6.2	1.5	7.8
4/3	194	194	-	-	-	2.6	1.0	-	3.6	67.1	6.1	1.0	7.1
4/4	218	218	-	-	-	3.0	2.3	-	5.3	87.3	7.0	2.3	9.3
5/1	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	977	977	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	788	788	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 3.6 Total Delay for Signalled Lanes (pcuHr): 55.09
PRC Over All Lanes (%): 3.6 Total Delay Over All Lanes(pcuHr): 55.09 Cycle Time (s): 120

Full Input Data And Results

Scenario 2: '2018 PM without Dev' (FG2: '2018 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

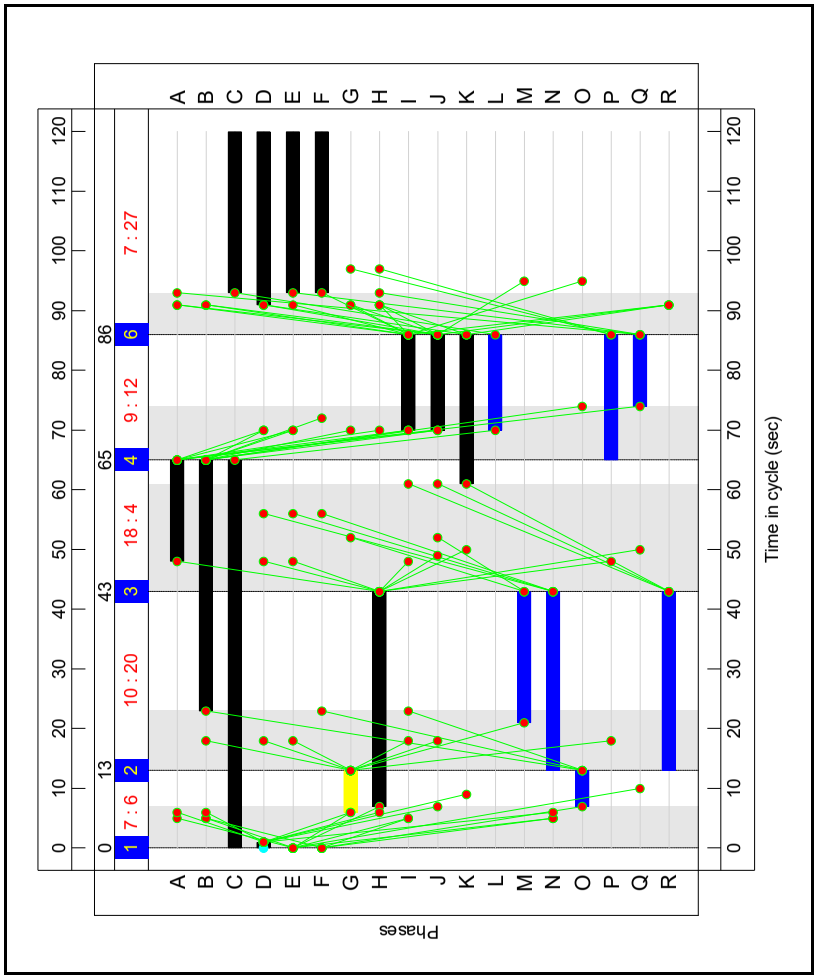


Stage Timings

Stage	1	2	3	4	6
Duration	6	20	4	12	27
Change Point	0	13	43	65	86

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**90.2%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**90.2%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	42:92		674	1915:1875	1107	60.9%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	42	-	311	1915	686	45.3%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	17	-	226	1741	261	86.5%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	27		406	1915:1702	462	87.8%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	30	-	396	1741	450	88.0%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	36	-	492	1789	552	89.2%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	36:7		541	1915:1741	600	90.2%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	16:25		236	1915:1702	364	64.9%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	16	-	145	1915	271	53.4%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	16	-	213	1741	247	86.4%
5/1		U	N/A	N/A	-		-	-	-	266	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	933	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	430	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	248	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	353	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	527	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	883	1	Inf	0.0%

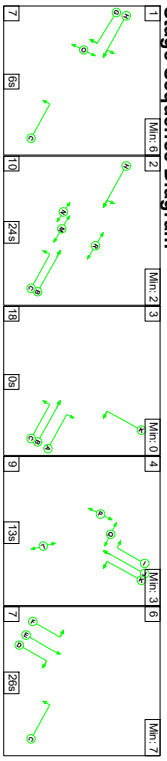
Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**34**	**305**	**6**	**37.9**	**22.4**	**0.2**	**60.5**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**34**	**305**	**6**	**37.9**	**22.4**	**0.2**	**60.5**	**-**	**-**	**-**	**-**
1/2+1/1	674	674	34	305	6	3.1	0.8	0.2	4.1	21.8	8.4	0.8	9.2
1/3	311	311	-	-	-	2.5	0.4	-	3.0	34.3	7.9	0.4	8.3
1/4	226	226	-	-	-	3.1	2.8	-	5.9	94.0	7.3	2.8	10.1
2/2+2/1	406	406	-	-	-	4.9	3.2	-	8.2	72.5	12.5	3.2	15.7
2/3	396	396	-	-	-	4.7	3.3	-	8.0	72.6	12.7	3.3	15.9
3/1	492	492	-	-	-	5.4	3.7	-	9.1	66.5	15.6	3.7	19.3
3/2+3/3	541	541	-	-	-	6.1	4.0	-	10.2	67.8	16.7	4.0	20.7
4/2+4/1	236	236	-	-	-	3.0	0.9	-	3.9	59.2	5.1	0.9	6.0
4/3	145	145	-	-	-	1.9	0.6	-	2.5	62.0	4.5	0.6	5.0
4/4	213	213	-	-	-	3.0	2.7	-	5.7	96.4	6.9	2.7	9.6
5/1	266	266	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	933	933	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	248	248	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	353	353	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	527	527	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	883	883	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -0.2 Total Delay for Signalled Lanes (pcuHr): 60.46
PRC Over All Lanes (%): -0.2 Total Delay Over All Lanes(pcuHr): 60.46 Cycle Time (s): 120

Scenario 3: '2022 AM without Dev' (FG3: '2022 AM without Dev', Plan 1: 'Network Control Plan 1')

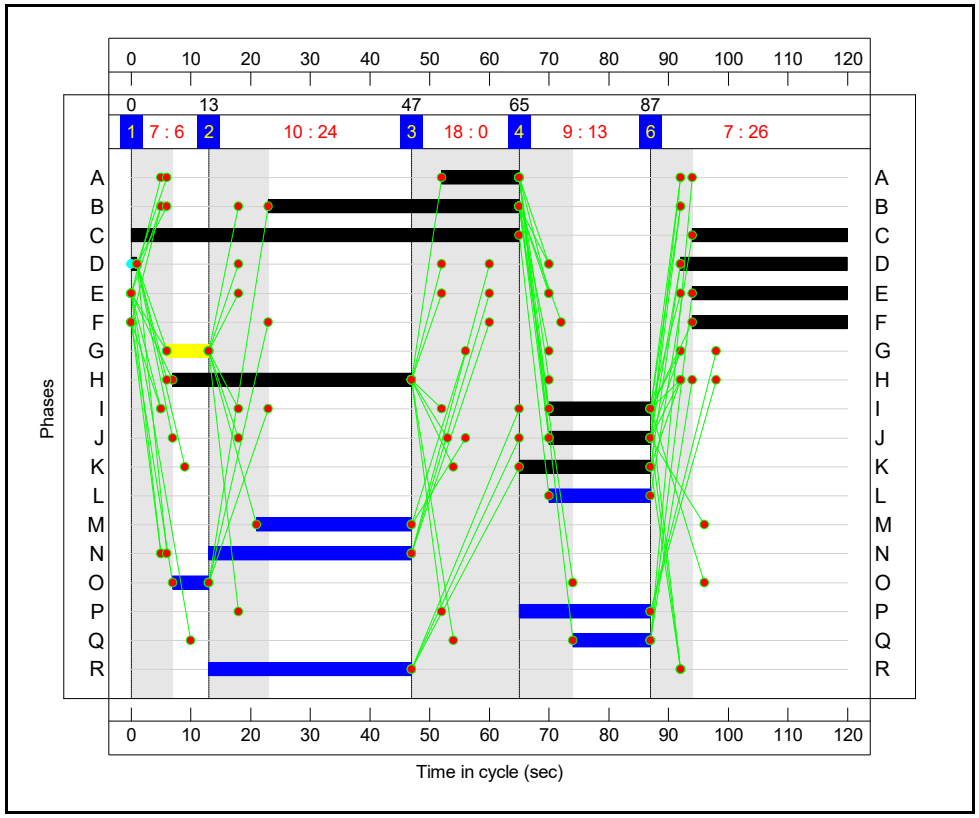
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	24	0	13	26
Change Point	0	13	47	65	87

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**87.8%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**87.8%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	42:91		691	1915:1875	878	78.7%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	42	-	390	1915	686	56.8%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	114	1741	203	56.1%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	26		369	1915:1702	441	83.7%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	29	-	382	1741	435	87.8%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	40	-	517	1772	605	85.4%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	40:7		582	1915:1741	669	87.0%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	17:22		300	1915:1702	384	78.1%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	17	-	202	1915	287	70.3%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	17	-	227	1741	261	86.9%
5/1		U	N/A	N/A	-		-	-	-	213	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	992	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	556	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	337	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	254	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	618	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	804	1	Inf	0.0%

