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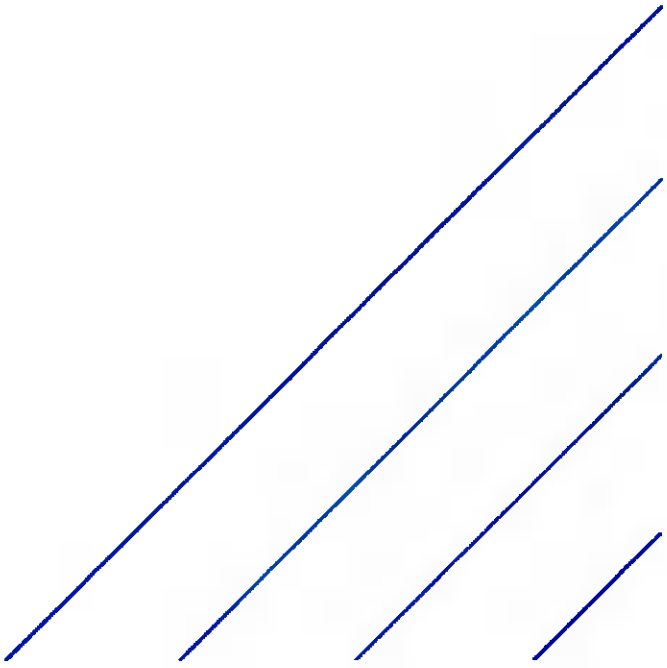
Rathcoole EV Charging and Coffee Drive-Thru

Traffic and Transport Assessment

Petrogas Group Ltd.

March 2022



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This document has 88 pages including the cover.

Document history

Revision	Purpose description	Origin-ated	Checked	Reviewed	Authorised	Date
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Rev 1	For Planning	MA	MA	SW	SW	04/03/2021
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Client signoff

Client	Petrogas Group Ltd.
Project	Rathcoole EV Charging and Coffee Drive-Thru
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1. Introduction

Atkins was appointed by Petrogas Group Ltd to undertake a Traffic and Transportation Assessment in relation to the development of EV charging spaces and Drive-Thru facilities at an existing service station site at Tootenhill, Rathcoole.

This TTA assesses the possible impacts on relevant junctions and the surrounding local road network.

1.1. Scoping Study

A scoping document was prepared and issued to South Dublin County Council in February 2021 with the following aims:

- To agree the strategy of Traffic and Transport Assessment to undertake
- To inform and guide the initial contact between the developer and South Dublin County Council
- To put the importance of traffic and transport into context as an integral element of the development proposal
- To emphasise the role of transport as both a possible asset and a source of difficulties to the development
- To facilitate the planning authority in its review process by including them in the scoping process at an early stage of scheme development.

1.2. Transport Assessment Methodology

This TTA has been undertaken, as set out within the Scoping Study, in accordance with current best practice guidance and planning policies. The following documents have been referenced during the preparation of this report:

- NRA Traffic and Transport Assessment Guidelines (May 2014)
- TII Project Appraisal Guidelines (October 2016)
- Design Manual for Urban Roads and Streets (DMURS)
- TII Design Manual for Roads and Bridges (TII DMRB)
- NTA Transport Strategy for the Greater Dublin Area 2016-2035
- South Dublin County Council Development Plan 2016-2022
- Greater Dublin Area Cycle Network Plan (December 2013)

The key items assessed as part of this Traffic and Transportation Assessment include the following:

- Examination and description of existing road network.
- Examination and description of proposed development.
- Calculation of trip generation for the site, trip distribution and trip assignment.
- Assessment of traffic impact for year of opening and future design years
- Assessment of the receiving transport network.
- Assessment of road safety risks.

2. Receiving Environment

2.1. Site Location

The existing site (0.51ha) at Tootenhill, Rathcoole forms part of a larger brown-filed landholding (1.5 ha) owned by Petrogas Group Ltd which currently consists of a service station building including multiple food outlets, fuel pumps and car and truck parking. The site is located to the west of Rathcoole village in the townland of Tootenhill, with significant frontage onto the N7.

The subject site is currently vacant. It previously contained Tootenhill House, which was demolished following a grant of permission for same (Reg. Ref. SD18A/0042).

2.1.1. Site Access

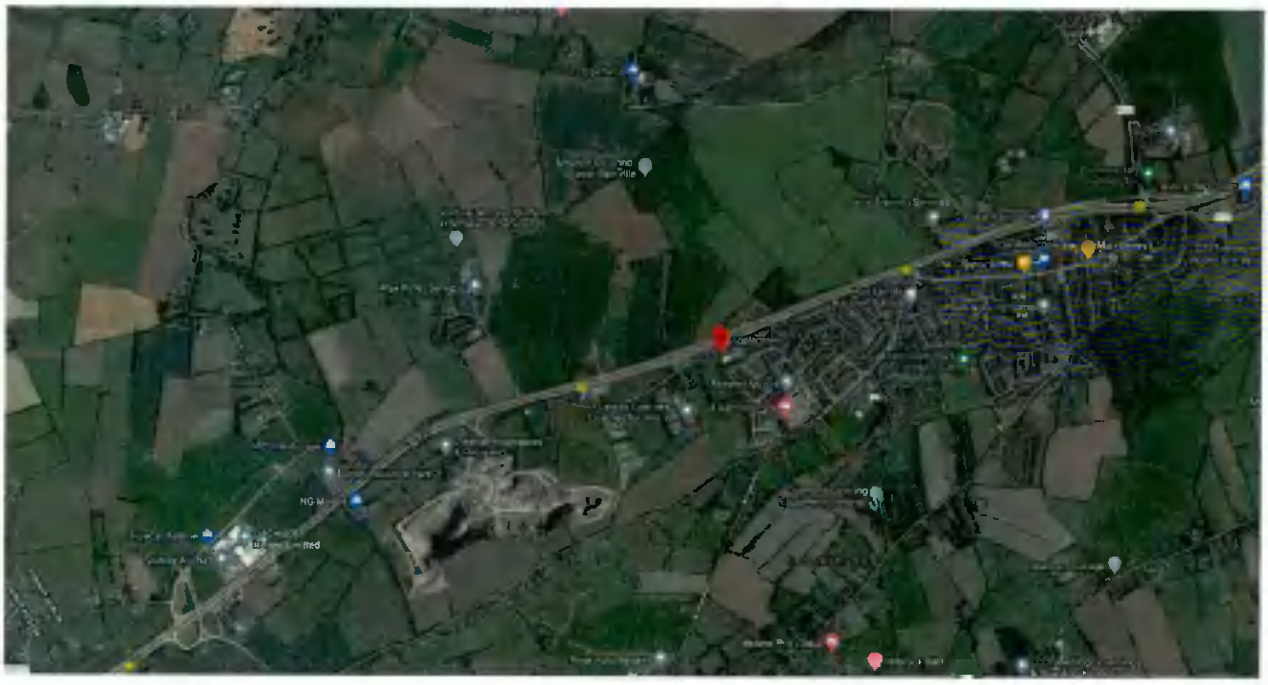
The access to the existing service station is provided directly from the N7 by means of a direct at-grade access as well as via a service road parallel to the N7. The parallel service road diverges from the N7 approximately 400m east of the site entrance and also serves a small number of other properties which access directly onto it as well as providing access to a local road to the east of the existing service station. For reference, this parallel access road is referred as the "long off-slip connector road" in the remainder of the report.

