2021

Traffic and Transport Assessment

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Traffic and Transport Assessment

The Green Quarter SHD at Cartrontroy, Kilnafaddoge and Lissywollen, Ardnaglug (townlands), Athlone, Co. Westmeath

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Executive Summary

ORS have been commissioned by Avenir Homes Ltd. to carry out a Traffic and Transport Assessment (TTA) for the proposed Green Quarter Strategic Housing Development (SHD) at Cartrontroy, Kilnafaddoge and Lissywollen, Ardnaglug (townlands), Athlone, Co. Westmeath. This TTA will examine existing and proposed traffic conditions and transport activity to determine the effects on the surrounding road network by the proposed development.

Avenir Homes Limited is seeking planning permission for the construction of a mixed use residential development of 122No. residential units with ancillary creche, 46No. student apartments consisting of 283 bed spaces, and all associated site development works. The proposed development makes provision for 60No. dwelling houses comprising 38No. 2-storey 3-bed townhouses, 7No. 2-storey 4-bed townhouses, 7No. 3-storey 4-bed townhouses, 6No. 2 storey 4-bed semi-detached and 2No. 2 storey 4-bed detached. The proposed development includes 62No. apartments / duplexes to be provided as follows: Block R1 containing 38No. apartments (16No. 1 bed units and 22 no. 2 bed units) in a 3-6 storey building, and Block R2 containing 20No. duplex units (10No. 2 bed units and 10No. 3 bed units) over 4 storeys with 4No. apartments (4No. 2 bed units) in one 5th storey feature area. The proposed student accommodation makes provision for 283No. bed spaces in 3No. blocks to be provided as follows: Block S1 containing 18 apartments with 117 bed spaces over 5-6 storeys, Block S2 containing 16 apartments with 107 bed spaces over 6-7 storeys, and Block S3 containing 12 apartments with 59 bed spaces over 4-5 storeys.

The proposed development will provide for two new vehicular accesses as well as pedestrian entrances onto Lissywollen Avenue east-west access road (as permitted under An Bord Pleanála Reference ABP-309513-21). Minor modifications to ABP-309513-21 are proposed to cater for these access points, alterations to cycle/pedestrian paths, the removal of a central island to facilitate the south-eastern entrance, and provision of bus stop infrastructure. Ancillary site works include public and communal open spaces, hard and soft landscaping, pedestrian / cycleways, car parking, cycle parking, bin storage, public lighting, solar panels, ESB substation and supporting distribution kiosks, and all other ancillary works above and below ground. The proposal includes pedestrian and cycle linkages onto the Old Rail Trail Greenway to the south and Blackberry Lane (L40061) to the west.

Following consultation with Westmeath County Council, it was agreed that this traffic assessment would focus mainly on the junction between R916/Moydrum Road, as it is the immediate junction from the proposed Green Quarter SHD, and for the purpose of a robust assessment, it is assumed that all traffic associated with the development will make use of this junction.

Existing traffic data has been used to enable accurate assessments of the current conditions and predicted future conditions on the local road network. ORS validated previous traffic counts carried out in May 2019 in relation to another proposed application lodged in a site west of the proposed Green Quarter SHD, planning application reference ABP-309513-21.

Traffic counts were factored up by the Traffic Infrastructure Ireland (TII) growth rates to bring them in line with the expected growth in traffic over the projected phasing of the development.

Traffic profiles likely to be generated by the entire site, including the residential units and the student accommodation were obtained by TRICS (Trip Rate Information Computer System) database and split through the junctions in proportion to the existing traffic flow as measured in 2019. Due to the large scale of the development, a proposed phasing was established, with the first phase counting of the residential element, the second phase the student accommodation and the final phase the potential future development southeast of the site.

These arrangements were then tested using the TII (Transport Infrastructure Ireland) approved software ARCADY (Assessment of Roundabout Capacity and Delay), for the opening years for each phasing works and the 15-year future design scenario. Appropriate TII Traffic Growth Factors have been applied to the existing traffic flows to ensure that future traffic growth on the road network has been considered in the analysis.

Upon building the traffic model for the proposed Green Quarter SHD, junction capacity analysis was carried out on the existing junction to assess the potential worst-case scenarios associated with the development.

The major project to connect the R916/Moydrum Road roundabout to Brawney Road, named Lissywollen Avenue was included in this assessment, as it was granted permission as part of the planning application reference ABP-309513-21. The route will also include mitigation measures at the Lissywollen Avenue approach to the junction, which improves the overall capacity and reduces existing delays found to occur at the junction. From the analyses undertaken, it can be considered that the proposed Green Quarter SHD will not adversely affect the functionality of the R916/Moydrum Road roundabout, as the Green Quarter SHD will be concluded after the mitigation measures and the Lissywollen Avenue are constructed.

The site is located in a well-served public transport area and provides excellent connectivity for walking and cycling. There are several schools, employment areas and the Athlone Technological University of the Shannon (TUS) located near the proposed Green Quarter SHD which can be accessed by a short walk or bus ride.

1   Introduction

The purpose of this Traffic Assessment is to address the traffic and transport related issues that may arise in relation to the proposal by Avenir Homes Ltd to construct the proposed Green Quarter Strategic Housing Development (SHD) at Cartrontroy, Kilnafaddoge and Lissywollen, Ardnaglug (townlands), Athlone, Co. Westmeath and how the proposed development will integrate with the existing traffic flows at the vicinity of the site.

For the purposes of the traffic analysis, this report will refer to the residential area of the development, which will have 60No. residential units, 62No. apartments divided into two apartment blocks, a creche, 3No. blocks of student accommodation with a total of 283No. bedrooms, open public space and priority T-junctions connecting the site to Lissywollen Avenue.

This report therefore will follow the principles set out in the TII Publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' and will assess the impact the proposed Green Quarter SHD, and the associated traffic flows, will have on the public road network in the vicinity of the proposed development.

1.1   Objectives of this TTA

The objectives of this report are to assess the impact the proposed Green Quarter SHD will have on the surrounding road network, with the assessment focusing primarily on the R916/Moydrum Road roundabout and the access junctions to the site.

Therefore, in summary, the objectives of this report are to assess:

- The prevailing traffic conditions on the public road network in the vicinity of the proposed development
- The determination and quantification of the additional trips generated by the Green Quarter SHD and the potential effect on the surrounding road network due to the anticipated traffic generated by the proposed residential development
- The pedestrian and cyclist connectivity in the vicinity of the proposed development
- The review of parking requirements.

1.2   Methodology

The methodology that will be used in this assessment are as follows:

- The traffic counts used in this assessment were part of the planning application for a proposed 576No. residential units, 2No. creches and associates site works at Lissywollen South (Planning Number ABP-309513-21, granted permission on the 15th of June 2021), which were undertaken in May 2019 in 11No. neighbouring junctions
- The traffic counts were utilized and factored up using the TII Central Traffic Growth Rates for Co. Westmeath

- The traffic distribution splits on the public road network could be determined from the traffic counts and applied to the anticipated future generated traffic as a result of the proposed Green Quarter SHD
- The predicted traffic to be generated by the Green Quarter SHD was obtained using TRICS (Trip Rate Information Computer System) traffic generation software
- Due to the large scale of the proposed development, in order to provide a more accurate analysis, a phasing scheme works was implemented for the delivery of the Green Quarter SHD
- The effect caused by the Green Quarter SHD in the neighbouring junctions could be calculated using the existing traffic flows and the expected additional traffic to be generated by the development
- The Transport Research Laboratory (TRL) software ARCADY (*Junctions 9*) was used to model the junctions to evaluate its performance for future design years, in order to obtain the existing and proposed traffic profiles at the roundabout analysed for the baseline year, the years of opening and 15 years after the completion of the development.

2 The Proposed Development

2.1 Development Site Location

The Green Quarter SHD is located at Lissywollen South, northeast of Athlone town centre, Co. Westmeath. The site offers great network connectivity, with links to the regional road R916 and the National Road N6.

The site of which the proposed Green Quarter SHD is aimed to be constructed on a zoned land, classified by the Lissywollen South Framework 2018 – 2024, Area 1 East End. The site is located to the southwest of junction 9 of the N6 and it is bounded by the ESB headquarters to the east, by the Old Rail Train greenway to the south and by green fields to the west. **Figure 2.1** below indicates the proposed site location.
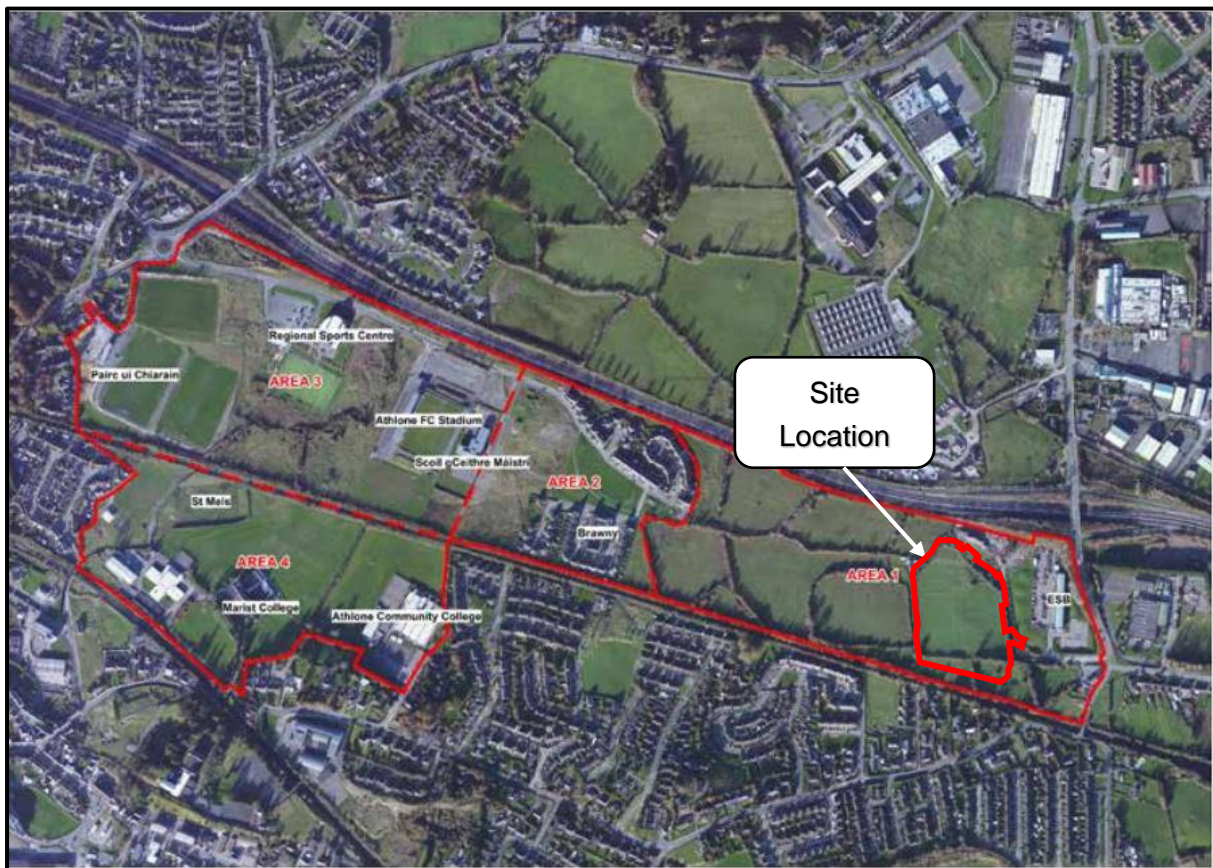
Figure 2.1 – Site Location of the Green Quarter SHD (Source: Lissywollen South Framework)

2.2 Existing Premises and Land Use

The site currently consists of agricultural land with no traffic profile and is located within the Lissywollen South area. The Lissywollen South Framework 2018 – 2024 also classifies the area in its land use and function. The location of the proposed development is within Area 4 – Residential and Area 5 – Mixed Use, as shown in **Figure 2.2** overleaf.
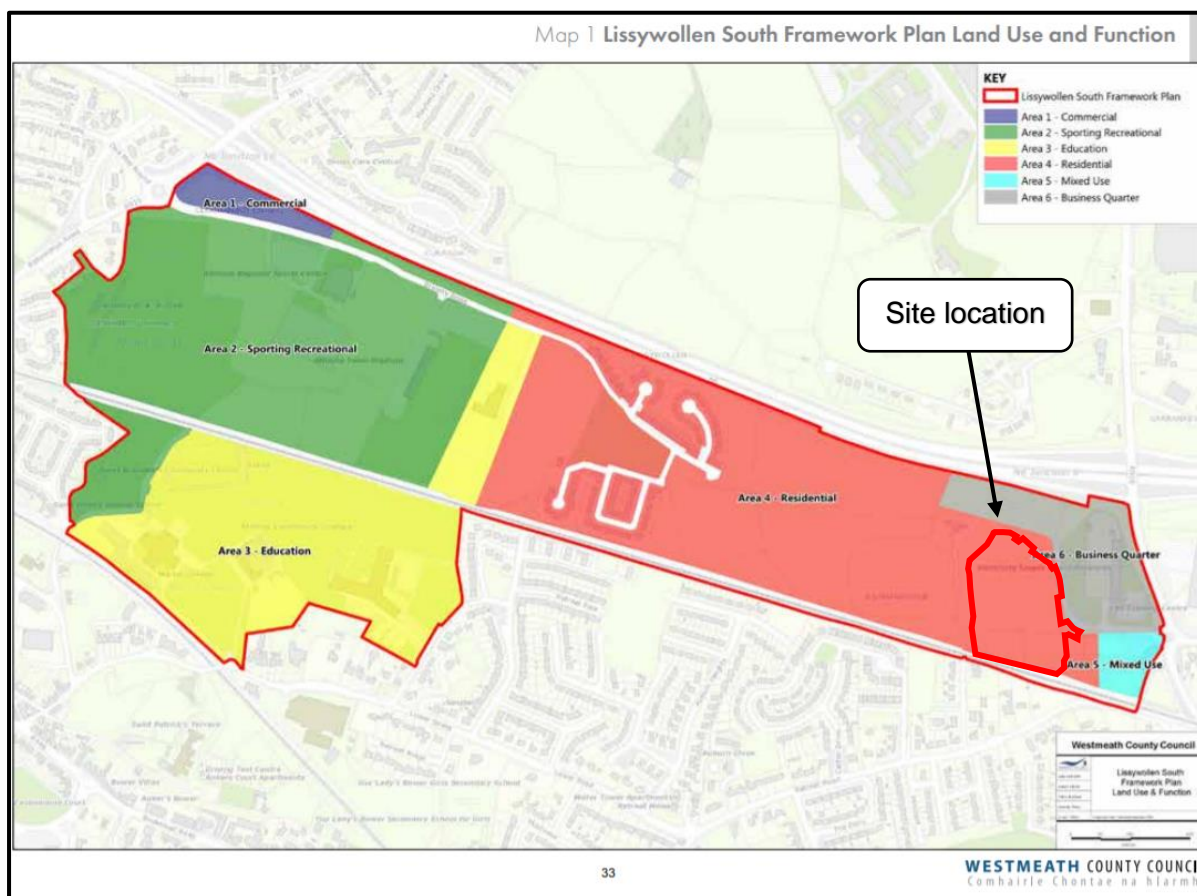
Figure 2.2: Lissywollen South Framework Plan Land Use and Function (Source: Lissywollen South Framework 2018 – 2024).

2.3   Description of the Proposed Development

The overall site area is shown in **Figure 2.3** overleaf, however, as stated previously, this Traffic and Transport Assessment (TTA) will address the subject planning submission of the Green Quarter Strategic Housing Development (SHD). The proposed planning submission will consist of the following:

- 60No. house units with between 3 and 4 bedrooms
- 62No. apartment/duplexes units divided into two blocks
- A creche with outdoor play area
- 3No. blocks of student accommodation with a total of 283No. bedrooms
- 200No. on-site dedicated parking spaces
- 519No. bicycle parking spaces
- Cycle route throughout the site
- 2No. vehicular entrances
- Pedestrian links to the Old Rail Trail greenway, Blackberry Lane, and Lissywollen Avenue

From **Figure 2.3** overleaf, the residential area is outlined in red, which comprises the residential, the student accommodation and the creche. As can be seen, the two apartment blocks will be located to the south and east of the site, with the creche in the north end of the apartment block R2. The residential units are displayed on the north and west sides of the site and the student accommodation to the southeast.

There will be two dedicated entrances to the development, one for the housing and apartment units and another one for the student accommodation, as indicated in **Figure 2.3**.
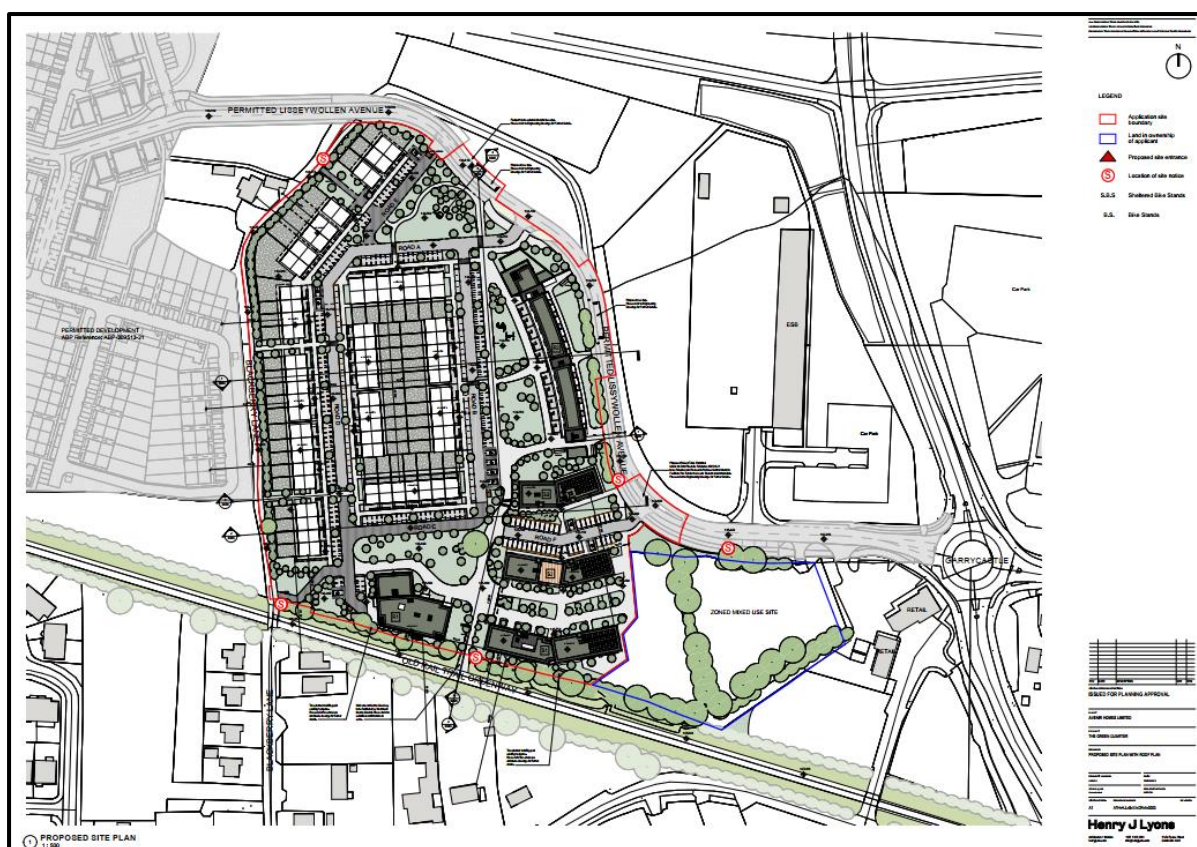
Figure 2.3 – The Green Quarter Masterplan (Source: Henry J Lyons)

2.4   Accessibility and Parking

The proposed Green Quarter Strategic Housing Development is located in Athlone town, classified by the Westmeath County Development Plan 2021 – 2027 as a Regional Growth Centre. That implies that Athlone will provide for increased employment and investment opportunities, which will be supported by the strong tourism assets. Also, item CPO 2.4 of the Westmeath Development Plan, states the aim to promote Athlone as a sustainable transport hub of both regional and national importance.

Likewise, the document expresses that walking and cycling should be promoted as an efficient, healthy and environmentally friendly mode of transport and that it is aimed to improve pedestrian and cyclist connectivity in the County. In saying that, it is one of the objectives of the Green Quarter SHD to include a dedicated cycle infrastructure throughout the site, linking

the north of the site to the Old Rail Trail greenway to the south, as well as to provide safe footways across the entire development.

The site is located in an excellent location for walking and cycling, hence changing the transport mode into a more sustainable one, due to the fact that the Old Rail Trail lies adjacent to the south of the site and dedicated cycle and walking infrastructure will provide the residents with a safe and efficient manner to reach other points of the town.

The Lissywollen Framework refers to a link road connecting the R916/Moydrum Road roundabout to the Brawney Road, named Lissywollen Avenue, with aims to form a key element of the sustainable transport network. The Lissywollen Avenue was funded and approved by the Department of Housing, Local Government and Heritage in 2017 under the Local Infrastructure Housing Activation Fund (LIHAF), where €1.83 million was projected towards the delivery of this access roadway. The preferred Economic Operator has been identified and received planning approval under the Strategic Housing Development for the construction of the Alanna Roadbridge development, to the west of the Green Quarter SHD. Exact timeframes for the commencement of the construction for the Lissywollen Avenue has not been defined yet, however, it is anticipated that the construction will begin in 2022.

The Lissywollen Framework also comments about a North-South route which is proposed to connect Retreat Road to Lissywollen Avenue, with the aim to provide important new linkage for public transport, cyclists and pedestrians. **Figure 2.4** overleaf show the indicative route of both proposed roadways.
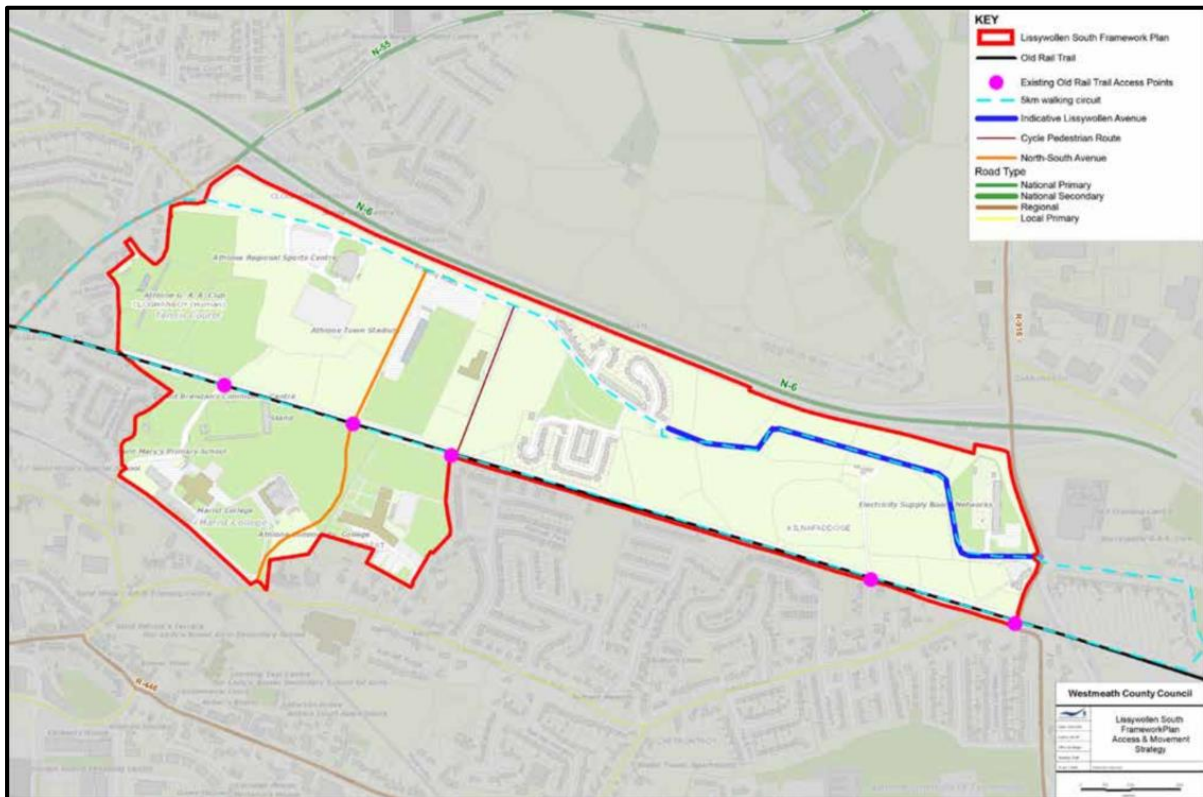
Figure 2.4 – Proposed Location of Lissywollen Avenue and North-South route (Source: Lissywollen South Framework)

2.4.1 Car Parking

The site of the proposed Green Quarter SHD will have two dedicated vehicular entrances. One entrance will be located to the north and another one will be located to the east of the development, off Lissywollen Avenue, by means of newly constructed priority T-junctions, as can be seen in **Figure 2.3** above. From the site accesses, each housing unit will have its own dedicated on-site parking spaces and the student accommodation will be provided with a car park area between blocks 2 and 3. The Westmeath County Development Plan, in Table 16.2, outlines the car park standards for developments within town centre areas, as can be seen in **Table 2.1** below.

Table 2.1 – Car Park Standards		
Land Use	**Unit**	**Max. Space/Unit**
Residential	Dwelling	1
Visitor Parking for Residential	1 visitor for every 3 dwellings	1
Creche	Not specified	
Student Accommodation	Not specified	

The Green Quarter SHD plans a total of 200No. spaces to cater for the residential units, the creche and the student accommodation, which will be divided into 157No. spaces for the residential area, 4No. for the creche and 39No. spaces for the student accommodations. **Table 2.2** below summarises the parking provided across the site.

Table 2.2 – Car Park Availability at the Green Quarter SHD		
Land Use	**Proposed Units**	**Proposed Parking**
Residential	122	157
Creche	1	4
Student Accommodation	283	39
Total		**200**

The 2016 Census data for the Athlone Rural electoral division was assessed in order to obtain the car ownership in the area to compare with the proposed parking spaces in the Green Quarter SHD. From the Census data, a total of 2,053 houses were recorded to own one or more vehicles and 484 do not own a car. From the 2,053 houses, a total of 3,082 vehicles were recorded, which brings an average of 1.5 vehicles per house. The parking ratio for the residential units in the Green Quarter SHD is 1.3, which is below the ratio in the Census area.

Reference was also made for item CPO 16.36 of the Westmeath Development Plan, where it states the requirements for disabled parking provision. According to this item, a minimum of 5% of car parking spaces should be designed for disabled car parking. As the total of parking provided throughout the site is 200No., the number of disabled parking spaces should be 10No. spaces. The development is proposed to have a total of 10No. disable parking spaces,

where 2No. will be located at the student accommodation parking and 8No. located across the site for residents and visitors, which is in accordance with the guidelines.

This particular item also refers to EV charging provision, where '*new residential development should accommodate at least one car parking space equipped with EV points for every ten car parking spaces'*, hence, the number of EV points should be 24No. spaces.

2.4.2 Cycle Storage

Regarding bicycle parking provision, the Westmeath Development Plan says that the provision of secure cycle storage facilities is essential to promote and develop cycling as a more sustainable mode of transport. Table 16.3 of the document refers to the cycle storage standards, as summarised in **Table 2.3** below.

Table 2.3 – Cycle Storage Standards	
Housing Developments	1 private secure bicycle space per bed space (note - design should not require bicycle access via living area), minimum 2 spaces
	1 visitor bicycle space per two housing units
Creche	Not specified
Student Accommodation	Not specified

The Green Quarter SHD is proposed to provide 519No. bicycle parking spaces across the site with the aim to promote cycling as a feasible option for residents and visitors. All 519No. spaces will be secured and weather-proofed cycle storage. **Table 2.4** summarises the cycle parking at the proposed development.

Table 2.4 – Cycle Park Availability at the Green Quarter SHD		
Land Use	**Proposed Parking**	**WDP Requirement**
Houses	-	219
Apartments	118	118
Student Accommodation	283	-
External Spaces	118	-
Total	**519**	**328**

The Sustainable Urban Housing sets guidelines for bicycle parking provision in new apartment buildings, which is a minimum of 1 bicycle storage per bedroom and they should be directly accessible from the public road or from a shared private area and that the cycle storage facility

should be a permanent construction and shall be safe for users. For the house units, cyclists will be able to park their bicycles at either the front or the rear garden. For both the apartments and the student accommodation, as can be seen in **Table 2.4** above, the requirements were followed by the design team of the Green Quarter SHD.

According to the current census in the area, only 3% of the population in the Electoral Division of Athlone East Rural cycle to school or work purposes, as shown in Section 4.2. According to this data, the number of bicycle spaces provided is of sufficient provision, and should more spaces be required, the management of the Green Quarter SHD could increase provision if required. It is important to note that a Mobility Management Plan was also prepared as part of the application, where it incentivises cycling and walking to and from the development from an early stage. In the case where the transport modal splits change in the site, the car parking spaces required would be reduced, and more cycle storage could be introduced as one car parking space could be recycled to provide to 6 to 10 cycle spaces.

2.4.3   Bus Stop

Due to the size and location of the Green Quarter SHD, it is intended to introduce 2No. bus stops for the existing A2 bus service in operation in Athlone town. The bus stops will be located on-road, to the north and northeast of the development, near the 2No. entrances of the site, as can be seen in accompanying engineering design drawings. The locations of these bus stops have been agreed in writing with the National Transport Authority (NTA)

The bus stops adjacent to the site will be beneficial to all residents and will also contribute to the transport modal slip in the site into a more sustainable, as aimed in the Smart Travel Strategy 2009 – 2020.

Figure 2.4 below shows the proposed location for the bus stops and the routes for the A1 and A2 bus services.
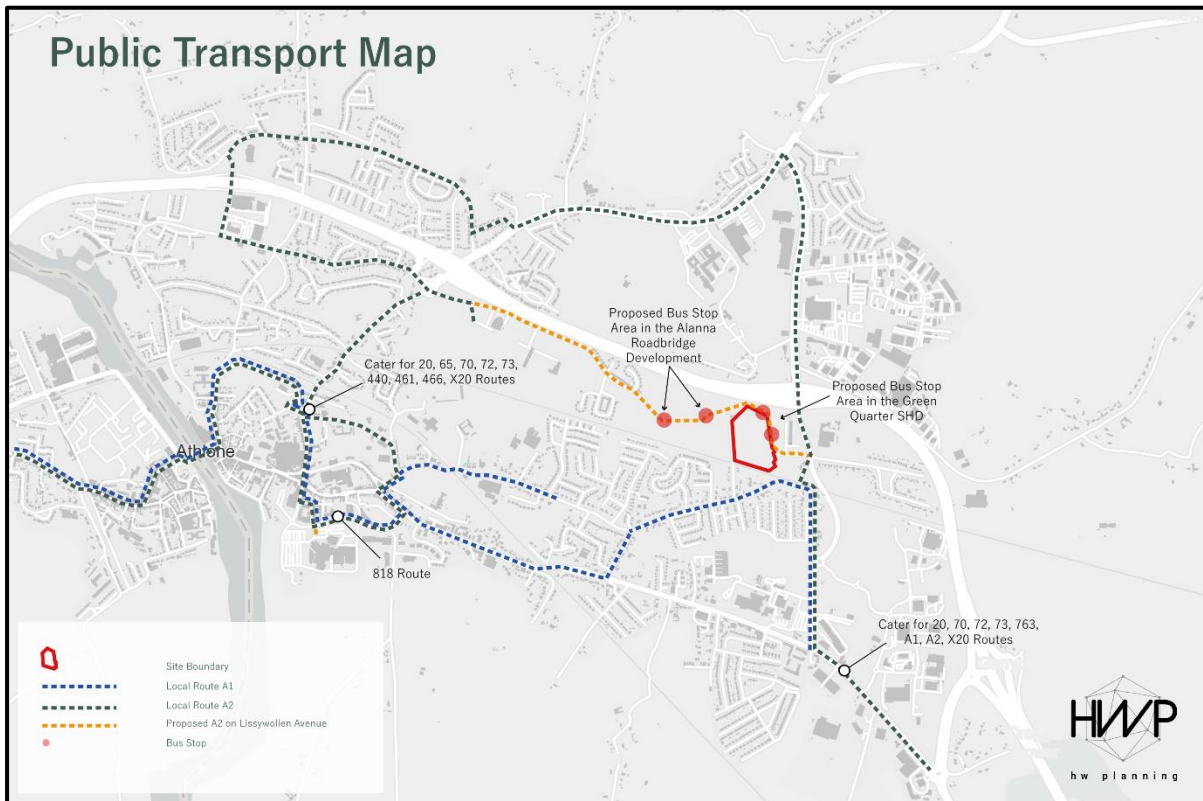
Figure 2.4 – Proposed Location of 2No bus stops (Source: HW Planning)

2.5   Internal Site Layout and DMURS Compliance

The Green Quarter SHD internal road layout has been designed in accordance with the principles and guidelines outlined in the Design Manual for Urban Roads and Streets (DMURS), published by the Department of Transport, Tourism and Sport and the Department of Environment, Community and Local Government, in 2013. A DMURS Compliance Statement was carried out to accompany the planning application.

3 Existing Traffic Conditions

3.1 Previous TTA Reports

As part of this TTA report to assess the existing traffic, the Westmeath County Council planning website and An Board Pleanala were searched for any previous Traffic and Transport Assessments carried out in the neighbouring sites.

The planning application 167155 was lodged on the 14th of November 2016 and was granted permission on the 16th of January 2017. This planning application is for the demolition of 2No. residential units to construct a filling station with canopy and car wash adjacent to the existing retail unit, to the east of the proposed Green Quarter SHD. The traffic to and from the filling station will make use of the R916/Moydrum Road roundabout. **Table 3.1** below outlines the traffic proposed to be generated by the filling station once it is operational.

Table 3.1 – Total Typical Daily Generated Profile by PL 161755			
Time Range	Arrivals	Departures	Total
13:00-14:00	62	62	124
17:00-18:00	62	62	124

As mentioned previously, there is a proposed residential development to the west of the site, granted permission on the 15th of June 2021 for 576No. residential units (285No. houses and 291No. apartments), 2No. creches and associated site works, with planning reference ABP-309513-21. A Traffic and Transport Assessment was undertaken for this development, where traffic counts were undertaken in May 2019 at 11No. junctions near the site. The trip generated from the site that will make use of the R916/Moydrum Road roundabout is shown in **Table 3.2** below, and the development is planned to be constructed on a phased basis, where 100No. house units will be constructed in the opening year, 2021, and the remaining 285No. units in the 2026 future design year.