Full Input Data And Results

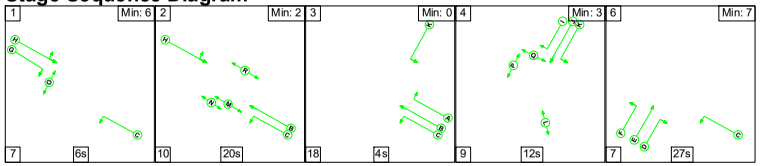
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**45**	**398**	**8**	**37.9**	**20.3**	**0.5**	**58.7**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**45**	**398**	**8**	**37.9**	**20.3**	**0.5**	**58.7**	**-**	**-**	**-**	**-**
1/2+1/1	691	691	45	398	8	2.5	1.8	0.5	4.9	25.5	6.8	1.8	8.6
1/3	390	390	-	-	-	3.4	0.7	-	4.0	37.1	10.4	0.7	11.1
1/4	114	114	-	-	-	1.6	0.6	-	2.2	70.0	3.6	0.6	4.2
2/2+2/1	369	369	-	-	-	4.5	2.4	-	6.9	67.7	11.4	2.4	13.8
2/3	382	382	-	-	-	4.6	3.2	-	7.8	73.4	12.2	3.2	15.4
3/1	517	517	-	-	-	5.3	2.8	-	8.0	55.9	15.9	2.8	18.7
3/2+3/3	582	582	-	-	-	6.3	3.1	-	9.4	58.1	17.4	3.1	20.6
4/2+4/1	300	300	-	-	-	3.9	1.7	-	5.6	66.9	6.5	1.7	8.2
4/3	202	202	-	-	-	2.7	1.2	-	3.9	69.0	6.4	1.2	7.6
4/4	227	227	-	-	-	3.1	2.8	-	6.0	95.0	7.4	2.8	10.2
5/1	213	213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	992	992	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	556	556	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	337	337	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	254	254	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	804	804	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 2.5 Total Delay for Signalled Lanes (pcuHr): 58.72
PRC Over All Lanes (%): 2.5 Total Delay Over All Lanes(pcuHr): 58.72 Cycle Time (s): 120

Full Input Data And Results

Scenario 4: '2022 PM without Dev' (FG4: '2022 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

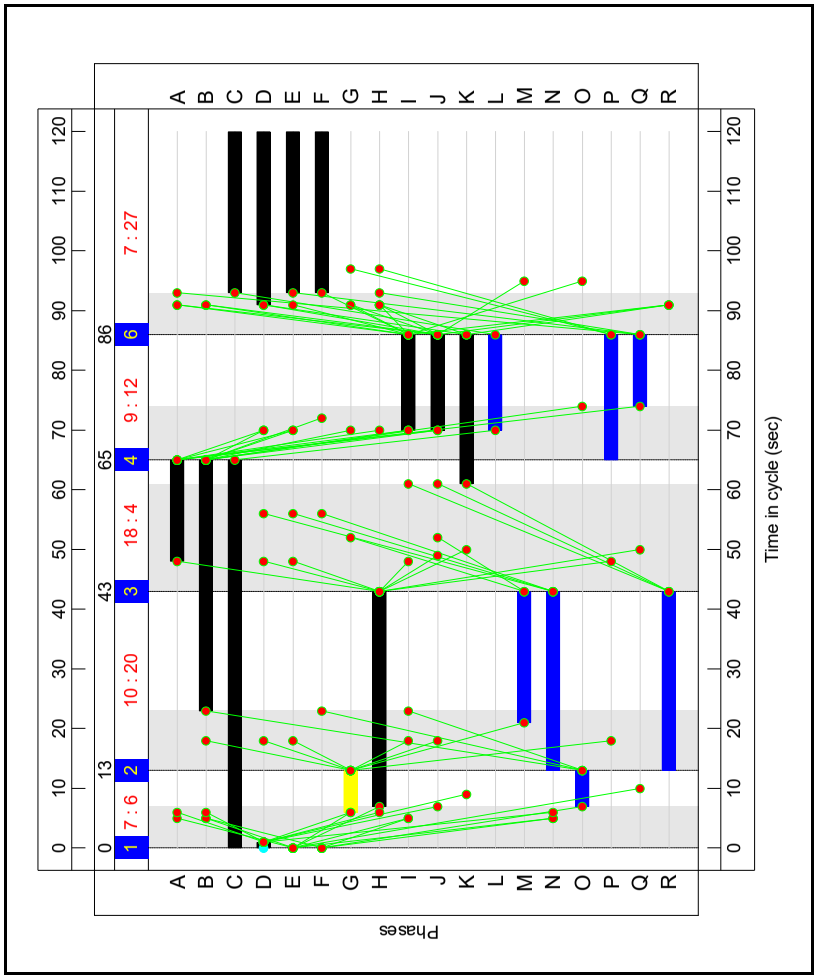


Stage Timings

Stage	1	2	3	4	6
Duration	6	20	4	12	27
Change Point	0	13	43	65	86

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**91.2%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**91.2%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	42:92		698	1915:1875	1108	63.0%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	42	-	321	1915	686	46.8%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	17	-	235	1741	261	90.0%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	27		420	1915:1702	462	90.8%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	30	-	410	1741	450	91.2%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	36	-	493	1789	552	89.4%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	36:7		541	1915:1741	600	90.1%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	16:25		242	1915:1702	364	66.5%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	16	-	152	1915	271	56.0%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	16	-	220	1741	247	89.2%
5/1		U	N/A	N/A	-		-	-	-	269	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	946	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	446	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	256	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	366	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	544	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	905	1	Inf	0.0%

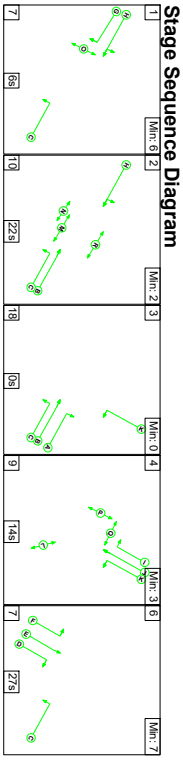
Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**35**	**316**	**6**	**39.0**	**25.9**	**0.2**	**65.1**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**35**	**316**	**6**	**39.0**	**25.9**	**0.2**	**65.1**	**-**	**-**	**-**	**-**
1/2+1/1	698	698	35	316	6	3.2	0.8	0.2	4.3	22.2	8.8	0.8	9.7
1/3	321	321	-	-	-	2.6	0.4	-	3.1	34.6	8.2	0.4	8.6
1/4	235	235	-	-	-	3.3	3.5	-	6.8	104.3	7.6	3.5	11.2
2/2+2/1	420	420	-	-	-	5.2	4.1	-	9.3	79.8	13.0	4.1	17.2
2/3	410	410	-	-	-	4.9	4.2	-	9.2	80.5	13.2	4.2	17.5
3/1	493	493	-	-	-	5.4	3.7	-	9.2	66.9	15.6	3.7	19.3
3/2+3/3	541	541	-	-	-	6.2	4.0	-	10.2	67.6	16.6	4.0	20.7
4/2+4/1	242	242	-	-	-	3.1	1.0	-	4.0	59.9	5.2	1.0	6.2
4/3	152	152	-	-	-	2.0	0.6	-	2.7	63.0	4.7	0.6	5.3
4/4	220	220	-	-	-	3.1	3.3	-	6.4	104.7	7.1	3.3	10.5
5/1	269	269	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	946	946	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	256	256	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	366	366	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	905	905	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -1.3 Total Delay for Signalled Lanes (pcuHr): 65.08
PRC Over All Lanes (%): -1.3 Total Delay Over All Lanes(pcuHr): 65.08 Cycle Time (s): 120

Scenario 5: '2027 AM without Dev' (FG5: '2027 AM without Dev', Plan 1: 'Network Control Plan 1')