An additional direct access is provided from the N7 with a left turn lane commencing approximately 90m to the east of the service station entrance. For reference, this access is referred to as the "short off-slip connector road" in the remainder of the report

Vehicular access for the proposed development will be provided internally from the existing service station. A one-way traffic system will operate for the drive-thru. No changes to the existing access to the service station from the N7 or parallel access road are proposed.

The approximate location of the proposed development is shown below.

Figure 2-1 - Site Location



2.2. Policy Background

In accordance with the South Dublin County Development Plan, the proposed development site is zoned in "Zone B - To protect rural amenity / provide employment for the development of agriculture". However, the existing vacant site detracts from the visual amenity of the area at this high profile location and there are very limited options for development on the site given the restricted access. An ancillary use associated with the existing

filling station development is considered to be the only viable use for this site. Therefore, the applicant, Petrogas Group Ltd. have proposed to construct an Electric Vehicle fast-charging hub and coffee drive-thru facility on the lands.

2.3. Surrounding Road Network

2.3.1. Links

The surrounding road network primarily consists of the following roads in order of classification:

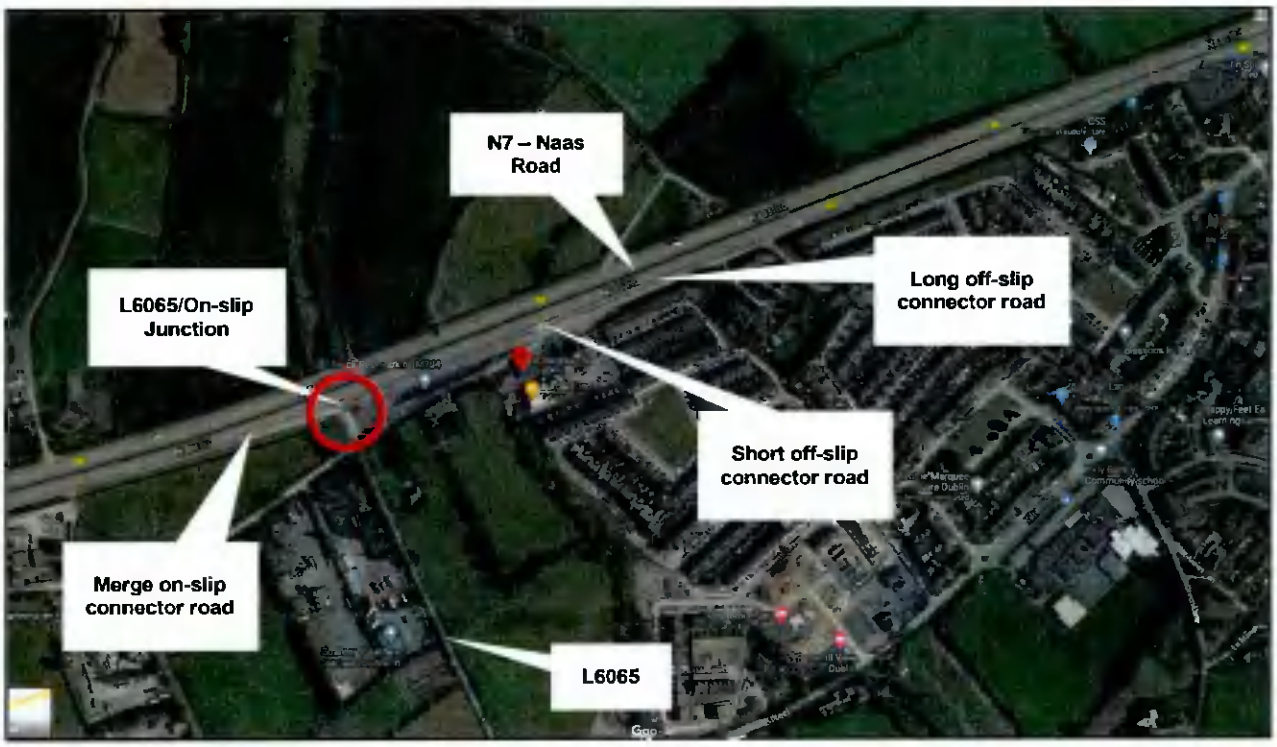
- N7 (National Secondary Road) – The N7-Naas Road is a 3+3 lane dual carriageway that provides a link between the M7 to Limerick, and the M50 to Dublin and the R110 Naas Road to Dublin City Centre. In the vicinity of the proposed development, the speed limit is 100 km/hr.
- L6065 (Local Road) – This is a 5-metre single carriageway road which connects Kiteel Road in the south to the N7-on slip road in the north.
- Off-slip connector roads which provide access for the vehicles diverting from the N7 to avail of the facilities at the proposed development site. Both of these connector roads are single lane.
- Merge on-slip connector road along which the vehicles from the subject site can move onto the N7 westbound mainline – this is also a single lane.

2.3.2. Junctions

The priority junction of the local road (L6065) with the N7 on-slip road is a key junction which is likely to be impacted by the proposed development.

The following figure summarises the key links and junctions in the vicinity of the proposed development.