Table 3.2 – Total Typical Daily Generated Profile by ABP-309513-21 which will make use of the R916/Moydrum Road roundabout				
Year	Time Range	Arrivals	Departure	Total
2021 Opening Year	08:30-09:30	8	15	23
	17:00-18:00	16	9	25
2026 & 2036 Future Year	08:30-09:30	33	57	90
	17:00-18:00	69	43	112

Due to COVID-19 travel restrictions and traffic flows recorded at such time not being fully representative of the real traffic flows along the road network, ORS utilised the traffic counts

undertaken as part of the application ABP-105726-19. The TTA for the aforementioned application recorded the peak times between 07:30 to 09:30 in the AM period and between 16:30 to 18:30 in the PM period at the 11No. junctions shown in **Figure 3.1** overleaf.
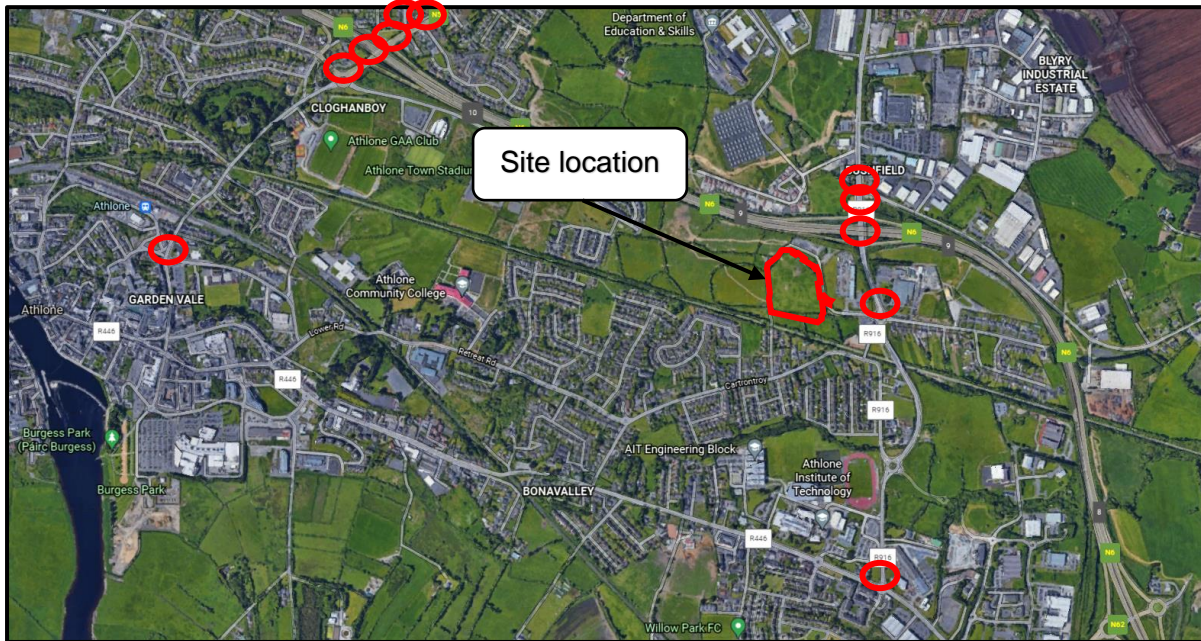
Figure 3.1 – Location Traffic Counts Undertaken by Planning Application ABP-105726-19.

3.2   Existing Traffic Flows

The traffic counts obtained in May 2019 encompass all traffic movements on the R916/Moydrum Road roundabout, the main object of this assessment.

Principal features of May 2019 traffic flows on the R916/Moydrum Road roundabout are as follows:

- AM peak traffic occurs between 08:30-09:30 and a total of 1522 PCU travelled through the roundabout during that time
- PM peak traffic occurs between 17:00 to 18:00 with a total of 1499 PCU travelling on the roundabout
- R916/Moydrum Road roundabout is approximately 38m in diameter and is a high capacity 4-arm roundabout with 2 lanes on both the northern and southern approaches
- There are footpaths and cycleways along both sides of the roundabout which are flanked by grass verges. There is also a dedicated pedestrian crossing with dropped kerbs and tactile paving on the four arms of the roundabout.
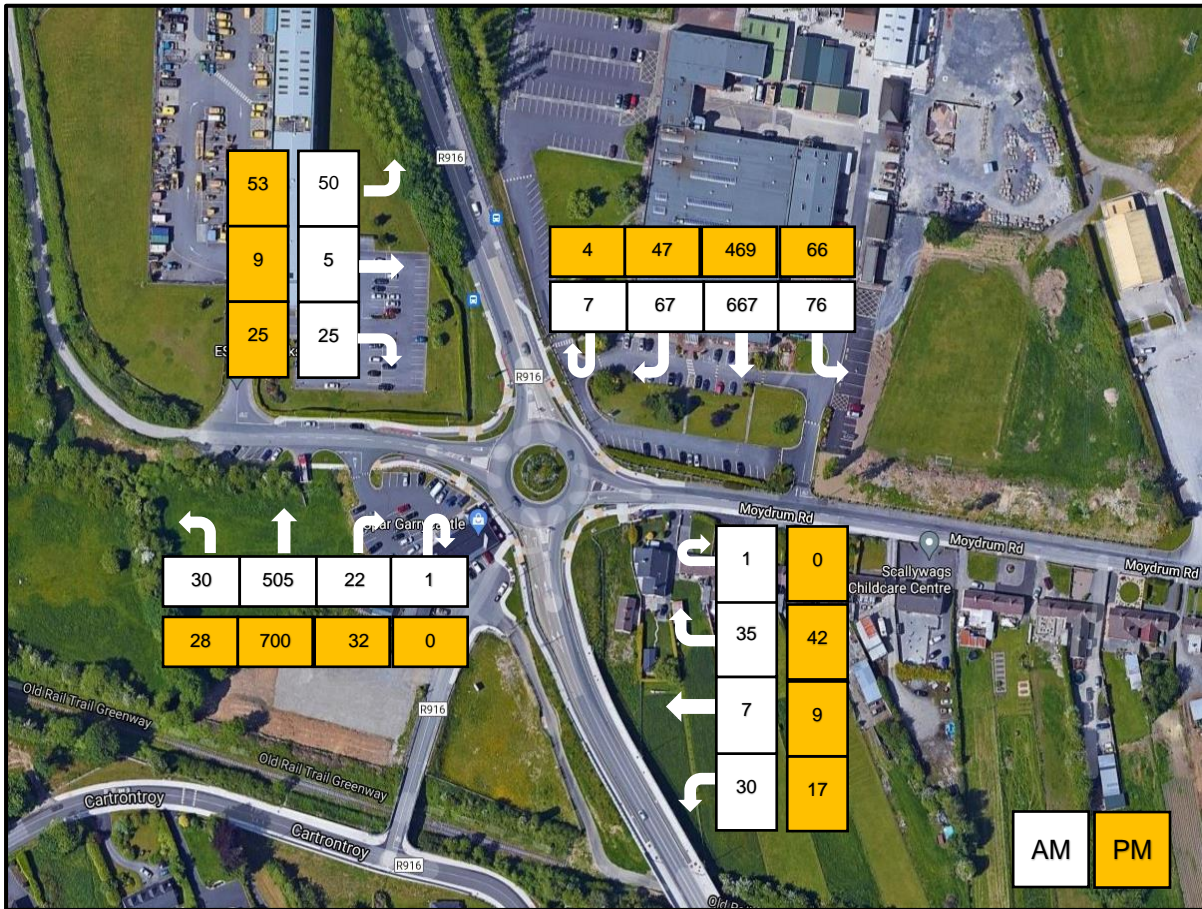
3.2 – May 2019, AM and PM peak as counted

3.3   Existing Surrounding Road Network

Blackberry Lane currently is a single carriageway with footpath and cycleway along both sides of the road which are flanked by grass verge that extends only until the ESB Headquarters entrance, as can be seen in **Figures 3.3** and **3.4** below, however, as stated previously in Section 2.4, Blackberry Lane will be upgraded to connect into Brawney Road to the west of the site, as part of the masterplan funded by LIHAF, which will be named as Lissywollen Avenue.

To obtain a worst-case scenario, it is expected that all traffic associated with the Green Quarter SHD will travel east from Lissywollen Avenue into R916/Moydrum Road roundabout as it provides great connectivity with regional and national roads. However, this assessment will also consider a traffic split with 75% of traffic using the R916/Moydrum Road roundabout and 25% using the R915/N55 roundabout, to the west of the site.

Figure 3.3 – Aerial View of Blackberry Lane and R916/Moydrum Road roundabout (Source: Google Maps)

Figure 3.4 – Existing infrastructure at Blackberry Lane (Source: Google Maps)

For visual detail of the R916/Moydrum Road roundabout and R915/N55 tested as part of this assessment, please refer to **Figures 3.5** to **3.7** overleaf.

Figure 3.5 – Approach to R916/Moydrum Road roundabout from the south (Source: Google Maps)

Figure 3.6 – View of Blackberry Lane approach to the junction (Source: Google Maps)

Figure 3.7 – View of Brawney Road approach to R915/N55 roundabout (Source: Google maps)

3.4   Traffic Collisions Data in the Vicinity of the Site

Data on road collisions near the Green Quarter SHD was obtained from the Road Safety Authority website. As indicated in **Figure 3.8** overleaf, no incidents of any kind have been recorded along Blackberry Lane near the proposed entrance to the development.

Two minor incidents have been recorded on R916/Moydrum Road roundabout since 2005. One was on a Sunday evening in 2006 involving a bus and the other one was in 2011, on a Tuesday evening, involving a motorcycle. Another incident was recorded to have happened in the junction between the R916 and Cartrontroy Road, in 2006, on a Wednesday evening involving a car.
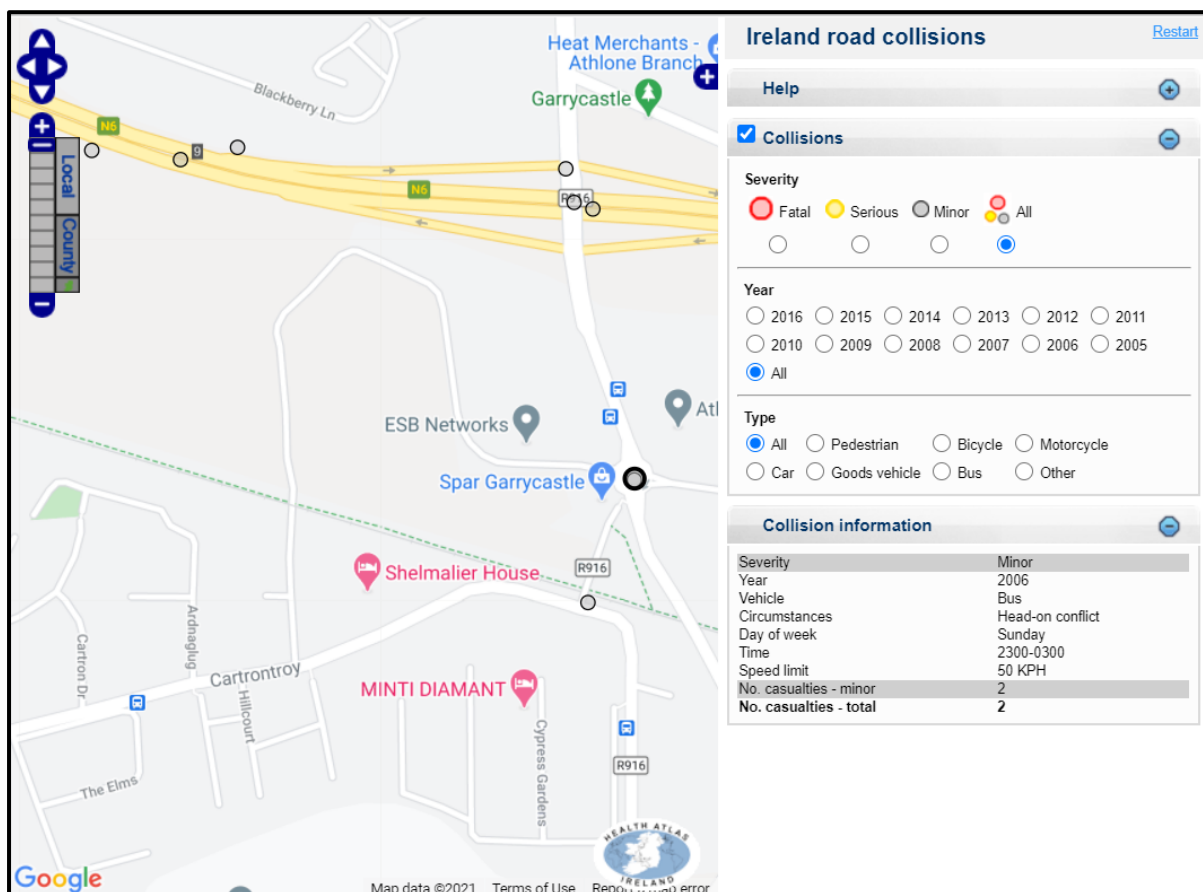
Figure 3.8 – Road Collision Data in the vicinity of the Green Quarter SHD (Source: RSA.ie)

4 Impact of Proposed Developments on Existing Road Network

4.1 Review of Trip Generation on Surrounding Settlement Areas

An analysis of the Census 2016 was undertaken in order to obtain more details about the current transport modes in the area. The Green Quarter SHD is located under the Electoral Division of Athlone East Rural, as shown in **Figure 4.1** below.
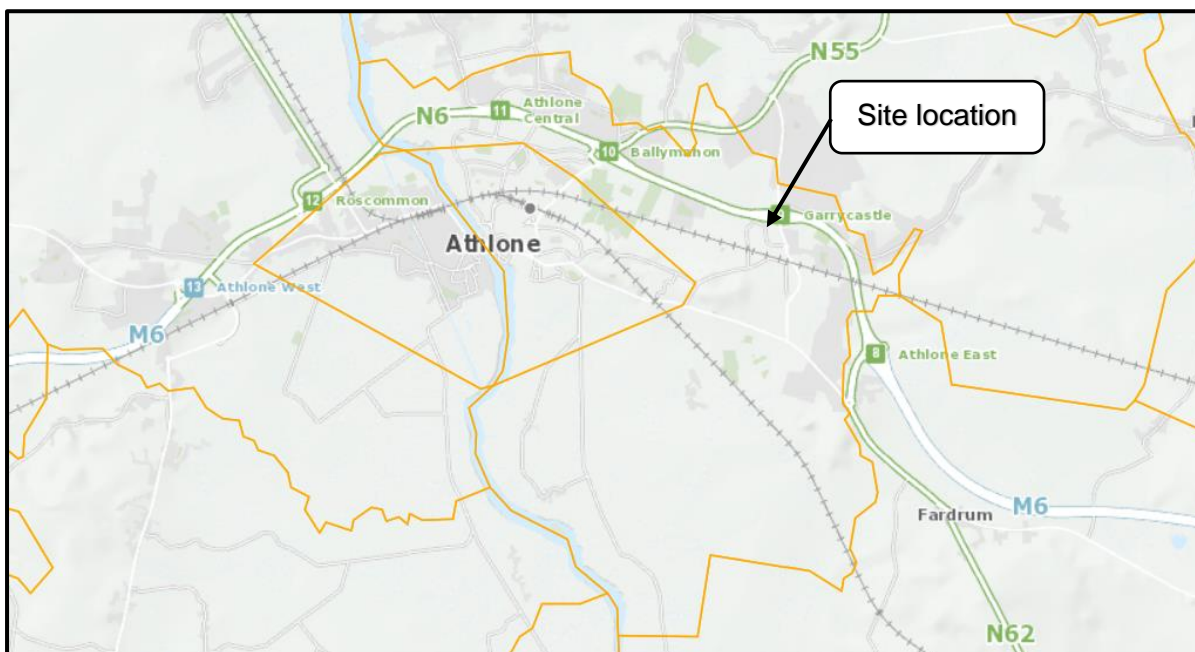
Figure 4.1 – Electoral Divisions in Athlone (Source: CSO.ie)

The Smart Travel Strategy 2009 – 2020 recognises the importance of sustainable means of travel and aims to make people aware of their impact on the way they travel on the environment. As part of the document, the main objective is to reduce private car usage to 45% and to encourage the use of sustainable transport modes, such as public transport, car-sharing and walk/cycle, to 55%.

Figure 4.2 below shows the breakdown of the reported modes of transport for the population over 5 years and how they travel to work, school or college. As can be seen, there is a heavy reliance on private cars, with 68% either driving or being driven to school or work purposes. Public transport, such as buses or trains, is the preferred mode of transport for only 9% of the population in Athlone East Rural. However, since the census was undertaken in 2016, new bus routes and stop locations have been provided around the town, which could imply that more people are making use of public transport than was seen in the last census.

Walking or cycling was the preferred mode of transport for 23% of the population according to the available data. This figure can only improve through increased upgrades of pedestrian and public transport infrastructure.
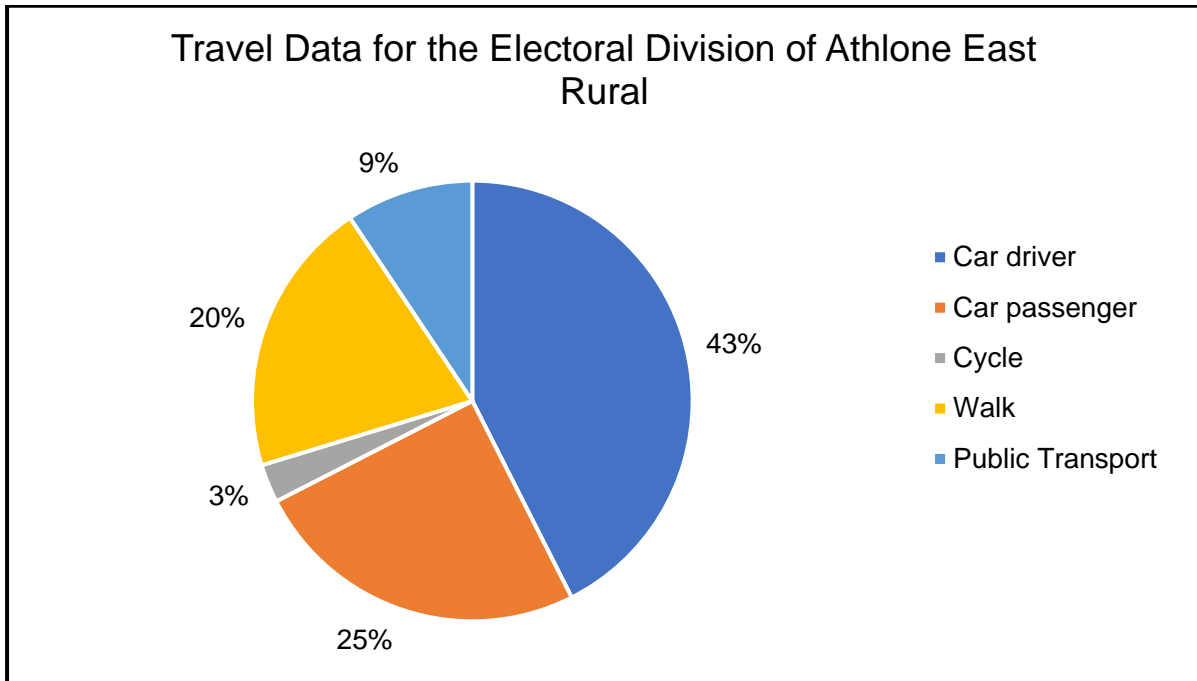
Figure 4.2 – Trips Breakdown for Athlone East Rural (Source: CSO.ie)

4.2   Traffic Generation and Distribution Slips

In order to obtain a comparative trip rate for the Green Quarter SHD once operational, the TRICS database was consulted. The TRICS (Trip Rate Information Computer System) database contains traffic generation data for developments of a similar nature to the proposed development. TRICS was established in the UK and is a substantial source of validated empirical data which contains information on arrival and departure rates for a range of different types and sizes of development throughout Ireland.

4.2.1   Residential Development Traffic Generation

The residential units of the Green Quarter SHD were assessed by the most applicable options in TRICS, which were:

- Mixed private houses (flats and houses)
- Houses privately owned
- Flats privately owned.

From this analysis, it was found that when comparing the mixed private houses, houses privately owned and flats privately owned, the houses privately owned produced a higher trip rate. On this basis, the trips generated from the houses privately owned were utilised for modelling purposes, as it provides the worst-case scenario.

Tables 4.1 and **4.2** overleaf shows the trip data for the 122No. residential units (60No. houses and 62No. apartments).

Table 4.1 – TRICS output for Houses Privately Owned						
TRICS 7.8.1						
Trip Rate Parameter: Number of Dwellings						
TRIP RATE for Land Use 03 – RESIDENTIAL/A – HOUSES PRIVATELY OWNED						
Calculation Factor: 1 Dwells						
Count Type: TOTAL VEHICLES						
TIME RANGE	ARRIVALS			DEPARTURE		
	No. Days	Ave. Dwells	Trip Rate	No. Days	Ave. Dwells	Trip Rate
07:00-08:00	23	54	0.046	23	54	0.202
08:00-09:00	**23**	**54**	**0.151**	**23**	**54**	**0.383**
09:00-10:00	23	54	0.205	23	54	0.216
10:00-11:00	23	54	0.138	23	54	0.181
11:00-12:00	23	54	0.157	23	54	0.166
12:00-13:00	23	54	0.188	23	54	0.180
13:00-14:00	23	54	0.182	23	54	0.194
14:00-15:00	23	54	0.191	23	54	0.209
15:00-16:00	23	54	0.250	23	54	0.180
16:00-17:00	23	54	0.268	23	54	0.174
17:00-18:00	**23**	**54**	**0.333**	**23**	**54**	**0.200**
18:00-19:00	23	54	0.255	23	54	0.200
Daily Trips Rates:			**2.364**			**2.485**

The TRICS output is presented in a trip rate per unit. The unit reference is dependent on the development in question, such as per person, per house or unit area. In this case, the multiplication factor to be applied to the unit rate is the number of residential units (122) of the development.

Table 4.2 – Total Typical Daily Generated Profile by the Proposed Residential Units			
Time Range	Arrivals	Departures	Total
08:00-09:00	18	47	65
17:00-18:00	41	24	65

4.2.2 Creche Traffic Generation

The Green Quarter SHD is proposed to include a creche with a gross floor area of 180m² in the residential area. The TRICS database was assessed to obtain the traffic distribution for the creche, as shown in **Tables 4.3** and **4.4** overleaf.

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Table 4.3 – TRICS output for Nursery Developments per GFA						
TRICS 7.8.1						
Trip Rate Parameter: Gross Floor Area						
TRIP RATE for Land Use 04 – EDUCATION/D – NURSERY						
Calculation Factor: 100 GFA						
Count Type: TOTAL VEHICLES						
TIME RANGE	ARRIVALS			DEPARTURE		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
07:00-08:00	7	404	1.239	7	404	0.389
08:00-09:00	**7**	**404**	**4.000**	**7**	**404**	**2.796**
09:00-10:00	7	404	2.938	7	404	2.903
10:00-11:00	7	404	0.885	7	404	0.673
11:00-12:00	7	404	1.062	7	404	0.496
12:00-13:00	7	404	1.805	7	404	2.726
13:00-14:00	7	404	0.991	7	404	1.274
14:00-15:00	7	404	1.062	7	404	0.779
15:00-16:00	7	404	0.814	7	404	1.345
16:00-17:00	7	404	1.168	7	404	1.239
17:00-18:00	**7**	**404**	**2.796**	**7**	**404**	**3.469**
18:00-19:00	6	446	0.112	6	446	0.935
Daily Trips Rates:			**18.872**			**19.024**

Table 4.4 below presents the traffic data obtained from the TRICS database for the proposed creche during the AM and PM peak periods.

Table 4.4 – Total Typical Daily Generated Profile by the Proposed Nursery			
Time Range	Arrivals	Departures	Total
08:00-09:00	7	5	12
17:00-18:00	3	4	7

4.2.3 Student Accommodation Traffic Generation

The Green Quarter SHD is proposed to construct 3No. blocks of student accommodation with a total of 283No. bedrooms and 39No. dedicated parking spaces and 283No. bicycle storage. The TRICS database was likewise obtained to collect the trip output for the student housing, as presented in **Tables 4.5** and **4.6** overleaf.

Table 4.5 – TRICS output for Student Accommodations

TRICS 7.8.1

Trip Rate Parameter: Number of Residents

TRIP RATE for Land Use 3 – RESIDENTIAL/G – STUDENT ACCOMMODATION

Calculation Factor: 1 Resident

Count Type: TOTAL VEHICLES

TIME RANGE	ARRIVALS			DEPARTURE		
	No. Days	Ave. Resident	Trip Rate	No. Days	Ave. Resident	Trip Rate
06:00-07:00	1	241	0.000	1	241	0.000
07:00-08:00	2	253	0.004	2	253	0.002
08:00-09:00	2	253	0.010	2	253	0.002
09:00-10:00	2	253	0.006	2	253	0.018
10:00-11:00	2	253	0.008	2	253	0.024
11:00-12:00	2	253	0.004	2	253	0.016
12:00-13:00	2	253	0.002	2	253	0.020
13:00-14:00	2	253	0.006	2	253	0.010
14:00-15:00	2	253	0.018	2	253	0.004
15:00-16:00	**2**	**253**	**0.032**	**2**	**253**	**0.012**
16:00-17:00	2	253	0.022	2	253	0.018
17:00-18:00	**2**	**253**	**0.026**	**2**	**253**	**0.022**
18:00-19:00	2	253	0.006	2	253	0.004
19:00-20:00	1	241	0.000	1	241	0.000
20:00-21:00	1	241	0.004	1	241	0.000
21:00-22:00	1	241	0.000	1	241	0.004
Daily Trips Rates:			**0.148**			**0.156**

As can be seen from **Table 4.5** above, the highest trip rates for student accommodations according to TRICS happen between 15:00-16:00 and 17:00-18:00, both in the evening period. For the purpose of this traffic analysis, it was considered that the 15:00-16:00 corresponds to the morning peak, in order to obtain the worst-case scenario.

Table 4.6 – Total Typical Daily Generated Profile by the Proposed Student Accommodation

Time Range	Arrivals	Departures	Total
15:00-16:00	9	3	12
17:00-18:00	7	6	14

4.2.4 Total Traffic Generated from the Site

The calculated trip for the residential units, the creche and the student accommodation were added together to represent the traffic which will be generated by the proposed development and consequently will utilise the R916/Moydrum Road roundabout. The total trip generated is shown in **Table 4.7** below.

Table 4.7 – Total Typical Daily Generated Profile by the Green Quarter SHD			
Time Range	Arrivals	Departures	Total
08:00-09:00	35	55	90
17:00-18:00	51	35	86

For the purposes of generating a robust traffic model, this report will take into account the potential development of a hotel being explored on an adjoining site to the east of the proposed development. Currently there are no proposals for any specific development on the adjoining site, but to apply a suitable trip rate for the site, a 'hotel type' development was selected for assessment purposes in order to provide a robust worst-case scenario. **Table 4.8** below shows the traffic profile generated by the potential development of the adjoining site.

Table 4.8 – Total Typical Daily Generated Profile by the Adjoining Site			
Time Range	Arrivals	Departures	Total
08:00-09:00	13	43	55
16:00-17:00	34	20	54

The total trip generation by both the residential area and the adjoining site is shown in **Table 4.9** below.

Table 4.9 – Total Typical Daily Generated Profile			
Time Range	Arrivals	Departures	Total
08:30-09:30	48	98	145
17:00-18:00	85	55	140

4.3 Phasing of Works

Due to the scale of the Green Quarter SHD, a phasing scheme has been implemented which assumes that a certain number of units will be constructed by the assessment years. **Table 4.10** below provides the phases and the proposed trip generated due to the phased works.

- Phase 1: The residential area, with 122No. residential units and the creche to be constructed in 2024.
- Phase 2: The 3No. blocks of student accommodation to be constructed in 2026.

- Phase 3: Phase 1 + Phase 2, plus the potential development of the adjoining site in 2028.

Table 4.10 – Number of Trips Related to Each Work Phase				
Phase	Assessment Year	Period	Arrivals	Departures
1	2024	AM	26	52
		PM	44	28
2	2026	AM	35	55
		PM	51	35
3	2028	AM	48	98
		PM	85	55

For the purpose of this report, it was assumed that the aforementioned application for the petrol station, planning reference 167155, will be fully operational during Phase 1. For the proposed residential development west of the site, planning reference ABP-309513-21, it was aimed to have 100No. residential units in 2021 and the remaining 476No. units by 2026, however, this report assumed the first units to be fully constructed during Phase 1, 2024, and the remaining units to be operational during Phase 2, 2026.

4.4   Future Year Traffic Growth

The TII issues a range of forecasts: low growth, central growth and high growth. For this assessment, we have used central growth factors (extract from TII Publication PE-PAG-02017 May 2019 below) in our assessment of future year background traffic flows.

Table 4.11 – Development Location Information	
Location of Development	Westmeath
Sensitivity Area	Central
Year of Traffic Counts	2019
Year of Assessment	2021
Year of Development Construction	2024

Table 4.12 – TII Annual Growth Rates (Central Growth) For Co. Westmeath	
2016 – 2030	1.0161
2030 – 2040	1.0062
2040 – 2050	1.0053

Table 4.13 – Growth Factors for Future Design Years					
Counts	Baseline	Opening	Opening +5	Opening +10	Opening +15
2019	2021	2024	2029	2034	2039
1.000	1.032	1.083	1.173	1.222	1.260

4.5   Generated Traffic Splits Through Neighbouring Junctions

Based on the traffic counts obtained in May 2019 as part of the planning application ABP-309513-21 mentioned in Section 3.1 above, the travel distribution in the R916/Moydrum Road roundabout analysed was established and the traffic generated by the Green Quarter SHD will follow the same trend.

Figures 4.3 to **4.5** overleaf shows the traffic distribution for Phases 1 to 3 on the R916/Moydrum Road roundabout on the AM and PM peak, when it is expected that the whole development is operational.

From the traffic counts obtained, the morning peak on the roundabout occurs between 8:30-09:30 am and afternoon peak between 17:00-18:00 with a total of 1522 PCU associated with the junction during the AM peak and 1499 in the PM peak.

Due to the fact that the AM and PM peak hours differs amongst the proposed developments and the traffic peak associated with the roundabout, it has been assumed that all the peak flows coincide with the peak traffic observed in the roundabout, in order to obtain a more conservative analysis.

The worst-case scenario assumed in this traffic assessment assumed that all traffic generated by the Green Quarter SHD will turn right from their respective access junctions onto Lissywollen Avenue and travel towards the R916/Moydrum Road roundabout. When compiling the traffic figures at this roundabout for the assessment year of 2028, the expected year of Phase 3 conclusion, using TII Central Traffic Growths for Co. Westmeath as shown in **Table 4.13** above, the total of AM and PM traffic at the roundabout accounts for 1758 PCU and 1731 PCU, respectively. The traffic associated with the development when it is fully concluded (145 PCU in the AM peak and 140 in the PM peak) will represent an increase of both 8.2% and 8.1% in the AM and PM traffic levels.

A second scenario analysed in this assessment is that 75% of traffic will access the R916/Moydrum Road roundabout and the remaining 25% will travel west and make use of the R915/N55 roundabout. When considering this 75/25 traffic slip, the effect in the R916/Moydrum Road will be 6.2% in the AM period and 6.1% in the PM period.

As mentioned above, this Traffic and Transport Assessment made use of the traffic counts undertaken in May 2019 in 11No. junctions near the proposed site by the planning application ABP-309513-21. **Table 4.14** and **Appendix A** summarise the effects the Green Quarter SHD will have on the 11No. neighbouring junctions when the site is fully constructed, in 2028.