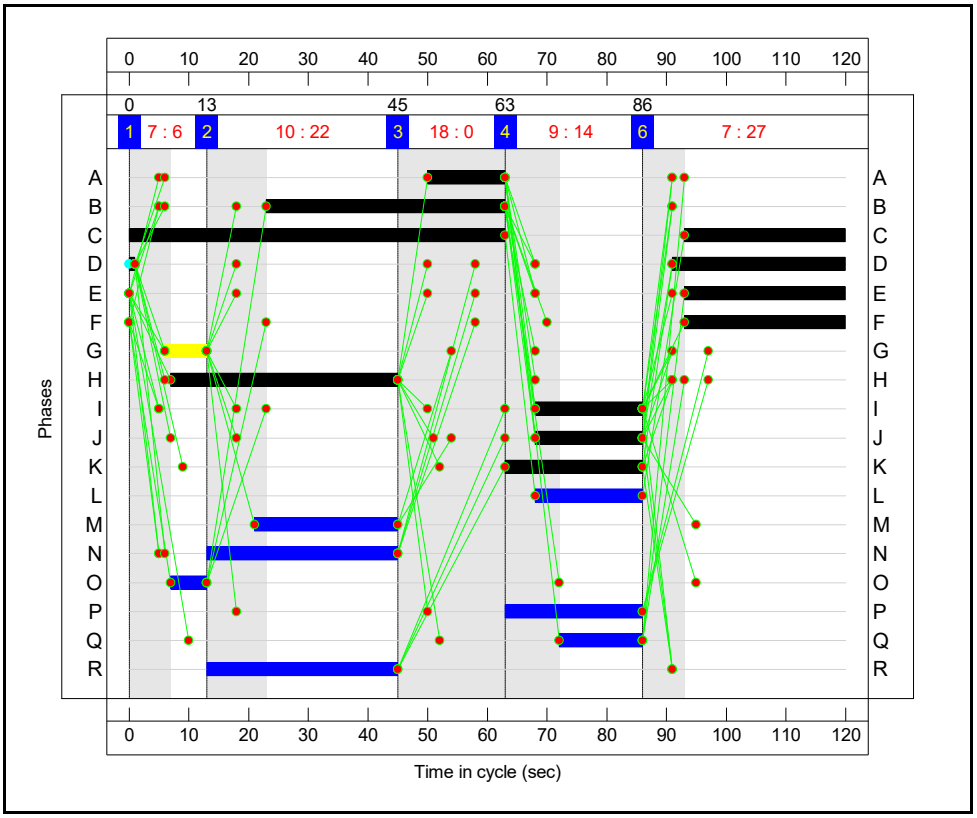
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	22	0	14	27
Change Point	0	13	45	63	86

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**91.1%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**91.1%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	40:90		714	1915:1875	852	83.8%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	40	-	419	1915	654	64.0%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	120	1741	203	59.1%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	27		386	1915:1702	457	84.5%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	30	-	399	1741	450	88.7%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	38	-	519	1772	576	90.1%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	38:7		581	1915:1741	638	91.1%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	18:23		312	1915:1702	401	77.8%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	18	-	213	1915	303	70.2%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	18	-	238	1741	276	86.3%
5/1		U	N/A	N/A	-		-	-	-	220	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1007	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	616	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	317	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	257	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	658	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	826	1	Inf	0.0%

Full Input Data And Results

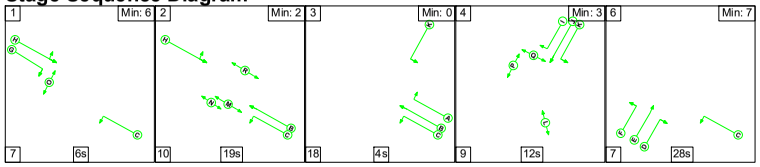
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**45**	**418**	**8**	**40.0**	**24.1**	**0.7**	**64.8**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**45**	**418**	**8**	**40.0**	**24.1**	**0.7**	**64.8**	**-**	**-**	**-**	**-**
1/2+1/1	714	714	45	418	8	2.8	2.5	0.7	6.0	30.2	8.0	2.5	10.5
1/3	419	419	-	-	-	3.9	0.9	-	4.8	40.9	11.8	0.9	12.6
1/4	120	120	-	-	-	1.7	0.7	-	2.4	71.6	3.8	0.7	4.5
2/2+2/1	386	386	-	-	-	4.7	2.5	-	7.2	67.4	11.9	2.5	14.5
2/3	399	399	-	-	-	4.7	3.5	-	8.2	74.0	12.7	3.5	16.2
3/1	519	519	-	-	-	5.6	4.0	-	9.6	66.4	16.4	4.0	20.4
3/2+3/3	581	581	-	-	-	6.6	4.4	-	11.0	68.2	17.7	4.4	22.2
4/2+4/1	312	312	-	-	-	3.9	1.7	-	5.6	65.0	6.7	1.7	8.3
4/3	213	213	-	-	-	2.8	1.2	-	4.0	67.3	6.7	1.2	7.8
4/4	238	238	-	-	-	3.3	2.8	-	6.0	90.9	7.7	2.8	10.4
5/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1007	1007	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	616	616	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	317	317	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	257	257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	658	658	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	826	826	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -1.3 Total Delay for Signalled Lanes (pcuHr): 64.77
PRC Over All Lanes (%): -1.3 Total Delay Over All Lanes(pcuHr): 64.77 Cycle Time (s): 120

Full Input Data And Results

Scenario 6: '2027 PM without Dev' (FG6: '2027 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

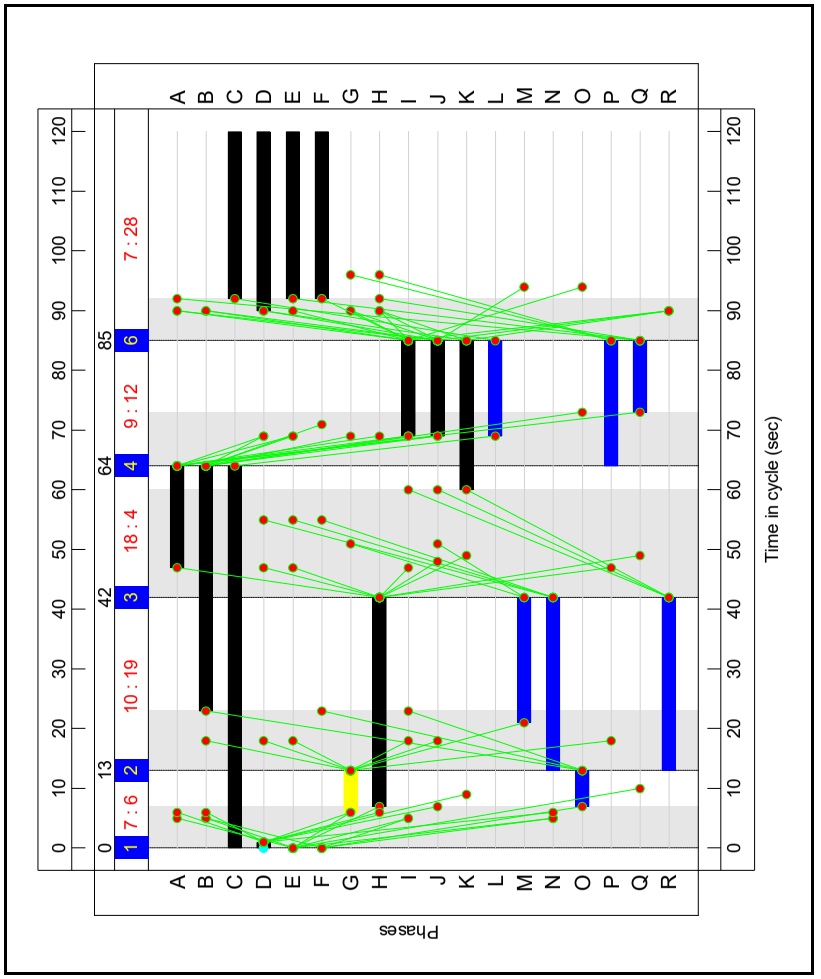


Stage Timings

Stage	1	2	3	4	6
Duration	6	19	4	12	28
Change Point	0	13	42	64	85

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.8%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**93.8%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	41:92		731	1915:1875	1113	65.7%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	41	-	333	1915	670	49.7%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	17	-	245	1741	261	93.8%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	28		439	1915:1702	478	91.8%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	31	-	428	1741	464	92.2%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	35	-	493	1789	537	91.9%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	35:7		542	1915:1741	585	92.6%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	16:25		251	1915:1702	364	68.9%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	16	-	160	1915	271	59.0%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	16	-	230	1741	247	93.3%
5/1		U	N/A	N/A	-		-	-	-	261	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	975	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	468	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	264	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	385	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	566	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	933	1	Inf	0.0%

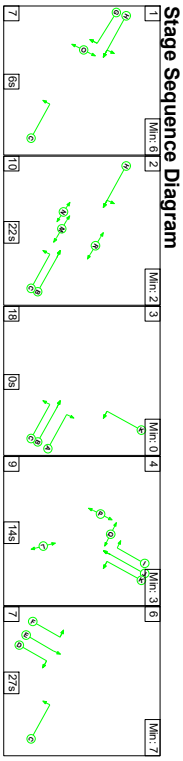
Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**36**	**329**	**6**	**40.7**	**31.5**	**0.3**	**72.4**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**36**	**329**	**6**	**40.7**	**31.5**	**0.3**	**72.4**	**-**	**-**	**-**	**-**
1/2+1/1	731	731	36	329	6	3.5	1.0	0.3	4.7	23.3	9.5	1.0	10.4
1/3	333	333	-	-	-	2.8	0.5	-	3.3	36.0	8.7	0.5	9.2
1/4	245	245	-	-	-	3.4	4.8	-	8.2	120.5	8.0	4.8	12.8
2/2+2/1	439	439	-	-	-	5.4	4.6	-	9.9	81.2	13.7	4.6	18.2
2/3	428	428	-	-	-	5.1	4.7	-	9.8	82.2	13.8	4.7	18.5
3/1	493	493	-	-	-	5.6	4.7	-	10.2	74.5	15.7	4.7	20.4
3/2+3/3	542	542	-	-	-	6.3	5.1	-	11.4	75.8	17.0	5.1	22.0
4/2+4/1	251	251	-	-	-	3.2	1.1	-	4.3	61.1	5.5	1.1	6.5
4/3	160	160	-	-	-	2.1	0.7	-	2.9	64.2	5.0	0.7	5.7
4/4	230	230	-	-	-	3.3	4.5	-	7.7	121.2	7.5	4.5	12.0
5/1	261	261	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	975	975	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	468	468	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	385	385	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	566	566	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	933	933	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -4.2 Total Delay for Signalled Lanes (pcuHr): 72.42
PRC Over All Lanes (%): -4.2 Total Delay Over All Lanes(pcuHr): 72.42 Cycle Time (s): 120