Figure 2-2 - Key Links and Junctions



2.4. Current Baseline Traffic

2.4.1. N7 Mainline Traffic

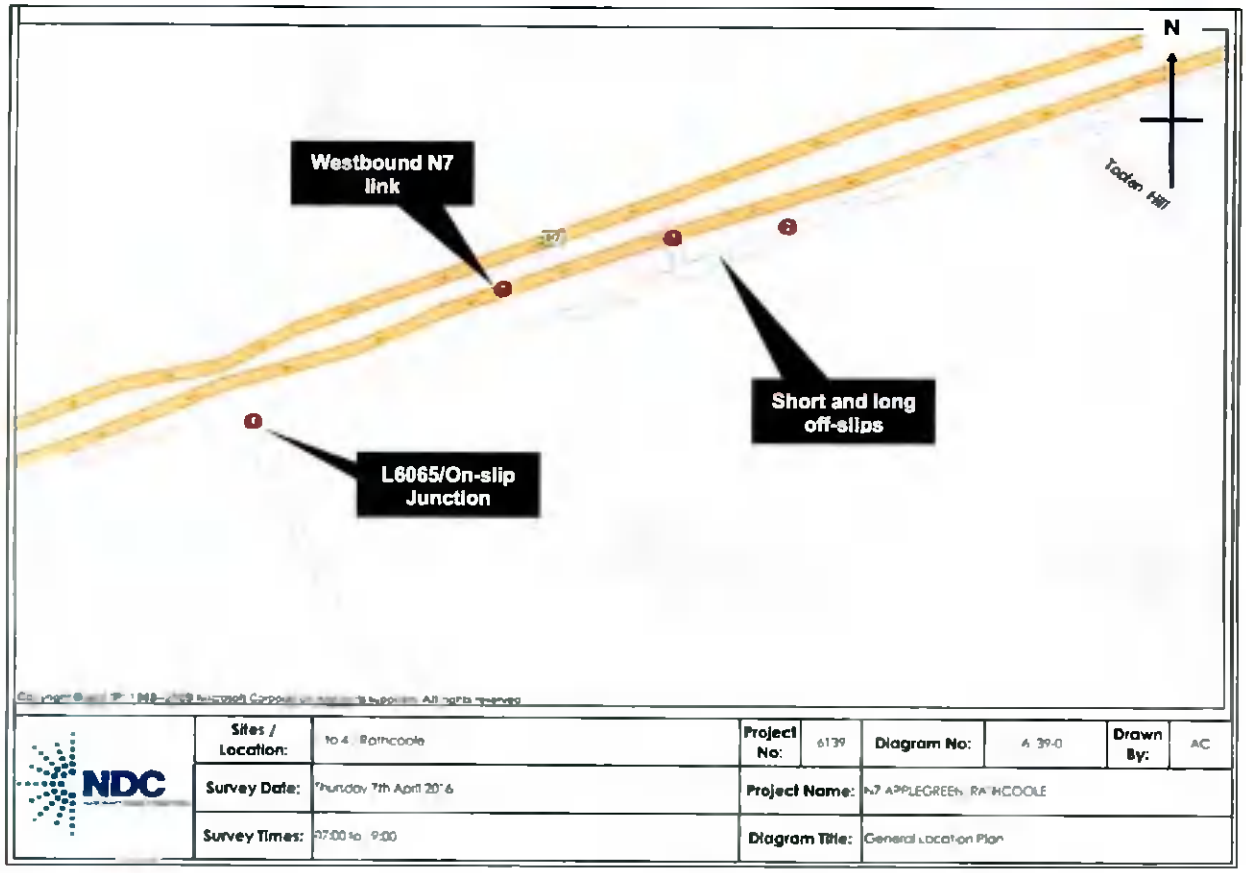
Traffic data from the nearby TMU counters along the N7 were investigated for the analysis to determine the peak hours. Given the impact of Covid-19 restrictions over the past number of years and the uncertainty in how traffic volumes will react to remote working etc., the data for 2017-2019 was examined only. The traffic flow pattern for the N7 Westbound mainline at the nearby TMU counters is included in Appendix A. Based on this data, the following peak hours were identified:

- AM Peak – 08:00 to 09:00
- PM Peak – 16:00 to 17:00

2.4.2. Previous Survey Data

A previous planning application (SD16A/0280) by the same applicant to construct and develop a service station and other facilities at the same site was granted permission in January 2017. As part of this application, traffic surveys were conducted by a specialised data collection company on April 7, 2016. This survey included link counts on the N7 westbound link as well as at the off and on slips to the petrol station. In addition, a Junction Turning Count (JTC) was conducted for the junction of the on-slip road with the L6065. The location of all of the surveys is summarised in the figure below as extracted from the previous application.

Figure 2-3 - Location of Traffic Survey Sites for Previous Planning Application (SD16A/0280)



Given the impact of Covid-19 restrictions on traffic volumes and patterns over the past two years and the current uncertainty over the impact of remote working etc. in the future, new traffic counts at this location were not considered to be appropriate. Therefore, the previous traffic counts have been used and grown to current traffic levels based on established TII growth factors. This is likely to represent a conservative estimate of traffic as reductions due to remote working etc. are not included.

3. Proposed Development

3.1. Description of the Proposed Development

The applicant intends to upgrade the existing site to provide EV charging spaces and a new coffee outlet including:

- 8 number existing parking spaces located north-east of the existing amenity building will be removed and replaced with 8 new EV charging spaces and 3 no. standard parking spaces
- A drive-thru coffee facility (167 sq. m) which would consist of approximately 50 seats and a total number of 22 number of car parking spaces
- 5 number of existing parking spaces located east of the existing amenity building will be removed to facilitate the drive-thru entrance.

3.2. Internal Site Layout

The proposed layout of the new facilities is illustrated in Appendix B.

The existing entrance and exit from the current site from the current service station site to/from the N7 will be retained as is with no changes proposed.

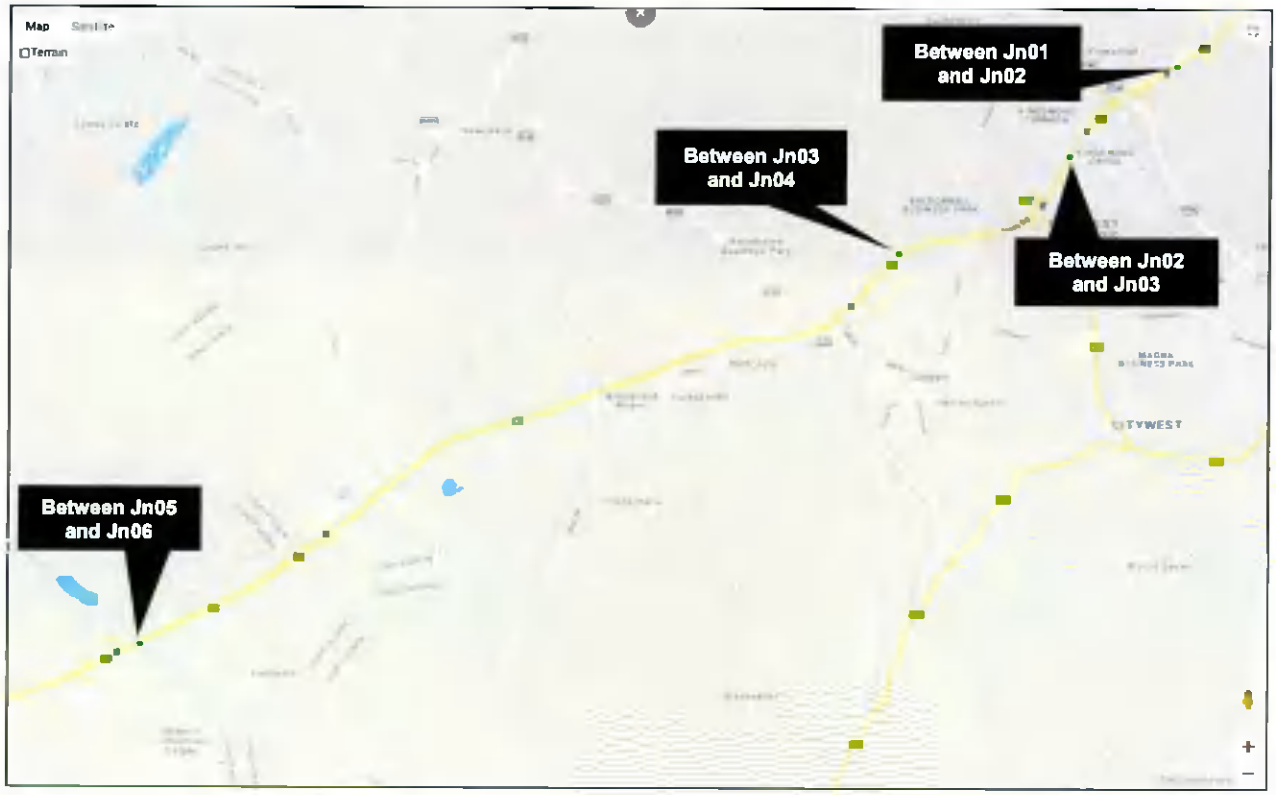
The proposed coffee drive-thru and the associated car parking spaces have been accommodated at the current site which was vacated after demolishing of Tootenhill House. The drive-thru areas have been designed to allow for a one-way circulatory system and the widths and turning areas have been designed based on the swept-path analysis and industry best practice.