As can be seen from **Table 4.14** below, only Junction 1 – R916/Moydrum Road is within the TII threshold of 5% when congestion is assumed to exist, therefore, only this junction will be further analysed in this traffic assessment.
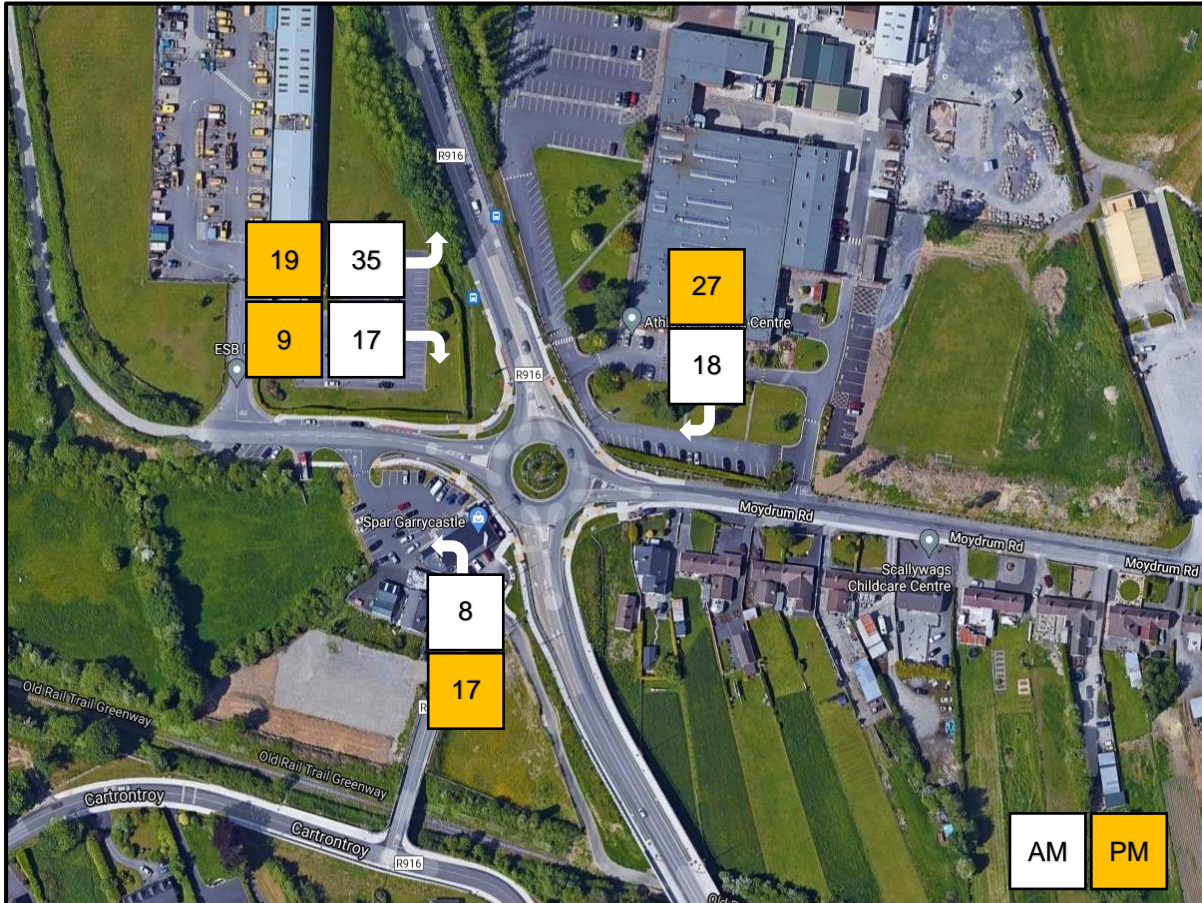
Figure 4.3 – Phase 1 AM and PM peak traffic splits on the R916/Moydrum Road roundabout
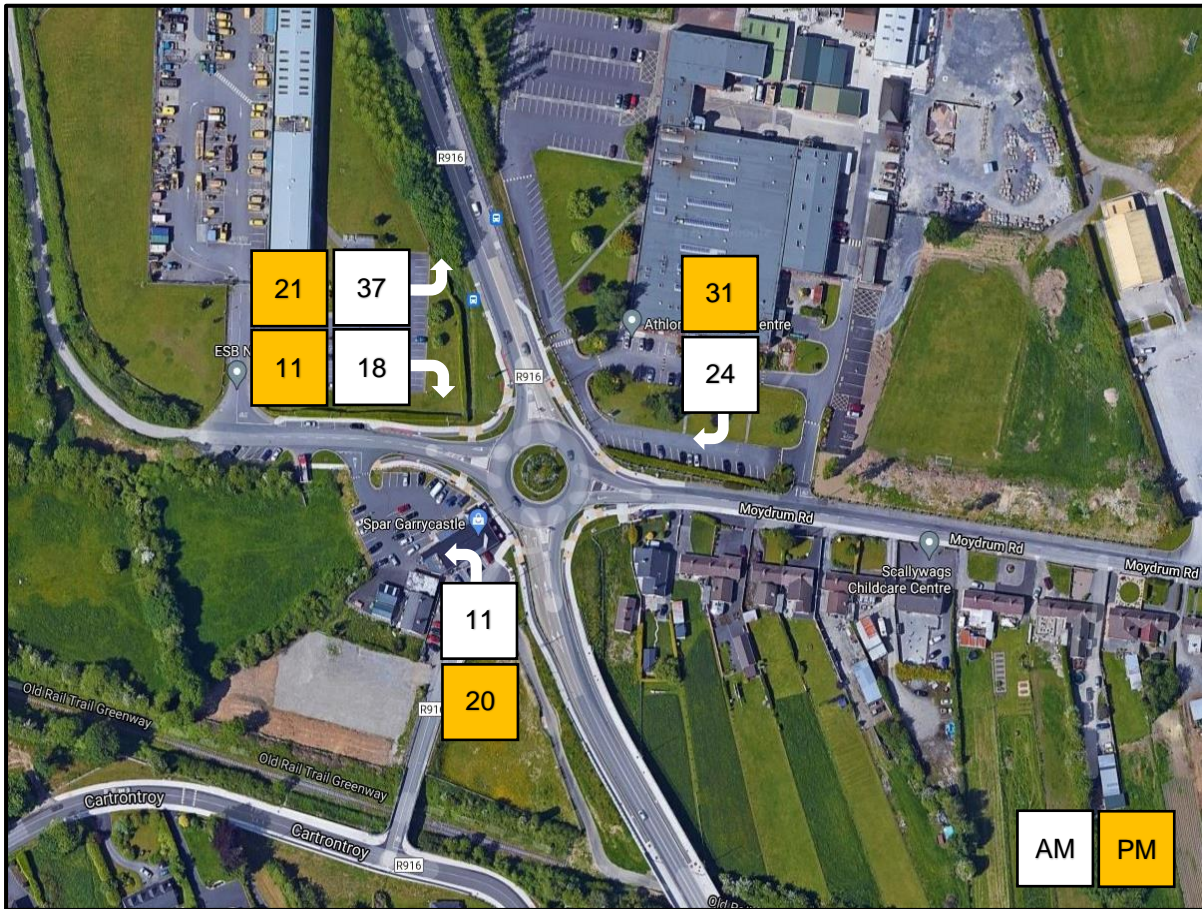
Figure 4.4 – Phase 2 AM and PM peak traffic splits on the R916/Moydrum Road roundabout
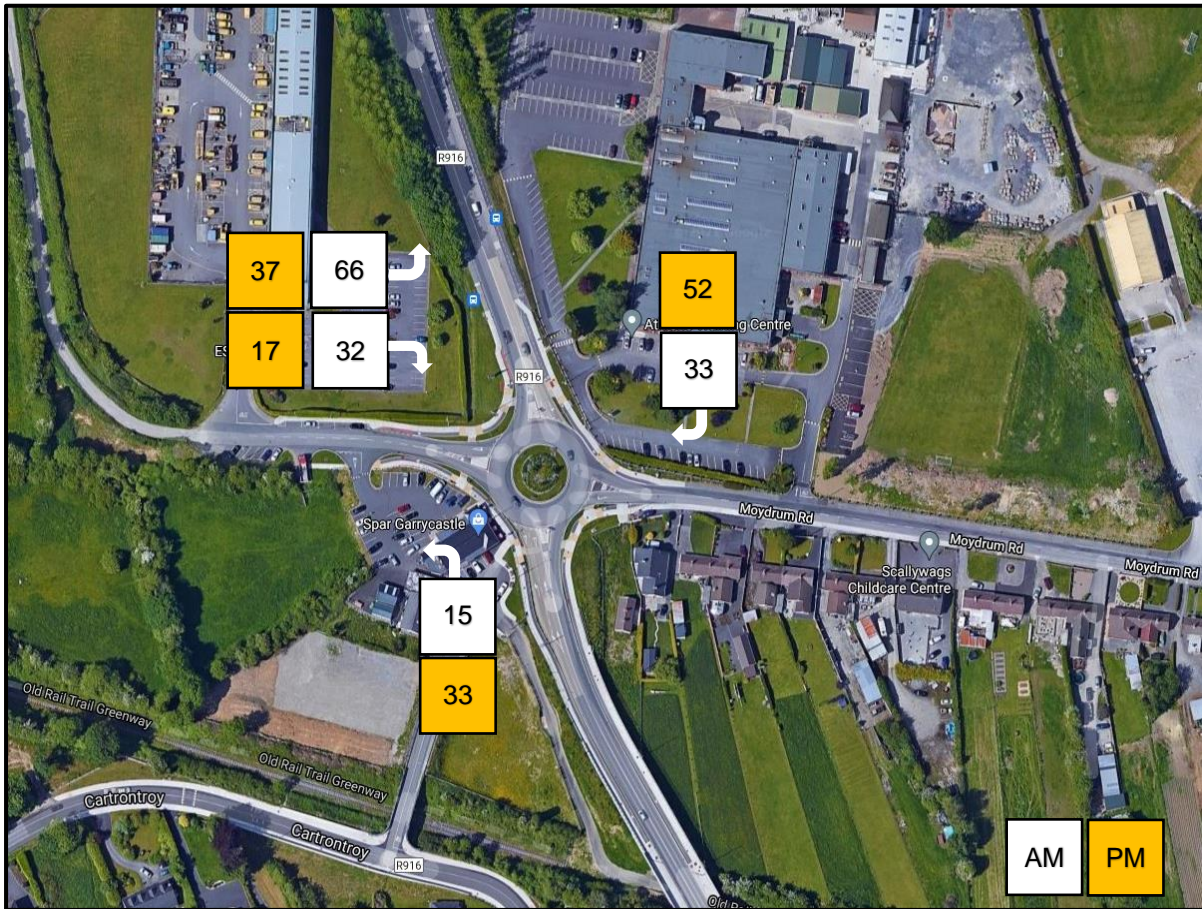
Figure 4.5 – Phase 3 AM and PM peak traffic splits on the R916/Moydrum Road roundabout

Table 4.14 – Traffic Impact on Neighbouring Junctions

Junction	2028 Projected Traffic		Traffic from The Green Quarter SHD		Increase in Traffic		TII Threshold of 5%	
	AM	PM	AM	PM	AM	PM	AM	PM
1 - R916/Moydrum Road roundabout	1758	1731	145	140	8.2%	8.1%	Above	Above
2 - R915/N55	2173	2112	34	28	1.6%	1.3%	Below	Below
3 - N55/N6 eastbound	2081	1929	12	13	0.6%	0.7%	Below	Below
4 - N55/N6 westbound	1887	1794	34	27	1.8%	1.5%	Below	Below
5 - R916/N6 eastbound	2417	2149	69	67	2.6%	3.1%	Below	Below
6 - R916/N6 westbound	2182	2218	98	89	4.5%	4.0%	Below	Below
7 - R446/R916	1500	2024	48	51	3.2%	2.5%	Below	Below
8 - R915/The Crescent	1887	1898	21	17	1.1%	0.9%	Below	Below
9 - N55/Coosan Road	1845	1854	4	5	0.2%	0.3%	Below	Below
10 - N55/Cloghanboy Avenue	1655	1749	3	5	0.2%	0.3%	Below	Below
11 - R916/Moydrum road	2042	1888	54	54	2.6%	2.7%	Below	Below

5   Capacity Analysis

5.1   Traffic and Transport Assessment Thresholds

TII recommends that junction modelling should be carried out where new traffic exceeds 5% of existing flows if congestion already exists and if traffic generated by the development exceeds 10% where no traffic congestion is present, as outlined in **Table 5.1** below. As discussed in Section 4.5 above, the Green Quarter SHD is likely to generate an increase of over 5% on the existing R916/Moydrum Road roundabout, where congestion is considered to exist.

Within this document, if any of the criteria in **Table 5.1** is exceeded, a Traffic Assessment is automatically required. As can be seen, one condition was met.

Table 5.1 – Traffic Management Guidelines Thresholds for Transport Assessments (TII)	
N/A	Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.
YES	Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive
N/A	Residential development in excess of 200 dwellings
N/A	Retail and leisure development in excess of 100m^2
N/A	Office, education and hospital development in excess of 2,500m^2
N/A	Industrial development in excess of 5,000m^2
N/A	Distribution and warehousing in excess of 10,000m^2

5.2   Capacity Analysis Introduction

Capacity assessments were undertaken in the R916/Moydrum Road roundabout, as it is the immediate junction from the Green Quarter SHD, as shown in **Figure 5.1** below, and it falls below the TII threshold of 5% increase where congestion exists. The performance of the AM and PM peak hours were assessed in the junction for the following design years:

- 2021, base year
- 2024, planned year of conclusion of Phase 1
- 2026, planned year of conclusion of Phase 2
- 2028, planned year of conclusion of Phase 3
- 2039, 15-year future design scenario.

Figure 5.1 – Locations of Junction Analysed (Source: Google Earth)

Two analyses were undertaken as part of this traffic assessment:

(A) Taking into account the planning reference ABP-309513-21 and the conclusion of the Lissywollen Avenue which will connect the site to Brawney Road to the west, and the enhancements at the approach to Lissywollen Avenue from the roundabout, as well as the planning application 167155 and the development of the adjoining site. The worst-case scenario, 100% traffic splits, was considered in this analysis.

(B) A second analysis considering a traffic slip of 75% of traffic from the Green Quarter SHD travelling towards the R916/Moydrum Road roundabout and 25% using the R915/N55 roundabout. This analysis followed the same principles as 'Analysis A'.

5.3   Traffic Impacts of the Proposed Development on Local Road Network

As stated in Section 3.1 above, this report made use of the traffic counts undertaken in May 2019 for the planning application ABP-309513-21. The traffic counts were then factored using appropriate TII Traffic Growth rates for Co. Westmeath, as specified in TII's PE-PAG-02017 of May 2019, as shown in **Table 4.13** above. The traffic growth rates were applied to existing background traffic only and were not applied to Green Quarter SHD traffic, since traffic associated with the site is limited by development size. We have used Central Sensitivity

Growth Factor since most sites in the area have now been developed and the R916/Moydrum Road roundabout was modelled using *ARCADY (Junctions 9)* software for roundabouts.

The capacity assessments were modelled according to the TII guidelines stated under document PE-PAG-0215 October 2016 for three different scenarios:

- Base-year: 2021 traffic flows modelled according to traffic counts obtained in 2019 and factored up using TII Traffic Growth Rates.
- Do-nothing: modelled without the intervention of the Green Quarter SHD. For this analysis, the traffic counts were factored up using TII's Growth Factor for the design years 2024, 2026, 2028 and 2039 and added the traffic generated by the planning permissions 167155 and ABP-309513-21 for the future design years.
- Do-something: the impact the traffic generated by the Green Quarter SHD was added to the future design years. This analysis will enable the comparison with the 'Do-nothing' scenario.

The Ratio of Flow to Capacity (RFC) describes the capacity of each approach to a junction. An RFC below 0.85 (85%) implies that an approach road is operating satisfactorily well within capacity, between 0.85 to 1.0 RFC means the approach operates well within capacity but at less optimal efficiency; an RFC above 1.0 is deemed to be above capacity.

In the following analysis of the R916/Moydrum Road roundabout, the junction was assessed for AM and PM peak periods and the arms were labelled as shown in **Figure 5.2** below:

- Arm A: Northern arm of the R916
- Arm B: Moydrum Road
- Arm C: Southern arm of the R916
- Arm D: Lissywollen Avenue.
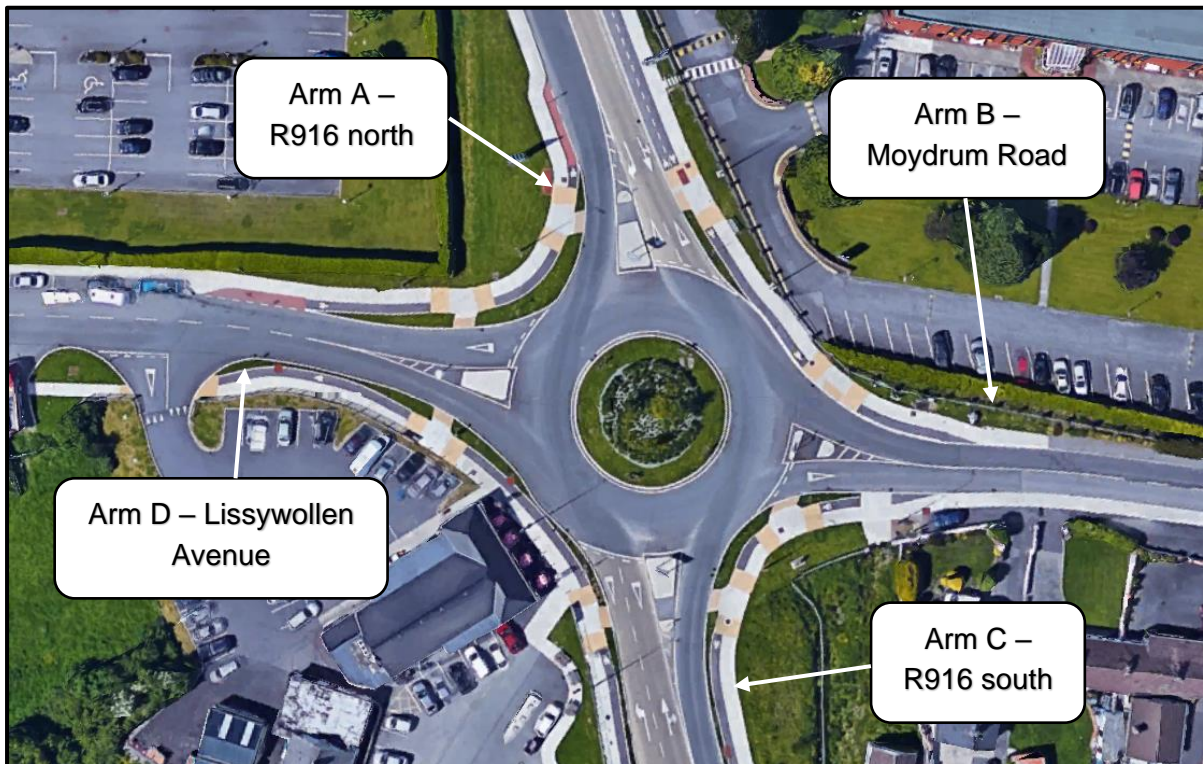
Figure 5.2 – R916/Moydrum Road Roundabout arm names (Source: Google Earth)

5.3.1 Analysis A

As part of the planning application ABP-309513-21, mitigation infrastructure, in order to reduce the Level of Service (LOS) of the R916/Moydrum Road, is proposed, as indicated in **Figure 5.3**. This proposition is to upgrade the geometry of the roundabout by introducing a flare on the Lissywollen Avenue approach, which will consequently reduce the queue on the Lissywollen Avenue approach to the roundabout. The planning application was granted permission on the 15th of June 2021; therefore, this assessment considers that conclusion of the Lissywollen Avenue will be prior the construction of the development.

Table 5.2 displays the total additional traffic – the residential area, including the houses, apartments and the student accommodation, the development traffic associated with the adjoining site to the east, the planning applications 167155 and ABP-309513-21– that will travel from Lissywollen Avenue towards the R916/Moydrum Road roundabout in the AM and PM peak.

Table 5.2 – 2028 Total Additional Traffic Flow Along Junction 1 – R916/Moydrum Road Roundabout			
Time Range	Arrivals	Departures	Total
08:00-09:00	143	217	360
17:00-18:00	216	160	376

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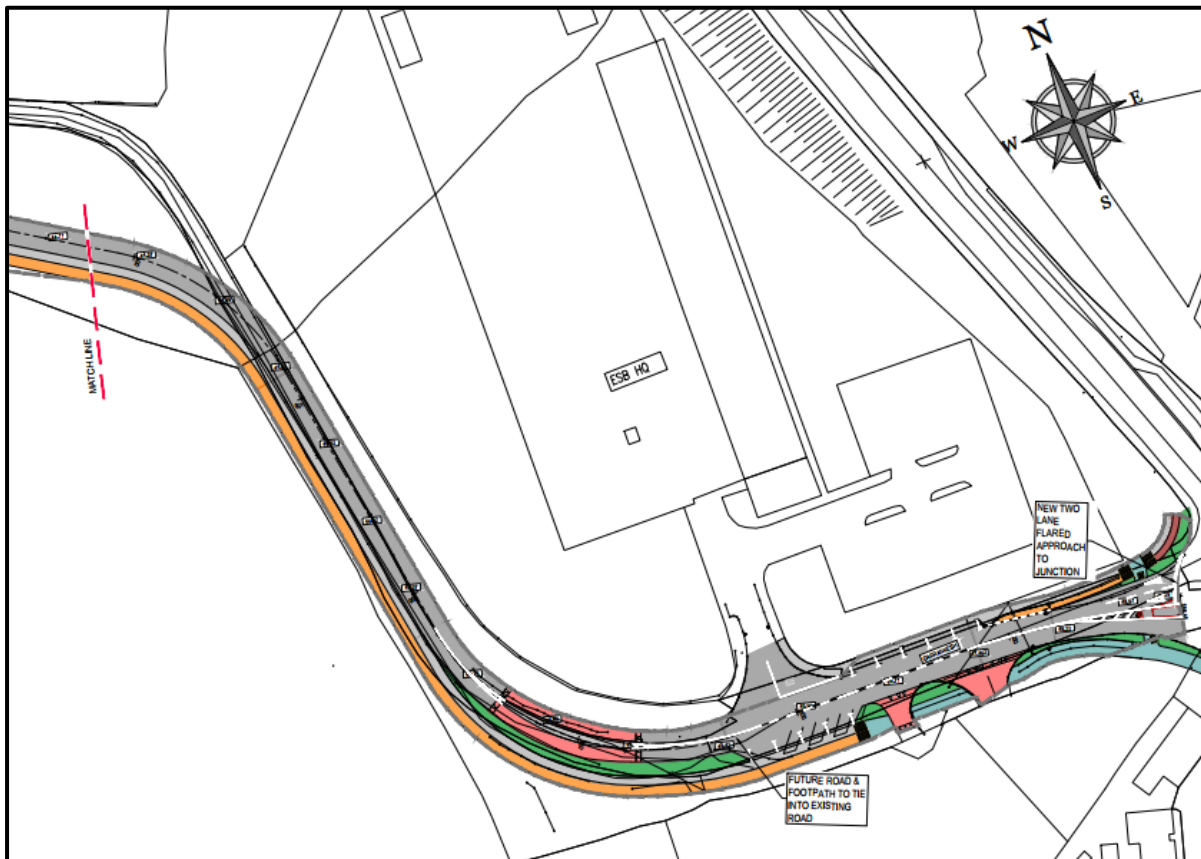
Figure 5.3 – Proposed Mitigation Works (Source: DBFL)

The implementation of the Lissywollen Avenue will connect the R916/Moydrum Road roundabout to the N55/R915 roundabout, west of the development. Due to the implementation of Lissywollen Avenue, this analysis takes into consideration a proportion of extra vehicles that will make use of the avenue. **Table 5.3** shows the results from this analysis.

Table 5.3 shows the maximum RFC and queue formed in R916/Moydrum Road roundabout, for the 2021 base year, 2024, 2026 and 2028 future years of development conclusion and 2039, 15 years after conclusion with the implementation of the mitigation measures on the R916/Moydrum Road roundabout and the Lissywollen Avenue in operation.

The proposed adjoining development of 576No. residential units was added to the 'Do Nothing' scenarios in **Table 5.3**. It can be seen that, even when adding the additional traffic, the maximum RFC value for arm D is 0.36 in the PM period when the Lissywollen Avenue approach to the junction is upgraded.

When comparing the 'Do-nothing' and the 'Do-something' scenario in the future design year of 2028, it can be noted that, when the Green Quarter SHD is fully concluded and operational, the increase in the roundabout capacity is minimum, from 1.11 to 1.17 in arm A in the morning period. The comparison between the two analyses shows that the Green Quarter SHD put forward by Avenir Homes Ltd. will not significantly impact on the operational capacity of the proposed upgraded measures of the junction tested.

Further, as part of this planning application, a Mobility Management Plan was produced for the purpose of introducing sustainable means of transportation from an early stage in the development in order to reduce the traffic associated with the site and, in consequence, reduce the Rate Flow Capacity (RFC) in the R916/Moydrum Road roundabout.

Furthermore, as stated in Section 4.4, the peak times from the Green Quarter SHD occur at different times, however, in order to assess the worst-case scenario, it was considered as occurring at the same time.

Table 5.3 – *ARCADY* Results for Analysis A at Junction 1 – R916/Moydrum Road					
Analysis	Arm	AM		PM	
		Queue (PCU)	RFC	Queue (PCU)	RFC
1 – 2021, base year	A	4.7	0.82	2.7	0.71
	B	2.0	0.68	1.9	0.66
	C	3.2	0.75	1.9	0.64
	D	0.1	0.10	0.1	0.12
2 – 2024, do-nothing	A	11.1	0.94	4.8	0.84
	B	4.3	0.89	3.6	0.85
	C	6.0	0.87	2.7	0.73
	D	0.2	0.18	0.3	0.21
3 – 2024, do-something	A	14.6	0.96	6.2	0.87
	B	4.7	0.91	4.0	0.87
	C	6.8	0.89	3.0	0.75
	D	0.3	0.24	0.3	0.24
4 – 2026, do-nothing	A	20.6	0.99	8.3	0.91
	B	5.7	0.96	4.8	0.92
	C	8.6	0.92	3.5	0.78
	D	0.3	0.23	0.3	0.25
5 – 2026, do-something	A	31.5	1.02	12.4	0.95
	B	6.6	0.98	5.4	0.95
	C	11.3	0.94	4.1	0.81
	D	0.4	0.28	0.4	0.29
6 – 2028, do-nothing	A	30.8	1.02	10.8	0.94
	B	6.8	1.00	5.8	0.96
	C	11.3	0.95	4.0	0.81
	D	0.3	0.24	0.4	0.26
7 – 2028, do-something	A	54.7	1.08	23.4	1.01
	B	7.9	1.04	6.8	1.00
	C	16.4	0.98	5.4	0.85
	D	0.5	0.35	0.5	0.33
8 – 2039, do-nothing	A	74.7	1.11	26.4	1.02
	B	10.5	1.10	9.3	1.08
	C	27.0	1.03	6.6	0.88
	D	0.3	0.25	0.4	0.29
9 – 2039, do-something	A	105.9	1.17	52.4	1.09
	B	11.7	1.13	10.2	1.10
	C	37.8	1.06	9.7	0.92
	D	0.6	0.36	0.6	0.36

5.3.2 Analysis B

A second analysis was undertaken considering a traffic slip of 75/25 from the site, where 75% of the proposed additional traffic travels east towards the R916/Moydrum Road roundabout and 25% travels towards the R916/N55 roundabout, to the west of the site. **Table 5.4** below details de findings in this traffic analysis.

Table 5.4 – *ARCADY* Results for Analysis B at Junction 1 – R916/Moydrum Road					
Analysis	Arm	AM		PM	
		Queue (PCU)	RFC	Queue (PCU)	RFC
3 – 2024, do-something	A	13.6	0.95	5.8	0.86
	B	4.6	0.91	3.9	0.87
	C	6.6	0.88	2.9	0.75
	D	0.3	0.22	0.3	0.23
5 – 2026, do-something	A	41.0	1.05	11.1	0.94
	B	7.3	1.02	5.3	0.94
	C	13.6	0.96	3.9	0.80
	D	0.4	0.28	0.4	0.28
7 – 2028, do-something	A	47.9	1.06	19.2	0.99
	B	7.6	1.03	6.6	1.00
	C	14.8	0.97	5.0	0.84
	D	0.5	0.32	0.4	0.31
9 – 2039, do-something	A	97.7	1.15	45.3	1.07
	B	11.4	1.12	10.0	1.10
	C	34.6	1.05	8.8	0.91
	D	0.5	0.34	0.5	0.34

For this 75/25 traffic split analysis, only the 'Do-something' scenario was taken into consideration because the only change from Analysis A is the traffic slip from the Green Quarter SHD.

As displayed in **Table 5.4**, it can be seen that there is a reduction in the overall RFC and queue length in the junction. Analysis 9 drops from 1.17 in arm A in Analysis A to 1.15 in Analysis B. When compared to the 'Do-nothing' scenarios in **Table 5.3**, the increase caused by the Green Quarter SHD in the RFC at the junction is only 0.04, which means that the junction will still function and will not be adversely affected after the development conclusion.

The impact on the R916/N55 roundabout due to the 75/25 traffic slip is calculated to be 1.7% in both the morning and evening peak, which does not sit below the TII threshold of 5% where congestion exists, therefore, this junction was not analysed in this assessment.

5.4 Factors Likely to Reduce Predicted Traffic Flows by the Future Design Year 2039

It should be noted that central sensitivity growth factors were applied to the traffic flows to obtain future year flows and to provide a robust and conservative basis for assessment. It is arguable that these growth factors over-represent the future traffic volumes as planned infrastructure in the area will reduce reliance on private vehicles in the future, and the trend towards remote working and flexitime travel will reduce traffic at peak times.

Another point to be made is that the TRICS analyses considers that no public transport is available in the area, however, Athlone provides 2No. local bus services and it is considered a hub for public transport. The Green Quarter SHD is located only 12 minutes walking from the Athlone Technological University of the Shannon (TUS) and 18 minutes from IDA Ireland, and residents of the Green Quarter SHD can avail of the high-quality infrastructure currently in place to avoid the need to use private cars for travelling to work

As mentioned in Section 4.5 above, the residential units and the student accommodation have different peak times and they differ from the peak hour at the R916/Moydrum Road roundabout, however, for the purpose of this traffic assessment and to obtain a conservative analysis, they were considered to occur at the same time. Also, the planning application 167155 has its morning peak occurring during lunchtime (13:00-14:00) and it was considered as part of this assessment to happen during the junction morning peak.

6 Road and Safety

6.1 Site Access

The Green Quarter SHD is located in Lissywollen South, in Athlone town. The area in which the proposed development is situated is categorised as Area 4 – Residential and 5 – Mixed Use by the Lissywollen South Framework 2018 – 2024.

There are 2No. proposed vehicular entrances to the site, one for the residential area and one for the student accommodation area. The site will also have one dedicated cycle route, connecting north and south and pedestrian footways across the entire site, connecting to Lissywollen Avenue and the Old Rail Trail greenway to the south.

All traffic associated with the Green Quarter SHD is expected to travel towards the R916/Moydrum Road roundabout when arriving or departing from the development.

The Design Manual for Urban Roads and Streets (DMURS) states that the desired sightlines for a 50km/h road at a 2.4m setback is 49m on bus routes, which is achievable in both directions from the 2No. site access junctions along Lissywollen Avenue.

6.2 Pedestrian and Cyclist

As the Green Quarter SHD is located near Athlone town centre, it is expected that residents will be able to walk or cycle to various locations across town. A walk from the proposed development to Athlone town centre is approximately 30 minutes through the Old Rail trail, whereas cycling is only 8 minutes.

The location of the development benefits the residents studying or working at the Athlone Technological University of the Shannon (TUS), as it is located only 12 minutes walking or a short cycle, approximately 4 minutes, from the development. The route from the proposed Green Quarter SHD to the TUS offers great connectivity with extensive footpath and cycleway infrastructure. The IDA Ireland Athlone facility is located 18 minutes walking southeast of the site. There are also 4No. schools, as shown in **Figure 6.1** below near the Green Quarter SHD.

Figure 6.1: Locations schools and the TUS (Source: Google Earth)

The introduction of Lissywollen Avenue will offer residents of the Green Quarter SHD strong connectivity to the west of the development. The Lissywollen Avenue project will include cycle and walking infrastructure, in a form of an urban boulevard, and it will be mainly designed for cyclists, pedestrians and buses. The avenue will be delivered in conjunction with the permitted Alanna Roadbridge development.

To Athlone Regional Sports Centre is located to the west of the development, including Athlone Town FC and Athlone GAA club. The journey by bicycle from the development to these sports facilities will take approximately 5 minutes, once the Lissywollen Avenue is completed. **Figure 6.2** below shows the locations of the leisure facilities in relation to the development.

Figure 6.2: Sports facilities near the Green Quarter SHD (Source: Google Earth)

The Green Quarter SHD is also located adjacent to the Old Rail Trail Greenway which links Athlone to Mullingar through the disused railway track. The greenway is approximately 42km in length and has many entries and exits points, which enable its users to explore nearby towns and villages along the way.

Figure 6.3: Old Rail Trail Greenway (Source: Athlone.ie)

6.3   Internal Road Layout

The main function of the internal road network is to provide a safe and efficient parking and circulatory system that reduces the potential for conflicting movements, which can comfortably accommodate the anticipated volume of arrivals and departures without presenting a safety risk and not having a negative effect on the road network that it connects to.

The internal road network is primarily designed to accommodate cars, which will be the main vehicle type to use the Green Quarter SHD. In addition, the site provided adequate provisions to facilitate the circulation and turning movements of emergency vehicles and bin collection vehicles.

211_035-ORS-XX-XX-RP-TR-7d-001

6.4   Sustainable Transport and Public Transport Provision

ORS have prepared a Mobility and Management Plan which aims to establish the various profile of people who will access the sites, the travel trends, modes of transport that will be used and influences on staff and occupants regarding their preferred mode of transport.

The Athlone town is described as a national hub for public bus services, according to the Athlone Development Plan. Due to its location, Athlone is served by buses to and from Dublin, Galway, Westport, Sligo, Belfast, Tuam, Dundalk, Roscrea and Waterford. Athlone has also a rail station, located 28 minutes walking west of the development, which operates three routes: Dublin Heuston – Galway, Dublin Heuston – Westport and Ballina and Galway – Limerick with trains operating several times a day.

Figure 6.4 below shows bus and rail connectivity to and from the Athlone Technological University of the Shannon (TUS).
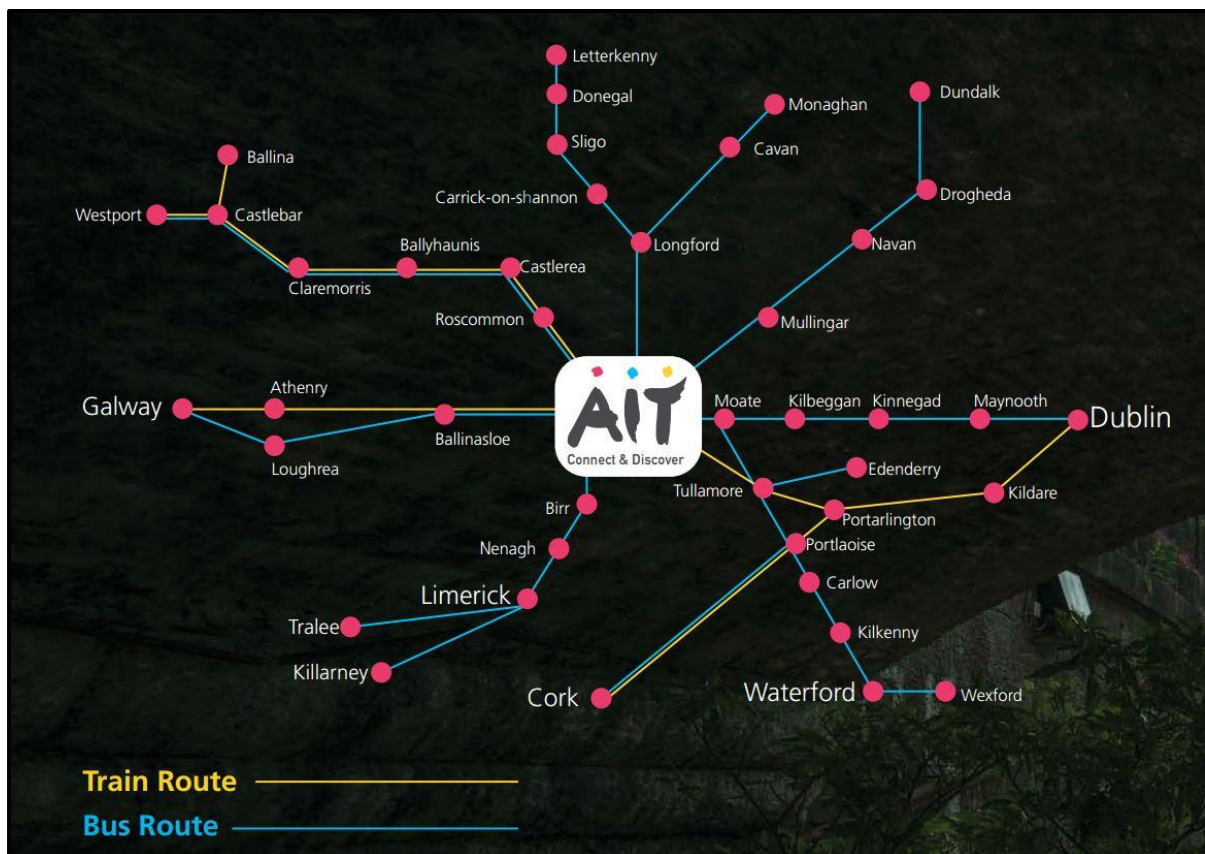
Figure 6.4: Public transport links (Source: AIT.ie)

In addition to the national transport linkages, Athlone has two local bus services, A1 and A2, which offers buses from Monday to Friday every 30mins from 7am to 8:30pm, and on an hourly basis on Saturday and Sunday. The nearest bus stop is located only 230m east of the development entrance, which serves bus route A2. For the A1 route, the bus stop is located

500m southeast of the development. **Figure 2.4** show the bus services maps and the proposed location of the 2No. bus stops adjacent to the Green Quarter SHD.