Scenario 7: '2037 AM without Dev' (FG7: '2037 AM without Dev', Plan 1: 'Network Control Plan 1')

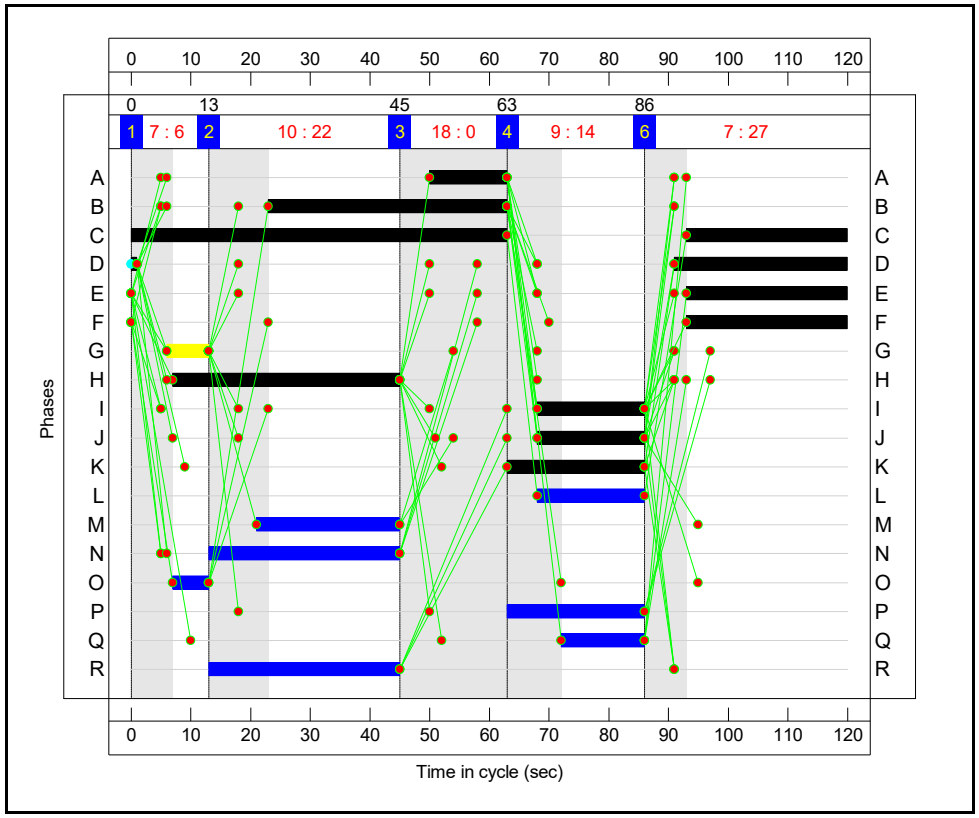
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	22	0	14	27
Change Point	0	13	45	63	86

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.0%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.0%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	40:90		712	1915:1875	818	87.0%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	40	-	472	1915	654	72.1%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	126	1741	203	62.0%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	27		400	1915:1702	457	87.5%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	30	-	414	1741	450	92.0%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	38	-	519	1772	576	90.1%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	38:7		582	1915:1741	638	91.2%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	18:23		325	1915:1702	404	80.5%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	18	-	222	1915	303	73.2%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	18	-	249	1741	276	90.3%
5/1		U	N/A	N/A	-		-	-	-	219	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1029	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	640	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	330	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	236	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	722	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	845	1	Inf	0.0%

Full Input Data And Results

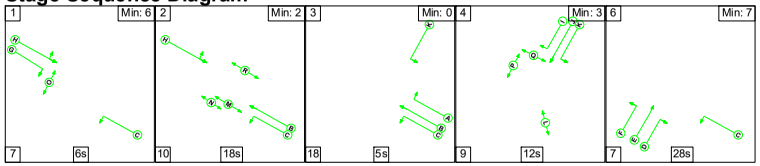
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**44**	**438**	**8**	**41.6**	**28.4**	**0.8**	**70.8**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**44**	**438**	**8**	**41.6**	**28.4**	**0.8**	**70.8**	**-**	**-**	**-**	**-**
1/2+1/1	712	712	44	438	8	2.7	3.2	0.8	6.7	33.7	9.1	3.2	12.3
1/3	472	472	-	-	-	4.5	1.3	-	5.8	44.2	13.6	1.3	14.9
1/4	126	126	-	-	-	1.8	0.8	-	2.6	73.3	4.0	0.8	4.8
2/2+2/1	400	400	-	-	-	4.9	3.2	-	8.1	72.5	12.5	3.2	15.6
2/3	414	414	-	-	-	5.0	4.6	-	9.6	83.3	13.3	4.6	17.9
3/1	519	519	-	-	-	5.6	4.0	-	9.6	66.4	16.4	4.0	20.4
3/2+3/3	582	582	-	-	-	6.6	4.5	-	11.1	68.4	17.7	4.5	22.2
4/2+4/1	325	325	-	-	-	4.1	2.0	-	6.1	67.5	6.9	2.0	8.9
4/3	222	222	-	-	-	3.0	1.3	-	4.3	69.5	7.0	1.3	8.4
4/4	249	249	-	-	-	3.4	3.7	-	7.1	102.6	8.1	3.7	11.8
5/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1029	1029	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	640	640	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	330	330	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	236	236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	722	722	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	845	845	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -2.3 Total Delay for Signalled Lanes (pcuHr): 70.79
PRC Over All Lanes (%): -2.3 Total Delay Over All Lanes(pcuHr): 70.79 Cycle Time (s): 120

Full Input Data And Results

Scenario 8: '2037 PM without Dev' (FG8: '2037 PM without Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

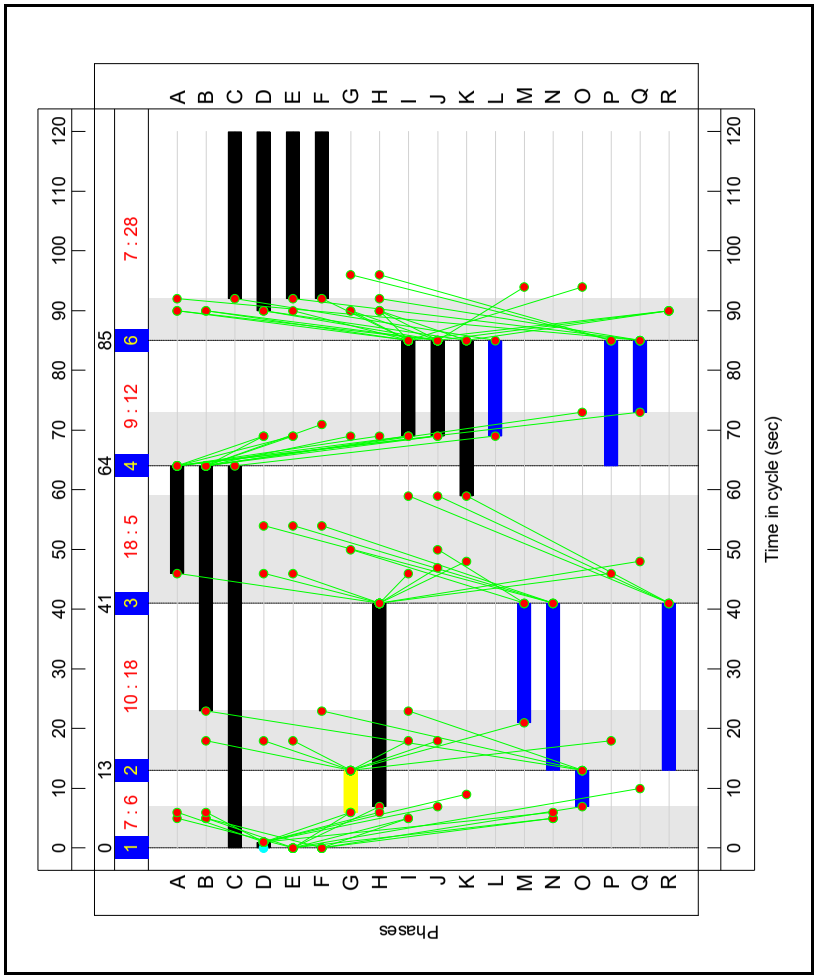


Stage Timings

Stage	1	2	3	4	6
Duration	6	18	5	12	28
Change Point	0	13	41	64	85

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**96.1%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**96.1%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	41:92		756	1915:1875	1112	68.0%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	41	-	346	1915	670	51.6%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	18	-	255	1741	276	92.5%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	28		456	1915:1702	478	95.4%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	31	-	444	1741	464	95.6%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	34	-	493	1789	522	94.5%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	34:7		543	1915:1741	570	95.3%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	16:26		260	1915:1702	365	71.3%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	16	-	165	1915	271	60.8%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	16	-	237	1741	247	96.1%
5/1		U	N/A	N/A	-		-	-	-	229	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1026	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	494	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	263	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	400	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	584	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	959	1	Inf	0.0%