4. Assessment of Existing Traffic

4.1. Traffic Forecasting

In order to estimate the likely base traffic volumes for 2022, an analysis of the TII TMU data in the vicinity of the site was carried out to determine the trend in growth over recent years. The locations of the TMUs which were examined are shown in the figure below.

Figure 4-1 - Location of TMUs



The data considered for the analysis was taken from the average working day for each year from 2017 to 2019 with light vehicles (LVs) and heavy vehicles (HVs) considered separately. Due to the impact of COVID-19 on the number of vehicles on the national road network, data for the years 2020 and 2021 was not considered for the analysis. The TMU counter between Junction 3 and 4 contains only data for the year 2019 and beyond and was therefore, not considered for the analysis. Since the current service station and the proposed development cater only for the traffic moving along the N7 westbound mainline, the data for the N7 westbound direction was considered only.

Based on this traffic data from TMU counters, the traffic growth over the years 2017 to 2019 are detailed in Appendix C and summarised in the table below.

Table 4-1 - Average Growth Rate Per Year Based on TMU Counts

TMU Counter	LV Growth Rate	HV Growth Rate
Between N7 – Junction 1 and Junction 2	101.00%	104.18%
Between N7 – Junction 2 and Junction 3	102.41%	106.73%
Between N7 – Junction 5 and Junction 6	100.48%	102.89%
Average	**101.30%**	**104.60%**

Based on the table above, it can be seen that the volume of LVs along the N7 westbound mainline increased by an average of 1.3% over the 2017-19 period, while the number of HVs increased by an average of 4.6% over the same time period. These growth factors were applied to the 2016 traffic survey data to get a projection of what the base traffic volume for 2022 would be in the absence of the previous two years of Covid-19 restrictions.

For all future years, "Central Growth" rates from the current Project Appraisal Guidelines, published by Transport Infrastructure Ireland (TII) in May 2019 were applied to determine future traffic flows. These rates are shown highlighted in the figure below.

Figure 4-2 - Link-Based Growth Rates: Metropolitan Area Annual Growth Rates

Metropolitan Area	Low Sensitivity Growth Rates						Central Growth Rates						High Sensitivity Growth Rates					
	2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0146	1.0280	1.0034	1.0116	1.0028	1.0144	1.0162	1.0295	1.0051	1.0136	1.0044	1.0182	1.0191	1.0328	1.0087	1.0172	1.0093	1.0256
Cork	1.0153	1.0279	1.0072	1.0128	1.0065	1.0164	1.0169	1.0294	1.0090	1.0149	1.0083	1.0182	1.0202	1.0328	1.0125	1.0185	1.0166	1.0276
Galway	1.0154	1.0201	1.0077	1.0164	1.0079	1.0203	1.0169	1.0217	1.0097	1.0182	1.0095	1.0220	1.0203	1.0250	1.0131	1.0217	1.0178	1.0313
Limerick	1.0158	1.0313	1.0052	1.0113	1.0050	1.0158	1.0174	1.0329	1.0070	1.0134	1.0069	1.0177	1.0218	1.0364	1.0106	1.0171	1.0146	1.0273
Waterford	1.0123	1.0301	1.0031	1.0131	1.0029	1.0175	1.0140	1.0317	1.0052	1.0153	1.0050	1.0194	1.0173	1.0352	1.0091	1.0194	1.0122	1.0300

5. Trip Generation and Distribution

5.1. Trip Generation – Proposed Development

Trip generation for the proposed new services at the Tootenhill site were calculated individually for each element of the proposed new development as summarised below. Given the nature and location of the site, it will not act as a destination in its own right and the proposed development will not generate any new trips on the network, i.e. it will not generate new trips on the N7 or local roads as trips will be generally pass-by in nature.

5.1.1. Coffee Drive-Thru

The applicant has proposed to develop a drive-thru coffee facility (167 sq. m) which would consist of approximately 50 seats and a total number of 22 number of car parking spaces. The TRICS (Trip Rate Information Computer System) database has data available for only two sites for "Drive Thru Coffee Category" subcategory. Hence, the trip rate for this category was not utilised for the analysis purpose. Therefore, the trip rate for Drive-Thru was estimated using the "Fast Food – Drive Through" subcategory. The direct output from TRICS is included in Appendix D and summarised in the table below.

Table 5-1 - TRICS Trip Rate – Vehicles per 100m²

Time Arrival	TRICS Trip Rates	
	Arrivals	Departures
AM Peak (8:00-9:00)	12.687	12.119
PM Peak (16:00-17:00)	19.379	19.764

Based on the above trip rate, total trips to and from Coffee Drive-Thru are summarised in the table below. It is assumed that all these trips will comprise of Cars and LVs. No growth factor has been applied in future years to the drive-thru traffic as it is maximized based on area size.

Table 5-2 - Total Trips Generation (Drive-Thru)

Time Arrival	Arrivals	Departures
AM Peak (8:00-9:00)	21	21
PM Peak (16:00-17:00)	33	33

For robustness, it has been assumed that the above trips will all be new to the development site. However, given the nature of the site and the number of food outlets already present, it is likely that at least a proportion of these trips would likely already be accessing the site with the proposed drive-thru acting as an additional choice for consumers who would be stopping regardless.

5.1.2. EV Charging Spaces

The applicant has proposed to upgrade the existing car parking spaces located northeast of the existing amenity building to accommodate 8 number of dedicated EV fast-charging hub spaces as illustrated in the proposed layout diagram outlined in Appendix B. The proposed development of EV spaces is in line with the Climate Action Plan 2019 which seeks to accelerate the take up of EV cars and vans so that 100% of all new cars and vans are EVs by 2030. Therefore, it is assumed that the EV fast-charging hub will not generate new trips as they will replace existing fossil fuel fill-up trips as the mix of vehicles on the road changes in line with national policy.

5.1.3. Car Parking Spaces

As outlined in Section 3.1, out of the existing parking spaces currently on site, 8 will be designated for the EV charging hub and 5 will be removed for facilitating new entrance for the drive-thru. Therefore, in total 13 parking spaces will be removed from the existing car parking provision and replaced with 3 no. standard parking spaces. However, to allow for a more robust assessment, it is not proposed to reduce the existing trips to the site despite this reduction in spaces.

5.2. Committed Development

An assessment of the additional nearby developments that have been granted planning permission in the vicinity of the proposed development was carried out and the trips associated with these committed developments are also considered for the assessment of the future years.

The committed development trips include the trips from the previous planning application (SD16A/0280) by the same applicant to construct and develop a service station and other facilities at the same site which was granted permission in January 2017. In the absence of available traffic count data since completion and opening of the upgraded service station, the traffic calculated as part of that application has been included as committed development.