7   Conclusions

The main conclusions of this study are summarised as follows:

- This Traffic and Transport Assessment report was conducted to accompany the planning application for the Green Quarter Strategic Housing Development at Cartrontroy, Kilnafaddoge and Lissywollen, Ardnaglug (townlands), Athlone, Co. Westmeath. The residential area will comprise house units, apartments, a creche and student accommodations.

- The proposed residential area of the development will have 122No. residential units, 283No. student accommodations and a 180sq.m creche. The site will be accessed by 2No. vehicular entrances, one for the house units and another one for the student accommodation. There will be a total of 200No. parking spaces and 519No. bicycle storage in the development.

- The site is located near the AIT and will offer easy connectivity to the campus. Also, the site will have public and communal amenity areas, as well as footpaths and cycleways across the site.

- There is a major project for a link road on the Lissywollen area, named Lissywollen Avenue, which will connect the R916/Moydrum Road roundabout to Brawny Road. This project will be constructed before the opening year of the proposed development.

- This assessment calculated the traffic impact on 11No. junctions in the vicinity of the proposed development in order to estipulate the traffic impact that the development will have in the neighbouring junctions. The analysis found that the TII threshold of 5% of additional traffic where congestion exists was not met by any other junction apart from the R916/Moydrum Road roundabout, therefore, this was the only junction assessed.

- ORS identified the R916/Moydrum Road as the key public road junction that will serve the subject site. The junction was then subjected to capacity analysis to examine the potential traffic levels generated from the proposed development and the existing road network.

- The junction was examined using the ARCADY (*Junctions 9*) software for the AM and the PM peak conditions under conservative future projections including poor public transport and central background traffic growth, for 2021 base year and 2024, 2026, 2028 and 2039 future design years.

- The traffic splits in the R916/Moydrum Road could be calculated from the traffic counts and it is expected that the traffic from the proposed development will follow the same trend. The trip generation from the site was assessed from the TRICS database. The data was then added to ARCADY (*Junctions9*) software to ascertain the traffic impact the proposed development will have on the surrounding road network.

- Two capacity analyses were undertaken, Analyses A and B. Analysis A considered the construction of Lissywollen Avenue, an introduction of a flare on the Lissywollen Avenue

approach to the roundabout and the planning application ABP-309513-21, as they will be constructed prior to the conclusion of the proposed development. The analysis B considered a traffic slip of 75/25 in order to reduce the overall RFC at the junction.

- From the two analyses undertaken, it can be considered that the proposed development will not adversely affect the functionality of the R916/Moydrum Road roundabout, as the Ratio of Flow to Capacity (RFC) on arm D – Lissywollen Avenue increases only from 0.25 to 0.36 in the morning period in the design year 2039.

- The fact that the traffic counts were factored up using central growth factors and that the TRICS obtained do not consider any public transport available ensures a robust and 'worst-case' scenario of the traffic generated by the proposed development. Also, the peak times were considered to coincide in order to obtain the most conservative analysis.

- In summary, it can be considered that the proposed Green Quarter residential and student accommodation put forward by Avenir Homes Ltd. at Lissywollen, Athlone, Co. Westmeath will not adversely impact the existing neighbouring junctions. From the 11No. neighbouring junctions assessed for capacity effect from the development, only the R916/Moydrum road was found to sit below the TII threshold. At present, the junction presents queue and delays on the Lissywollen Avenue approach, however the mitigation measures proposed will improve the functionality of the junction and also reduce the overall RFC. The construction of the link road Lissywollen Avenue will also improve the connectivity from the site to the extensive road network in the town.

- As the proposed development is situated near Athlone town centre, at a well-served suburban area near various amenities and facilities, future residents will have significant opportunities to avail of the existing urban pedestrian and cyclist connectivity infrastructure in place. The cycle infrastructure across Athlone town is also considered to be extensive and future improvements are planned to be installed. The proposed development also aims to include 2No. bus stops adjacent to the site, which will operate the existing public transport routes in the town of Athlone, which will provide additional sustainable transport options for the future occupants of the development.

- In transportation planning terms, the quantum of development proposed by this application is appropriately located within zoned land and will be accessed by proposed infrastructure improvements to facilitate larger developments proposed in the vicinity of the site. The proposed development will not adversely impact on the proposed infrastructure improvements proposed for the area.

Appendix A – Traffic Impact on Neighbouring Junctions

9

AM Peak Hour
2028 Traffic: 1845
Traffic from Dev: 4
Increase in traffic: 0.2%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 1854
Traffic from Dev: 5
Increase in traffic: 0.3%
TII threshold of 5%: Below

10

AM Peak Hour
2028 Traffic: 1655
Traffic from Dev: 3
Increase in traffic: 0.2%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 1749
Traffic from Dev: 5
Increase in traffic: 0.3%
TII threshold of 5%: Below

11

AM Peak Hour
2028 Traffic: 2042
Traffic from Dev: 54
Increase in traffic: 2.6%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 1888
Traffic from Dev: 54
Increase in traffic: 2.7%
TII threshold of 5%: Below

2

AM Peak Hour
2028 Traffic: 2173
Traffic from Dev: 34
Increase in traffic: 1.6%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 2112
Traffic from Dev: 28
Increase in traffic: 1.3%
TII threshold of 5%: Below

3

AM Peak Hour
2028 Traffic: 2081
Traffic from Dev: 12
Increase in traffic: 0.6%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 1929
Traffic from Dev: 13
Increase in traffic: 0.7%
TII threshold of 5%: Below

5

AM Peak Hour
2028 Traffic: 2417
Traffic from Dev: 69
Increase in traffic: 2.6%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 2149
Traffic from Dev: 67
Increase in traffic: 3.1%
TII threshold of 5%: Below

8

AM Peak Hour
2028 Traffic: 1887
Traffic from Dev: 21
Increase in traffic: 1.1%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 1898
Traffic from Dev: 17
Increase in traffic: 0.9%
TII threshold of 5%: Below

4

AM Peak Hour
2028 Traffic: 1887
Traffic from Dev: 34
Increase in traffic: 1.8%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 1794
Traffic from Dev: 27
Increase in traffic: 1.5%
TII threshold of 5%: Below

6

AM Peak Hour
2028 Traffic: 2182
Traffic from Dev: 98
Increase in traffic: 4.5%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 2218
Traffic from Dev: 89
Increase in traffic: 4.0%
TII threshold of 5%: Below

1

AM Peak Hour
2028 Traffic: 1758
Traffic from Dev: 145
Increase in traffic: 8.2%
TII threshold of 5%: Above

PM Peak Hour
2028 Traffic: 1731
Traffic from Dev: 140
Increase in traffic: 8.1%
TII threshold of 5%: Above

7

AM Peak Hour
2028 Traffic: 1500
Traffic from Dev: 48
Increase in traffic: 3.2%
TII threshold of 5%: Below

PM Peak Hour
2028 Traffic: 2024
Traffic from Dev: 51
Increase in traffic: 2.5%
TII threshold of 5%: Below

Google

Appendix B – Traffic Data and Future Flow Data
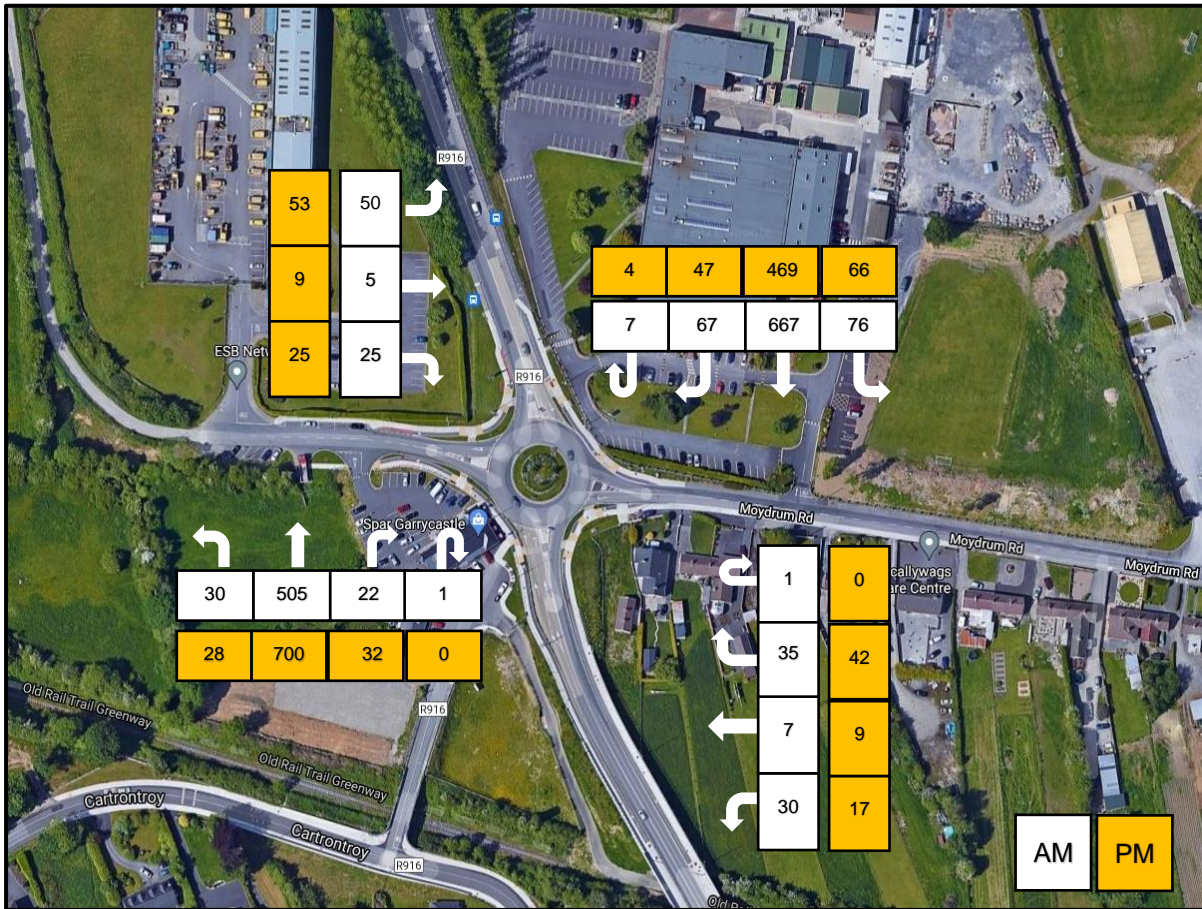
A.1 – May 2019, AM and PM peak as counted
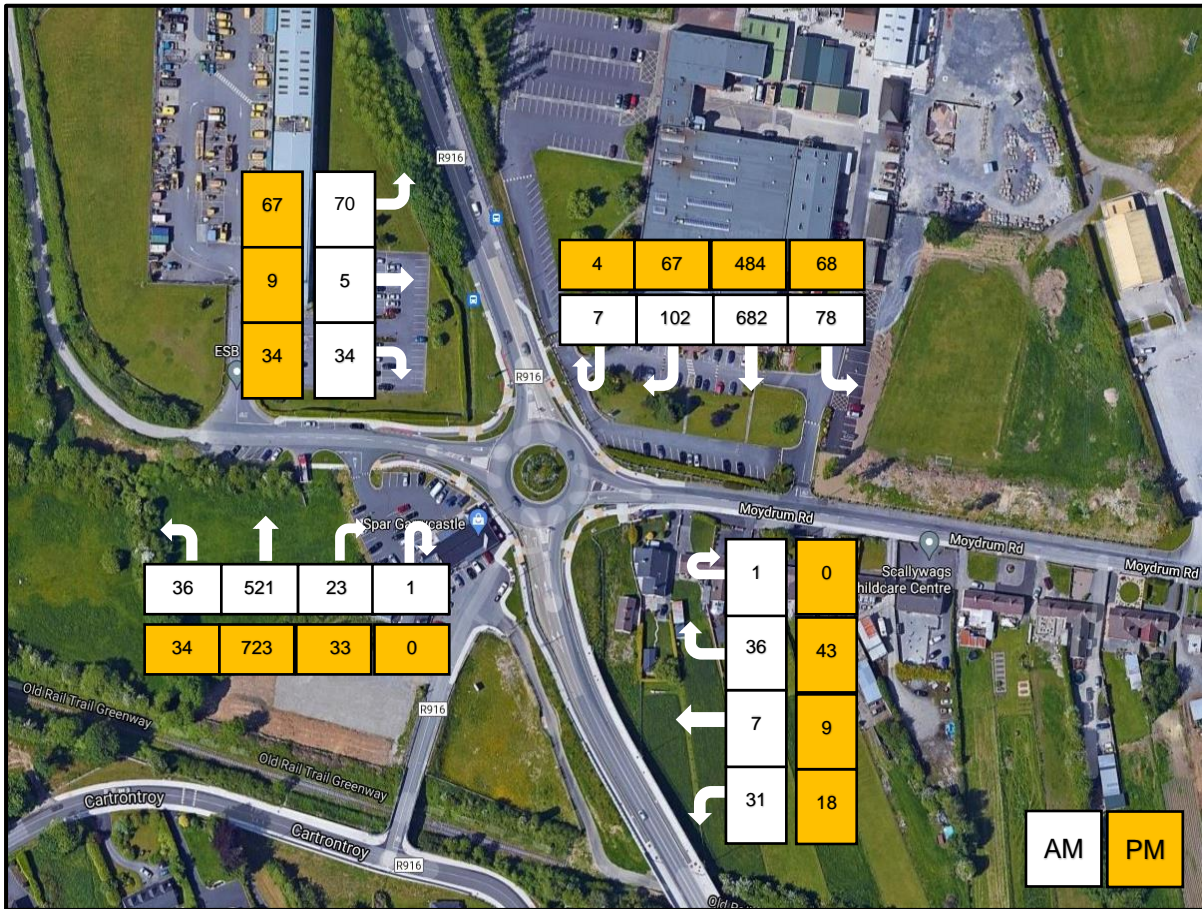
A.2 – 2021, base year AM and PM peak adjusted traffic scenario under Analysis A.
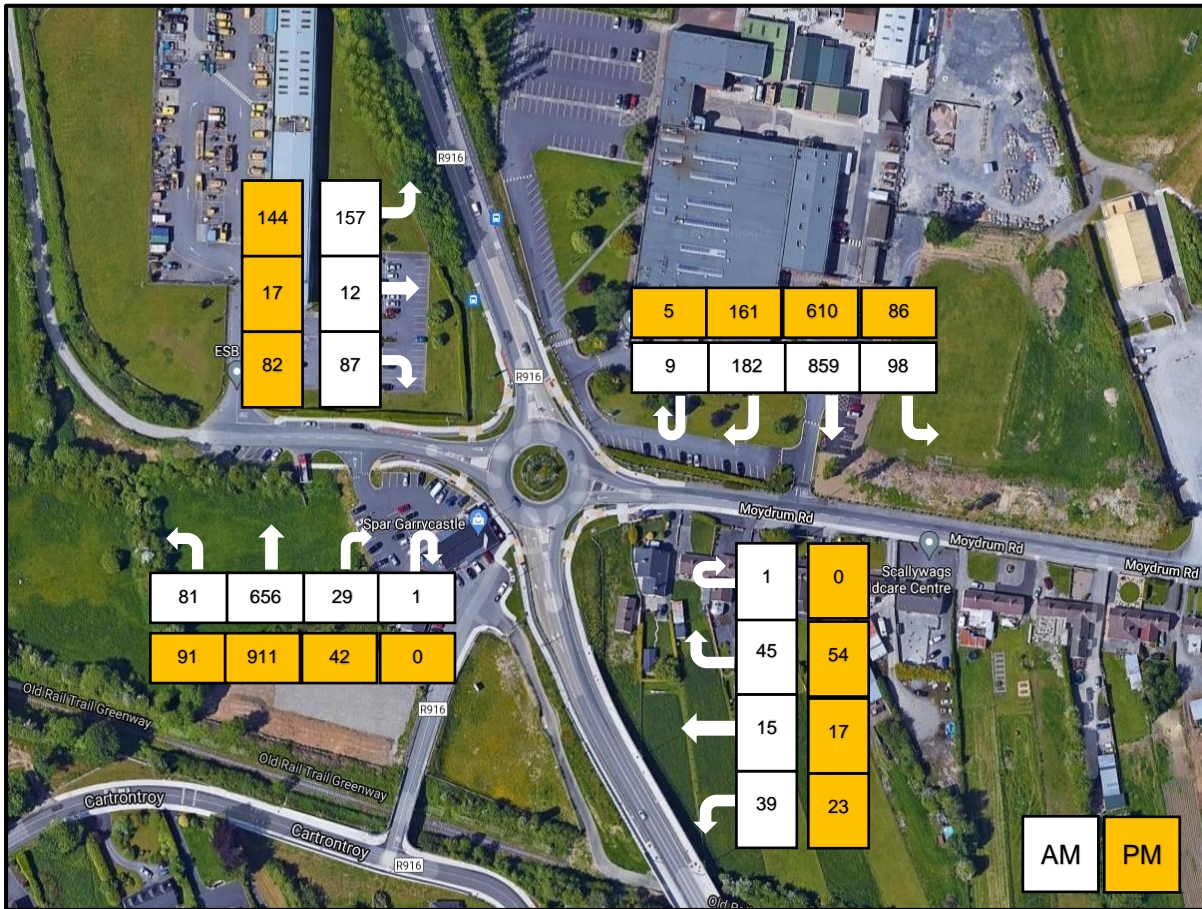
A.3 – 2039 AM and PM peak 'Do-Nothing' scenario under Analysis A.
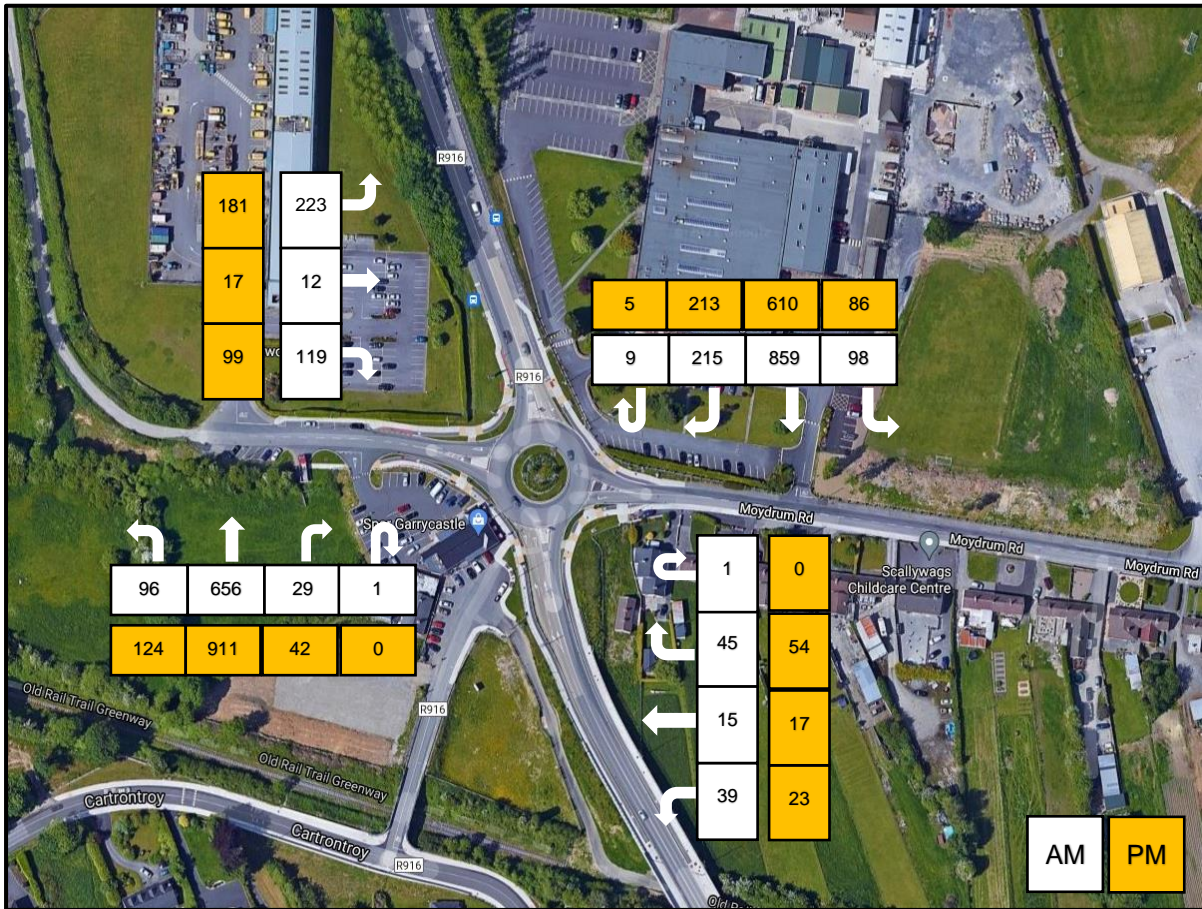
A.4 – 2039 AM and PM peak 'Do-Something' scenario under Analysis A.

Appendix C – *Junctions 9* Modelling Data

TRL THE FUTURE OF TRANSPORT

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777   software@trl.co.uk   www.trlsoftware.co.uk
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Filename: Residential area - AM - Copy (2).j9
Path: C:\Users\multiuser\Desktop\J9 FILES\211_035 Athlone
Report generation date: 26/11/2021 10:42:35

»**2021 do nothing, AM**
»**2024 do nothing, AM**
»**2024 do something, AM**
»**2026 do nothing, AM**
»**2026 do something, AM**
»**2028 do nothing, AM**
»**2028 do something, AM**
»**2039 do nothing, AM**
»**2039 do something, AM**
»**Residential Development + Creche, AM**
»**Student Accomodation, AM**
»**Adjacent Development, AM**
»**Petrol Station 167155, AM**
»**ABP-309513-21 Phase 1, AM**
»**ABP-309513-21 Phase 2, AM**

Summary of junction performance

	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
AM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2021 do nothing					
1 - N6	D1	4.7	18.28	0.82	C
2 - Moydrum Road		2.0	95.11	0.68	F
3 - R916		3.2	18.71	0.75	C
4 - To Site		0.1	3.68	0.10	A
2024 do nothing					
1 - N6	D2	11.1	39.72	0.94	E
2 - Moydrum Road		4.3	175.36	0.89	F
3 - R916		6.0	31.67	0.87	D
4 - To Site		0.2	3.79	0.18	A
2024 do something					
1 - N6	D3	14.6	50.85	0.96	F
2 - Moydrum Road		4.7	194.86	0.91	F
3 - R916		6.8	35.74	0.89	E
4 - To Site		0.3	4.04	0.24	A
2026 do nothing					
1 - N6	D4	20.6	67.20	0.99	F
2 - Moydrum Road		5.7	224.68	0.96	F
3 - R916		8.6	43.89	0.92	E

4 - To Site		0.3	4.05	0.23	A
2026 do something					
1 - N6		31.5	95.87	1.02	F
2 - Moydrum Road	D5	6.6	261.99	0.98	F
3 - R916		11.3	56.90	0.94	F
4 - To Site		0.4	4.68	0.28	A
2028 do nothing					
1 - N6		30.8	92.48	1.02	F
2 - Moydrum Road	D6	6.8	261.64	1.00	F
3 - R916		11.3	55.66	0.95	F
4 - To Site		0.3	4.13	0.24	A
2028 do something					
1 - N6		54.7	149.97	1.08	F
2 - Moydrum Road	D7	7.9	304.92	1.04	F
3 - R916		16.4	76.45	0.98	F
4 - To Site		0.5	4.80	0.35	A
2039 do nothing					
1 - N6		74.7	199.36	1.11	F
2 - Moydrum Road	D8	10.5	384.84	1.10	F
3 - R916		27.0	112.17	1.03	F
4 - To Site		0.3	4.31	0.25	A
2039 do something					
1 - N6		105.9	318.51	1.17	F
2 - Moydrum Road	D9	11.7	449.87	1.13	F
3 - R916		37.8	148.66	1.06	F
4 - To Site		0.6	5.00	0.36	A
Residential Development + Creche					
1 - N6		0.0	3.37	0.02	A
2 - Moydrum Road	D10	0.0	0.00	0.00	A
3 - R916		0.0	4.45	0.01	A
4 - To Site		0.0	2.58	0.04	A
Student Accomodation					
1 - N6		0.0	3.01	0.01	A
2 - Moydrum Road	D11	0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	0.00	0.00	A
Adjacent Development					
1 - N6		0.0	3.34	0.01	A
2 - Moydrum Road	D12	0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	2.56	0.03	A
Petrol Station 167155					
1 - N6		0.0	3.43	0.03	A
2 - Moydrum Road	D13	0.0	20.38	0.03	C
3 - R916		0.0	4.58	0.03	A
4 - To Site		0.0	2.60	0.04	A
ABP-309513-21 Phase 1					
1 - N6		0.0	3.01	0.00	A
2 - Moydrum Road	D14	0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	2.28	0.01	A
ABP-309513-21 Phase 2					
1 - N6		0.0	3.08	0.02	A
2 - Moydrum Road	D15	0.0	0.00	0.00	A
3 - R916		0.0	4.06	0.01	A
4 - To Site		0.0	2.35	0.04	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	31/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ORS\multiuser
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D1	2021 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D2	2024 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2024+D14+D13
D3	2024 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D2+D10
D4	2026 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2026+D13+D15
D5	2026 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D4+D10+D11
D6	2028 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2028+D13+D15
D7	2028 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D6+D10+D11+D12
D8	2039 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2039+D13+D15
D9	2039 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D8+D10+D11+D12
D10	Residential Development + Creche	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D11	Student Accomodation	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D12	Adjacent Development	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D13	Petrol Station 167155	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D14	ABP-309513-21 Phase 1	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D15	ABP-309513-21 Phase 2	AM	ONE HOUR	07:45	09:15	15	✓	✓		

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G2021			1.0320
G2024			1.0830
G2026			1.1180
G2028			1.1550
G2039			1.2600

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

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

2021 do nothing, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D1 - 2021 do nothing, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	20.99	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	N6	
2	Moydrum Road	
3	R916	
4	To Site	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - N6	4.50	6.60	5.1	23.0	38.0	34.0	
2 - Moydrum Road	2.60	4.70	13.4	20.0	38.0	29.0	
3 - R916	3.70	6.60	35.0	21.0	38.0	37.0	
4 - To Site	3.00	8.50	14.5	20.0	38.0	42.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - N6	0.629	1626
2 - Moydrum Road	0.550	1216
3 - R916	0.655	1776
4 - To Site	0.612	1593

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - N6	Percentage		74.00
2 - Moydrum Road	Percentage		17.00
3 - R916	Percentage		51.00
4 - To Site	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2021 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	869	100.000
2 - Moydrum Road		ONE HOUR	✓	75	100.000
3 - R916		ONE HOUR	✓	581	100.000
4 - To Site		ONE HOUR	✓	109	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	7	78	682	102
	2 - Moydrum Road	36	1	31	7
	3 - R916	521	23	1	36
	4 - To Site	70	5	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.82	18.28	4.7	C	869	869
2 - Moydrum Road	0.68	95.11	2.0	F	75	75
3 - R916	0.75	18.71	3.2	C	581	581
4 - To Site	0.10	3.68	0.1	A	109	109

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	781	195	57	1176	0.664	778	567	1.3	2.1	9.858	A
2 - Moydrum Road	67	17	740	138	0.490	66	96	0.6	1.0	54.250	F
3 - R916	522	131	136	860	0.607	520	669	1.1	1.6	11.570	B
4 - To Site	98	24	527	1270	0.077	98	130	0.1	0.1	3.377	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	957	239	70	1170	0.817	947	691	2.1	4.5	17.034	C
2 - Moydrum Road	83	21	901	122	0.674	79	117	1.0	1.8	84.956	F
3 - R916	640	160	165	850	0.752	634	815	1.6	3.1	17.801	C
4 - To Site	120	30	641	1200	0.100	120	158	0.1	0.1	3.665	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	957	239	70	1170	0.818	956	697	4.5	4.7	18.282	C
2 - Moydrum Road	83	21	909	122	0.678	82	118	1.8	2.0	95.113	F
3 - R916	640	160	168	850	0.753	639	823	3.1	3.2	18.712	C
4 - To Site	120	30	648	1196	0.100	120	159	0.1	0.1	3.678	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	781	195	58	1176	0.664	791	577	4.7	2.2	10.517	B
2 - Moydrum Road	67	17	751	136	0.494	71	97	2.0	1.2	62.643	F
3 - R916	522	131	141	859	0.608	528	681	3.2	1.8	12.180	B
4 - To Site	98	24	537	1264	0.078	98	132	0.1	0.1	3.398	A

TRL THE FUTURE OF TRANSPORT

2024 do nothing, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D2 - 2024 do nothing, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	39.48	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D2	2024 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2024+D14+D13

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	977	100.000
2 - Moydrum Road		ONE HOUR	✓	87	100.000
3 - R916		ONE HOUR	✓	657	100.000
4 - To Site		ONE HOUR	✓	195	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	84	739	146
	2 - Moydrum Road	39	1	34	14
	3 - R916	564	25	1	67
	4 - To Site	117	11	67	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	9	10	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.94	39.72	11.1	E	977	977
2 - Moydrum Road	0.89	175.36	4.3	F	87	87
3 - R916	0.87	31.67	6.0	D	657	657
4 - To Site	0.18	3.79	0.2	A	195	195

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	878	220	94	1159	0.758	873	650	1.7	3.0	12.364	B
2 - Moydrum Road	78	20	859	126	0.620	76	109	0.8	1.4	68.306	F
3 - R916	591	148	184	844	0.700	587	750	1.3	2.2	13.824	B
4 - To Site	175	44	569	1244	0.141	175	203	0.1	0.2	3.367	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1076	269	115	1149	0.936	1050	786	3.0	9.5	30.237	D
2 - Moydrum Road	96	24	1034	110	0.873	88	131	1.4	3.3	132.276	F
3 - R916	724	181	220	832	0.869	711	902	2.2	5.4	27.083	D
4 - To Site	215	54	687	1172	0.183	215	244	0.2	0.2	3.759	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1076	269	116	1149	0.936	1069	798	9.5	11.1	39.720	E
2 - Moydrum Road	96	24	1052	108	0.886	92	134	3.3	4.3	175.365	F
3 - R916	724	181	225	830	0.871	721	919	5.4	6.0	31.672	D
4 - To Site	215	54	699	1165	0.184	215	248	0.2	0.2	3.787	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	878	220	95	1159	0.758	910	670	11.1	3.3	16.021	C
2 - Moydrum Road	78	20	892	123	0.636	87	113	4.3	2.1	109.618	F
3 - R916	591	148	197	840	0.703	605	782	6.0	2.5	16.127	C
4 - To Site	175	44	590	1231	0.142	176	212	0.2	0.2	3.412	A

2024 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D3 - 2024 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	46.27	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D3	2024 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D2+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	995	100.000
2 - Moydrum Road		ONE HOUR	✓	87	100.000
3 - R916		ONE HOUR	✓	665	100.000
4 - To Site		ONE HOUR	✓	247	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	84	739	164
	2 - Moydrum Road	39	1	34	14
	3 - R916	564	25	1	75
	4 - To Site	152	11	84	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	9	10	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.96	50.85	14.6	F	995	995
2 - Moydrum Road	0.91	194.86	4.7	F	87	87
3 - R916	0.89	35.74	6.8	E	665	665
4 - To Site	0.24	4.04	0.3	A	249	249

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	895	224	111	1152	0.777	889	682	1.8	3.3	13.381	B
2 - Moydrum Road	78	20	890	123	0.635	76	109	0.8	1.5	71.879	F
3 - R916	598	150	200	839	0.713	594	766	1.4	2.4	14.483	B
4 - To Site	224	56	569	1244	0.180	224	226	0.2	0.2	3.526	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1096	274	135	1140	0.961	1062	824	3.3	11.8	35.695	E
2 - Moydrum Road	96	24	1066	107	0.897	87	131	1.5	3.6	142.698	F
3 - R916	732	183	237	826	0.886	718	916	2.4	6.1	29.629	D
4 - To Site	274	69	685	1173	0.234	274	270	0.2	0.3	4.001	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1096	274	136	1140	0.961	1084	836	11.8	14.6	50.846	F
2 - Moydrum Road	96	24	1087	105	0.914	92	133	3.6	4.7	194.861	F
3 - R916	732	183	244	824	0.889	729	935	6.1	6.8	35.744	E
4 - To Site	274	69	698	1166	0.235	274	276	0.3	0.3	4.037	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	895	224	112	1151	0.777	938	705	14.6	3.7	19.793	C
2 - Moydrum Road	78	20	936	119	0.658	88	114	4.7	2.4	126.767	F
3 - R916	598	150	216	833	0.718	615	808	6.8	2.7	17.527	C
4 - To Site	224	56	593	1230	0.182	224	238	0.3	0.2	3.583	A

2026 do nothing, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - 2026 do nothing, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	58.85	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D4	2026 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2026+D13+D15

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1025	100.000
2 - Moydrum Road		ONE HOUR	✓	90	100.000
3 - R916		ONE HOUR	✓	686	100.000
4 - To Site		ONE HOUR	✓	241	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	87	762	167
	2 - Moydrum Road	40	1	35	14
	3 - R916	582	26	1	76
	4 - To Site	147	12	82	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	7	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.99	67.20	20.6	F	1025	1025
2 - Moydrum Road	0.96	224.68	5.7	F	90	90
3 - R916	0.92	43.89	8.6	E	686	686
4 - To Site	0.23	4.05	0.3	A	241	241