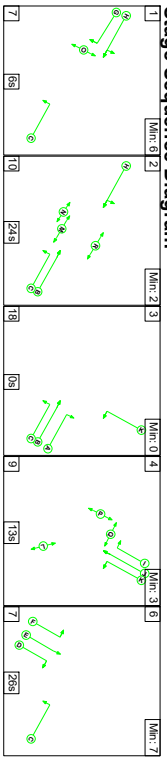
Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**37**	**341**	**6**	**42.2**	**39.5**	**0.3**	**81.9**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**37**	**341**	**6**	**42.2**	**39.5**	**0.3**	**81.9**	**-**	**-**	**-**	**-**
1/2+1/1	756	756	37	341	6	3.7	1.1	0.3	5.0	23.9	9.9	1.1	10.9
1/3	346	346	-	-	-	3.0	0.5	-	3.5	36.5	9.1	0.5	9.7
1/4	255	255	-	-	-	3.5	4.3	-	7.9	111.1	8.4	4.3	12.7
2/2+2/1	456	456	-	-	-	5.6	6.5	-	12.1	95.8	14.5	6.5	21.0
2/3	444	444	-	-	-	5.3	6.6	-	12.0	97.0	14.6	6.6	21.2
3/1	493	493	-	-	-	5.7	6.0	-	11.7	85.6	16.0	6.0	22.1
3/2+3/3	543	543	-	-	-	6.5	6.7	-	13.2	87.7	17.1	6.7	23.9
4/2+4/1	260	260	-	-	-	3.3	1.2	-	4.5	62.2	5.7	1.2	6.9
4/3	165	165	-	-	-	2.2	0.8	-	3.0	65.1	5.1	0.8	5.9
4/4	237	237	-	-	-	3.4	5.7	-	9.0	137.1	7.8	5.7	13.5
5/1	229	229	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1026	1026	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	494	494	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	584	584	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	959	959	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -6.8 Total Delay for Signalled Lanes (pcuHr): 81.95
PRC Over All Lanes (%): -6.8 Total Delay Over All Lanes(pcuHr): 81.95 Cycle Time (s): 120

Scenario 9: '2022 AM with Dev' (FG11: '2022 AM with Dev', Plan 1: 'Network Control Plan 1')

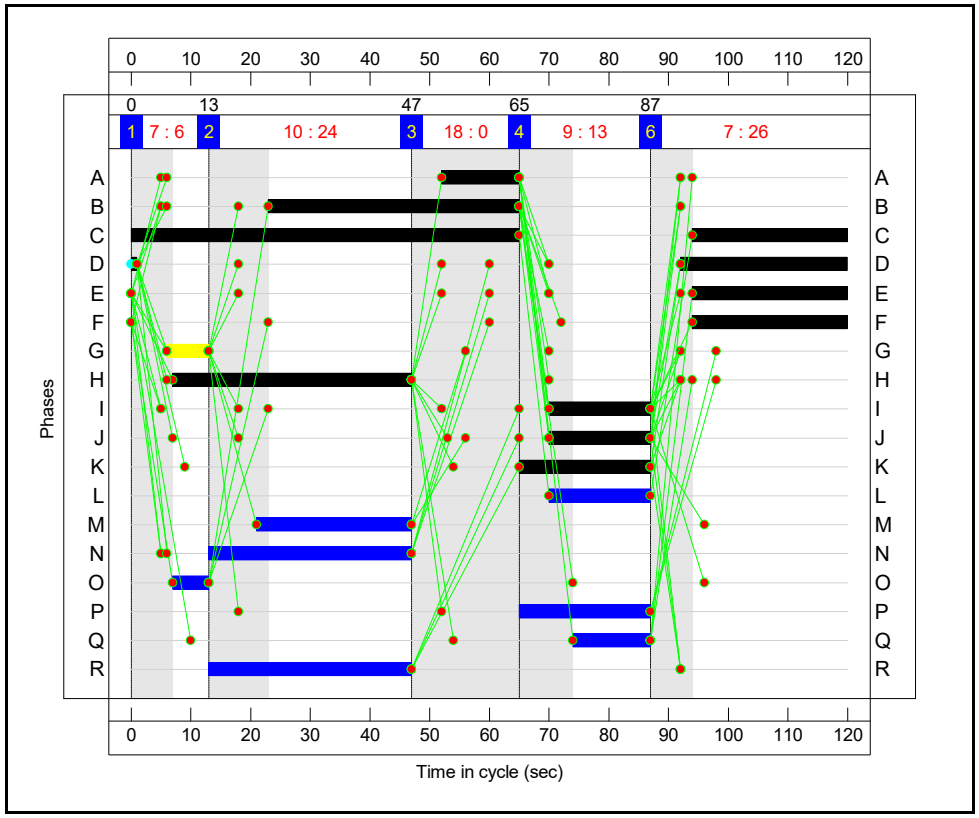
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	24	0	13	26
Change Point	0	13	47	65	87

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**87.8%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**87.8%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	42:91		691	1915:1875	878	78.7%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	42	-	390	1915	686	56.8%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	114	1741	203	56.1%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	26		382	1915:1702	440	86.7%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	29	-	382	1741	435	87.8%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	40	-	517	1772	605	85.4%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	40:7		582	1915:1741	669	87.0%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	17:22		317	1915:1702	377	84.1%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	17	-	224	1915	287	78.0%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	17	-	227	1741	261	86.9%
5/1		U	N/A	N/A	-		-	-	-	213	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	992	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	564	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	368	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	254	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	618	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	817	1	Inf	0.0%

Full Input Data And Results

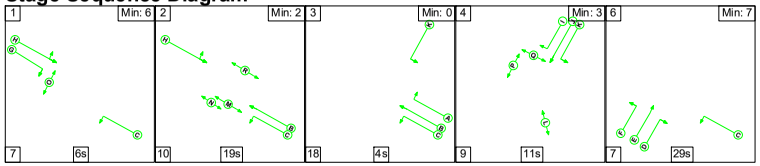
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**45**	**398**	**8**	**38.7**	**22.1**	**0.5**	**61.3**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**45**	**398**	**8**	**38.7**	**22.1**	**0.5**	**61.3**	**-**	**-**	**-**	**-**
1/2+1/1	691	691	45	398	8	2.5	1.8	0.5	4.9	25.5	6.8	1.8	8.6
1/3	390	390	-	-	-	3.4	0.7	-	4.0	37.1	10.4	0.7	11.1
1/4	114	114	-	-	-	1.6	0.6	-	2.2	70.0	3.6	0.6	4.2
2/2+2/1	382	382	-	-	-	4.7	3.0	-	7.7	72.5	11.9	3.0	14.9
2/3	382	382	-	-	-	4.6	3.2	-	7.8	73.4	12.2	3.2	15.4
3/1	517	517	-	-	-	5.3	2.8	-	8.0	55.9	15.9	2.8	18.7
3/2+3/3	582	582	-	-	-	6.3	3.1	-	9.4	58.1	17.4	3.1	20.6
4/2+4/1	317	317	-	-	-	4.1	2.5	-	6.6	74.6	7.2	2.5	9.6
4/3	224	224	-	-	-	3.1	1.7	-	4.7	76.1	7.2	1.7	8.8
4/4	227	227	-	-	-	3.1	2.8	-	6.0	95.0	7.4	2.8	10.2
5/1	213	213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	992	992	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	368	368	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	254	254	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	817	817	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 2.5 Total Delay for Signalled Lanes (pcuHr): 61.34
PRC Over All Lanes (%): 2.5 Total Delay Over All Lanes(pcuHr): 61.34 Cycle Time (s): 120

Full Input Data And Results

Scenario 10: '2022 PM with Dev' (FG12: '2022 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