The review of the TTA document prepared as the part of the above application suggests that 5.3% of the traffic along N7 westbound mainline will be diverted to avail of the facilities at the service station. Among the vehicles diverting to the service station, 63% will be using the short off-slip connector road, while the remaining vehicles will be accessing the site via the long off-slip connector road. This is shown in the figure below extracted from the previous application:

Figure 5-1 - Pass-by/Diverted Traffic as per SD16A/0280

Table 6.3 Projected Daily Turn-In 20% increase

N7 Naas Road	AADT Flows	Daily Turn-In Short Slip	Daily Turn In Long Slip
Opening Year 2017	41,200	1,387	808
Design Year 2032	44,092	1,484	865

Based on this distribution, the number of vehicles diverting from the N7 using both the connector roads is detailed in Appendix E for all the design year scenarios.

The assessment of the other committed developments in the vicinity of the development suggests that the trips associated with these developments will not impact the key links and junctions (Figure 2-2) near the proposed developments. Therefore, no other development trips were considered for the analysis.

5.3. Trip Distribution

To determine the traffic impact of the proposed development on the surrounding road network, consideration was given to the different types of vehicular trips that are likely to be generated. These are discussed below:

- **New Trips**: These are trips that do not appear anywhere on the road network prior to the opening of the development.
- **Pass-by Trips**: These are trips that are already present on the road network directly adjacent to the point of access to the site. that will turn into the site as a result of development.
- **Linked Trips**: These are trips that have multiple destinations within the proposed development site, i.e. car is left parked while using more than one facility.
- **Diverted Trips**: These are trips that are already present on the local road network but not the road from which site access is taken, i.e. they will divert from their existing route to access the site.

As discussed previously, it is highly likely that the development will not generate any new trips but that it will attract additional pass-by/diverted trips to and from the surrounding road network.

The proportion of these additional trips accessing the service station site by means of the short slip and long slip access is calculated on the basis of the existing distribution as summarised in the previous planning application (SD16A/0280) and discussed in the previous section. Therefore, it was assumed that 63% of these trips will access the subject site using the short off-slip connector road while the remainder will use the long off-slip connector road. It was assumed that all of these trips will further continue their journey along N7 and none of them will divert onto the local road L6065.

The distribution of trips to/from the N7 is summarised in Appendix F for different design years.

6. Assessment of Future Years

The purpose of the traffic impact assessment is to determine the impact on the surrounding road network, due to the change in localised traffic movements and patterns. Therefore, to determine the impact of the additional pass-by/diverted trips from the N7 to the service station site, an assessment for the future years was carried out for the following connector roads and junctions:

- Short-slip connector road from N7 which commences approximately 90 m east of the site
- Long-slip connector road from N7 which commences approximately 400 m east of the site
- Merge on-slip connector road from the site onto the N7
- Junction of merge lane with the local road L6065 and merge connector lane

6.1. Initial Screening Assessment

Initially, the additional volume due to the development along all of the key connector roads and junction as identified above was assessed. In line with TII's Traffic and Transport Assessment Guidelines, detailed assessment is carried out if:

- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining roads
- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining roads where congestion exists, or the location is sensitive.
- Development traffic exceeds 10% of turning movements at junctions
- Development traffic exceeds 5% of turning movements at junctions if location has potential to become congested or sensitive

For assessment, due to their proximity to the N7, all the connector roads and the junction were considered to be sensitive and therefore subject to the 5% threshold.

The percentage increase in traffic along each of the connector roads and junctions as a result of traffic generated by the proposed development is summarised in the 0. Based on these assessments, it can be seen that the percentage increase on all diverges/merges and the L6065/On-slip junction was observed to be above 5% for all the design years. Therefore, they were bought forward for more detailed analysis.

6.2. Detailed Assessment Approach

Assessments were undertaken for all the connector roads and the L6065/On-slip junction for the following design year scenarios for both AM peak and PM Peak:

- Opening Year (2022) without development
- Opening Year (2022) with development
- Opening Year + 5 (2027) without development
- Opening Year + 5 (2027) with development
- Opening Year + 15 (2037) without development
- Opening Year + 15 (2037) with development

The analysis of both diverge lanes and merge lane was carried out in accordance with the document "Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions, DN-GEO-03060)" published by TII. In addition, the length of both short and long connector road was also analysed to determine the stacking capacity available for vehicles.

The junction of local road L6065 with merge lane was analysed using PICADY module of TRL Junction 9 software.

6.3. Analysis of N7 Merge and Diverges

As mentioned earlier, the analysis of all the connector roads was carried out in accordance with the document "Geometric Design of Junctions" published by TII.

All of the connector roads currently consists of a single lane. The analysis was carried out to determine the number of lanes required on the basis of the traffic volume along these roads.

The traffic volume along all each of the connector roads for different design years are detailed in Appendix G and summarised in the figures below. This includes both the short and long off-slip connector roads that diverge from the N7 to the east of the site and the on-slip connector road which merges with the N7 to the west of the site. These traffic volumes include all of the traffic accessing the service station site as well as those accessing/exiting the L6065.