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	921	230	109	1152	0.799	914	694	1.9	3.7	14.666	B
2 - Moydrum Road	81	20	911	122	0.665	78	112	0.9	1.6	77.427	F
3 - R916	616	154	204	838	0.736	612	785	1.5	2.6	15.630	C
4 - To Site	217	54	587	1234	0.176	216	229	0.2	0.2	3.538	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1128	282	133	1141	0.988	1082	835	3.7	15.2	42.788	E
2 - Moydrum Road	99	25	1081	106	0.937	89	134	1.6	4.1	158.338	F
3 - R916	755	189	239	826	0.914	736	931	2.6	7.4	34.311	D
4 - To Site	265	66	703	1162	0.228	265	272	0.2	0.3	4.011	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1128	282	134	1141	0.989	1107	849	15.2	20.6	67.197	F
2 - Moydrum Road	99	25	1104	103	0.956	93	136	4.1	5.7	224.684	F
3 - R916	755	189	246	824	0.917	750	951	7.4	8.6	43.885	E
4 - To Site	265	66	718	1153	0.230	265	278	0.3	0.3	4.053	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	921	230	110	1152	0.800	986	723	20.6	4.4	27.855	D
2 - Moydrum Road	81	20	977	115	0.700	91	119	5.7	3.0	160.486	F
3 - R916	616	154	224	831	0.742	638	844	8.6	3.1	20.505	C
4 - To Site	217	54	617	1215	0.178	217	246	0.3	0.2	3.606	A

2026 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D5 - 2026 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	77.47	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D5	2026 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D4+D10+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1049	100.000
2 - Moydrum Road		ONE HOUR	✓	90	100.000
3 - R916		ONE HOUR	✓	697	100.000
4 - To Site		ONE HOUR	✓	296	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	87	762	191
	2 - Moydrum Road	40	1	35	14
	3 - R916	582	26	1	87
	4 - To Site	184	12	100	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	**2 - Moydrum Road**	**3 - R916**	**4 - To Site**
	1 - N6	0	10	10	8
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.02	95.87	31.5	F	1049	1049
2 - Moydrum Road	0.98	261.99	6.6	F	90	90
3 - R916	0.94	56.90	11.3	F	697	697
4 - To Site	0.28	4.68	0.4	A	296	296

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	943	236	125	1145	0.823	933	726	2.3	4.6	17.886	C
2 - Moydrum Road	81	20	946	118	0.683	77	112	1.0	1.9	89.692	F
3 - R916	626	157	225	831	0.754	621	799	1.7	3.1	18.329	C
4 - To Site	266	66	586	1234	0.215	266	260	0.2	0.3	4.006	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1154	289	152	1132	1.020	1089	871	4.6	21.1	55.371	F
2 - Moydrum Road	99	25	1109	103	0.961	88	132	1.9	4.7	181.686	F
3 - R916	767	192	260	819	0.937	742	937	3.1	9.3	41.898	E
4 - To Site	326	81	698	1166	0.279	325	305	0.3	0.4	4.617	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1154	289	153	1132	1.020	1113	887	21.1	31.5	95.870	F
2 - Moydrum Road	99	25	1132	101	0.981	92	134	4.7	6.6	261.990	F
3 - R916	767	192	267	816	0.939	759	956	9.3	11.3	56.895	F
4 - To Site	326	81	714	1156	0.282	326	312	0.4	0.4	4.676	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	943	236	127	1144	0.824	1044	763	31.5	6.1	52.765	F
2 - Moydrum Road	81	20	1049	109	0.743	90	123	6.6	4.2	212.325	F
3 - R916	626	157	253	821	0.763	656	885	11.3	3.9	27.253	D
4 - To Site	266	66	623	1211	0.220	266	286	0.4	0.3	4.110	A

2028 do nothing, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D6 - 2028 do nothing, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	77.25	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D6	2028 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2028+D13+D15

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1057	100.000
2 - Moydrum Road		ONE HOUR	✓	93	100.000
3 - R916		ONE HOUR	✓	707	100.000
4 - To Site		ONE HOUR	✓	245	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	90	788	171
	2 - Moydrum Road	42	1	36	14
	3 - R916	602	27	1	78
	4 - To Site	150	12	83	0

Vehicle Mix

TRL THE FUTURE OF TRANSPORT

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	**1 - N6**	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	7	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.02	92.48	30.8	F	1057	1057
2 - Moydrum Road	1.00	261.64	6.8	F	93	93
3 - R916	0.95	55.66	11.3	F	707	707
4 - To Site	0.24	4.13	0.3	A	245	245

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	950	237	111	1151	0.825	941	714	2.1	4.3	16.464	C
2 - Moydrum Road	83	21	937	119	0.699	80	116	1.0	1.8	84.761	F
3 - R916	636	159	208	836	0.760	630	808	1.6	3.0	17.056	C
4 - To Site	220	55	605	1222	0.180	220	233	0.2	0.2	3.591	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1163	291	135	1140	1.020	1099	855	4.3	20.5	52.804	F
2 - Moydrum Road	102	25	1098	104	0.980	90	136	1.8	4.8	177.315	F
3 - R916	778	195	241	825	0.944	753	947	3.0	9.2	40.412	E
4 - To Site	270	67	721	1151	0.234	269	274	0.2	0.3	4.081	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1163	291	136	1140	1.021	1122	871	20.5	30.8	92.477	F
2 - Moydrum Road	102	25	1119	102	1.000	94	139	4.8	6.8	261.637	F
3 - R916	778	195	248	823	0.946	770	966	9.2	11.3	55.661	F
4 - To Site	270	67	737	1141	0.236	270	280	0.3	0.3	4.129	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	950	237	113	1151	0.826	1051	752	30.8	5.5	49.445	E
2 - Moydrum Road	83	21	1037	110	0.759	93	126	6.8	4.3	213.920	F
3 - R916	636	159	235	827	0.769	666	896	11.3	3.6	25.673	D
4 - To Site	220	55	644	1198	0.184	220	257	0.3	0.2	3.685	A

2028 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D7 - 2028 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	109.84	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D7	2028 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D6+D10+D11+D12

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1090	100.000
2 - Moydrum Road		ONE HOUR	✓	93	100.000
3 - R916		ONE HOUR	✓	722	100.000
4 - To Site		ONE HOUR	✓	343	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	90	788	204
	2 - Moydrum Road	42	1	36	14
	3 - R916	602	27	1	93
	4 - To Site	216	12	115	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.08	149.97	54.7	F	1095	1095
2 - Moydrum Road	1.04	304.92	7.9	F	93	93
3 - R916	0.98	76.45	16.4	F	725	725
4 - To Site	0.35	4.80	0.5	A	360	360

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	984	246	145	1136	0.867	972	782	2.5	5.6	20.508	C
2 - Moydrum Road	83	21	1002	113	0.737	79	115	1.0	2.1	95.956	F
3 - R916	652	163	241	825	0.790	645	840	1.8	3.4	19.317	C
4 - To Site	324	81	604	1223	0.265	323	282	0.3	0.4	3.999	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1205	301	177	1121	1.075	1099	931	5.6	32.1	74.436	F
2 - Moydrum Road	102	25	1143	100	1.022	88	132	2.1	5.5	201.482	F
3 - R916	798	200	272	815	0.980	763	960	3.4	12.2	50.125	F
4 - To Site	396	99	711	1157	0.342	396	324	0.4	0.5	4.723	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1205	301	178	1120	1.076	1115	948	32.1	54.7	149.974	F
2 - Moydrum Road	102	25	1158	98	1.036	92	135	5.5	7.9	304.918	F
3 - R916	798	200	278	813	0.982	782	973	12.2	16.4	76.449	F
4 - To Site	396	99	729	1146	0.346	396	330	0.5	0.5	4.799	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	984	246	148	1134	0.868	1114	832	54.7	22.2	128.210	F
2 - Moydrum Road	83	21	1133	101	0.826	88	129	7.9	6.7	288.261	F
3 - R916	652	163	275	814	0.801	699	946	16.4	4.6	38.713	E
4 - To Site	324	81	656	1191	0.272	324	318	0.5	0.4	4.156	A

TRL THE FUTURE OF TRANSPORT

2039 do nothing, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D8 - 2039 do nothing, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	156.10	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D8	2039 do nothing	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2039+D13+D15

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1148	100.000
2 - Moydrum Road		ONE HOUR	✓	101	100.000
3 - R916		ONE HOUR	✓	768	100.000
4 - To Site		ONE HOUR	✓	256	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	9	98	859	182
	2 - Moydrum Road	45	1	39	15
	3 - R916	656	29	1	81
	4 - To Site	157	12	87	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	9
	4 - To Site	7	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.11	199.36	74.7	F	1148	1148
2 - Moydrum Road	1.10	384.84	10.5	F	101	101
3 - R916	1.03	112.17	27.0	F	768	768
4 - To Site	0.25	4.31	0.3	A	256	256

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1032	258	117	1149	0.898	1015	770	2.8	7.0	24.285	C
2 - Moydrum Road	90	23	1007	113	0.803	85	125	1.2	2.6	111.849	F
3 - R916	690	173	220	832	0.830	682	872	2.1	4.3	22.645	C
4 - To Site	230	58	657	1191	0.194	230	245	0.2	0.2	3.747	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1264	316	141	1137	1.111	1123	900	7.0	42.2	91.141	F
2 - Moydrum Road	111	28	1124	102	1.089	93	141	2.6	7.0	236.243	F
3 - R916	846	211	243	824	1.026	791	974	4.3	17.8	64.903	F
4 - To Site	282	71	759	1128	0.250	282	275	0.2	0.3	4.253	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1264	316	142	1137	1.112	1134	917	42.2	74.7	194.267	F
2 - Moydrum Road	111	28	1134	101	1.099	97	142	7.0	10.5	371.595	F
3 - R916	846	211	247	823	1.027	809	984	17.8	27.0	112.175	F
4 - To Site	282	71	777	1117	0.253	282	279	0.3	0.3	4.311	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1032	258	121	1147	0.900	1132	852	74.7	49.7	199.359	F
2 - Moydrum Road	90	23	1114	103	0.881	92	138	10.5	10.0	384.840	F
3 - R916	690	173	244	824	0.838	772	962	27.0	6.6	75.275	F
4 - To Site	230	58	742	1139	0.202	231	274	0.3	0.3	3.965	A

2039 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D9 - 2039 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	221.64	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D9	2039 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D8+D10+D11+D12

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1181	100.000
2 - Moydrum Road		ONE HOUR	✓	101	100.000
3 - R916		ONE HOUR	✓	783	100.000
4 - To Site		ONE HOUR	✓	354	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	9	98	859	215
	2 - Moydrum Road	45	1	39	15
	3 - R916	656	29	1	96
	4 - To Site	223	12	119	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.17	318.51	105.9	F	1186	1186
2 - Moydrum Road	1.13	449.87	11.7	F	101	101
3 - R916	1.06	148.66	37.8	F	786	786
4 - To Site	0.36	5.00	0.6	A	371	371

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1066	267	151	1133	0.941	1040	837	3.3	9.9	31.974	D
2 - Moydrum Road	90	23	1067	107	0.845	84	124	1.3	3.0	127.758	F
3 - R916	707	177	251	822	0.860	695	899	2.3	5.1	26.342	D
4 - To Site	334	83	654	1192	0.280	333	293	0.3	0.4	4.189	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1306	326	182	1118	1.168	1111	969	9.9	58.6	122.470	F
2 - Moydrum Road	111	28	1157	98	1.124	92	136	3.0	7.8	264.443	F
3 - R916	865	216	270	816	1.061	793	979	5.1	23.2	79.567	F
4 - To Site	409	102	744	1138	0.359	408	319	0.4	0.6	4.932	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1306	326	183	1118	1.168	1117	983	58.6	105.9	272.388	F
2 - Moydrum Road	111	28	1163	98	1.130	95	137	7.8	11.7	417.460	F
3 - R916	865	216	273	814	1.063	807	985	23.2	37.8	148.659	F
4 - To Site	409	102	758	1129	0.362	409	323	0.6	0.6	4.998	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1066	267	155	1131	0.943	1120	923	105.9	92.4	318.510	F
2 - Moydrum Road	90	23	1141	100	0.904	91	134	11.7	11.6	449.868	F
3 - R916	707	177	271	815	0.867	794	961	37.8	15.9	127.049	F
4 - To Site	334	83	744	1137	0.294	334	321	0.6	0.4	4.489	A

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TRL THE FUTURE OF TRANSPORT

Residential Development + Creche, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D10 - Residential Development + Creche, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.95	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D10	Residential Development + Creche	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	18	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	8	100.000
4 - To Site		ONE HOUR	✓	52	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	18
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	8
	4 - To Site	35	0	17	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.02	3.37	0.0	A	18	18
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	4.45	0.0	A	8	8
4 - To Site	0.04	2.58	0.0	A	52	52

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	16	4	15	1196	0.014	16	31	0.0	0.0	3.355	A
2 - Moydrum Road	0	0	31	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	7	2	16	900	0.008	7	15	0.0	0.0	4.433	A
4 - To Site	47	12	0	1593	0.029	47	23	0.0	0.0	2.561	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	20	5	19	1194	0.017	20	39	0.0	0.0	3.370	A
2 - Moydrum Road	0	0	39	203	0.000	0	0	0.0	0.0	0.000	A
3 - R916	9	2	20	899	0.010	9	19	0.0	0.0	4.447	A
4 - To Site	57	14	0	1593	0.036	57	29	0.0	0.0	2.578	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	20	5	19	1194	0.017	20	39	0.0	0.0	3.370	A
2 - Moydrum Road	0	0	39	203	0.000	0	0	0.0	0.0	0.000	A
3 - R916	9	2	20	899	0.010	9	19	0.0	0.0	4.447	A
4 - To Site	57	14	0	1593	0.036	57	29	0.0	0.0	2.578	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	16	4	15	1196	0.014	16	31	0.0	0.0	3.358	A
2 - Moydrum Road	0	0	31	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	7	2	16	900	0.008	7	15	0.0	0.0	4.433	A
4 - To Site	47	12	0	1593	0.029	47	23	0.0	0.0	2.561	A

Student Accomodation, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D11 - Student Accomodation, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D11	Student Accomodation	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	6	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	3	100.000
4 - To Site		ONE HOUR	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	6
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	3
	4 - To Site	2	0	1	0

Vehicle Mix

35

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.01	3.01	0.0	A	6	6
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.00	0.00	0.0	A	0	0

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	5	1	0	1203	0.004	5	0	0.0	0.0	3.005	A
2 - Moydrum Road	0	0	5	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	5	904	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	5	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	7	2	0	1203	0.005	7	0	0.0	0.0	3.008	A
2 - Moydrum Road	0	0	7	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	7	903	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	7	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	7	2	0	1203	0.005	7	0	0.0	0.0	3.008	A
2 - Moydrum Road	0	0	7	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	7	903	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	7	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	5	1	0	1203	0.004	5	0	0.0	0.0	3.005	A
2 - Moydrum Road	0	0	5	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	5	904	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	5	0.0	0.0	0.000	A

Adjacent Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D12 - Adjacent Development, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D12	Adjacent Development	AM	ONE HOUR	07:45	09:15	15	✔	✔

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✔	9	100.000
2 - Moydrum Road		ONE HOUR	✔	0	100.000
3 - R916		ONE HOUR	✔	4	100.000
4 - To Site		ONE HOUR	✔	43	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	9
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	4
	4 - To Site	29	0	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.01	3.34	0.0	A	9	9
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.03	2.56	0.0	A	43	43

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	8	2	13	1197	0.007	8	26	0.0	0.0	3.329	A
2 - Moydrum Road	0	0	21	205	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	8	903	0.000	0	13	0.0	0.0	0.000	A
4 - To Site	39	10	0	1593	0.024	39	8	0.0	0.0	2.547	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	10	2	15	1196	0.008	10	32	0.0	0.0	3.338	A
2 - Moydrum Road	0	0	25	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	10	902	0.000	0	15	0.0	0.0	0.000	A
4 - To Site	47	12	0	1593	0.030	47	10	0.0	0.0	2.562	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	10	2	15	1196	0.008	10	32	0.0	0.0	3.338	A
2 - Moydrum Road	0	0	25	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	10	902	0.000	0	15	0.0	0.0	0.000	A
4 - To Site	47	12	0	1593	0.030	47	10	0.0	0.0	2.562	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	8	2	13	1197	0.007	8	26	0.0	0.0	3.329	A
2 - Moydrum Road	0	0	21	205	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	8	903	0.000	0	13	0.0	0.0	0.000	A
4 - To Site	39	10	0	1593	0.024	39	8	0.0	0.0	2.547	A

Petrol Station 167155, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D13 - Petrol Station 167155, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	4.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D13	Petrol Station 167155	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	31	100.000
2 - Moydrum Road		ONE HOUR	✓	6	100.000
3 - R916		ONE HOUR	✓	25	100.000
4 - To Site		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	31
	2 - Moydrum Road	0	0	0	6
	3 - R916	0	0	0	25
	4 - To Site	31	6	25	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.03	3.43	0.0	A	31	31
2 - Moydrum Road	0.03	20.38	0.0	C	6	6
3 - R916	0.03	4.58	0.0	A	25	25
4 - To Site	0.04	2.60	0.0	A	62	62

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	1190	0.023	28	28	0.0	0.0	3.406	A
2 - Moydrum Road	5	1	50	202	0.027	5	5	0.0	0.0	20.139	C
3 - R916	22	6	33	895	0.025	22	22	0.0	0.0	4.540	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	1187	0.029	34	34	0.0	0.0	3.433	A
2 - Moydrum Road	7	2	62	201	0.033	7	7	0.0	0.0	20.372	C
3 - R916	28	7	41	892	0.031	27	28	0.0	0.0	4.580	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	1187	0.029	34	34	0.0	0.0	3.433	A
2 - Moydrum Road	7	2	62	201	0.033	7	7	0.0	0.0	20.379	C
3 - R916	28	7	41	892	0.031	28	28	0.0	0.0	4.580	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	1190	0.023	28	28	0.0	0.0	3.409	A
2 - Moydrum Road	5	1	50	202	0.027	5	5	0.0	0.0	20.149	C
3 - R916	22	6	33	895	0.025	23	22	0.0	0.0	4.540	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

ABP-309513-21 Phase 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D14 - ABP-309513-21 Phase 1, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D14	ABP-309513-21 Phase 1	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	5	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	3	100.000
4 - To Site		ONE HOUR	✓	15	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	5
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	3
	4 - To Site	10	0	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.00	3.01	0.0	A	5	5
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.01	2.28	0.0	A	15	15

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	4	1	4	1201	0.004	4	9	0.0	0.0	3.008	A
2 - Moydrum Road	0	0	9	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	4	904	0.000	0	4	0.0	0.0	0.000	A
4 - To Site	13	3	0	1593	0.008	13	4	0.0	0.0	2.279	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	1	6	1200	0.005	6	11	0.0	0.0	3.011	A
2 - Moydrum Road	0	0	11	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	6	0.0	0.0	0.000	A
4 - To Site	17	4	0	1593	0.010	17	6	0.0	0.0	2.283	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	1	6	1200	0.005	6	11	0.0	0.0	3.011	A
2 - Moydrum Road	0	0	11	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	6	0.0	0.0	0.000	A
4 - To Site	17	4	0	1593	0.010	17	6	0.0	0.0	2.283	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	4	1	4	1201	0.004	4	9	0.0	0.0	3.010	A
2 - Moydrum Road	0	0	9	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	4	904	0.000	0	4	0.0	0.0	0.000	A
4 - To Site	13	3	0	1593	0.008	13	4	0.0	0.0	2.281	A

TRL THE FUTURE OF TRANSPORT

ABP-309513-21 Phase 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D15 - ABP-309513-21 Phase 2, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, AM	Demand Set relationships are chained. This may slow down the file.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D15	ABP-309513-21 Phase 2	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	22	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	11	100.000
4 - To Site		ONE HOUR	✓	57	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	22
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	11
	4 - To Site	38	0	19	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.02	3.08	0.0	A	22	22
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	4.06	0.0	A	11	11
4 - To Site	0.04	2.35	0.0	A	57	57

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	20	5	17	1195	0.017	20	34	0.0	0.0	3.062	A
2 - Moydrum Road	0	0	37	203	0.000	0	0	0.0	0.0	0.000	A
3 - R916	10	2	20	899	0.011	10	17	0.0	0.0	4.048	A
4 - To Site	51	13	0	1593	0.032	51	30	0.0	0.0	2.335	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	24	6	21	1193	0.020	24	42	0.0	0.0	3.078	A
2 - Moydrum Road	0	0	45	202	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	24	898	0.013	12	21	0.0	0.0	4.065	A
4 - To Site	63	16	0	1593	0.039	63	36	0.0	0.0	2.352	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	24	6	21	1193	0.020	24	42	0.0	0.0	3.078	A
2 - Moydrum Road	0	0	45	202	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	24	898	0.013	12	21	0.0	0.0	4.065	A
4 - To Site	63	16	0	1593	0.039	63	36	0.0	0.0	2.352	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	20	5	17	1195	0.017	20	34	0.0	0.0	3.064	A
2 - Moydrum Road	0	0	37	203	0.000	0	0	0.0	0.0	0.000	A
3 - R916	10	2	20	899	0.011	10	17	0.0	0.0	4.048	A
4 - To Site	51	13	0	1593	0.032	51	30	0.0	0.0	2.335	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: Residential area - PM - Copy (2).j9
Path: C:\Users\multiuser\Desktop\J9 FILES\211_035 Athlone
Report generation date: 26/11/2021 10:44:11

»**2021 do nothing, PM**
»**2024 do nothing, PM**
»**2024 do something, PM**
»**2026 do nothing, PM**
»**2026 do something, PM**
»**2028 do nothing, PM**
»**2028 do something, PM**
»**2039 do nothing, PM**
»**2039 do something, PM**
»**Residential Development + Creche, PM**
»**Student Accomodation, PM**
»**Adjacent Development, PM**
»**Petrol Station 167155, PM**
»**ABP-309513-21 Phase 1, PM**
»**ABP-309513-21 Phase 2, PM**

Summary of junction performance

		PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2021 do nothing					
1 - N6	D1	2.7	14.41	0.71	B
2 - Moydrum Road		1.9	96.36	0.66	F
3 - R916		1.9	7.96	0.64	A
4 - To Site		0.1	4.25	0.12	A
2024 do nothing					
1 - N6	D2	4.8	22.89	0.84	C
2 - Moydrum Road		3.6	161.01	0.85	F
3 - R916		2.7	10.01	0.73	B
4 - To Site		0.3	4.51	0.21	A
2024 do something					
1 - N6	D3	6.2	28.73	0.87	D
2 - Moydrum Road		4.0	176.04	0.87	F
3 - R916		3.0	11.07	0.75	B
4 - To Site		0.3	4.70	0.24	A
2026 do nothing					
1 - N6	D4	8.3	37.33	0.91	E
2 - Moydrum Road		4.8	206.67	0.92	F
3 - R916		3.5	12.49	0.78	B

4 - To Site		0.3	4.87	0.25	A
2026 do something					
1 - N6	D5	12.4	53.64	0.95	F
2 - Moydrum Road		5.4	230.72	0.95	F
3 - R916		4.1	14.44	0.81	B
4 - To Site		0.4	5.14	0.29	A
2028 do nothing					
1 - N6	D6	10.8	47.24	0.94	E
2 - Moydrum Road		5.8	238.95	0.96	F
3 - R916		4.0	14.12	0.81	B
4 - To Site		0.4	5.04	0.26	A
2028 do something					
1 - N6	D7	23.4	89.79	1.01	F
2 - Moydrum Road		6.8	280.61	1.00	F
3 - R916		5.4	18.59	0.85	C
4 - To Site		0.5	5.49	0.33	A
2039 do nothing					
1 - N6	D8	26.4	98.48	1.02	F
2 - Moydrum Road		9.3	350.59	1.08	F
3 - R916		6.6	21.73	0.88	C
4 - To Site		0.4	5.55	0.29	A
2039 do something					
1 - N6	D9	52.4	173.37	1.09	F
2 - Moydrum Road		10.2	404.75	1.10	F
3 - R916		9.7	31.62	0.92	D
4 - To Site		0.6	6.10	0.36	A
Residential Development + Creche					
1 - N6	D10	0.0	4.13	0.03	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.56	0.01	A
4 - To Site		0.0	2.53	0.02	A
Student Accomodation					
1 - N6	D11	0.0	0.00	0.00	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	2.27	0.00	A
Adjacent Development					
1 - N6	D12	0.0	4.10	0.02	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.80	0.01	A
4 - To Site		0.0	2.52	0.01	A
Petrol Station 167155					
1 - N6	D13	0.0	4.19	0.03	A
2 - Moydrum Road		0.0	25.89	0.04	D
3 - R916		0.0	2.85	0.02	A
4 - To Site		0.0	2.60	0.04	A
ABP-309513-21 Phase 1					
1 - N6	D14	0.0	3.68	0.01	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.52	0.00	A
4 - To Site		0.0	2.27	0.01	A
ABP-309513-21 Phase 2					
1 - N6	D15	0.1	3.85	0.05	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.60	0.02	A
4 - To Site		0.0	2.33	0.03	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	31/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ORS\multiuser
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D1	2021 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D2	2024 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2024+D13+D14
D3	2024 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D2+D10
D4	2026 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2026+D13+D15
D5	2026 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D4+D10+D11
D6	2028 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2028+D13+D15
D7	2028 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D6+D10+D11+D12
D8	2039 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2039+D13+D15
D9	2039 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D8+D10+D11+D12
D10	Residential Development + Creche	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D11	Student Accomodation	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D12	Adjacent Development	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D13	Petrol Station 167155	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D14	ABP-309513-21 Phase 1	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D15	ABP-309513-21 Phase 2	PM	ONE HOUR	16:45	18:15	15	✓	✓		

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G2021			1.0320
G2024			1.0830
G2026			1.1180
G2028			1.1550
G2039			1.2600

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

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

2021 do nothing, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D1 - 2021 do nothing, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	14.11	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	N6	
2	Moydrum Road	
3	R916	
4	To Site	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - N6	4.50	6.60	5.1	23.0	38.0	34.0	
2 - Moydrum Road	2.60	4.70	13.4	20.0	38.0	29.0	
3 - R916	3.70	6.60	35.0	21.0	38.0	37.0	
4 - To Site	3.00	8.50	14.5	20.0	38.0	42.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - N6	0.629	1626
2 - Moydrum Road	0.550	1216
3 - R916	0.655	1776
4 - To Site	0.612	1593

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - N6	Percentage		61.00
2 - Moydrum Road	Percentage		13.50
3 - R916	Percentage		81.00
4 - To Site	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2021 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	623	100.000
2 - Moydrum Road		ONE HOUR	✓	70	100.000
3 - R916		ONE HOUR	✓	790	100.000
4 - To Site		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	68	484	67
	2 - Moydrum Road	43	0	18	9
	3 - R916	723	33	0	34
	4 - To Site	67	9	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.71	14.41	2.7	B	623	623
2 - Moydrum Road	0.66	96.36	1.9	F	70	70
3 - R916	0.64	7.96	1.9	A	790	790
4 - To Site	0.12	4.25	0.1	A	110	110

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	560	140	68	966	0.580	558	750	1.0	1.5	9.668	A
2 - Moydrum Road	63	16	528	125	0.504	62	99	0.7	1.0	61.117	F
3 - R916	710	178	109	1380	0.515	709	480	0.8	1.2	5.885	A
4 - To Site	99	25	720	1152	0.086	99	98	0.1	0.1	3.758	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	686	171	83	960	0.715	681	917	1.5	2.6	13.987	B
2 - Moydrum Road	77	19	644	116	0.663	74	120	1.0	1.7	87.845	F
3 - R916	870	217	133	1368	0.636	867	586	1.2	1.9	7.857	A
4 - To Site	121	30	880	1054	0.115	121	120	0.1	0.1	4.242	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	686	171	84	960	0.715	686	921	2.6	2.7	14.408	B
2 - Moydrum Road	77	19	648	116	0.664	76	121	1.7	1.9	96.360	F
3 - R916	870	217	135	1367	0.636	870	590	1.9	1.9	7.962	A
4 - To Site	121	30	884	1052	0.115	121	121	0.1	0.1	4.254	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	560	140	69	965	0.580	565	757	2.7	1.6	9.981	A
2 - Moydrum Road	63	16	534	125	0.505	66	100	1.9	1.3	69.679	F
3 - R916	710	178	113	1378	0.515	713	486	1.9	1.2	5.976	A
4 - To Site	99	25	726	1148	0.086	99	100	0.1	0.1	3.777	A

TRL THE FUTURE OF TRANSPORT

2024 do nothing, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D2 - 2024 do nothing, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	20.97	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D2	2024 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2024+D13+D14

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	717	100.000
2 - Moydrum Road		ONE HOUR	✓	82	100.000
3 - R916		ONE HOUR	✓	886	100.000
4 - To Site		ONE HOUR	✓	190	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	74	524	115
	2 - Moydrum Road	47	0	19	16
	3 - R916	783	36	0	67
	4 - To Site	110	16	65	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	9
	4 - To Site	9	10	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.84	22.89	4.8	C	717	717
2 - Moydrum Road	0.85	161.01	3.6	F	82	82
3 - R916	0.73	10.01	2.7	B	886	886
4 - To Site	0.21	4.51	0.3	A	190	190

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	644	161	104	952	0.677	641	845	1.3	2.0	11.481	B
2 - Moydrum Road	74	18	634	117	0.628	71	112	0.9	1.4	74.888	F
3 - R916	796	199	161	1353	0.588	794	544	0.9	1.4	6.419	A
4 - To Site	171	43	779	1116	0.153	171	176	0.1	0.2	3.808	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	789	197	128	943	0.837	779	1031	2.0	4.5	20.808	C
2 - Moydrum Road	90	23	770	107	0.842	84	137	1.4	3.0	128.472	F
3 - R916	975	244	193	1336	0.730	970	661	1.4	2.6	9.716	A
4 - To Site	209	52	949	1012	0.207	209	214	0.2	0.3	4.482	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	789	197	128	943	0.837	788	1037	4.5	4.8	22.893	C
2 - Moydrum Road	90	23	778	106	0.847	88	138	3.0	3.6	161.014	F
3 - R916	975	244	197	1334	0.731	975	669	2.6	2.7	10.013	B
4 - To Site	209	52	956	1008	0.208	209	216	0.3	0.3	4.509	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	644	161	105	951	0.677	655	856	4.8	2.2	12.527	B
2 - Moydrum Road	74	18	646	116	0.633	80	114	3.6	2.1	107.681	F
3 - R916	796	199	169	1349	0.590	801	556	2.7	1.5	6.629	A
4 - To Site	171	43	790	1109	0.154	171	180	0.3	0.2	3.838	A

TRL THE FUTURE OF TRANSPORT

2024 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D3 - 2024 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	24.03	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D3	2024 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D2+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	744	100.000
2 - Moydrum Road		ONE HOUR	✓	82	100.000
3 - R916		ONE HOUR	✓	903	100.000
4 - To Site		ONE HOUR	✓	218	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	74	524	142
	2 - Moydrum Road	47	0	19	16
	3 - R916	783	36	0	84
	4 - To Site	129	16	74	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	7
	4 - To Site	9	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.87	28.73	6.2	D	745	745
2 - Moydrum Road	0.87	176.04	4.0	F	82	82
3 - R916	0.75	11.07	3.0	B	903	903
4 - To Site	0.24	4.70	0.3	A	219	219

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	669	167	112	949	0.706	666	863	1.4	2.3	12.566	B
2 - Moydrum Road	74	18	666	115	0.641	71	112	0.9	1.5	78.375	F
3 - R916	811	203	186	1340	0.606	809	552	1.0	1.5	6.756	A
4 - To Site	197	49	779	1116	0.177	197	216	0.2	0.2	3.914	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	820	205	138	939	0.873	806	1052	2.3	5.7	24.902	C
2 - Moydrum Road	90	23	808	104	0.865	83	136	1.5	3.2	137.875	F
3 - R916	994	248	222	1320	0.753	988	669	1.5	2.9	10.655	B
4 - To Site	241	60	948	1012	0.238	241	262	0.2	0.3	4.665	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	820	205	138	939	0.873	818	1059	5.7	6.2	28.726	D
2 - Moydrum Road	90	23	818	103	0.871	87	138	3.2	4.0	176.038	F
3 - R916	994	248	228	1318	0.754	993	678	2.9	3.0	11.074	B
4 - To Site	241	60	955	1008	0.239	241	266	0.3	0.3	4.695	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	669	167	113	948	0.706	684	875	6.2	2.5	14.305	B
2 - Moydrum Road	74	18	683	113	0.648	81	114	4.0	2.2	119.567	F
3 - R916	811	203	196	1334	0.608	817	567	3.0	1.6	7.033	A
4 - To Site	197	49	791	1109	0.178	197	222	0.3	0.2	3.954	A

TRL THE FUTURE OF TRANSPORT

2026 do nothing, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - 2026 do nothing, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	29.27	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D4	2026 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2026+D13+D15

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	774	100.000
2 - Moydrum Road		ONE HOUR	✓	84	100.000
3 - R916		ONE HOUR	✓	931	100.000
4 - To Site		ONE HOUR	✓	228	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	76	541	152
	2 - Moydrum Road	48	0	20	16
	3 - R916	808	37	0	86
	4 - To Site	135	16	77	0

Vehicle Mix

TRL THE FUTURE OF TRANSPORT

Heavy Vehicle Percentages

From		To			
		1 - N6	**2 - Moydrum Road**	**3 - R916**	**4 - To Site**
	1 - N6	0	10	10	7
From	**2 - Moydrum Road**	10	0	10	10
	3 - R916	10	10	0	7
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.91	37.33	8.3	E	774	774
2 - Moydrum Road	0.92	206.67	4.8	F	84	84
3 - R916	0.78	12.49	3.5	B	931	931
4 - To Site	0.25	4.87	0.3	A	228	228