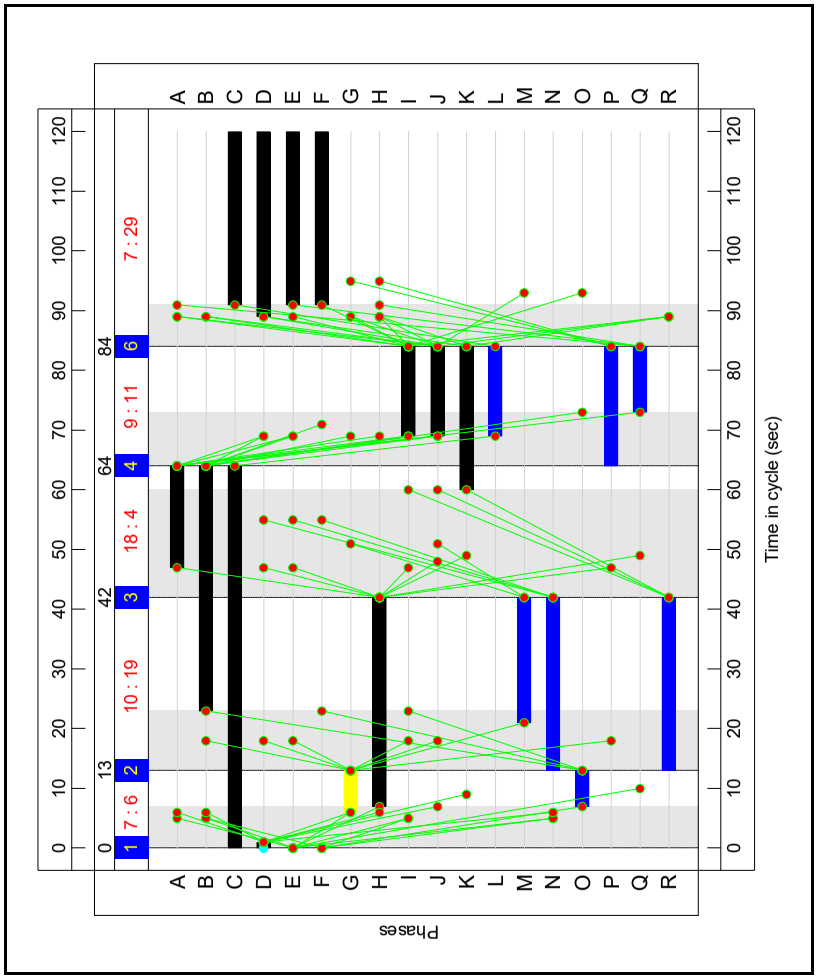


Stage Timings

Stage	1	2	3	4	6
Duration	6	19	4	11	29
Change Point	0	13	42	64	84

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.8%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.8%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	41:93		706	1915:1875	1135	62.2%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	41	-	313	1915	670	46.7%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	17	-	235	1741	261	90.0%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	29		455	1915:1702	493	92.3%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	32	-	410	1741	479	85.6%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	35	-	493	1789	537	91.9%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	35:7		541	1915:1741	585	92.5%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	15:24		254	1915:1702	362	70.2%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	15	-	151	1915	255	59.1%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	15	-	220	1741	232	94.8%
5/1		U	N/A	N/A	-		-	-	-	260	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	966	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	453	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	249	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	374	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	536	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	940	1	Inf	0.0%

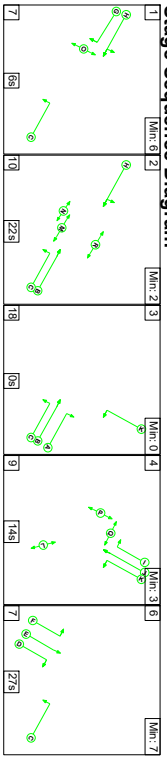
Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**35**	**316**	**6**	**39.8**	**28.9**	**0.2**	**68.9**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**35**	**316**	**6**	**39.8**	**28.9**	**0.2**	**68.9**	**-**	**-**	**-**	**-**
1/2+1/1	706	706	35	316	6	3.4	0.8	0.2	4.4	22.4	9.2	0.8	10.0
1/3	313	313	-	-	-	2.6	0.4	-	3.1	35.3	8.1	0.4	8.5
1/4	235	235	-	-	-	3.3	3.5	-	6.8	104.3	7.6	3.5	11.2
2/2+2/1	455	455	-	-	-	5.5	4.8	-	10.3	81.3	14.2	4.8	19.0
2/3	410	410	-	-	-	4.7	2.8	-	7.5	65.5	12.9	2.8	15.6
3/1	493	493	-	-	-	5.6	4.7	-	10.2	74.5	15.7	4.7	20.4
3/2+3/3	541	541	-	-	-	6.3	5.0	-	11.3	75.5	16.9	5.0	22.0
4/2+4/1	254	254	-	-	-	3.3	1.2	-	4.4	62.5	5.4	1.2	6.5
4/3	151	151	-	-	-	2.1	0.7	-	2.8	65.9	4.7	0.7	5.4
4/4	220	220	-	-	-	3.2	5.0	-	8.1	133.1	7.3	5.0	12.3
5/1	260	260	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	966	966	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	453	453	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	374	374	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	536	536	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	940	940	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -5.3 Total Delay for Signalled Lanes (pcuHr): 68.86
PRC Over All Lanes (%): -5.3 Total Delay Over All Lanes(pcuHr): 68.86 Cycle Time (s): 120

Scenario 11: '2027 AM with Dev' (FG13: '2027 AM with Dev', Plan 1: 'Network Control Plan 1')

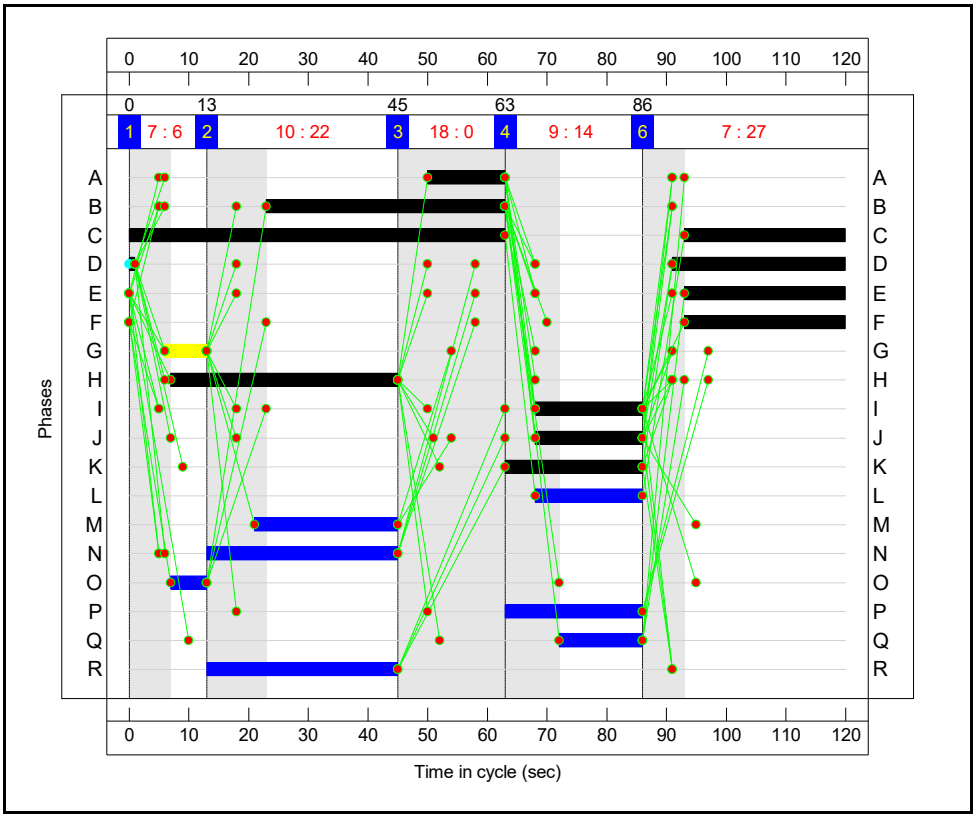
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	22	0	14	27
Change Point	0	13	45	63	86

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**91.1%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**91.1%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	40:90		711	1915:1875	849	83.8%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	40	-	422	1915	654	64.5%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	120	1741	203	59.1%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	27		399	1915:1702	456	87.4%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	30	-	399	1741	450	88.7%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	38	-	519	1772	576	90.1%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	38:7		581	1915:1741	638	91.1%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	18:23		329	1915:1702	394	83.5%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	18	-	235	1915	303	77.5%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	18	-	238	1741	276	86.3%
5/1		U	N/A	N/A	-		-	-	-	215	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1012	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	599	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	373	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	254	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	661	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	839	1	Inf	0.0%

Full Input Data And Results

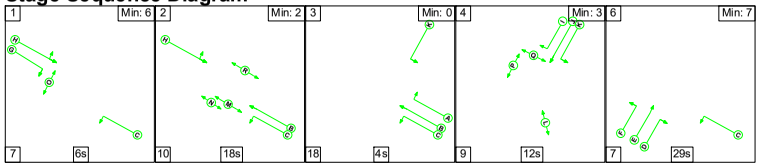
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**45**	**419**	**8**	**40.8**	**25.9**	**0.7**	**67.3**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**45**	**419**	**8**	**40.8**	**25.9**	**0.7**	**67.3**	**-**	**-**	**-**	**-**
1/2+1/1	711	711	45	419	8	2.8	2.5	0.7	6.0	30.1	8.0	2.5	10.5
1/3	422	422	-	-	-	3.9	0.9	-	4.8	41.0	11.8	0.9	12.7
1/4	120	120	-	-	-	1.7	0.7	-	2.4	71.6	3.8	0.7	4.5
2/2+2/1	399	399	-	-	-	4.9	3.1	-	8.0	72.3	12.5	3.1	15.6
2/3	399	399	-	-	-	4.7	3.5	-	8.2	74.0	12.7	3.5	16.2
3/1	519	519	-	-	-	5.6	4.0	-	9.6	66.4	16.4	4.0	20.4
3/2+3/3	581	581	-	-	-	6.6	4.4	-	11.0	68.2	17.7	4.4	22.2
4/2+4/1	329	329	-	-	-	4.2	2.4	-	6.6	71.9	7.5	2.4	9.8
4/3	235	235	-	-	-	3.2	1.6	-	4.8	73.6	7.5	1.6	9.2
4/4	238	238	-	-	-	3.3	2.8	-	6.0	90.9	7.7	2.8	10.4
5/1	215	215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1012	1012	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	254	254	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	661	661	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	839	839	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -1.3 Total Delay for Signalled Lanes (pcuHr): 67.33
PRC Over All Lanes (%): -1.3 Total Delay Over All Lanes(pcuHr): 67.33 Cycle Time (s): 120