Figure 6-1 - Capacity Along Short Off-Slip Diverge Connector Road

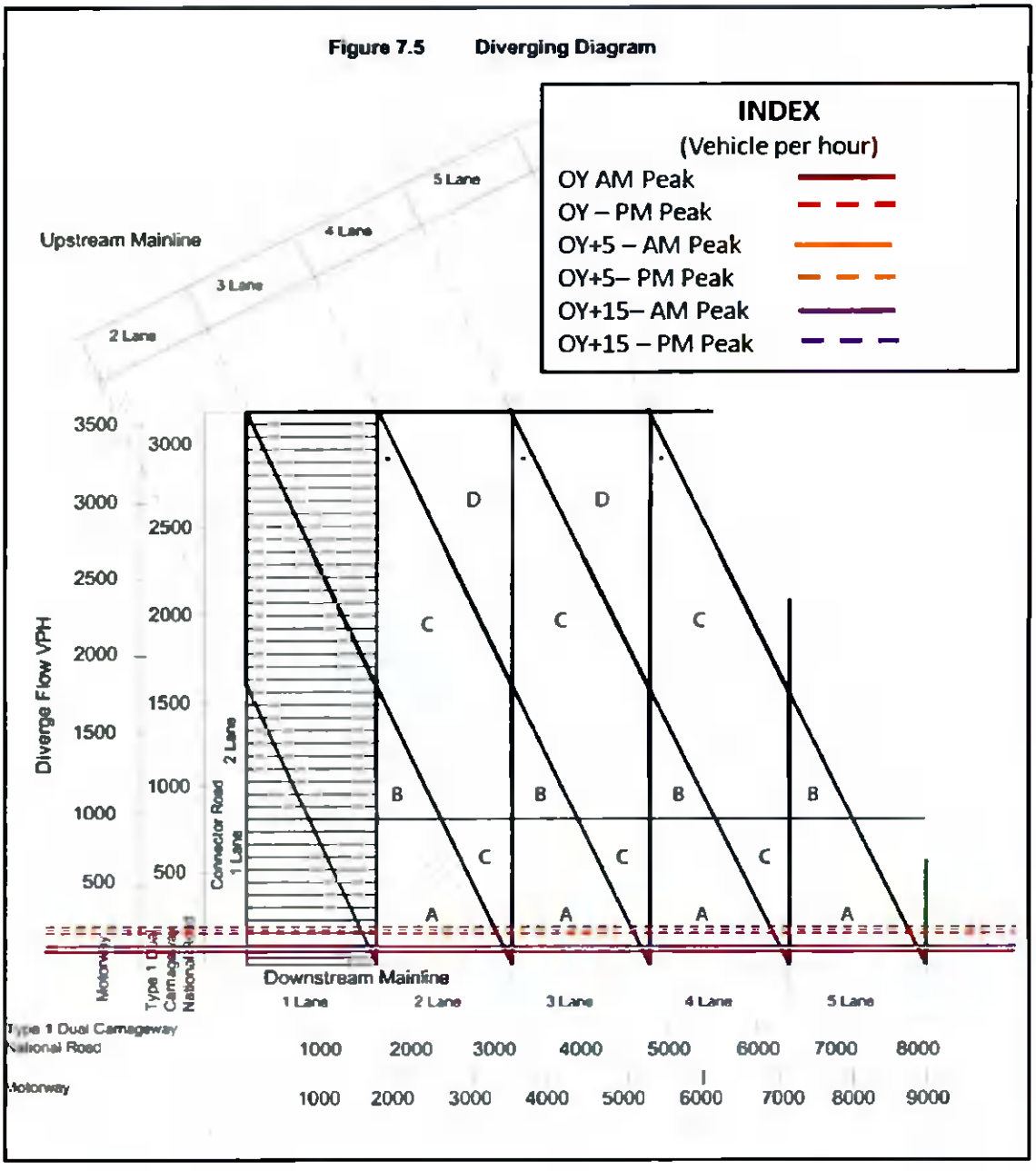


Figure 6-2 - Capacity Along Long Off-Slip Diverge Connector Road

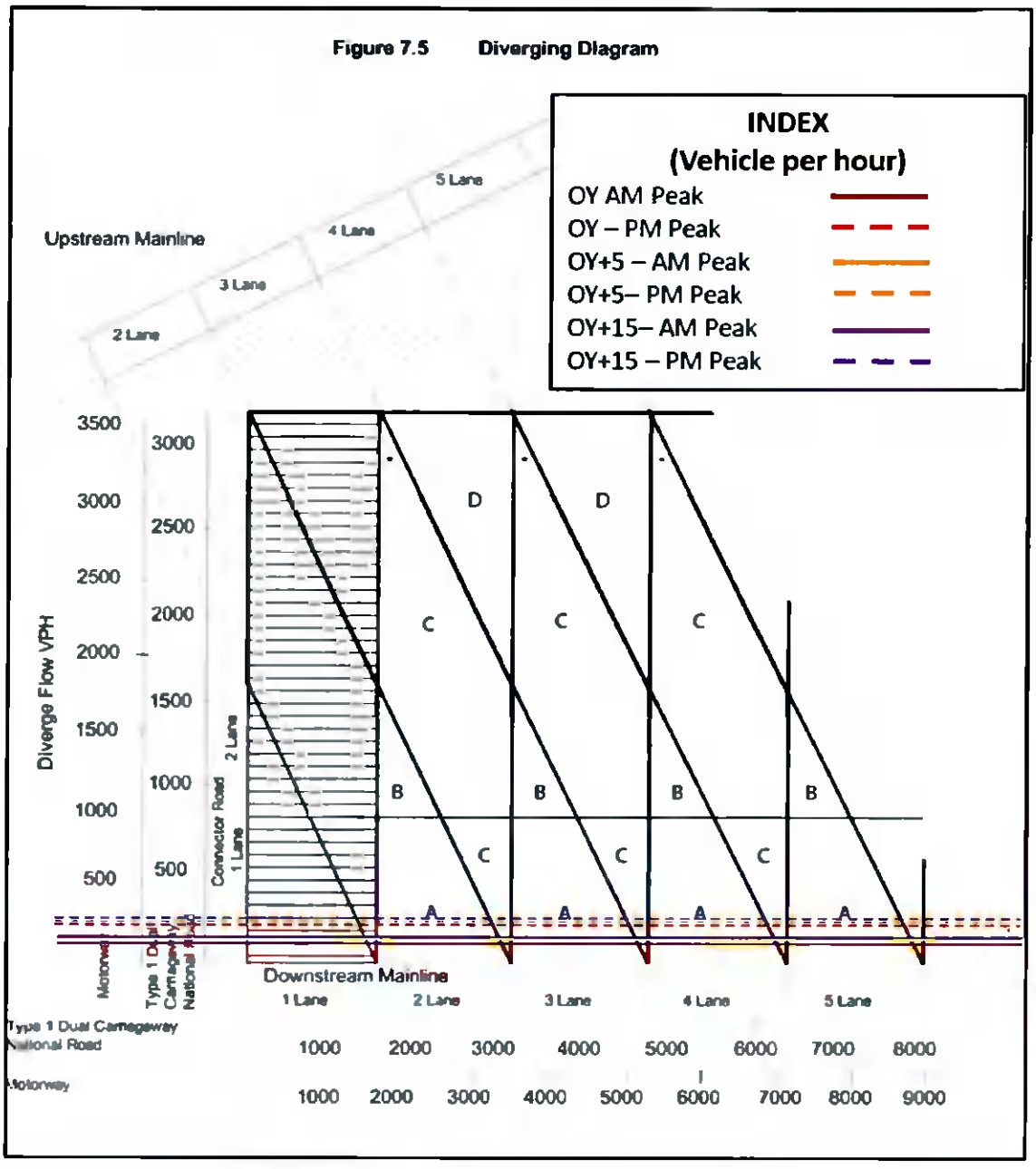
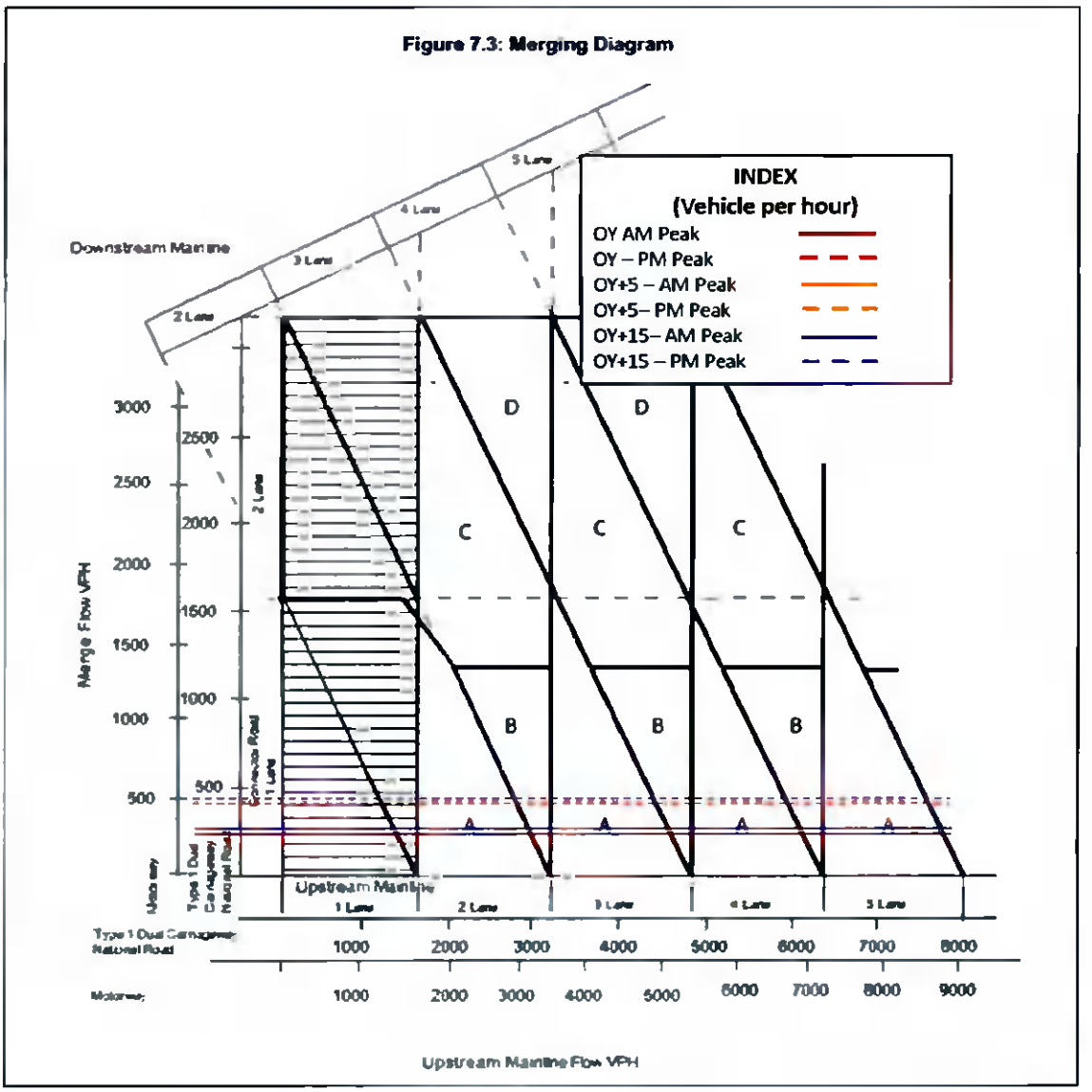