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	695	174	117	947	0.734	691	891	1.5	2.6	13.822	B
2 - Moydrum Road	76	19	692	113	0.672	73	115	1.0	1.7	84.726	F
3 - R916	837	209	195	1335	0.627	835	570	1.1	1.6	7.165	A
4 - To Site	205	51	803	1101	0.186	205	227	0.2	0.2	4.015	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	852	213	143	937	0.909	833	1085	2.6	7.3	30.194	D
2 - Moydrum Road	93	23	836	102	0.909	84	140	1.7	3.7	155.017	F
3 - R916	1025	256	233	1315	0.780	1019	687	1.6	3.3	11.872	B
4 - To Site	251	63	977	994	0.252	251	274	0.2	0.3	4.838	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	852	213	143	937	0.909	848	1093	7.3	8.3	37.325	E
2 - Moydrum Road	93	23	849	101	0.918	88	142	3.7	4.8	206.668	F
3 - R916	1025	256	239	1312	0.782	1025	699	3.3	3.5	12.493	B
4 - To Site	251	63	985	989	0.254	251	278	0.3	0.3	4.874	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	695	174	117	947	0.735	717	906	8.3	2.9	16.912	C
2 - Moydrum Road	76	19	716	111	0.682	84	118	4.8	2.7	146.287	F
3 - R916	837	209	209	1327	0.631	844	591	3.5	1.7	7.550	A
4 - To Site	205	51	818	1092	0.188	205	235	0.3	0.2	4.062	A

2026 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D5 - 2026 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	36.94	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D5	2026 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D4+D10+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	805	100.000
2 - Moydrum Road		ONE HOUR	✓	84	100.000
3 - R916		ONE HOUR	✓	951	100.000
4 - To Site		ONE HOUR	✓	262	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	76	541	183
	2 - Moydrum Road	48	0	20	16
	3 - R916	808	37	0	106
	4 - To Site	158	16	88	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	6
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.95	53.64	12.4	F	806	806
2 - Moydrum Road	0.95	230.72	5.4	F	84	84
3 - R916	0.81	14.44	4.1	B	951	951
4 - To Site	0.29	5.14	0.4	A	263	263

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	724	181	127	943	0.768	719	913	1.7	3.1	15.641	C
2 - Moydrum Road	76	19	730	110	0.689	73	115	1.0	1.7	89.724	F
3 - R916	855	214	223	1320	0.648	852	579	1.1	1.8	7.658	A
4 - To Site	236	59	803	1101	0.215	236	273	0.2	0.3	4.160	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	887	222	155	932	0.951	859	1110	3.1	10.2	38.715	E
2 - Moydrum Road	93	23	874	99	0.935	84	139	1.7	4.1	167.936	F
3 - R916	1047	262	264	1298	0.807	1039	693	1.8	3.9	13.467	B
4 - To Site	290	72	976	996	0.291	289	328	0.3	0.4	5.092	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	887	222	155	932	0.951	878	1119	10.2	12.4	53.640	F
2 - Moydrum Road	93	23	892	98	0.947	87	141	4.1	5.4	230.715	F
3 - R916	1047	262	272	1294	0.809	1047	707	3.9	4.1	14.435	B
4 - To Site	290	72	985	990	0.292	290	334	0.4	0.4	5.139	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	724	181	127	943	0.768	760	930	12.4	3.6	22.672	C
2 - Moydrum Road	76	19	767	107	0.707	85	120	5.4	3.1	171.711	F
3 - R916	855	214	242	1310	0.653	864	610	4.1	1.9	8.217	A
4 - To Site	236	59	820	1091	0.217	237	286	0.4	0.3	4.218	A

TRL THE FUTURE OF TRANSPORT

2028 do nothing, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D6 - 2028 do nothing, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	35.22	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D6	2028 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2028+D13+D15

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	797	100.000
2 - Moydrum Road		ONE HOUR	✓	87	100.000
3 - R916		ONE HOUR	✓	960	100.000
4 - To Site		ONE HOUR	✓	232	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	5	79	559	154
	2 - Moydrum Road	50	0	21	16
	3 - R916	835	38	0	87
	4 - To Site	137	16	78	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	7
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.94	47.24	10.8	E	797	797
2 - Moydrum Road	0.96	238.95	5.8	F	87	87
3 - R916	0.81	14.12	4.0	B	960	960
4 - To Site	0.26	5.04	0.4	A	232	232

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	716	179	119	946	0.757	711	919	1.6	2.9	14.986	B
2 - Moydrum Road	78	20	711	111	0.701	75	119	1.0	1.8	91.167	F
3 - R916	863	216	199	1333	0.648	861	587	1.1	1.8	7.583	A
4 - To Site	209	52	830	1085	0.192	208	230	0.2	0.2	4.106	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	877	219	146	936	0.937	852	1117	2.9	9.1	35.541	E
2 - Moydrum Road	96	24	854	101	0.950	86	144	1.8	4.3	172.196	F
3 - R916	1057	264	235	1314	0.805	1049	705	1.8	3.8	13.222	B
4 - To Site	255	64	1008	976	0.262	255	277	0.2	0.4	4.991	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	877	219	146	936	0.937	870	1126	9.1	10.8	47.242	E
2 - Moydrum Road	96	24	871	99	0.961	90	146	4.3	5.8	238.948	F
3 - R916	1057	264	242	1310	0.807	1057	718	3.8	4.0	14.122	B
4 - To Site	255	64	1017	970	0.263	255	282	0.4	0.4	5.036	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	716	179	120	946	0.757	746	936	10.8	3.3	20.228	C
2 - Moydrum Road	78	20	743	109	0.716	88	123	5.8	3.3	179.789	F
3 - R916	863	216	216	1324	0.652	872	615	4.0	1.9	8.106	A
4 - To Site	209	52	847	1074	0.194	209	240	0.4	0.2	4.165	A

2028 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D7 - 2028 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	54.44	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D7	2028 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D6+D10+D11+D12

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	849	100.000
2 - Moydrum Road		ONE HOUR	✓	87	100.000
3 - R916		ONE HOUR	✓	993	100.000
4 - To Site		ONE HOUR	✓	286	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	5	79	559	206
	2 - Moydrum Road	50	0	21	16
	3 - R916	835	38	0	120
	4 - To Site	174	16	95	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	6
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.01	89.79	23.4	F	850	850
2 - Moydrum Road	1.00	280.61	6.8	F	87	87
3 - R916	0.85	18.59	5.4	C	993	993
4 - To Site	0.33	5.49	0.5	A	287	287

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	764	191	134	940	0.812	756	952	2.0	3.9	18.779	C
2 - Moydrum Road	78	20	772	107	0.731	74	119	1.1	2.0	100.538	F
3 - R916	893	223	245	1308	0.683	890	601	1.3	2.1	8.533	A
4 - To Site	258	65	829	1085	0.238	258	306	0.2	0.3	4.347	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	935	234	164	929	1.007	886	1155	3.9	16.3	54.378	F
2 - Moydrum Road	96	24	909	97	0.989	84	141	2.0	4.9	194.156	F
3 - R916	1094	273	285	1287	0.850	1082	708	2.1	5.0	16.648	C
4 - To Site	316	79	1004	978	0.323	315	363	0.3	0.5	5.425	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	935	234	165	928	1.007	907	1166	16.3	23.4	89.789	F
2 - Moydrum Road	96	24	928	95	1.004	88	144	4.9	6.8	280.613	F
3 - R916	1094	273	293	1283	0.853	1092	723	5.0	5.4	18.586	C
4 - To Site	316	79	1015	971	0.325	316	370	0.5	0.5	5.493	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	764	191	135	940	0.813	837	974	23.4	5.0	46.298	E
2 - Moydrum Road	78	20	846	101	0.770	87	127	6.8	4.6	238.455	F
3 - R916	893	223	275	1292	0.691	905	658	5.4	2.3	9.583	A
4 - To Site	258	65	850	1072	0.241	259	330	0.5	0.3	4.427	A

TRL THE FUTURE OF TRANSPORT

2039 do nothing, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D8 - 2039 do nothing, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	63.28	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D8	2039 do nothing	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2039+D13+D15

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	862	100.000
2 - Moydrum Road		ONE HOUR	✓	94	100.000
3 - R916		ONE HOUR	✓	1043	100.000
4 - To Site		ONE HOUR	✓	244	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	5	86	610	161
	2 - Moydrum Road	54	0	23	17
	3 - R916	911	42	0	91
	4 - To Site	144	17	82	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	**2 - Moydrum Road**	**3 - R916**	**4 - To Site**
From	**1 - N6**	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	7
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.02	98.48	26.4	F	862	862
2 - Moydrum Road	1.08	350.59	9.3	F	94	94
3 - R916	0.88	21.73	6.6	C	1043	1043
4 - To Site	0.29	5.55	0.4	A	244	244

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	775	194	126	943	0.822	767	996	2.1	4.1	19.490	C
2 - Moydrum Road	85	21	764	107	0.788	80	129	1.3	2.5	113.918	F
3 - R916	938	234	209	1328	0.707	934	635	1.4	2.3	9.059	A
4 - To Site	219	55	903	1040	0.211	219	240	0.2	0.3	4.383	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	949	237	154	933	1.018	894	1205	4.1	17.9	57.808	F
2 - Moydrum Road	104	26	895	98	1.062	89	153	2.5	6.3	229.122	F
3 - R916	1149	287	240	1311	0.876	1134	744	2.3	6.1	18.877	C
4 - To Site	268	67	1091	925	0.290	268	282	0.3	0.4	5.474	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	949	237	155	932	1.018	915	1218	17.9	26.4	98.475	F
2 - Moydrum Road	104	26	914	96	1.077	92	156	6.3	9.3	350.587	F
3 - R916	1149	287	246	1308	0.878	1147	759	6.1	6.6	21.734	C
4 - To Site	268	67	1105	916	0.293	268	288	0.4	0.4	5.553	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	775	194	127	943	0.822	859	1021	26.4	5.5	55.462	F
2 - Moydrum Road	85	21	847	101	0.836	92	139	9.3	7.4	333.467	F
3 - R916	938	234	236	1313	0.714	954	703	6.6	2.6	10.429	B
4 - To Site	219	55	929	1024	0.214	220	261	0.4	0.3	4.477	A

2039 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D9 - 2039 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	97.57	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D9	2039 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D8+D10+D11+D12

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	914	100.000
2 - Moydrum Road		ONE HOUR	✓	94	100.000
3 - R916		ONE HOUR	✓	1076	100.000
4 - To Site		ONE HOUR	✓	298	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	5	86	610	213
	2 - Moydrum Road	54	0	23	17
	3 - R916	911	42	0	124
	4 - To Site	181	17	99	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	**2 - Moydrum Road**	**3 - R916**	**4 - To Site**
From	**1 - N6**	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	6
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.09	173.37	52.4	F	915	915
2 - Moydrum Road	1.10	404.75	10.2	F	94	94
3 - R916	0.92	31.62	9.7	D	1076	1076
4 - To Site	0.36	6.10	0.6	A	299	299

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	823	206	141	937	0.877	809	1029	2.5	5.9	25.692	D
2 - Moydrum Road	85	21	822	103	0.822	79	129	1.4	2.8	126.690	F
3 - R916	968	242	254	1304	0.742	963	647	1.5	2.8	10.413	B
4 - To Site	268	67	902	1041	0.258	268	315	0.2	0.3	4.658	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1007	252	173	926	1.088	908	1239	5.9	30.8	86.669	F
2 - Moydrum Road	104	26	931	95	1.092	87	149	2.8	6.9	252.009	F
3 - R916	1185	296	284	1288	0.920	1162	735	2.8	8.5	24.989	C
4 - To Site	329	82	1084	929	0.354	328	362	0.3	0.5	5.978	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1007	252	173	925	1.089	921	1257	30.8	52.4	173.371	F
2 - Moydrum Road	104	26	943	94	1.102	90	151	6.9	10.2	390.001	F
3 - R916	1185	296	289	1285	0.922	1180	744	8.5	9.7	31.622	D
4 - To Site	329	82	1101	919	0.358	329	368	0.5	0.6	6.103	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	823	206	143	937	0.878	919	1060	52.4	28.2	160.971	F
2 - Moydrum Road	85	21	922	96	0.885	86	140	10.2	10.0	404.751	F
3 - R916	968	242	286	1287	0.752	994	722	9.7	3.2	13.271	B
4 - To Site	268	67	934	1021	0.263	269	346	0.6	0.4	4.794	A

TRL THE FUTURE OF TRANSPORT

Residential Development + Creche, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D10 - Residential Development + Creche, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D10	Residential Development + Creche	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	27	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	17	100.000
4 - To Site		ONE HOUR	✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	27
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	17
	4 - To Site	19	0	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	10	0
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.03	4.13	0.0	A	27	27
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	2.56	0.0	A	17	17
4 - To Site	0.02	2.53	0.0	A	28	28

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	24	6	8	989	0.025	24	17	0.0	0.0	4.106	A
2 - Moydrum Road	0	0	32	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	15	4	24	1426	0.011	15	8	0.0	0.0	2.552	A
4 - To Site	25	6	0	1593	0.016	25	40	0.0	0.0	2.525	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	30	7	10	988	0.030	30	21	0.0	0.0	4.132	A
2 - Moydrum Road	0	0	40	161	0.000	0	0	0.0	0.0	0.000	A
3 - R916	19	5	30	1423	0.013	19	10	0.0	0.0	2.563	A
4 - To Site	31	8	0	1593	0.019	31	48	0.0	0.0	2.535	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	30	7	10	988	0.030	30	21	0.0	0.0	4.132	A
2 - Moydrum Road	0	0	40	161	0.000	0	0	0.0	0.0	0.000	A
3 - R916	19	5	30	1423	0.013	19	10	0.0	0.0	2.563	A
4 - To Site	31	8	0	1593	0.019	31	48	0.0	0.0	2.535	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	24	6	8	989	0.025	24	17	0.0	0.0	4.106	A
2 - Moydrum Road	0	0	32	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	15	4	24	1425	0.011	15	8	0.0	0.0	2.552	A
4 - To Site	25	6	0	1593	0.016	25	40	0.0	0.0	2.526	A

Student Accomodation, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D11 - Student Accomodation, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.27	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D11	Student Accomodation	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	4	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	3	100.000
4 - To Site		ONE HOUR	✓	6	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	4
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	3
	4 - To Site	4	0	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.00	0.00	0.0	A	0	0
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.00	2.27	0.0	A	6	6

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	2	991	0.000	0	4	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	2	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	2	0.0	0.0	0.000	A
4 - To Site	5	1	0	1593	0.003	5	0	0.0	0.0	2.267	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	2	991	0.000	0	4	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	2	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	2	0.0	0.0	0.000	A
4 - To Site	7	2	0	1593	0.004	7	0	0.0	0.0	2.269	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	2	991	0.000	0	4	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	2	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	2	0.0	0.0	0.000	A
4 - To Site	7	2	0	1593	0.004	7	0	0.0	0.0	2.269	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	2	991	0.000	0	4	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	2	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	2	0.0	0.0	0.000	A
4 - To Site	5	1	0	1593	0.003	5	0	0.0	0.0	2.267	A

Adjacent Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D12 - Adjacent Development, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.20	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D12	Adjacent Development	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	21	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	13	100.000
4 - To Site		ONE HOUR	✓	20	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	21
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	13
	4 - To Site	14	0	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	**2 - Moydrum Road**	**3 - R916**	**4 - To Site**
From	**1 - N6**	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.02	4.10	0.0	A	21	21
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	2.80	0.0	A	13	13
4 - To Site	0.01	2.52	0.0	A	20	20

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	19	5	5	990	0.019	19	13	0.0	0.0	4.078	A
2 - Moydrum Road	0	0	24	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	19	1428	0.008	12	5	0.0	0.0	2.794	A
4 - To Site	18	4	0	1593	0.011	18	31	0.0	0.0	2.514	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	23	6	7	989	0.023	23	15	0.0	0.0	4.098	A
2 - Moydrum Road	0	0	30	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	14	4	23	1426	0.010	14	7	0.0	0.0	2.804	A
4 - To Site	22	6	0	1593	0.014	22	37	0.0	0.0	2.520	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	23	6	7	989	0.023	23	15	0.0	0.0	4.098	A
2 - Moydrum Road	0	0	30	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	14	4	23	1426	0.010	14	7	0.0	0.0	2.804	A
4 - To Site	22	6	0	1593	0.014	22	37	0.0	0.0	2.520	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	19	5	5	990	0.019	19	13	0.0	0.0	4.079	A
2 - Moydrum Road	0	0	24	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	19	1428	0.008	12	5	0.0	0.0	2.796	A
4 - To Site	18	4	0	1593	0.011	18	31	0.0	0.0	2.514	A

Petrol Station 167155, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D13 - Petrol Station 167155, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	4.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D13	Petrol Station 167155	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	31	100.000
2 - Moydrum Road		ONE HOUR	✓	6	100.000
3 - R916		ONE HOUR	✓	25	100.000
4 - To Site		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	31
	2 - Moydrum Road	0	0	0	6
	3 - R916	0	0	0	25
	4 - To Site	31	6	25	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.03	4.19	0.0	A	31	31
2 - Moydrum Road	0.04	25.89	0.0	D	6	6
3 - R916	0.02	2.85	0.0	A	25	25
4 - To Site	0.04	2.60	0.0	A	62	62

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	981	0.028	28	28	0.0	0.0	4.154	A
2 - Moydrum Road	5	1	50	160	0.034	5	5	0.0	0.0	25.539	D
3 - R916	22	6	33	1421	0.016	22	22	0.0	0.0	2.831	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	979	0.035	34	34	0.0	0.0	4.192	A
2 - Moydrum Road	7	2	62	160	0.041	7	7	0.0	0.0	25.877	D
3 - R916	28	7	41	1417	0.019	28	28	0.0	0.0	2.849	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	979	0.035	34	34	0.0	0.0	4.192	A
2 - Moydrum Road	7	2	62	160	0.041	7	7	0.0	0.0	25.890	D
3 - R916	28	7	41	1417	0.019	28	28	0.0	0.0	2.849	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	981	0.028	28	28	0.0	0.0	4.156	A
2 - Moydrum Road	5	1	50	160	0.034	5	5	0.0	0.0	25.559	D
3 - R916	22	6	33	1421	0.016	22	22	0.0	0.0	2.833	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

TRL THE FUTURE OF TRANSPORT

ABP-309513-21 Phase 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D14 - ABP-309513-21 Phase 1, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D14	ABP-309513-21 Phase 1	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	11	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	5	100.000
4 - To Site		ONE HOUR	✓	9	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	11
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	5
	4 - To Site	6	0	3	0

Vehicle Mix

Heavy Vehicle Percentages

From			To		
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.01	3.68	0.0	A	11	11
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	2.52	0.0	A	5	5
4 - To Site	0.01	2.27	0.0	A	9	9

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	10	2	3	991	0.010	10	5	0.0	0.0	3.669	A
2 - Moydrum Road	0	0	13	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	4	1	10	1433	0.003	4	3	0.0	0.0	2.519	A
4 - To Site	8	2	0	1593	0.005	8	14	0.0	0.0	2.271	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	12	3	3	990	0.012	12	7	0.0	0.0	3.678	A
2 - Moydrum Road	0	0	15	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	6	1	12	1432	0.004	6	3	0.0	0.0	2.523	A
4 - To Site	10	2	0	1593	0.006	10	18	0.0	0.0	2.274	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	12	3	3	990	0.012	12	7	0.0	0.0	3.678	A
2 - Moydrum Road	0	0	15	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	6	1	12	1432	0.004	6	3	0.0	0.0	2.523	A
4 - To Site	10	2	0	1593	0.006	10	18	0.0	0.0	2.274	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	10	2	3	991	0.010	10	5	0.0	0.0	3.669	A
2 - Moydrum Road	0	0	13	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	4	1	10	1433	0.003	4	3	0.0	0.0	2.521	A
4 - To Site	8	2	0	1593	0.005	8	14	0.0	0.0	2.271	A

TRL THE FUTURE OF TRANSPORT

ABP-309513-21 Phase 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D15 - ABP-309513-21 Phase 2, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Demand Set Relationship	D3 - 2024 do something, PM	Demand Set relationships are chained. This may slow down the file.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D15	ABP-309513-21 Phase 2	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	46	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	23	100.000
4 - To Site		ONE HOUR	✓	43	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	46
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	23
	4 - To Site	29	0	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.05	3.85	0.1	A	46	46
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.02	2.60	0.0	A	23	23
4 - To Site	0.03	2.33	0.0	A	43	43

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	41	10	13	987	0.042	41	26	0.0	0.0	3.806	A
2 - Moydrum Road	0	0	54	160	0.000	0	0	0.0	0.0	0.000	A
3 - R916	21	5	41	1416	0.015	21	13	0.0	0.0	2.578	A
4 - To Site	39	10	0	1593	0.024	39	62	0.0	0.0	2.316	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	51	13	15	986	0.051	51	32	0.0	0.1	3.849	A
2 - Moydrum Road	0	0	66	159	0.000	0	0	0.0	0.0	0.000	A
3 - R916	25	6	51	1412	0.018	25	15	0.0	0.0	2.596	A
4 - To Site	47	12	0	1593	0.030	47	76	0.0	0.0	2.329	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	51	13	15	986	0.051	51	32	0.1	0.1	3.849	A
2 - Moydrum Road	0	0	66	159	0.000	0	0	0.0	0.0	0.000	A
3 - R916	25	6	51	1412	0.018	25	15	0.0	0.0	2.596	A
4 - To Site	47	12	0	1593	0.030	47	76	0.0	0.0	2.329	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	41	10	13	987	0.042	41	26	0.1	0.0	3.806	A
2 - Moydrum Road	0	0	54	160	0.000	0	0	0.0	0.0	0.000	A
3 - R916	21	5	41	1416	0.015	21	13	0.0	0.0	2.580	A
4 - To Site	39	10	0	1593	0.024	39	62	0.0	0.0	2.316	A

TRL THE FUTURE OF TRANSPORT

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: Residential area - AM.j9
Path: C:\Users\multiuser\Desktop\J9 FILES\211_035 Athlone\75-25
Report generation date: 26/11/2021 10:49:20

»**2021 base flows, AM**
»**2024 do something, AM**
»**2026 do something, AM**
»**2028 do something, AM**
»**2039 do something, AM**
»**Residential Development + Creche, AM**
»**Student Accomodation, AM**
»**Adjacent Development, AM**
»**Petrol Station 167155, AM**
»**ABP-309513-21 Phase 1, AM**
»**ABP-309513-21 Phase 2, AM**

Summary of junction performance

		AM			
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2021 base flows					
1 - N6	D1	4.7	18.28	0.82	C
2 - Moydrum Road		2.0	95.11	0.68	F
3 - R916		3.2	18.71	0.75	C
4 - To Site		0.1	3.68	0.10	A
2024 do something					
1 - N6	D2	13.6	47.60	0.95	E
2 - Moydrum Road		4.6	189.92	0.91	F
3 - R916		6.6	34.60	0.88	D
4 - To Site		0.3	3.97	0.22	A
2026 do something					
1 - N6	D3	41.0	117.11	1.05	F
2 - Moydrum Road		7.3	281.29	1.02	F
3 - R916		13.6	65.32	0.96	F
4 - To Site		0.4	4.36	0.28	A
2028 do something					
1 - N6	D4	47.9	133.80	1.06	F
2 - Moydrum Road		7.6	295.16	1.03	F
3 - R916		14.8	70.10	0.97	F
4 - To Site		0.5	4.62	0.32	A
2039 do something					
1 - N6		97.7	286.98	1.15	F

2 - Moydrum Road	D5	11.4	434.85	1.12	F
3 - R916		34.6	138.09	1.05	F
4 - To Site		0.5	4.81	0.34	A
Residential Development + Creche					
1 - N6	D6	0.0	3.35	0.01	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	4.43	0.01	A
4 - To Site		0.0	2.55	0.03	A
Student Accomodation					
1 - N6	D7	0.0	3.00	0.00	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	0.00	0.00	A
Adjacent Development					
1 - N6	D8	0.0	3.33	0.01	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	2.54	0.02	A
Petrol Station 167155					
1 - N6	D9	0.0	3.43	0.03	A
2 - Moydrum Road		0.0	20.38	0.03	C
3 - R916		0.0	4.58	0.03	A
4 - To Site		0.0	2.60	0.04	A
ABP-309513-21 Phase 1					
1 - N6	D10	0.0	3.01	0.00	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	2.28	0.01	A
ABP-309513-21 Phase 2					
1 - N6	D11	0.0	3.08	0.02	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	4.06	0.01	A
4 - To Site		0.0	2.35	0.04	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	31/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ORS\multiuser
Description	

Units

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

2

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D1	2021 base flows	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D2	2024 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2024+D6+D9+D10
D3	2026 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2028+D6+D7+D9+D11
D4	2028 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2028+D6+D7+D8+D9+D11
D5	2039 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2039+D6+D7+D8+D9+D11
D6	Residential Development + Creche	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D7	Student Accomodation	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D8	Adjacent Development	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D9	Petrol Station 167155	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D10	ABP-309513-21 Phase 1	AM	ONE HOUR	07:45	09:15	15	✓	✓		
D11	ABP-309513-21 Phase 2	AM	ONE HOUR	07:45	09:15	15	✓	✓		

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G2021			1.0320
G2024			1.0830
G2026			1.1180
G2028			1.1550
G2039			1.2600

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

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

2021 base flows, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D1 - 2021 base flows, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	20.99	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	N6	
2	Moydrum Road	
3	R916	
4	To Site	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - N6	4.50	6.60	5.1	23.0	38.0	34.0	
2 - Moydrum Road	2.60	4.70	13.4	20.0	38.0	29.0	
3 - R916	3.70	6.60	35.0	21.0	38.0	37.0	
4 - To Site	3.00	8.50	14.5	20.0	38.0	42.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - N6	0.629	1626
2 - Moydrum Road	0.550	1216
3 - R916	0.655	1776
4 - To Site	0.612	1593

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - N6	Percentage		74.00
2 - Moydrum Road	Percentage		17.00
3 - R916	Percentage		51.00
4 - To Site	Percentage		100.00

4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2021 base flows	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	869	100.000
2 - Moydrum Road		ONE HOUR	✓	75	100.000
3 - R916		ONE HOUR	✓	581	100.000
4 - To Site		ONE HOUR	✓	109	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	7	78	682	102
	2 - Moydrum Road	36	1	31	7
	3 - R916	521	23	1	36
	4 - To Site	70	5	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.82	18.28	4.7	C	869	869
2 - Moydrum Road	0.68	95.11	2.0	F	75	75
3 - R916	0.75	18.71	3.2	C	581	581
4 - To Site	0.10	3.68	0.1	A	109	109

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	781	195	57	1176	0.664	778	567	1.3	2.1	9.858	A
2 - Moydrum Road	67	17	740	138	0.490	66	96	0.6	1.0	54.250	F
3 - R916	522	131	136	860	0.607	520	669	1.1	1.6	11.570	B
4 - To Site	98	24	527	1270	0.077	98	130	0.1	0.1	3.377	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	957	239	70	1170	0.817	947	691	2.1	4.5	17.034	C
2 - Moydrum Road	83	21	901	122	0.674	79	117	1.0	1.8	84.956	F
3 - R916	640	160	165	850	0.752	634	815	1.6	3.1	17.801	C
4 - To Site	120	30	641	1200	0.100	120	158	0.1	0.1	3.665	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	957	239	70	1170	0.818	956	697	4.5	4.7	18.282	C
2 - Moydrum Road	83	21	909	122	0.678	82	118	1.8	2.0	95.113	F
3 - R916	640	160	168	850	0.753	639	823	3.1	3.2	18.712	C
4 - To Site	120	30	648	1196	0.100	120	159	0.1	0.1	3.678	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	781	195	58	1176	0.664	791	577	4.7	2.2	10.517	B
2 - Moydrum Road	67	17	751	136	0.494	71	97	2.0	1.2	62.643	F
3 - R916	522	131	141	859	0.608	528	681	3.2	1.8	12.180	B
4 - To Site	98	24	537	1264	0.078	98	132	0.1	0.1	3.398	A

TRL THE FUTURE OF TRANSPORT

2024 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D2 - 2024 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	44.31	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D2	2024 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2024+D6+D9+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	990	100.000
2 - Moydrum Road		ONE HOUR	✓	87	100.000
3 - R916		ONE HOUR	✓	663	100.000
4 - To Site		ONE HOUR	✓	234	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	84	739	159
	2 - Moydrum Road	39	1	34	14
	3 - R916	564	25	1	73
	4 - To Site	143	11	80	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	9	10	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.95	47.60	13.6	E	990	990
2 - Moydrum Road	0.91	189.92	4.6	F	87	87
3 - R916	0.88	34.60	6.6	D	663	663
4 - To Site	0.22	3.97	0.3	A	236	236

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	890	223	107	1153	0.772	884	674	1.7	3.2	13.102	B
2 - Moydrum Road	78	20	882	124	0.631	76	109	0.8	1.4	70.958	F
3 - R916	596	149	196	840	0.710	592	762	1.4	2.3	14.306	B
4 - To Site	212	53	569	1244	0.171	212	219	0.2	0.2	3.486	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1090	273	131	1142	0.954	1058	815	3.2	11.1	34.170	D
2 - Moydrum Road	96	24	1058	108	0.891	88	131	1.4	3.5	140.075	F
3 - R916	730	183	232	828	0.882	716	913	2.3	5.9	28.931	D
4 - To Site	260	65	686	1173	0.222	260	263	0.2	0.3	3.940	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1090	273	131	1142	0.955	1080	827	11.1	13.6	47.601	E
2 - Moydrum Road	96	24	1078	106	0.907	92	133	3.5	4.6	189.915	F
3 - R916	730	183	239	826	0.884	728	931	5.9	6.6	34.604	D
4 - To Site	260	65	698	1166	0.223	260	268	0.3	0.3	3.974	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	890	223	108	1153	0.772	930	696	13.6	3.6	18.593	C
2 - Moydrum Road	78	20	924	120	0.652	88	114	4.6	2.3	122.009	F
3 - R916	596	149	211	835	0.714	612	801	6.6	2.6	17.128	C
4 - To Site	212	53	592	1230	0.172	213	231	0.3	0.2	3.537	A

TRL THE FUTURE OF TRANSPORT

2026 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D3 - 2026 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	92.06	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D3	2026 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2028+D6+D7+D9+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1075	100.000
2 - Moydrum Road		ONE HOUR	✓	93	100.000
3 - R916		ONE HOUR	✓	715	100.000
4 - To Site		ONE HOUR	✓	287	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	90	788	189
	2 - Moydrum Road	42	1	36	14
	3 - R916	602	27	1	86
	4 - To Site	178	12	97	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	**1 - N6**	0	10	10	8
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.05	117.11	41.0	F	1076	1076
2 - Moydrum Road	1.02	281.29	7.3	F	93	93
3 - R916	0.96	65.32	13.6	F	716	716
4 - To Site	0.28	4.36	0.4	A	289	289

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	967	242	125	1145	0.844	957	740	2.3	4.8	18.164	C
2 - Moydrum Road	83	21	966	116	0.716	80	115	1.0	1.9	89.510	F
3 - R916	644	161	225	831	0.775	638	821	1.7	3.2	18.126	C
4 - To Site	260	65	605	1223	0.212	259	258	0.2	0.3	3.737	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1184	296	151	1133	1.046	1102	883	4.8	25.5	62.139	F
2 - Moydrum Road	102	25	1119	102	0.999	89	134	1.9	5.1	187.839	F
3 - R916	788	197	257	820	0.962	759	951	3.2	10.6	45.049	E
4 - To Site	318	80	716	1154	0.276	318	300	0.3	0.4	4.302	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1184	296	152	1132	1.046	1122	900	25.5	41.0	117.107	F
2 - Moydrum Road	102	25	1138	100	1.017	93	137	5.1	7.3	281.294	F
3 - R916	788	197	264	818	0.964	776	967	10.6	13.6	65.323	F
4 - To Site	318	80	734	1143	0.278	318	306	0.4	0.4	4.361	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	967	242	127	1144	0.845	1102	783	41.0	7.3	80.270	F
2 - Moydrum Road	83	21	1099	104	0.801	90	129	7.3	5.6	253.380	F
3 - R916	644	161	258	819	0.786	682	931	13.6	4.1	31.114	D
4 - To Site	260	65	649	1195	0.217	260	291	0.4	0.3	3.852	A

2028 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - 2028 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	100.70	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D4	2028 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2028+D6+D7+D8+D9+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1082	100.000
2 - Moydrum Road		ONE HOUR	✓	93	100.000
3 - R916		ONE HOUR	✓	718	100.000
4 - To Site		ONE HOUR	✓	320	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	8	90	788	196
	2 - Moydrum Road	42	1	36	14
	3 - R916	602	27	1	89
	4 - To Site	200	12	108	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.06	133.80	47.9	F	1085	1085
2 - Moydrum Road	1.03	295.16	7.6	F	93	93
3 - R916	0.97	70.10	14.8	F	720	720
4 - To Site	0.32	4.62	0.5	A	332	332

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	975	244	137	1139	0.856	964	765	2.4	5.2	19.331	C
2 - Moydrum Road	83	21	986	115	0.727	79	115	1.0	2.0	92.961	F
3 - R916	647	162	233	828	0.782	641	832	1.8	3.3	18.653	C
4 - To Site	298	75	604	1223	0.244	298	269	0.2	0.3	3.892	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1194	299	167	1125	1.061	1100	912	5.2	28.8	68.394	F
2 - Moydrum Road	102	25	1133	101	1.012	89	133	2.0	5.3	195.538	F
3 - R916	793	198	264	817	0.970	761	958	3.3	11.3	47.265	E
4 - To Site	365	91	714	1155	0.316	365	311	0.3	0.5	4.550	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1194	299	168	1125	1.062	1118	930	28.8	47.9	133.805	F
2 - Moydrum Road	102	25	1150	99	1.028	93	136	5.3	7.6	295.157	F
3 - R916	793	198	270	815	0.972	779	972	11.3	14.8	70.099	F
4 - To Site	365	91	732	1145	0.319	365	317	0.5	0.5	4.619	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	975	244	139	1138	0.857	1115	811	47.9	13.0	104.002	F
2 - Moydrum Road	83	21	1125	102	0.820	88	130	7.6	6.4	275.866	F
3 - R916	647	162	267	817	0.793	689	946	14.8	4.3	34.237	D
4 - To Site	298	75	652	1194	0.250	299	305	0.5	0.3	4.026	A

2039 do something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D5 - 2039 do something, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	204.38	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D5	2039 do something	AM	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*G2039+D6+D7+D8+D9+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	1173	100.000
2 - Moydrum Road		ONE HOUR	✓	101	100.000
3 - R916		ONE HOUR	✓	779	100.000
4 - To Site		ONE HOUR	✓	331	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	9	98	859	207
	2 - Moydrum Road	45	1	39	15
	3 - R916	656	29	1	92
	4 - To Site	207	12	112	0

Vehicle Mix

TRL THE FUTURE OF TRANSPORT

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.15	286.98	97.7	F	1176	1176
2 - Moydrum Road	1.12	434.85	11.4	F	101	101
3 - R916	1.05	138.09	34.6	F	781	781
4 - To Site	0.34	4.81	0.5	A	343	343