Full Input Data And Results

Scenario 12: '2027 PM with Dev' (FG14: '2027 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

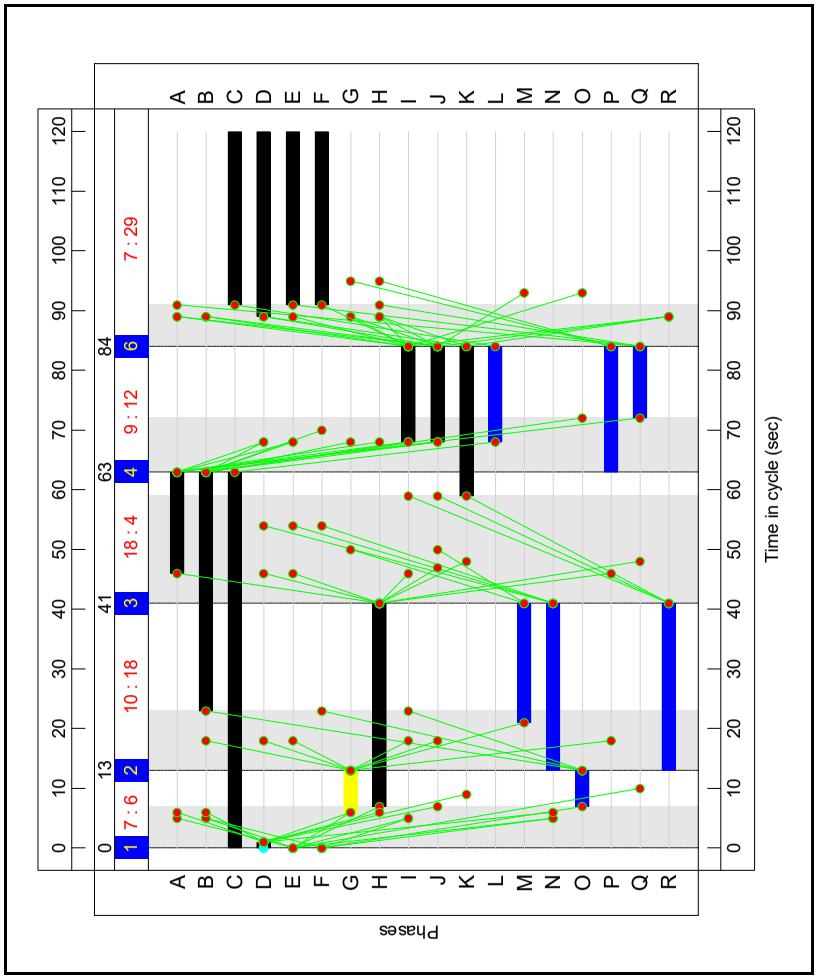


Stage Timings

Stage	1	2	3	4	6
Duration	6	18	4	12	29
Change Point	0	13	41	63	84

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**96.2%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**96.2%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	40:92		738	1915:1875	1122	65.8%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	40	-	326	1915	654	49.8%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	17	-	245	1741	261	93.8%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	29		474	1915:1702	493	96.2%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	32	-	428	1741	479	89.4%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	34	-	493	1789	522	94.5%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	34:7		542	1915:1741	569	95.2%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	16:25		263	1915:1702	377	69.8%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	16	-	159	1915	271	58.6%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	16	-	230	1741	247	93.3%
5/1		U	N/A	N/A	-		-	-	-	233	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1014	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	475	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	257	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	394	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	557	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	968	1	Inf	0.0%

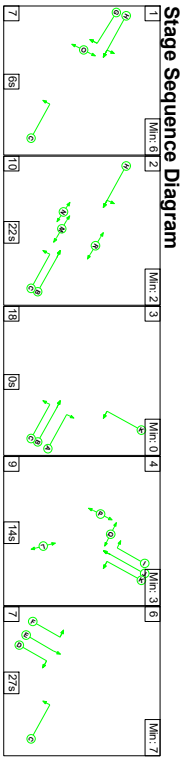
Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**36**	**329**	**6**	**41.6**	**36.1**	**0.3**	**77.9**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**36**	**329**	**6**	**41.6**	**36.1**	**0.3**	**77.9**	**-**	**-**	**-**	**-**
1/2+1/1	738	738	36	329	6	3.7	1.0	0.3	4.9	23.9	9.9	1.0	10.8
1/3	326	326	-	-	-	2.8	0.5	-	3.3	36.8	8.6	0.5	9.1
1/4	245	245	-	-	-	3.4	4.8	-	8.2	120.5	8.0	4.8	12.8
2/2+2/1	474	474	-	-	-	5.8	7.1	-	12.9	98.3	15.1	7.1	22.2
2/3	428	428	-	-	-	5.0	3.7	-	8.7	72.8	13.7	3.7	17.4
3/1	493	493	-	-	-	5.7	6.0	-	11.7	85.6	16.0	6.0	22.1
3/2+3/3	542	542	-	-	-	6.5	6.7	-	13.1	87.3	17.1	6.7	23.8
4/2+4/1	263	263	-	-	-	3.3	1.1	-	4.4	60.9	5.5	1.1	6.6
4/3	159	159	-	-	-	2.1	0.7	-	2.8	64.0	4.9	0.7	5.6
4/4	230	230	-	-	-	3.3	4.5	-	7.7	121.2	7.5	4.5	12.0
5/1	233	233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1014	1014	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	475	475	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	257	257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	557	557	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	968	968	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -6.8 Total Delay for Signalled Lanes (pcuHr): 77.91
PRC Over All Lanes (%): -6.8 Total Delay Over All Lanes(pcuHr): 77.91 Cycle Time (s): 120

Scenario 13: '2037 AM with Dev' (FG15: '2037 AM with Dev', Plan 1: 'Network Control Plan 1')

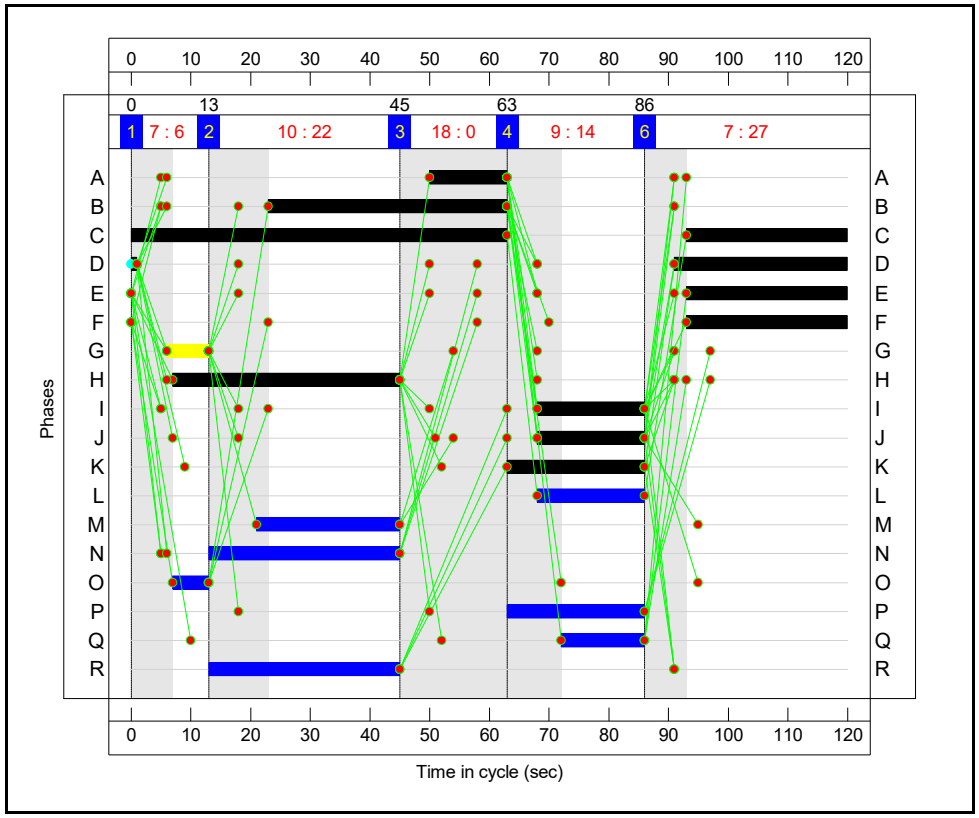
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	6
Duration	6	22	0	14	27
Change Point	0	13	45	63	86