Figure 6-3 - Capacity Along On-Slip Merge Connector Road



Based on the above figures, it can be observed that a single diverge connector road can cater for a maximum of around 750 vehicles per hour while for the merge connector road, single lane can cater a maximum of around 1500 vehicles per hour. However, from the above figures and Table G-1, it can be observed that the maximum number of vehicles along the short and long off-slip connector roads is 239 and 170 respectively, whereas along the merge on-slip connector road the maximum number of vehicles is 413. Therefore, all connector roads have more than sufficient capacity to cater for the future traffic.

6.3.1. Queue Capacity

In terms of stacking capacity, the short and long connector roads together are approximately 450 metres long which can cater for approximately 75 number of vehicles at once. Therefore, it can be implied a queue of 75 vehicles could be catered for before having any impact on the N7 itself. However, a queue of this length is almost certain to never develop as vehicles are unlikely to divert into the site if congestion was observed considering that there are alternative similar facilities at various points on the N7 and the local area. It should also be noted that the upgraded service station has been operating since July 2018 with no issues observed with queueing at the entrance or on the N7 mainline. The relatively small additional volume generated by the proposed coffee drive-thru unlikely to have any major impact on the current operational characteristics.

6.4. Junction Impact Analysis

For detailed analysis, the junction of local road L6065 with the N7 on-slip merge lane was analysed using TRL Junctions 9 software. The terminology used throughout the analysis associated with the software is explained in the following sections.

- **RFC**: This is the ratio of demand flow to capacity. The practical capacity threshold is normally approximately 0.85. An RFC below 0.85 represents a junction which is operating in an efficient and stable condition. An RFC of between 0.85 and 1 represents variable operation, and may be said to be operating adequately, if the queueing and delay are deemed acceptable. RFC values in excess of 1 represent an oversaturated condition/
- **Average Queue Length**: This represents the average queue length of vehicles waiting to enter the junction on each arm.
- **Average Delay**: This shows the average amount of traffic delay at the junction per vehicle over the peak hour period

The results for the assessment scenarios are included in Appendix H, while the direct output from the Junction 9 are included in Appendix I. The results for different scenarios are summarised below.

6.4.1. Opening year (2022)

The increase in the average queue, delay and RFC observed due to the proposed development is insignificant for both morning and evening peak. The maximum average queue among all the scenarios is 0.2 pcu with a maximum average delay of 6.70 seconds. The maximum RFC observed was 0.16 which suggests that the junction is operating well within capacity for the Opening Year scenario.

6.4.2. Opening Year + 5 (2027)

The increase in the average queue, delay and RFC observed due to the proposed development is negligible for both morning and evening peak. The maximum average queue among all the scenarios was observed to be 0.2 pcu with maximum average delay observed were under 7 seconds. The maximum RFC observed was 0.18 which suggests that the junction is operating well within capacity for the Opening Year + 5 scenario.

6.4.3. Opening Year + 15 (2037)

The increase in the average queue, delay and RFC observed due to the proposed development is negligible for both morning and evening peak. The maximum average queue among all the scenarios was observed to be 0.3 pcu with maximum average delay observed were 7.16 seconds. The maximum RFC observed was 0.20 which suggests that the junction is operating well within capacity for the Opening Year + 15 scenario.

6.5. Summary

The analysis of all the connector roads suggest that the number of vehicles along both the off-slip roads and merge road are well within the threshold number of vehicles per hour that a single lane connector road can cater for. In addition, the off-slips will have more than sufficient stacking capacity to cater for the future year traffic.

The impact on the junction between local road L6065 with on-slip to N7 was negligible with the maximum average queue observed to be under 0.5 pcu among all the scenarios and delay under 10 seconds. The RFC value of 0.2 suggests that the junction is operating within the capacity.

6.5.1. Impact on Adjacent Local and National Road Network

The proposed development will, have a very negligible impact on the local road network with the existing L6065/N7 on-slip junction having more than an adequate capacity to cater for the development.

Similarly, both diverge off-slips and the merge on-slip to/from the N7 have more than sufficient capacity to cater for the development in all design year scenarios. The development will, therefore, not have any negative impact on the operation of the N7 mainline.

7. Parking Provision

7.1. Cycle Parking

Table 11.22 of the SDCC development plan (2016-22) sets out the Minimum Bicycle Parking rates for the proposed new development as shown below:

Table 7-1 - Bicycle Parking Standards

Land Use	Criterion	Bike	Category	Norm or Max
Vehicle Service Station	Number of employees	1 per 5 staff	Retail and retail service	Minimum

It is estimated that the proposed Coffee Drive-thru development will employ approximately 20 people (full and part time). Therefore, it is proposed to include 4 number of additional cycle parking spaces as a part of the development.

7.2. Car Parking

As set out in the SDCC development plan (2016-22), the proposed development is situated in Zone 2 for the purposes of car parking standards. Table 11.23 of the development plan sets out the maximum permissible number of parking spaces as replicated below:

Table 7-2 - Car Parking Standards

Land Use	Criterion	Bike	Category	Norm or Max
Cafe	GFA	1 per 15 m^2 GFA	Retail and retail service	Maximum

The proposed GFA for the coffee drive-thru is 167 m2 for which a maximum of 12 parking spaces can be provided as per the above guidelines.