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1057	264	143	1137	0.930	1034	820	3.2	9.0	29.729	D
2 - Moydrum Road	90	23	1052	108	0.834	84	124	1.3	2.9	123.608	F
3 - R916	702	176	243	824	0.852	692	893	2.2	4.9	25.253	D
4 - To Site	309	77	655	1192	0.259	308	280	0.3	0.3	4.072	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1295	324	173	1123	1.153	1114	953	9.0	54.2	113.823	F
2 - Moydrum Road	111	28	1150	99	1.115	92	137	2.9	7.6	257.338	F
3 - R916	860	215	263	818	1.052	793	978	4.9	21.7	75.343	F
4 - To Site	378	95	748	1135	0.333	377	308	0.3	0.5	4.749	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1295	324	174	1122	1.154	1121	968	54.2	97.7	251.474	F
2 - Moydrum Road	111	28	1156	99	1.122	95	138	7.6	11.4	406.024	F
3 - R916	860	215	266	817	1.053	808	985	21.7	34.6	138.088	F
4 - To Site	378	95	763	1126	0.336	378	311	0.5	0.5	4.815	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	1057	264	147	1134	0.932	1123	914	97.7	81.2	286.983	F
2 - Moydrum Road	90	23	1135	101	0.898	91	136	11.4	11.2	434.850	F
3 - R916	702	176	264	817	0.859	798	962	34.6	10.7	111.276	F
4 - To Site	309	77	752	1132	0.273	309	310	0.5	0.4	4.375	A

Residential Development + Creche, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D6 - Residential Development + Creche, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D6	Residential Development + Creche	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	13	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	6	100.000
4 - To Site		ONE HOUR	✓	39	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	13
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	6
	4 - To Site	26	0	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.01	3.35	0.0	A	13	13
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	4.43	0.0	A	6	6
4 - To Site	0.03	2.55	0.0	A	39	39

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	12	3	12	1198	0.010	12	23	0.0	0.0	3.338	A
2 - Moydrum Road	0	0	23	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	5	1	12	902	0.006	5	12	0.0	0.0	4.417	A
4 - To Site	35	9	0	1593	0.022	35	17	0.0	0.0	2.542	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	14	4	14	1196	0.012	14	29	0.0	0.0	3.349	A
2 - Moydrum Road	0	0	29	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	7	2	14	901	0.007	7	14	0.0	0.0	4.427	A
4 - To Site	43	11	0	1593	0.027	43	21	0.0	0.0	2.554	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	14	4	14	1196	0.012	14	29	0.0	0.0	3.349	A
2 - Moydrum Road	0	0	29	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	7	2	14	901	0.007	7	14	0.0	0.0	4.427	A
4 - To Site	43	11	0	1593	0.027	43	21	0.0	0.0	2.554	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	12	3	12	1198	0.010	12	23	0.0	0.0	3.341	A
2 - Moydrum Road	0	0	23	204	0.000	0	0	0.0	0.0	0.000	A
3 - R916	5	1	12	902	0.006	5	12	0.0	0.0	4.417	A
4 - To Site	35	9	0	1593	0.022	35	17	0.0	0.0	2.542	A

Student Accomodation, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D7 - Student Accomodation, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D7	Student Accomodation	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	5	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	2	100.000
4 - To Site		ONE HOUR	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	5
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	2
	4 - To Site	2	0	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.00	3.00	0.0	A	5	5
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.00	0.00	0.0	A	0	0

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	4	1	0	1203	0.004	4	0	0.0	0.0	3.002	A
2 - Moydrum Road	0	0	4	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	4	904	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	4	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	1	0	1203	0.005	6	0	0.0	0.0	3.005	A
2 - Moydrum Road	0	0	6	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	6	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	1	0	1203	0.005	6	0	0.0	0.0	3.005	A
2 - Moydrum Road	0	0	6	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	6	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	4	1	0	1203	0.004	4	0	0.0	0.0	3.005	A
2 - Moydrum Road	0	0	4	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	4	904	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	4	0.0	0.0	0.000	A

Adjacent Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D8 - Adjacent Development, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D8	Adjacent Development	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	7	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	3	100.000
4 - To Site		ONE HOUR	✓	33	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	7
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	3
	4 - To Site	22	0	11	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.01	3.33	0.0	A	7	7
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.02	2.54	0.0	A	33	33

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	2	10	1198	0.005	6	20	0.0	0.0	3.320	A
2 - Moydrum Road	0	0	16	205	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	10	0.0	0.0	0.000	A
4 - To Site	30	7	0	1593	0.019	30	6	0.0	0.0	2.533	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	8	2	12	1197	0.006	8	24	0.0	0.0	3.327	A
2 - Moydrum Road	0	0	20	205	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	8	903	0.000	0	12	0.0	0.0	0.000	A
4 - To Site	36	9	0	1593	0.023	36	8	0.0	0.0	2.544	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	8	2	12	1197	0.006	8	24	0.0	0.0	3.327	A
2 - Moydrum Road	0	0	20	205	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	8	903	0.000	0	12	0.0	0.0	0.000	A
4 - To Site	36	9	0	1593	0.023	36	8	0.0	0.0	2.544	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	2	10	1198	0.005	6	20	0.0	0.0	3.323	A
2 - Moydrum Road	0	0	16	205	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	10	0.0	0.0	0.000	A
4 - To Site	30	7	0	1593	0.019	30	6	0.0	0.0	2.533	A

TRL THE FUTURE OF TRANSPORT

Petrol Station 167155, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D9 - Petrol Station 167155, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	4.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D9	Petrol Station 167155	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	31	100.000
2 - Moydrum Road		ONE HOUR	✓	6	100.000
3 - R916		ONE HOUR	✓	25	100.000
4 - To Site		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	31
	2 - Moydrum Road	0	0	0	6
	3 - R916	0	0	0	25
	4 - To Site	31	6	25	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.03	3.43	0.0	A	31	31
2 - Moydrum Road	0.03	20.38	0.0	C	6	6
3 - R916	0.03	4.58	0.0	A	25	25
4 - To Site	0.04	2.60	0.0	A	62	62

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	1190	0.023	28	28	0.0	0.0	3.406	A
2 - Moydrum Road	5	1	50	202	0.027	5	5	0.0	0.0	20.139	C
3 - R916	22	6	33	895	0.025	22	22	0.0	0.0	4.540	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	1187	0.029	34	34	0.0	0.0	3.433	A
2 - Moydrum Road	7	2	62	201	0.033	7	7	0.0	0.0	20.372	C
3 - R916	28	7	41	892	0.031	27	28	0.0	0.0	4.580	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	1187	0.029	34	34	0.0	0.0	3.433	A
2 - Moydrum Road	7	2	62	201	0.033	7	7	0.0	0.0	20.379	C
3 - R916	28	7	41	892	0.031	28	28	0.0	0.0	4.580	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	1190	0.023	28	28	0.0	0.0	3.409	A
2 - Moydrum Road	5	1	50	202	0.027	5	5	0.0	0.0	20.149	C
3 - R916	22	6	33	895	0.025	23	22	0.0	0.0	4.540	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

ABP-309513-21 Phase 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D10 - ABP-309513-21 Phase 1, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D10	ABP-309513-21 Phase 1	AM	ONE HOUR	07:45	09:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	5	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	3	100.000
4 - To Site		ONE HOUR	✓	15	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	5
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	3
	4 - To Site	10	0	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.00	3.01	0.0	A	5	5
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.01	2.28	0.0	A	15	15

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	4	1	4	1201	0.004	4	9	0.0	0.0	3.008	A
2 - Moydrum Road	0	0	9	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	4	904	0.000	0	4	0.0	0.0	0.000	A
4 - To Site	13	3	0	1593	0.008	13	4	0.0	0.0	2.279	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	1	6	1200	0.005	6	11	0.0	0.0	3.011	A
2 - Moydrum Road	0	0	11	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	6	0.0	0.0	0.000	A
4 - To Site	17	4	0	1593	0.010	17	6	0.0	0.0	2.283	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	6	1	6	1200	0.005	6	11	0.0	0.0	3.011	A
2 - Moydrum Road	0	0	11	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	6	904	0.000	0	6	0.0	0.0	0.000	A
4 - To Site	17	4	0	1593	0.010	17	6	0.0	0.0	2.283	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	4	1	4	1201	0.004	4	9	0.0	0.0	3.010	A
2 - Moydrum Road	0	0	9	206	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	4	904	0.000	0	4	0.0	0.0	0.000	A
4 - To Site	13	3	0	1593	0.008	13	4	0.0	0.0	2.281	A

TRL THE FUTURE OF TRANSPORT

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.02	3.08	0.0	A	22	22
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	4.06	0.0	A	11	11
4 - To Site	0.04	2.35	0.0	A	57	57

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	20	5	17	1195	0.017	20	34	0.0	0.0	3.062	A
2 - Moydrum Road	0	0	37	203	0.000	0	0	0.0	0.0	0.000	A
3 - R916	10	2	20	899	0.011	10	17	0.0	0.0	4.048	A
4 - To Site	51	13	0	1593	0.032	51	30	0.0	0.0	2.335	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	24	6	21	1193	0.020	24	42	0.0	0.0	3.078	A
2 - Moydrum Road	0	0	45	202	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	24	898	0.013	12	21	0.0	0.0	4.065	A
4 - To Site	63	16	0	1593	0.039	63	36	0.0	0.0	2.352	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	24	6	21	1193	0.020	24	42	0.0	0.0	3.078	A
2 - Moydrum Road	0	0	45	202	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	24	898	0.013	12	21	0.0	0.0	4.065	A
4 - To Site	63	16	0	1593	0.039	63	36	0.0	0.0	2.352	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	20	5	17	1195	0.017	20	34	0.0	0.0	3.064	A
2 - Moydrum Road	0	0	37	203	0.000	0	0	0.0	0.0	0.000	A
3 - R916	10	2	20	899	0.011	10	17	0.0	0.0	4.048	A
4 - To Site	51	13	0	1593	0.032	51	30	0.0	0.0	2.335	A

TRL THE FUTURE OF TRANSPORT

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: Residential area - PM.j9
Path: C:\Users\multiuser\Desktop\J9 FILES\211_035 Athlone\75-25
Report generation date: 26/11/2021 10:56:53

»**2021 base flows, PM**
»**2024 do something, PM**
»**2026 do something, PM**
»**2028 do something, PM**
»**2039 do something, PM**
»**Residential Development + Creche, PM**
»**Student Accomodation, PM**
»**Adjacent Development, PM**
»**Petrol Station 167155, PM**
»**ABP-309513-21 Phase 1, PM**
»**ABP-309513-21 Phase 2, PM**

Summary of junction performance

	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
PM					
2021 base flows					
1 - N6	D1	2.7	14.41	0.71	B
2 - Moydrum Road		1.9	96.36	0.66	F
3 - R916		1.9	7.96	0.64	A
4 - To Site		0.1	4.25	0.12	A
2024 do something					
1 - N6	D2	5.8	27.06	0.86	D
2 - Moydrum Road		3.9	171.95	0.87	F
3 - R916		2.9	10.80	0.75	B
4 - To Site		0.3	4.65	0.23	A
2026 do something					
1 - N6	D3	11.1	48.72	0.94	E
2 - Moydrum Road		5.3	224.46	0.94	F
3 - R916		3.9	13.90	0.80	B
4 - To Site		0.4	5.07	0.28	A
2028 do something					
1 - N6	D4	19.2	76.66	0.99	F
2 - Moydrum Road		6.6	271.00	1.00	F
3 - R916		5.0	17.30	0.84	C
4 - To Site		0.4	5.37	0.31	A
2039 do something					
1 - N6		45.3	152.89	1.07	F

2 - Moydrum Road	D5	10.0	392.66	1.10	F
3 - R916		8.8	28.68	0.91	D
4 - To Site		0.5	5.95	0.34	A
Residential Development + Creche					
1 - N6	D6	0.0	4.10	0.02	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.80	0.01	A
4 - To Site		0.0	2.52	0.02	A
Student Accomodation					
1 - N6	D7	0.0	0.00	0.00	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	0.00	0.00	A
4 - To Site		0.0	0.00	0.00	A
Adjacent Development					
1 - N6	D8	0.0	4.07	0.02	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.79	0.01	A
4 - To Site		0.0	2.51	0.01	A
Petrol Station 167155					
1 - N6	D9	0.0	4.19	0.03	A
2 - Moydrum Road		0.0	25.89	0.04	D
3 - R916		0.0	2.85	0.02	A
4 - To Site		0.0	2.60	0.04	A
ABP-309513-21 Phase 1					
1 - N6	D10	0.0	3.68	0.01	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.52	0.00	A
4 - To Site		0.0	2.27	0.01	A
ABP-309513-21 Phase 2					
1 - N6	D11	0.1	3.85	0.05	A
2 - Moydrum Road		0.0	0.00	0.00	A
3 - R916		0.0	2.60	0.02	A
4 - To Site		0.0	2.33	0.03	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	31/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ORS\multiuser
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D1	2021 base flows	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D2	2024 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2024+D6+D9+D10
D3	2026 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2026+D6+D7+D9+D11
D4	2028 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2028+D6+D7+D8+D9+D11
D5	2039 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2039+D6+D7+D8+D9+D11
D6	Residential Development + Creche	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D7	Student Accomodation	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D8	Adjacent Development	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D9	Petrol Station 167155	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D10	ABP-309513-21 Phase 1	PM	ONE HOUR	16:45	18:15	15	✓	✓		
D11	ABP-309513-21 Phase 2	PM	ONE HOUR	16:45	18:15	15	✓	✓		

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G2021			1.0320
G2024			1.0830
G2026			1.1180
G2028			1.1550
G2039			1.2600

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

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

2021 base flows, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D1 - 2021 base flows, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	14.11	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	N6	
2	Moydrum Road	
3	R916	
4	To Site	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - N6	4.50	6.60	5.1	23.0	38.0	34.0	
2 - Moydrum Road	2.60	4.70	13.4	20.0	38.0	29.0	
3 - R916	3.70	6.60	35.0	21.0	38.0	37.0	
4 - To Site	3.00	8.50	14.5	20.0	38.0	42.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - N6	0.629	1626
2 - Moydrum Road	0.550	1216
3 - R916	0.655	1776
4 - To Site	0.612	1593

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - N6	Percentage		61.00
2 - Moydrum Road	Percentage		13.50
3 - R916	Percentage		81.00
4 - To Site	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2021 base flows	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	623	100.000
2 - Moydrum Road		ONE HOUR	✓	70	100.000
3 - R916		ONE HOUR	✓	790	100.000
4 - To Site		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	68	484	67
	2 - Moydrum Road	43	0	18	9
	3 - R916	723	33	0	34
	4 - To Site	67	9	34	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.71	14.41	2.7	B	623	623
2 - Moydrum Road	0.66	96.36	1.9	F	70	70
3 - R916	0.64	7.96	1.9	A	790	790
4 - To Site	0.12	4.25	0.1	A	110	110

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	560	140	68	966	0.580	558	750	1.0	1.5	9.668	A
2 - Moydrum Road	63	16	528	125	0.504	62	99	0.7	1.0	61.117	F
3 - R916	710	178	109	1380	0.515	709	480	0.8	1.2	5.885	A
4 - To Site	99	25	720	1152	0.086	99	98	0.1	0.1	3.758	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	686	171	83	960	0.715	681	917	1.5	2.6	13.987	B
2 - Moydrum Road	77	19	644	116	0.663	74	120	1.0	1.7	87.845	F
3 - R916	870	217	133	1368	0.636	867	586	1.2	1.9	7.857	A
4 - To Site	121	30	880	1054	0.115	121	120	0.1	0.1	4.242	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	686	171	84	960	0.715	686	921	2.6	2.7	14.408	B
2 - Moydrum Road	77	19	648	116	0.664	76	121	1.7	1.9	96.360	F
3 - R916	870	217	135	1367	0.636	870	590	1.9	1.9	7.962	A
4 - To Site	121	30	884	1052	0.115	121	121	0.1	0.1	4.254	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	560	140	69	965	0.580	565	757	2.7	1.6	9.981	A
2 - Moydrum Road	63	16	534	125	0.505	66	100	1.9	1.3	69.679	F
3 - R916	710	178	113	1378	0.515	713	486	1.9	1.2	5.976	A
4 - To Site	99	25	726	1148	0.086	99	100	0.1	0.1	3.777	A

2024 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D2 - 2024 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	23.17	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D2	2024 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2024+D6+D9+D10

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	738	100.000
2 - Moydrum Road		ONE HOUR	✓	82	100.000
3 - R916		ONE HOUR	✓	899	100.000
4 - To Site		ONE HOUR	✓	212	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	74	524	136
	2 - Moydrum Road	47	0	19	16
	3 - R916	783	36	0	80
	4 - To Site	125	16	72	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	9
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	9
	4 - To Site	9	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.86	27.06	5.8	D	738	738
2 - Moydrum Road	0.87	171.95	3.9	F	82	82
3 - R916	0.75	10.80	2.9	B	899	899
4 - To Site	0.23	4.65	0.3	A	212	212

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	663	166	111	949	0.699	660	858	1.4	2.2	12.281	B
2 - Moydrum Road	74	18	658	115	0.638	71	112	0.9	1.5	77.504	F
3 - R916	808	202	179	1343	0.601	806	550	1.0	1.5	6.672	A
4 - To Site	191	48	779	1116	0.171	190	207	0.2	0.2	3.888	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	812	203	135	940	0.864	800	1046	2.2	5.4	23.779	C
2 - Moydrum Road	90	23	799	105	0.859	83	136	1.5	3.2	135.523	F
3 - R916	989	247	215	1324	0.747	984	667	1.5	2.8	10.413	B
4 - To Site	234	58	949	1012	0.231	233	250	0.2	0.3	4.620	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	812	203	136	940	0.864	811	1053	5.4	5.8	27.060	D
2 - Moydrum Road	90	23	809	104	0.865	87	138	3.2	3.9	171.952	F
3 - R916	989	247	220	1322	0.749	989	676	2.8	2.9	10.798	B
4 - To Site	234	58	956	1008	0.232	234	254	0.3	0.3	4.649	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	663	166	111	949	0.699	677	871	5.8	2.4	13.807	B
2 - Moydrum Road	74	18	674	114	0.645	80	114	3.9	2.2	116.433	F
3 - R916	808	202	190	1338	0.604	813	565	2.9	1.6	6.929	A
4 - To Site	191	48	791	1109	0.172	191	212	0.3	0.2	3.924	A

2026 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D3 - 2026 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	34.68	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D3	2026 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2026+D6+D7+D9+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	798	100.000
2 - Moydrum Road		ONE HOUR	✓	84	100.000
3 - R916		ONE HOUR	✓	946	100.000
4 - To Site		ONE HOUR	✓	254	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	4	76	541	176
	2 - Moydrum Road	48	0	20	16
	3 - R916	808	37	0	101
	4 - To Site	153	16	85	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	7
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.94	48.72	11.1	E	798	798
2 - Moydrum Road	0.94	224.46	5.3	F	84	84
3 - R916	0.80	13.90	3.9	B	946	946
4 - To Site	0.28	5.07	0.4	A	254	254

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	717	179	124	944	0.759	712	907	1.7	3.0	15.141	C
2 - Moydrum Road	76	19	720	111	0.685	73	115	1.0	1.7	88.401	F
3 - R916	851	213	216	1324	0.643	848	577	1.1	1.8	7.534	A
4 - To Site	228	57	803	1101	0.207	228	261	0.2	0.3	4.122	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	878	220	151	934	0.941	853	1104	3.0	9.3	36.298	E
2 - Moydrum Road	93	23	865	100	0.928	84	139	1.7	4.0	164.601	F
3 - R916	1042	260	257	1302	0.800	1034	692	1.8	3.7	13.036	B
4 - To Site	280	70	976	995	0.281	279	314	0.3	0.4	5.024	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	878	220	152	933	0.941	871	1113	9.3	11.1	48.719	E
2 - Moydrum Road	93	23	881	99	0.940	88	141	4.0	5.3	224.459	F
3 - R916	1042	260	264	1299	0.802	1041	705	3.7	3.9	13.903	B
4 - To Site	280	70	985	990	0.283	280	320	0.4	0.4	5.068	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	717	179	125	944	0.760	748	924	11.1	3.4	20.751	C
2 - Moydrum Road	76	19	753	108	0.700	85	119	5.3	3.0	164.543	F
3 - R916	851	213	234	1314	0.647	859	604	3.9	1.9	8.034	A
4 - To Site	228	57	820	1091	0.209	229	273	0.4	0.3	4.179	A

TRL THE FUTURE OF TRANSPORT

2028 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - 2028 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	48.67	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D4	2028 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2028+D6+D7+D8+D9+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	837	100.000
2 - Moydrum Road		ONE HOUR	✓	87	100.000
3 - R916		ONE HOUR	✓	985	100.000
4 - To Site		ONE HOUR	✓	273	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	5	79	559	194
	2 - Moydrum Road	50	0	21	16
	3 - R916	835	38	0	112
	4 - To Site	165	16	91	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.99	76.66	19.2	F	837	837
2 - Moydrum Road	1.00	271.00	6.6	F	87	87
3 - R916	0.84	17.30	5.0	C	985	985
4 - To Site	0.31	5.37	0.4	A	273	273

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	752	188	131	942	0.799	745	943	1.9	3.6	17.707	C
2 - Moydrum Road	78	20	757	108	0.723	75	119	1.1	2.0	98.139	F
3 - R916	886	221	234	1314	0.674	883	598	1.2	2.0	8.281	A
4 - To Site	245	61	829	1085	0.226	245	288	0.2	0.3	4.284	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	921	230	160	930	0.990	879	1145	3.6	14.1	48.981	E
2 - Moydrum Road	96	24	897	98	0.980	85	142	2.0	4.7	189.014	F
3 - R916	1085	271	273	1293	0.839	1074	708	2.0	4.7	15.696	C
4 - To Site	301	75	1005	978	0.308	300	343	0.3	0.4	5.309	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	921	230	160	930	0.990	901	1156	14.1	19.2	76.663	F
2 - Moydrum Road	96	24	917	96	0.995	88	145	4.7	6.6	271.001	F
3 - R916	1085	271	281	1289	0.842	1084	723	4.7	5.0	17.304	C
4 - To Site	301	75	1016	971	0.310	301	349	0.4	0.4	5.369	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	752	188	132	941	0.799	811	964	19.2	4.5	35.390	E
2 - Moydrum Road	78	20	817	103	0.755	88	126	6.6	4.2	222.008	F
3 - R916	886	221	260	1301	0.681	897	645	5.0	2.2	9.156	A
4 - To Site	245	61	850	1073	0.229	246	307	0.4	0.3	4.357	A

2039 do something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D5 - 2039 do something, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	88.21	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically	Relationship type	Relationship
D5	2039 do something	PM	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D1*G2039+D6+D7+D8+D9+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	902	100.000
2 - Moydrum Road		ONE HOUR	✓	94	100.000
3 - R916		ONE HOUR	✓	1068	100.000
4 - To Site		ONE HOUR	✓	285	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	5	86	610	201
	2 - Moydrum Road	54	0	23	17
	3 - R916	911	42	0	116
	4 - To Site	172	17	95	0

Vehicle Mix

TRL THE FUTURE OF TRANSPORT

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	7
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	8
	4 - To Site	8	10	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	1.07	152.89	45.3	F	902	902
2 - Moydrum Road	1.10	392.66	10.0	F	94	94
3 - R916	0.91	28.68	8.8	D	1068	1068
4 - To Site	0.34	5.95	0.5	A	285	285

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	811	203	138	939	0.864	799	1020	2.4	5.3	23.911	C
2 - Moydrum Road	85	21	808	104	0.813	79	129	1.4	2.7	123.452	F
3 - R916	960	240	243	1309	0.734	956	645	1.5	2.6	10.050	B
4 - To Site	256	64	902	1040	0.246	255	297	0.2	0.3	4.584	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	993	248	168	927	1.071	906	1230	5.3	27.2	78.803	F
2 - Moydrum Road	104	26	924	96	1.086	87	150	2.7	6.7	246.729	F
3 - R916	1176	294	274	1293	0.910	1156	738	2.6	7.8	23.278	C
4 - To Site	313	78	1086	928	0.338	313	344	0.3	0.5	5.841	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	993	248	169	927	1.072	921	1247	27.2	45.3	152.885	F
2 - Moydrum Road	104	26	938	95	1.097	91	152	6.7	10.0	382.010	F
3 - R916	1176	294	280	1290	0.912	1172	749	7.8	8.8	28.678	D
4 - To Site	313	78	1103	918	0.341	313	349	0.5	0.5	5.954	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	811	203	139	938	0.864	918	1049	45.3	18.5	129.664	F
2 - Moydrum Road	85	21	916	96	0.881	86	141	10.0	9.7	392.662	F
3 - R916	960	240	275	1292	0.743	984	727	8.8	3.0	12.443	B
4 - To Site	256	64	931	1023	0.250	257	327	0.5	0.3	4.705	A

Residential Development + Creche, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D6 - Residential Development + Creche, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D6	Residential Development + Creche	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	21	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	13	100.000
4 - To Site		ONE HOUR	✓	22	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	21
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	13
	4 - To Site	15	0	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.02	4.10	0.0	A	21	21
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	2.80	0.0	A	13	13
4 - To Site	0.02	2.52	0.0	A	22	22

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	19	5	6	989	0.019	19	13	0.0	0.0	4.080	A
2 - Moydrum Road	0	0	25	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	19	1428	0.008	12	6	0.0	0.0	2.794	A
4 - To Site	20	5	0	1593	0.012	20	31	0.0	0.0	2.517	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	23	6	8	989	0.023	23	17	0.0	0.0	4.100	A
2 - Moydrum Road	0	0	31	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	14	4	23	1426	0.010	14	8	0.0	0.0	2.804	A
4 - To Site	24	6	0	1593	0.015	24	37	0.0	0.0	2.524	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	23	6	8	989	0.023	23	17	0.0	0.0	4.100	A
2 - Moydrum Road	0	0	31	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	14	4	23	1426	0.010	14	8	0.0	0.0	2.804	A
4 - To Site	24	6	0	1593	0.015	24	37	0.0	0.0	2.524	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	19	5	6	989	0.019	19	13	0.0	0.0	4.082	A
2 - Moydrum Road	0	0	25	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	12	3	19	1428	0.008	12	6	0.0	0.0	2.794	A
4 - To Site	20	5	0	1593	0.012	20	31	0.0	0.0	2.517	A

Student Accomodation, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D7 - Student Accomodation, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	0.00	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D7	Student Accomodation	PM	ONE HOUR	16:45	18:15	15	✔	✔

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✔	3	100.000
2 - Moydrum Road		ONE HOUR	✔	0	100.000
3 - R916		ONE HOUR	✔	2	100.000
4 - To Site		ONE HOUR	✔	4	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	3
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	2
	4 - To Site	3	0	1	0

Vehicle Mix

Heavy Vehicle Percentages

From	To	1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
	1 - N6	0	0	0	0
From	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.00	0.00	0.0	A	0	0
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	0.00	0.0	A	0	0
4 - To Site	0.00	0.00	0.0	A	0	0

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	0	992	0.000	0	0	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	0	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	0	992	0.000	0	0	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	0	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	0	992	0.000	0	0	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	0	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	0	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	0	0	0	992	0.000	0	0	0.0	0.0	0.000	A
2 - Moydrum Road	0	0	0	164	0.000	0	0	0.0	0.0	0.000	A
3 - R916	0	0	0	1438	0.000	0	0	0.0	0.0	0.000	A
4 - To Site	0	0	0	1593	0.000	0	0	0.0	0.0	0.000	A

Adjacent Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D8 - Adjacent Development, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D8	Adjacent Development	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	16	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	10	100.000
4 - To Site		ONE HOUR	✓	15	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	16
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	10
	4 - To Site	10	0	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.02	4.07	0.0	A	16	16
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.01	2.79	0.0	A	10	10
4 - To Site	0.01	2.51	0.0	A	15	15

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	14	4	4	990	0.015	14	9	0.0	0.0	4.058	A
2 - Moydrum Road	0	0	19	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	9	2	14	1431	0.006	9	4	0.0	0.0	2.784	A
4 - To Site	13	3	0	1593	0.008	13	23	0.0	0.0	2.507	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	18	4	6	990	0.018	18	11	0.0	0.0	4.073	A
2 - Moydrum Road	0	0	23	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	11	3	18	1429	0.008	11	6	0.0	0.0	2.792	A
4 - To Site	17	4	0	1593	0.010	17	29	0.0	0.0	2.512	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	18	4	6	990	0.018	18	11	0.0	0.0	4.073	A
2 - Moydrum Road	0	0	23	162	0.000	0	0	0.0	0.0	0.000	A
3 - R916	11	3	18	1429	0.008	11	6	0.0	0.0	2.792	A
4 - To Site	17	4	0	1593	0.010	17	29	0.0	0.0	2.512	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	14	4	4	990	0.015	14	9	0.0	0.0	4.058	A
2 - Moydrum Road	0	0	19	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	9	2	14	1431	0.006	9	4	0.0	0.0	2.784	A
4 - To Site	13	3	0	1593	0.008	13	23	0.0	0.0	2.507	A

TRL THE FUTURE OF TRANSPORT

Petrol Station 167155, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D9 - Petrol Station 167155, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	4.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D9	Petrol Station 167155	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	31	100.000
2 - Moydrum Road		ONE HOUR	✓	6	100.000
3 - R916		ONE HOUR	✓	25	100.000
4 - To Site		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	31
	2 - Moydrum Road	0	0	0	6
	3 - R916	0	0	0	25
	4 - To Site	31	6	25	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	10	10	10
	2 - Moydrum Road	10	0	10	10
	3 - R916	10	10	0	10
	4 - To Site	10	10	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.03	4.19	0.0	A	31	31
2 - Moydrum Road	0.04	25.89	0.0	D	6	6
3 - R916	0.02	2.85	0.0	A	25	25
4 - To Site	0.04	2.60	0.0	A	62	62

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	981	0.028	28	28	0.0	0.0	4.154	A
2 - Moydrum Road	5	1	50	160	0.034	5	5	0.0	0.0	25.539	D
3 - R916	22	6	33	1421	0.016	22	22	0.0	0.0	2.831	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	979	0.035	34	34	0.0	0.0	4.192	A
2 - Moydrum Road	7	2	62	160	0.041	7	7	0.0	0.0	25.877	D
3 - R916	28	7	41	1417	0.019	28	28	0.0	0.0	2.849	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	34	9	34	979	0.035	34	34	0.0	0.0	4.192	A
2 - Moydrum Road	7	2	62	160	0.041	7	7	0.0	0.0	25.890	D
3 - R916	28	7	41	1417	0.019	28	28	0.0	0.0	2.849	A
4 - To Site	68	17	0	1593	0.043	68	68	0.0	0.0	2.597	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	28	7	28	981	0.028	28	28	0.0	0.0	4.156	A
2 - Moydrum Road	5	1	50	160	0.034	5	5	0.0	0.0	25.559	D
3 - R916	22	6	33	1421	0.016	22	22	0.0	0.0	2.833	A
4 - To Site	56	14	0	1593	0.035	56	56	0.0	0.0	2.576	A

ABP-309513-21 Phase 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D10 - ABP-309513-21 Phase 1, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	2.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D10	ABP-309513-21 Phase 1	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	11	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	5	100.000
4 - To Site		ONE HOUR	✓	9	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	11
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	5
	4 - To Site	6	0	3	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.01	3.68	0.0	A	11	11
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.00	2.52	0.0	A	5	5
4 - To Site	0.01	2.27	0.0	A	9	9

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	10	2	3	991	0.010	10	5	0.0	0.0	3.669	A
2 - Moydrum Road	0	0	13	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	4	1	10	1433	0.003	4	3	0.0	0.0	2.519	A
4 - To Site	8	2	0	1593	0.005	8	14	0.0	0.0	2.271	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	12	3	3	990	0.012	12	7	0.0	0.0	3.678	A
2 - Moydrum Road	0	0	15	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	6	1	12	1432	0.004	6	3	0.0	0.0	2.523	A
4 - To Site	10	2	0	1593	0.006	10	18	0.0	0.0	2.274	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	12	3	3	990	0.012	12	7	0.0	0.0	3.678	A
2 - Moydrum Road	0	0	15	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	6	1	12	1432	0.004	6	3	0.0	0.0	2.523	A
4 - To Site	10	2	0	1593	0.006	10	18	0.0	0.0	2.274	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	10	2	3	991	0.010	10	5	0.0	0.0	3.669	A
2 - Moydrum Road	0	0	13	163	0.000	0	0	0.0	0.0	0.000	A
3 - R916	4	1	10	1433	0.003	4	3	0.0	0.0	2.521	A
4 - To Site	8	2	0	1593	0.005	8	14	0.0	0.0	2.271	A

TRL THE FUTURE OF TRANSPORT

ABP-309513-21 Phase 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - R916 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D11 - ABP-309513-21 Phase 2, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	R916/Moydrum Road	Standard Roundabout		1, 2, 3, 4	3.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D11	ABP-309513-21 Phase 2	PM	ONE HOUR	16:45	18:15	15	✓	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - N6		ONE HOUR	✓	46	100.000
2 - Moydrum Road		ONE HOUR	✓	0	100.000
3 - R916		ONE HOUR	✓	23	100.000
4 - To Site		ONE HOUR	✓	43	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
From	1 - N6	0	0	0	46
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	23
	4 - To Site	29	0	14	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		1 - N6	2 - Moydrum Road	3 - R916	4 - To Site
	1 - N6	0	0	0	0
	2 - Moydrum Road	0	0	0	0
	3 - R916	0	0	0	0
	4 - To Site	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - N6	0.05	3.85	0.1	A	46	46
2 - Moydrum Road	0.00	0.00	0.0	A	0	0
3 - R916	0.02	2.60	0.0	A	23	23
4 - To Site	0.03	2.33	0.0	A	43	43

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	41	10	13	987	0.042	41	26	0.0	0.0	3.806	A
2 - Moydrum Road	0	0	54	160	0.000	0	0	0.0	0.0	0.000	A
3 - R916	21	5	41	1416	0.015	21	13	0.0	0.0	2.578	A
4 - To Site	39	10	0	1593	0.024	39	62	0.0	0.0	2.316	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	51	13	15	986	0.051	51	32	0.0	0.1	3.849	A
2 - Moydrum Road	0	0	66	159	0.000	0	0	0.0	0.0	0.000	A
3 - R916	25	6	51	1412	0.018	25	15	0.0	0.0	2.596	A
4 - To Site	47	12	0	1593	0.030	47	76	0.0	0.0	2.329	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	51	13	15	986	0.051	51	32	0.1	0.1	3.849	A
2 - Moydrum Road	0	0	66	159	0.000	0	0	0.0	0.0	0.000	A
3 - R916	25	6	51	1412	0.018	25	15	0.0	0.0	2.596	A
4 - To Site	47	12	0	1593	0.030	47	76	0.0	0.0	2.329	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - N6	41	10	13	987	0.042	41	26	0.1	0.0	3.806	A
2 - Moydrum Road	0	0	54	160	0.000	0	0	0.0	0.0	0.000	A
3 - R916	21	5	41	1416	0.015	21	13	0.0	0.0	2.580	A
4 - To Site	39	10	0	1593	0.024	39	62	0.0	0.0	2.316	A

Appendix D – *TRICS* Data

Calculation Reference: AUDIT-538501-210531-0517

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:
04   EAST ANGLIA
      SF   SUFFOLK   1 days
06   WEST MIDLANDS
      SH   SHROPSHIRE   1 days
      WK   WARWICKSHIRE   1 days
09   NORTH
      TV   TEES VALLEY   1 days
11   SCOTLAND
      SR   STIRLING   1 days
12   CONNAUGHT
      RO   ROSCOMMON   2 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 150 to 750 (units: sqm)
Range Selected by User: 109 to 2350 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 27/09/19

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

Selected survey days:
Monday   1 days
Wednesday   2 days
Friday   4 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   3
Edge of Town   4

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   6
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:
E(f)   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 500m Range:
All Surveys Included
Population within 1 mile:
1,001 to 5,000   1 days
5,001 to 10,000   3 days
15,001 to 20,000   2 days
20,001 to 25,000   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   2 days
50,001 to 75,000   1 days
75,001 to 100,000   4 days

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

Car ownership within 5 miles:
0.6 to 1.0   2 days
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   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	RO-04-D-01	NURSERY	ROSCOMMON

PARK VIEW
ROSCOMMON
CRUBY HILL
Edge of Town
Residential Zone
Total Gross floor area: 500   sqm
    Survey date: FRIDAY   *26/09/14*   *Survey Type: MANUAL*

2	RO-04-D-02	NURSERY	ROSCOMMON

CIRCULAR ROAD
ROSCOMMON
BALLYPHEASAN
Edge of Town Centre
Residential Zone
Total Gross floor area: 509   sqm
    Survey date: FRIDAY   *27/04/18*   *Survey Type: MANUAL*

3	SF-04-D-03	NURSERY	SUFFOLK

CAMP ROAD
LOWESTOFT

Edge of Town Centre
Residential Zone
Total Gross floor area: 750   sqm
    Survey date: WEDNESDAY   *10/12/14*   *Survey Type: MANUAL*

4	SH-04-D-01	NURSERY	SHROPSHIRE

OLD COLEHAM
SHREWSBURY

Edge of Town Centre
Residential Zone
Total Gross floor area: 326   sqm
    Survey date: WEDNESDAY   *28/05/14*   *Survey Type: MANUAL*

5	SR-04-D-01	NURSERY	STIRLING

HENDERSON STREET
STIRLING
BRIDGE OF ALLAN
Edge of Town
No Sub Category
Total Gross floor area: 250   sqm
    Survey date: MONDAY   *16/06/14*   *Survey Type: MANUAL*

6	TV-04-D-01	NURSERY	TEES VALLEY

COTSWOLD DRIVE
REDCAR

Edge of Town
Residential Zone
Total Gross floor area: 150   sqm
    Survey date: FRIDAY   *19/05/17*   *Survey Type: MANUAL*

7	WK-04-D-01	NURSERY	WARWICKSHIRE

THE RIDGEWAY
STRATFORD UPON AVON

Edge of Town
Residential Zone
Total Gross floor area: 340   sqm
    Survey date: FRIDAY   *29/06/18*   *Survey Type: MANUAL*

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
TOTAL VEHICLES
Calculation factor: 100 sqm
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									
07:00 - 08:00	7	404	1.239	7	404	0.389	7	404	1.628
08:00 - 09:00	7	404	**4.000**	7	404	2.796	7	404	**6.796**
09:00 - 10:00	7	404	2.938	7	404	**2.903**	7	404	5.841
10:00 - 11:00	7	404	0.885	7	404	0.673	7	404	1.558
11:00 - 12:00	7	404	1.062	7	404	0.496	7	404	1.558
12:00 - 13:00	7	404	1.805	7	404	2.726	7	404	4.531
13:00 - 14:00	7	404	0.991	7	404	1.274	7	404	2.265
14:00 - 15:00	7	404	1.062	7	404	0.779	7	404	1.841
15:00 - 16:00	7	404	0.814	7	404	1.345	7	404	2.159
16:00 - 17:00	7	404	1.168	7	404	1.239	7	404	2.407
17:00 - 18:00	7	404	2.796	7	404	**3.469**	7	404	6.265
18:00 - 19:00	6	446	0.112	6	446	0.935	6	446	1.047
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			18.872			19.024			37.896

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:	150 - 750 (units: sqm)
Survey date date range:	01/01/13 - 27/09/19
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.