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.0%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.0%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	40:90		712	1915:1875	818	87.0%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	40	-	472	1915	654	72.1%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	13	-	126	1741	203	62.0%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	27		413	1915:1702	457	90.4%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	30	-	414	1741	450	92.0%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	38	-	519	1772	576	90.1%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	38:7		582	1915:1741	638	91.2%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	18:23		341	1915:1702	397	85.9%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	18	-	245	1915	303	80.8%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	18	-	249	1741	276	90.3%
5/1		U	N/A	N/A	-		-	-	-	219	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1029	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	620	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	389	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	236	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	722	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	858	1	Inf	0.0%

Full Input Data And Results

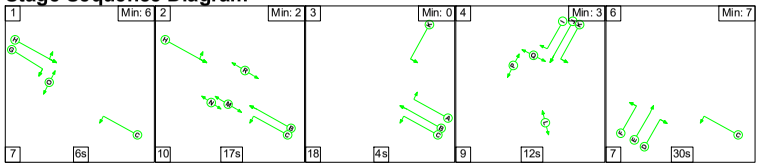
Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**44**	**438**	**8**	**42.4**	**30.7**	**0.8**	**73.9**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**44**	**438**	**8**	**42.4**	**30.7**	**0.8**	**73.9**	**-**	**-**	**-**	**-**
1/2+1/1	712	712	44	438	8	2.7	3.2	0.8	6.7	33.8	9.1	3.2	12.3
1/3	472	472	-	-	-	4.5	1.3	-	5.8	44.2	13.6	1.3	14.9
1/4	126	126	-	-	-	1.8	0.8	-	2.6	73.3	4.0	0.8	4.8
2/2+2/1	413	413	-	-	-	5.1	4.0	-	9.1	79.3	13.0	4.0	17.0
2/3	414	414	-	-	-	5.0	4.6	-	9.6	83.3	13.3	4.6	17.9
3/1	519	519	-	-	-	5.6	4.0	-	9.6	66.4	16.4	4.0	20.4
3/2+3/3	582	582	-	-	-	6.6	4.5	-	11.1	68.4	17.7	4.5	22.2
4/2+4/1	341	341	-	-	-	4.4	2.8	-	7.2	75.5	7.8	2.8	10.5
4/3	245	245	-	-	-	3.3	2.0	-	5.3	77.7	7.8	2.0	9.8
4/4	249	249	-	-	-	3.4	3.7	-	7.1	102.6	8.1	3.7	11.8
5/1	219	219	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1029	1029	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	236	236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	722	722	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	858	858	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): -2.3 Total Delay for Signalled Lanes (pcuHr): 73.89
PRC Over All Lanes (%): -2.3 Total Delay Over All Lanes(pcuHr): 73.89 Cycle Time (s): 120

Full Input Data And Results

Scenario 14: '2037 PM with Dev' (FG16: '2037 PM with Dev', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

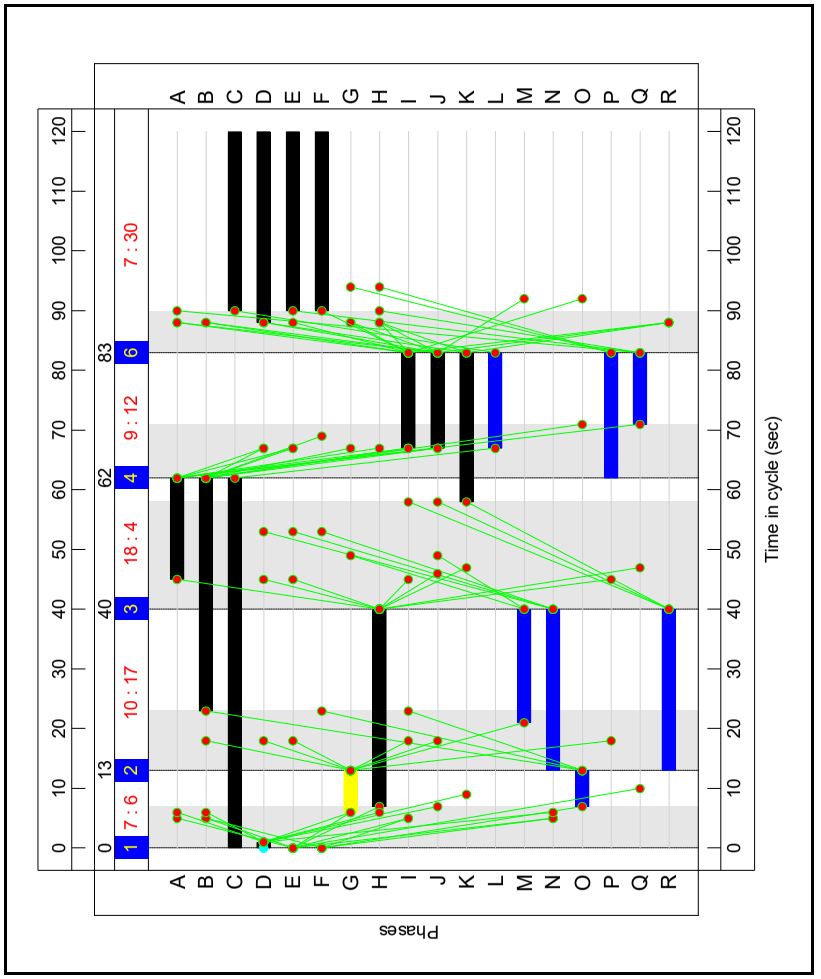


Stage Timings

Stage	1	2	3	4	6
Duration	6	17	4	12	30
Change Point	0	13	40	62	83

Full Input Data And Results

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	-	-	-	-	-	-	-	-	-	-	-	-	**97.8%**
Bothar na dTreabh (N6)/Tuam Road Junction	-	-	-	-	-	-	-	-	-	-	-	-	**97.8%**
1/2+1/1	Bothar na dTreabh (N6) Westbound Left Ahead	U+O	N/A	N/A	B C		1	39:92		766	1915:1875	1125	68.1%
1/3	Bothar na dTreabh (N6) Westbound Ahead	U	N/A	N/A	B		1	39	-	336	1915	638	52.6%
1/4	Bothar na dTreabh (N6) Westbound Right	U	N/A	N/A	A		1	17	-	255	1741	261	97.6%
2/2+2/1	Tuam Road Northbound Left Ahead	U	N/A	N/A	E F		1	30		491	1915:1702	509	96.5%
2/3	Tuam Road Northbound Right	U	N/A	N/A	D		1	33	-	444	1741	493	90.0%
3/1	Bothar na dTreabh (N6) Eastbound Ahead Left	U	N/A	N/A	H		1	33	-	494	1789	507	97.5%
3/2+3/3	Bothar na dTreabh (N6) Eastbound Ahead Right	U	N/A	N/A	H G		1	33:7		542	1915:1741	554	97.8%
4/2+4/1	Tuam Road Southbound Left Ahead	U	N/A	N/A	J K		1	16:25		270	1915:1702	378	71.4%
4/3	Tuam Road Southbound Ahead	U	N/A	N/A	J		1	16	-	166	1915	271	61.2%

Full Input Data And Results

4/4	Tuam Road Southbound Right	U	N/A	N/A	I		1	16	-	237	1741	247	96.1%
5/1		U	N/A	N/A	-		-	-	-	235	1	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	1031	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	490	1	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	267	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	410	1	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	574	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	994	1	Inf	0.0%

Full Input Data And Results

Item	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: N6 Bothar na dTreabh/R336 Tuam Road/N83 Tuam Road Crossroads Junction	**-**	**-**	**37**	**341**	**6**	**43.1**	**44.6**	**0.3**	**88.0**	**-**	**-**	**-**	**-**
Bothar na dTreabh (N6)/Tuam Road Junction	**-**	**-**	**37**	**341**	**6**	**43.1**	**44.6**	**0.3**	**88.0**	**-**	**-**	**-**	**-**
1/2+1/1	766	766	37	341	6	4.0	1.1	0.3	5.3	24.9	10.5	1.1	11.5
1/3	336	336	-	-	-	3.0	0.6	-	3.6	38.3	9.1	0.6	9.6
1/4	255	255	-	-	-	3.6	6.6	-	10.2	143.9	8.4	6.6	15.0
2/2+2/1	491	491	-	-	-	5.9	7.5	-	13.4	98.6	15.6	7.5	23.1
2/3	444	444	-	-	-	5.1	3.9	-	9.0	72.9	14.2	3.9	18.1
3/1	494	494	-	-	-	5.8	8.3	-	14.2	103.4	16.2	8.3	24.5
3/2+3/3	542	542	-	-	-	6.6	9.0	-	15.7	104.0	17.2	9.0	26.3
4/2+4/1	270	270	-	-	-	3.4	1.2	-	4.6	61.7	5.6	1.2	6.8
4/3	166	166	-	-	-	2.2	0.8	-	3.0	65.3	5.2	0.8	5.9
4/4	237	237	-	-	-	3.4	5.7	-	9.0	137.1	7.8	5.7	13.5
5/1	235	235	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	1031	1031	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	490	490	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	410	410	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	574	574	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	994	994	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -8.7
PRC Over All Lanes (%): -8.7

Total Delay for Signalled Lanes (pcuHr): 88.02
Total Delay Over All Lanes(pcuHr): 88.02

Cycle Time (s): 120