ORS Consulting Engineers   Marlinstown Office Park   Mullingar   Licence No: 538501

Calculation Reference: AUDIT-538501-210528-0504

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:
03	SOUTH WEST		
	DC	DORSET	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	RI	EAST RIDING OF YORKSHIRE	1 days
09	NORTH		
	CB	CUMBRIA	1 days
11	SCOTLAND		
	SA	SOUTH AYRSHIRE	1 days
	SR	STIRLING	1 days
12	CONNAUGHT		
	GA	GALWAY	1 days
13	MUNSTER		
	WA	WATERFORD	1 days
14	LEINSTER		
	LU	LOUTH	3 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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 14 to 82 (units:)
Range Selected by User: 6 to 493 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

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

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

Selected survey days:
Monday	2 days
Tuesday	4 days
Wednesday	2 days
Thursday	2 days
Friday	2 days

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

Selected survey types:
| Manual count | 12 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	5
Suburban Area (PPS6 Out of Centre)	4
Edge of Town	3

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

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   12 days

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

Population within 500m Range:
All Surveys Included
Population within 1 mile:
1,001 to 5,000   2 days
5,001 to 10,000   3 days
10,001 to 15,000   5 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   2 days
25,001 to 50,000   3 days
50,001 to 75,000   7 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   9 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   12 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   12 days

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

Covid-19 Restrictions   Yes   At least one survey within the selected data set
                                                    was undertaken at a time of Covid-19 restrictions

ORS Consulting Engineers   Marlinstown Office Park   Mullingar   Licence No: 538501

LIST OF SITES relevant to selection parameters

1   CB-03-C-02   BLOCK OF FLATS   CUMBRIA
    BRIDGE LANE
    PENRITH

    Edge of Town
    No Sub Category
    Total No of Dwellings: 35
         Survey date: WEDNESDAY   11/06/14   *Survey Type: MANUAL*
2   DC-03-C-02   FLATS IN BLOCKS   DORSET
    PALM COURT
    WEYMOUTH
    SPA ROAD
    Suburban Area (PPS6 Out of Centre)
    Residential Zone
    Total No of Dwellings: 14
         Survey date: FRIDAY   28/03/14   *Survey Type: MANUAL*
3   GA-03-C-01   FLATS   GALWAY
    BALLYLOUGHANE ROAD
    GALWAY

    Suburban Area (PPS6 Out of Centre)
    No Sub Category
    Total No of Dwellings: 34
         Survey date: THURSDAY   31/10/13   *Survey Type: MANUAL*
4   LU-03-C-01   BLOCKS OF FLATS   LOUTH
    DONORE ROAD
    DROGHEDA

    Edge of Town Centre
    Residential Zone
    Total No of Dwellings: 52
         Survey date: THURSDAY   12/09/13   *Survey Type: MANUAL*
5   LU-03-C-02   BLOCK OF FLATS   LOUTH
    NICHOLAS STREET
    DUNDALK

    Edge of Town Centre
    Residential Zone
    Total No of Dwellings: 33
         Survey date: MONDAY   16/09/13   *Survey Type: MANUAL*
6   LU-03-C-03   BLOCK OF FLATS   LOUTH
    NICHOLAS STREET
    DUNDALK

    Edge of Town Centre
    Residential Zone
    Total No of Dwellings: 20
         Survey date: MONDAY   16/09/13   *Survey Type: MANUAL*
7   MG-03-C-01   BLOCK OF FLATS   MONAGHAN
    MALL ROAD
    MONAGHAN

    Edge of Town Centre
    No Sub Category
    Total No of Dwellings: 28
         Survey date: FRIDAY   06/09/13   *Survey Type: MANUAL*
8   RI-03-C-01   FLATS   EAST RIDING OF YORKSHIRE
    465 PRIORY ROAD
    HULL

    Edge of Town
    Residential Zone
    Total No of Dwellings: 20
         Survey date: TUESDAY   13/05/14   *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

  9   SA-03-C-01   BLOCK OF FLATS   SOUTH AYRSHIRE
      RACECOURSE ROAD
      AYR

      Edge of Town Centre
      Residential Zone
      Total No of Dwellings: 51
        Survey date: TUESDAY   _16/09/14_   _Survey Type: MANUAL_

10   SF-03-C-03   BLOCKS OF FLATS   SUFFOLK
      TOLLGATE LANE
      BURY ST EDMUNDS

      Suburban Area (PPS6 Out of Centre)
      Residential Zone
      Total No of Dwellings: 30
        Survey date: WEDNESDAY   _03/12/14_   _Survey Type: MANUAL_

11   SR-03-C-03   BLOCK OF FLATS & TERRACED   STIRLING
      KERSEBONNY ROAD
      STIRLING
      CAMBUSBARRON
      Edge of Town
      Residential Zone
      Total No of Dwellings: 82
        Survey date: TUESDAY   _01/09/20_   _Survey Type: MANUAL_

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

      Suburban Area (PPS6 Out of Centre)
      Residential Zone
      Total No 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.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
TOTAL 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	12	38	0.031	12	38	0.107	12	38	0.138
08:00 - 09:00	12	38	0.056	12	38	0.160	12	38	0.216
09:00 - 10:00	12	38	0.076	12	38	0.109	12	38	0.185
10:00 - 11:00	12	38	0.062	12	38	0.084	12	38	0.146
11:00 - 12:00	12	38	0.082	12	38	0.100	12	38	0.182
12:00 - 13:00	12	38	0.111	12	38	0.091	12	38	0.202
13:00 - 14:00	12	38	0.107	12	38	0.096	12	38	0.203
14:00 - 15:00	12	38	0.098	12	38	0.100	12	38	0.198
15:00 - 16:00	12	38	0.120	12	38	0.107	12	38	0.227
16:00 - 17:00	12	38	0.120	12	38	0.116	12	38	0.236
17:00 - 18:00	12	38	0.211	12	38	0.104	12	38	0.315
18:00 - 19:00	12	38	0.153	12	38	0.124	12	38	0.277
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:		1.227			1.298				2.525

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:	14 - 82 (units:)
Survey date date range:	01/01/13 - 23/10/20
Number of weekdays (Monday-Friday):	12
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.

ORS Consulting Engineers   Marlinstown Office Park   Mullingar   Licence No: 538501

Calculation Reference: AUDIT-538501-210531-0532

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:
03   SOUTH WEST
         GS   GLOUCESTERSHIRE   1 days
         WL   WILTSHIRE   1 days

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

Primary Filtering selection:

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

Parameter: Number of bedrooms
Actual Range: 57 to 67 (units:)
Range Selected by User: 4 to 483 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 26/11/20

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

Selected survey days:
Tuesday   1 days
Thursday   1 days

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

Selected survey types:
Manual count   2 days
Directional ATC Count   0 days

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

Selected Locations:
Suburban Area (PPS6 Out of Centre)   1
Edge of Town   1

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

Selected Location Sub Categories:
Residential 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:
C1   2 days

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

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:
5,001   to 10,000   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   1 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   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:
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   2 days

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

LIST OF SITES relevant to selection parameters

1 GS-06-A-02   PREMIER INN   GLOUCESTERSHIRE
   GLOUCESTER ROAD
   CHELTENHAM SPA
   SAINT MARKS
   Suburban Area (PPS6 Out of Centre)
   Residential Zone
   Total Number of bedrooms: 67
       Survey date: THURSDAY   *28/11/13*   *Survey Type: MANUAL*
2 WL-06-A-03   TRAVELODGE   WILTSHIRE
   LAWRENCE HILL
   WINCANTON

   Edge of Town
   No Sub Category
   Total Number of bedrooms: 57
       Survey date: TUESDAY   *18/09/18*   *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
TOTAL VEHICLES
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	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	2	62	0.024	2	62	0.210	2	62	0.234
08:00 - 09:00	2	62	0.073	2	62	0.242	2	62	0.315
09:00 - 10:00	2	62	0.024	2	62	0.129	2	62	0.153
10:00 - 11:00	2	62	0.016	2	62	0.073	2	62	0.089
11:00 - 12:00	2	62	0.065	2	62	0.073	2	62	0.138
12:00 - 13:00	2	62	0.065	2	62	0.056	2	62	0.121
13:00 - 14:00	2	62	0.032	2	62	0.056	2	62	0.088
14:00 - 15:00	2	62	0.081	2	62	0.056	2	62	0.137
15:00 - 16:00	2	62	0.089	2	62	0.040	2	62	0.129
16:00 - 17:00	2	62	0.194	2	62	0.113	2	62	0.307
17:00 - 18:00	2	62	0.185	2	62	0.105	2	62	0.290
18:00 - 19:00	2	62	0.169	2	62	0.056	2	62	0.225
19:00 - 20:00	2	62	0.105	2	62	0.113	2	62	0.218
20:00 - 21:00	2	62	0.129	2	62	0.048	2	62	0.177
21:00 - 22:00	2	62	0.056	2	62	0.024	2	62	0.080
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.307			1.394			2.701

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:	57 - 67 (units:)
Survey date date range:	01/01/13 - 26/11/20
Number of weekdays (Monday-Friday):	2
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.

Calculation Reference: AUDIT-538501-210528-0539

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use   : 03 - RESIDENTIAL
Category   : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:
02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	KC KENT	1 days
03	SOUTH WEST	
	DV DEVON	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	3 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
	DH DURHAM	1 days
10	WALES	
	PS POWYS	2 days
11	SCOTLAND	
	FA FALKIRK	1 days
	HI HIGHLAND	1 days
12	CONNAUGHT	
	LT LEITRIM	2 days
	RO ROSCOMMON	1 days
14	LEINSTER	
	WC WICKLOW	1 days
	WX WEXFORD	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	DN DONEGAL	3 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 9 to 180 (units:)
Range Selected by User: 4 to 4334 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

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

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

Selected survey days:
Monday	6 days
Tuesday	5 days
Wednesday	5 days
Thursday	4 days
Friday	3 days

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

Selected survey types:
Manual count	23 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   7

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.

<u>*Selected Location Sub Categories:*</u>
Residential Zone	22
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:

<u>*Use Class:*</u>
C3	23 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®.

<u>*Population within 500m Range:*</u>
All Surveys Included
<u>*Population within 1 mile:*</u>
1,001 to 5,000	6 days
5,001 to 10,000	7 days
10,001 to 15,000	5 days
15,001 to 20,000	5 days

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

<u>*Population within 5 miles:*</u>
5,001 to 25,000	14 days
25,001 to 50,000	2 days
50,001 to 75,000	3 days
75,001 to 100,000	4 days

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

<u>*Car ownership within 5 miles:*</u>
0.6 to 1.0	6 days
1.1 to 1.5	15 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.

<u>*Travel Plan:*</u>
Yes	2 days
No	21 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.

<u>*PTAL Rating:*</u>
No PTAL Present	23 days

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

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

ORS Consulting Engineers   Marlinstown Office Park   Mullingar

LIST OF SITES relevant to selection parameters

1   CB-03-A-05   DETACHED/TERRACED HOUSING   CUMBRIA
     MACADAM WAY
     PENRITH

     Edge of Town Centre
     Residential Zone
     Total No of Dwellings: 50
          Survey date: TUESDAY   *21/06/16*   *Survey Type: MANUAL*
2   CH-03-A-11   TOWN HOUSES   CHESHIRE
     LONDON ROAD
     NORTHWICH
     LEFTWICH
     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 24
          Survey date: THURSDAY   *06/06/19*   *Survey Type: MANUAL*
3   DH-03-A-01   SEMI DETACHED   DURHAM
     GREENFIELDS ROAD
     BISHOP AUCKLAND

     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 50
          Survey date: TUESDAY   *28/03/17*   *Survey Type: MANUAL*
4   DN-03-A-05   DETACHED/SEMI-DETACHED   DONEGAL
     GORTLEE ROAD
     LETTERKENNY
     GORTLEE
     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 146
          Survey date: WEDNESDAY   *03/09/14*   *Survey Type: MANUAL*
5   DN-03-A-07   DETACHED & SEMI-DETACHED   DONEGAL
     ST ORANS ROAD
     BUNCRANA

     Edge of Town Centre
     Residential Zone
     Total No of Dwellings: 9
          Survey date: WEDNESDAY   *29/05/19*   *Survey Type: MANUAL*
6   DN-03-A-08   SEMI DETACHED & DETACHED   DONEGAL
     CHURCH ROAD
     CARNDONAGH

     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 36
          Survey date: WEDNESDAY   *30/09/20*   *Survey Type: MANUAL*
7   DV-03-A-02   HOUSES & BUNGALOWS   DEVON
     MILLHEAD ROAD
     HONITON

     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 116
          Survey date: FRIDAY   *25/09/15*   *Survey Type: MANUAL*
8   DV-03-A-03   TERRACED & SEMI DETACHED   DEVON
     LOWER BRAND LANE
     HONITON

     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 70
          Survey date: MONDAY   *28/09/15*   *Survey Type: MANUAL*
9   FA-03-A-01   SEMI-DETACHED/TERRACED   FALKIRK
     MANDELA AVENUE
     FALKIRK

     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 37
          Survey date: THURSDAY   *30/05/13*   *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 HC-03-A-23   HOUSES & FLATS   HAMPSHIRE
    CANADA WAY
    LIPHOOK

    Suburban Area (PPS6 Out of Centre)
    Residential Zone
    Total No of Dwellings: 62
        Survey date: TUESDAY   19/11/19   *Survey Type: MANUAL*
11 HI-03-A-14   SEMI-DETACHED & TERRACED   HIGHLAND
    KING BRUDE ROAD
    INVERNESS
    SCORGUIE
    Suburban Area (PPS6 Out of Centre)
    Residential Zone
    Total No of Dwellings: 40
        Survey date: WEDNESDAY   23/03/16   *Survey Type: MANUAL*
12 KC-03-A-03   MIXED HOUSES & FLATS   KENT
    HYTHE ROAD
    ASHFORD
    WILLESBOROUGH
    Suburban Area (PPS6 Out of Centre)
    Residential Zone
    Total No of Dwellings: 51
        Survey date: THURSDAY   14/07/16   *Survey Type: MANUAL*
13 LT-03-A-01   SEMI-DETACHED & DETACHED   LEITRIM
    ARD NA SI
    CARRICK-ON-SHANNON
    ATTIRORY
    Suburban Area (PPS6 Out of Centre)
    Residential Zone
    Total No of Dwellings: 90
        Survey date: FRIDAY   24/04/15   *Survey Type: MANUAL*
14 LT-03-A-02   BUNGALOWS   LEITRIM
    ARD ÁLAINN
    CARRICK-ON-SHANNON
    GALLOW'S HILL
    Edge of Town Centre
    Residential Zone
    Total No of Dwellings: 10
        Survey date: MONDAY   22/05/17   *Survey Type: MANUAL*
15 NE-03-A-03   PRIVATE HOUSES   NORTH EAST LINCOLNSHIRE
    STATION ROAD
    SCUNTHORPE

    Edge of Town Centre
    Residential Zone
    Total No of Dwellings: 180
        Survey date: TUESDAY   20/05/14   *Survey Type: MANUAL*
16 NY-03-A-09   MIXED HOUSING   NORTH YORKSHIRE
    GRAMMAR SCHOOL LANE
    NORTHALLERTON

    Suburban Area (PPS6 Out of Centre)
    Residential Zone
    Total No of Dwellings: 52
        Survey date: MONDAY   16/09/13   *Survey Type: MANUAL*
17 NY-03-A-12   TOWN HOUSES   NORTH YORKSHIRE
    RACECOURSE LANE
    NORTHALLERTON

    Edge of Town Centre
    Residential Zone
    Total No of Dwellings: 47
        Survey date: TUESDAY   27/09/16   *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

18   NY-03-A-13   TERRACED HOUSES   NORTH YORKSHIRE
      CATTERICK ROAD
      CATTERICK GARRISON
      OLD HOSPITAL COMPOUND
      Suburban Area (PPS6 Out of Centre)
      Residential Zone
      Total No of Dwellings: 10
          Survey date: WEDNESDAY   10/05/17   *Survey Type: MANUAL*
19   PS-03-A-01   MIXED HOUSES   POWYS
      BRYN GLAS
      WELSHPOOL

      Edge of Town Centre
      Residential Zone
      Total No of Dwellings: 16
          Survey date: MONDAY   11/05/15   *Survey Type: MANUAL*
20   PS-03-A-02   DETACHED/SEMI-DETACHED   POWYS
      GUNROG ROAD
      WELSHPOOL

      Suburban Area (PPS6 Out of Centre)
      Residential Zone
      Total No of Dwellings: 28
          Survey date: MONDAY   11/05/15   *Survey Type: MANUAL*
21   RO-03-A-04   SEMI DET. & BUNGALOWS   ROSCOMMON
      EAGLE COURT
      ROSCOMMON
      ARDNANAGH
      Suburban Area (PPS6 Out of Centre)
      Residential Zone
      Total No of Dwellings: 39
          Survey date: FRIDAY   26/09/14   *Survey Type: MANUAL*
22   WC-03-A-02   DETACHED HOUSES   WICKLOW
      MARLTON ROAD
      WICKLOW
      FRIARSHILL
      Edge of Town Centre
      Residential Zone
      Total No of Dwellings: 45
          Survey date: MONDAY   28/05/18   *Survey Type: MANUAL*
23   WX-03-A-01   SEMI-DETACHED   WEXFORD
      CLONARD ROAD
      WEXFORD

      Suburban Area (PPS6 Out of Centre)
      No Sub Category
      Total No of Dwellings: 34
          Survey date: THURSDAY   25/09/14   *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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	23	54	0.046	23	54	0.202	23	54	0.248
08:00 - 09:00	23	54	0.151	23	54	0.383	23	54	0.534
09:00 - 10:00	23	54	0.205	23	54	0.216	23	54	0.421
10:00 - 11:00	23	54	0.138	23	54	0.181	23	54	0.319
11:00 - 12:00	23	54	0.157	23	54	0.166	23	54	0.323
12:00 - 13:00	23	54	0.188	23	54	0.180	23	54	0.368
13:00 - 14:00	23	54	0.182	23	54	0.194	23	54	0.376
14:00 - 15:00	23	54	0.191	23	54	0.209	23	54	0.400
15:00 - 16:00	23	54	0.250	23	54	0.180	23	54	0.430
16:00 - 17:00	23	54	0.268	23	54	0.174	23	54	0.442
17:00 - 18:00	23	54	0.333	23	54	0.200	23	54	0.533
18:00 - 19:00	23	54	0.255	23	54	0.200	23	54	0.455
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.364			2.485			4.849

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:	9 - 180 (units:)
Survey date date range:	01/01/13 - 20/10/20
Number of weekdays (Monday-Friday):	23
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	4
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.

ORS Consulting Engineers   Marlinstown Office Park   Mullingar

Calculation Reference: AUDIT-538501-210528-0548

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use   : 03 - RESIDENTIAL
Category   : K - MIXED PRIV HOUS (FLATS AND HOUSES)
TOTAL VEHICLES

Selected regions and areas:
02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
03	SOUTH WEST		
	CW	CORNWALL	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	1 days
09	NORTH		
	CB	CUMBRIA	1 days
10	WALES		
	CO	CONWY	1 days
13	MUNSTER		
	TI	TIPPERARY	1 days
14	LEINSTER		
	KK	KILKENNY	2 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 15 to 100 (units:)
Range Selected by User: 15 to 788 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 15/10/20

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

Selected survey days:
Monday	2 days
Tuesday	4 days
Wednesday	2 days
Thursday	2 days

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

Selected survey types:
| Manual count | 10 days |
| Directional ATC Count | 0 days |

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

Selected Locations:
| Suburban Area (PPS6 Out of Centre) | 4 |
| Edge of Town | 6 |

*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 | 10 |

*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,*

Secondary Filtering selection:

Use Class:
C3   10 days

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

Population within 500m Range:
All Surveys Included
Population within 1 mile:
5,001 to 10,000   7 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
25,001 to 50,000   7 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   3 days
1.1 to 1.5   6 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:
Yes   1 days
No   9 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   10 days

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

Covid-19 Restrictions   Yes   At least one survey within the selected data set
                                                        was undertaken at a time of Covid-19 restrictions

ORS Consulting Engineers   Marlinstown Office Park   Mullingar   Licence No: 538501

LIST OF SITES relevant to selection parameters

1   CA-03-K-01   MIXED HOUSES & FLATS   CAMBRIDGESHIRE
WEASANHAM LANE
WISBECH
FENLAND
Edge of Town
Residential Zone
Total No of Dwellings: 100
    Survey date: MONDAY   07/09/15   _Survey Type: MANUAL_
2   CA-03-K-04   MIXED HOUSES & FLATS   CAMBRIDGESHIRE
FORDHAM ROAD
SOHAM

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 65
    Survey date: WEDNESDAY   11/07/18   _Survey Type: MANUAL_
3   CB-03-K-02   SEMI-DETACHED & FLATS   CUMBRIA
NATLAND ROAD
KENDAL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 15
    Survey date: TUESDAY   21/06/16   _Survey Type: MANUAL_
4   CO-03-K-01   MIXED HOUSES & FLATS   CONWY
LIDDELL DRIVE
LLANDUDNO

Edge of Town
Residential Zone
Total No of Dwellings: 15
    Survey date: TUESDAY   27/03/18   _Survey Type: MANUAL_
5   CW-03-K-01   MIXED HOUSES & FLATS   CORNWALL
TRELOWEN DRIVE
PENRYN

Edge of Town
Residential Zone
Total No of Dwellings: 89
    Survey date: THURSDAY   28/03/19   _Survey Type: MANUAL_
6   ES-03-K-01   MIXED HOUSES & FLATS   EAST SUSSEX
LEWES ROAD
UCKFIELD
RIDGEWOOD
Edge of Town
Residential Zone
Total No of Dwellings: 64
    Survey date: THURSDAY   14/07/16   _Survey Type: MANUAL_
7   KK-03-K-01   HOUSES & FLATS   KILKENNY
BENNETTS BRIDGE ROAD
KILKENNY

Edge of Town
Residential Zone
Total No of Dwellings: 35
    Survey date: TUESDAY   30/09/14   _Survey Type: MANUAL_
8   KK-03-K-02   DETACHED & FLATS   KILKENNY
BOTHAR AN CHOLAISTE
KILKENNY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 27
    Survey date: MONDAY   29/09/14   _Survey Type: MANUAL_

LIST OF SITES relevant to selection parameters (Cont.)

9   NE-03-K-01   BLOCK OF FLATS   NORTH EAST LINCOLNSHIRE
     LADYSMITH ROAD
     CLEETHORPES

     Suburban Area (PPS6 Out of Centre)
     Residential Zone
     Total No of Dwellings: 67
          Survey date: TUESDAY   *06/05/14*   *Survey Type: MANUAL*
10   TI-03-K-01   DETACHED HOUSES & FLATS   TIPPERARY
     SLIEVENAMON ROAD
     THURLES
     CLONGOWER
     Edge of Town
     Residential Zone
     Total No of Dwellings: 58
          Survey date: WEDNESDAY   *23/09/20*   *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 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	10	54	0.065	10	54	0.187	10	54	0.252
08:00 - 09:00	10	54	0.114	10	54	0.321	10	54	0.435
09:00 - 10:00	10	54	0.127	10	54	0.157	10	54	0.284
10:00 - 11:00	10	54	0.178	10	54	0.168	10	54	0.346
11:00 - 12:00	10	54	0.157	10	54	0.168	10	54	0.325
12:00 - 13:00	10	54	0.179	10	54	0.164	10	54	0.343
13:00 - 14:00	10	54	0.176	10	54	0.166	10	54	0.342
14:00 - 15:00	10	54	0.148	10	54	0.211	10	54	0.359
15:00 - 16:00	10	54	0.282	10	54	0.168	10	54	0.450
16:00 - 17:00	10	54	0.232	10	54	0.193	10	54	0.425
17:00 - 18:00	10	54	0.329	10	54	0.191	10	54	0.520
18:00 - 19:00	10	54	0.221	10	54	0.138	10	54	0.359
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.208			2.232			4.440

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:	15 - 100 (units:)
Survey date date range:	01/01/13 - 15/10/20
Number of weekdays (Monday-Friday):	10
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.

ORS Consulting Engineers   Marlinstown Office Park   Mullingar   Licence No: 538501

Calculation Reference: AUDIT-538501-210531-0554

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use   : 03 - RESIDENTIAL
Category   : G - STUDENT ACCOMMODATION
TOTAL VEHICLES

Selected regions and areas:
03   SOUTH WEST
        DV   DEVON   1 days
13   MUNSTER
        LI   LIMERICK   1 days

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

Primary Filtering selection:

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

Parameter: Number of residents
Actual Range: 241 to 265 (units:)
Range Selected by User: 15 to 1700 (units:)

Parking Spaces Range: All Surveys Included

<u>Public Transport Provision:</u>
Selection by: Include all surveys

Date Range: 01/01/13 to 09/03/20

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

<u>Selected survey days:</u>
Tuesday   1 days
Thursday   1 days

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

<u>Selected survey types:</u>
Manual count   2 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.

<u>Selected Locations:</u>
Edge of Town Centre   1
Edge of Town   1

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

<u>Selected Location Sub Categories:</u>
Residential Zone   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:

<u>Use Class:</u>
C3   2 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®.

<u>Population within 500m Range:</u>
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:
1,001 to 5,000   1 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:
25,001 to 50,000   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   1 days
1.1 to 1.5   1 days

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

Travel Plan:
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   2 days

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

LIST OF SITES relevant to selection parameters

  1   DV-03-G-04   STUDENT ACCOMMODATION   DEVON
     BONHAY ROAD
     EXETER

     Edge of Town Centre
     Residential Zone
     Total Number of residents: 241
       Survey date: THURSDAY   *28/11/13*   *Survey Type: MANUAL*

  2   LI-03-G-01   STUDENT FLATS   LIMERICK
     SOUTH CIRCULAR ROAD
     LIMERICK

     Edge of Town
     Residential Zone
     Total Number of residents: 265
       Survey date: TUESDAY   *05/11/13*   *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 03 - RESIDENTIAL/G - STUDENT ACCOMMODATION
TOTAL VEHICLES
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	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	241	0.000	1	241	0.000	1	241	0.000
07:00 - 08:00	2	253	0.004	2	253	0.002	2	253	0.006
08:00 - 09:00	2	253	0.010	2	253	0.002	2	253	0.012
09:00 - 10:00	2	253	0.006	2	253	0.018	2	253	0.024
10:00 - 11:00	2	253	0.008	2	253	0.024	2	253	0.032
11:00 - 12:00	2	253	0.004	2	253	0.016	2	253	0.020
12:00 - 13:00	2	253	0.002	2	253	0.020	2	253	0.022
13:00 - 14:00	2	253	0.006	2	253	0.010	2	253	0.016
14:00 - 15:00	2	253	0.018	2	253	0.004	2	253	0.022
15:00 - 16:00	2	253	0.032	2	253	0.012	2	253	0.044
16:00 - 17:00	2	253	0.022	2	253	0.018	2	253	0.040
17:00 - 18:00	2	253	0.026	2	253	0.022	2	253	0.048
18:00 - 19:00	2	253	0.006	2	253	0.004	2	253	0.010
19:00 - 20:00	1	241	0.000	1	241	0.000	1	241	0.000
20:00 - 21:00	1	241	0.004	1	241	0.000	1	241	0.004
21:00 - 22:00	1	241	0.000	1	241	0.004	1	241	0.004
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.148			0.156			0.304

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:	241 - 265 (units:)
Survey date date range:	01/01/13 - 09/03/20
Number of weekdays (Monday-Friday):	2
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.

Appendix E – Westmeath County Council Elaboration of Funding, Timing and Delivery of Lissywollen Avenue

Conor Frehill
Director, HW Planning
5 Joyce House
Barrack Square
Ballincollig
Co. Cork

26 November 2021

By email: cfrehill@hwplanning.ie

Reference: Avenir Homes Limited - Elaboration on funding, timing and delivery of Lissywollen Avenue at Lissywollen, Athlone, Co. Westmeath.
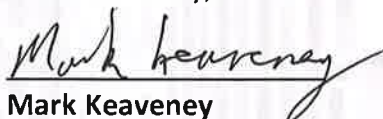
Dear Conor,

Please see below clarification on foot of tripartite consultation meeting of 14 October 2021 in relation to a proposed Strategic Housing Development (SHD) application for 127 no. residential units (65 no. houses, 62 no. apartments), 283 no. student bedspace accommodation, creche and associated site works at Cartrontroy, Kilnafaddoge, Lissywollen (townlands), Athlone, Co. Westmeath.

Funding for the provision of an access road connecting the access road at Brawny to the roundabout at Garrycastle was approved by the Department of Housing, Local Government and Heritage in 2017 under the Local Infrastructure Housing Activation Fund. Westmeath County Council included the provision of this access road as part of a Competitive Dialogue Procurement Process for the delivery of approx. 600 houses on Council owned lands at Lissywollen. The preferred Economic Operator was identified and has received planning approval under the SHD process for the development of 574 housing units and associated infrastructure including the access road, now known as Lissywollen Avenue. The Council, in consultation with the DHLGH, is in discussions with the preferred Economic Operator to finalise the contract award and commence construction. Westmeath County Council remains committed to the delivery of the access road and the proposed housing, including social housing, at this location. Exact timeframes cannot be established until the contract is awarded, however, it is anticipated that construction would commence in 2022. The tender documents provide for the construction of the access road in its entirety at the start of the development.

I trust this this clarifies this matter, however, should you wish to discuss the matter further please do not hesitate to contact me.

Yours Sincerely,

Mark Keaveney

Mark Keaveney
Director of Service for Housing, Community Development, Culture inc Library & the Arts, ICT, Corporate Performance & Development inc. HR
Designated Public Official under the Regulation of Lobbying Act

Áras an Chontae
Mullingar, County Westmeath | An Muileann gCearr, Contae na hIarmhí | N91 FH4N
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