As outlined in Section 3.1, 8 existing parking spaces will be designated for the EV charging hub and 5 will be removed for facilitating the new entrance for the drive-thru. Therefore, in total 13 parking spaces will be removed from the existing car parking provision and replaced with 3 no. standard parking spaces. When considered with the above proposed spaces as part of the coffee drive thru development, an additional 12 no. new parking spaces will be provided on the site as a whole, which is in accordance with the above standards.

8. Mobility Management Plan

A Mobility Management Plan (MMP) is a strategic management tool designed to accommodate a site's specific transportation needs. The MMP aims to educate people regarding how, why and when they need to travel. It provides a forum to promote and support the use of alternative, active and sustainable transport modes such as walking, cycling, shared transport and mass transit such as buses and trains.

The MMP is developed in accordance with the site location, site context and proposed site layout. The MMP is not one fixed but a dynamic and evolving mechanism for introducing and maintaining a package of measures.

The MMP envisages the measures taken for the promotion of alternative, active and sustainable modes of transport.

8.1. Existing Conditions

8.1.1. Accessibility for Cyclists and Pedestrians

Since the N7 is a high-speed dual carriageway, it does not generally cater for pedestrians and cyclists with limited facilities provided for these users in general. There is a foot-over bridge located approximately 1 km east of the proposed development site which facilitates the pedestrian moving across the N7 mainline.

The local road, L6065, located to the west of the subject development, is a left in-left out priority junction with the one-way on slip connector road at the N7 merge. Therefore, cyclists cannot use this road to access the service station area. In addition, there are no cycling or pedestrian facilities along this road.

There is a 1.5 metre footpath located on the left side of the local access road which diverges from approximately 400m east of the site entrance the N7. However, there are no cycle facilities along the road.

Within the site, pedestrians alighting from vehicles are provided with clear routes from all parking areas to the main entrance of the amenity building. A pedestrian route is also provided from the coach and HV parking areas. Pedestrians accessing the main car parking areas are completely separated from the coach and HV traffic. Road crossings for the pedestrian are provided in the form of zebra crossing with raised platforms.

Drivers of HVs are provided with a safe crossing point from the HV parking area to the forecourt to facilitate safe access to the existing amenity building.

8.1.2. Public Transport

The N7 dual carriageway is used by public transport buses which connect Dublin to the south-west region of Ireland. There are two Go-Ahead Ireland bus stops located along N7. The bus stop along the eastbound mainline is located an approximately 20-minute walk from the subject site, while the one along westbound mainline is located 8-minute walk. These stops are served by the 125 and 126 commuter services run by Go-Ahead. The 125 connects Newbridge to UCD and runs only from Monday to Friday, with two buses operating during the morning for going to UCD and two buses operating during the evening from UCD. The bus route 126 operates between Newbridge and Dublin City Centre. This services operates at a 30-minute frequency throughout the week.

There are existing bus stops at Main Street and School Road within Rathcoole village to the south of the development site which can be reached by approximately 15 minutes walk. The bus route number 69, operated by Dublin Bus currently services these stops and operates between Rathcoole and Dublin City Centre at a frequency of 1-hour.

The bus stops serving route 125 and 126 can be accessed by existing footpath along the long slip lane and foot over the bridge across N7, while bus stops serving route 69 can be accessed by footpath along Main Street, School Road and long slip lane. However, to access the footpath along long slip lane, pedestrians have to walk briefly either along N7 hard shoulder or walk through the car parking area located at the end of the Main Street.

Given the frequency of the above services and the accessibility by foot, there is scope for some staff to use public transport to access the site.

8.2. Strategy and Measures

This section describes the services to be provided and the 'inbuilt' infrastructure measures (as part of the layout and design of the development) which are intended to encourage the use of active and sustainable travel modes and complement the strategic aspects of the MMP.

8.2.1. Strategy

Travel Information Packs will be distributed to all staff of the development. These will be distributed by the Mobility Manager. The details of the Travel Information Packs would be provided to South Dublin County Council. The Travel Information Packs would ideally contain the following information:

- Information about public transport, walking and cycling routes and car parking management.
- Information about local services and facilities that are within comfortable walking distance.
- Information on active and sustainable transport measures facilitated by the development (i.e. car sharing scheme, EV charging, etc.).
- Information on future transport infrastructure.

Through a monitoring and review process, the Mobility Manager will also be responsible for ensuring that the measures proposed are implemented in the most effective way possible.

8.2.2. Measures

The following measures should be promoted to encourage the best choice of travel other than private car use.

8.2.2.1. Walking and Cycling

The existing and the proposed development at the subject site will mainly cater to the car users who are travelling long distance along with N7 westbound link. Hence, the walking and cycling strategies are mainly intended for the staff who may live locally or are using public transport to access the workplace.

Walking has the capacity to replace car based journeys of up to 3.5km. A high proportion of walking journeys may form the start or end of larger journeys comprising of bus or rail links, hence an attractive walking experience can play a large part in encouraging public transport patronage. As stated in the above section, there is sufficient infrastructure along the nearby links which can facilitate the movement of pedestrians from nearby residential areas and bus stops to the subject site. The following measures are proposed to encourage staff to walk to work:

- **Promote the health benefits of walking** – A relatively easy to implement measure, which may encourage more staff to walk to work is to raise awareness of the health benefits of walking through promotional material, such as posters and leaflets.
- **Provision of maps of walking routes** – The maps showing safe walking routes will be provided to the staff who are unfamiliar with the area and are reaching the site using public transportation.
- **Provision of weather-proof gear** – This is a simple cost-effective measure which requires the provision of umbrellas and waterproof clothing for staff. This can facilitate movement between buildings or to and from adjacent areas. The aim is to discourage car use for those shorter trips.
- **Promotion of schemes** – Walking will also be promoted through various schemes such as the:
  a. Pedometer Challenge, as part of the Smarter Travel Work Place programme
  b. Organise special events such as a 'Walk to work on Wednesdays' where participants are rewarded for their participation
  c. The use of existing services such as the NTA journey planner at www.nationaltransport.ie will also be promoted as a helpful way to find out the most effective and convenient cycle/pedestrian route
  d. Buddy systems should also be promoted to address personal safety issues of staff travelling to/ from the site
  e. Organise lunchtime or afternoon walks as part of a workplace health and well-being programme

Cycling has significant potential as a viable mode for staff. Research suggests that cycling could be a feasible mode of transport for those who live up to 5 miles from the workplace. As stated in the above sections there are no adequate cycling facilities provided along the links connecting the nearby area to the subject site, therefore, it is not advisable to cycle to the subject site. However, the following facilities will be provided for the staff who live locally and are willing to access the subject site through the cycle.

- **Cycle Parking** – Cycle parking as outlined in Section 7.1 should be installed to encourage staff to travel to work by bike where possible, e.g. staff living locally in Rathcoole.
- **Cycle Loan Scheme** – This cycling initiative is a measure contained in the new National Cycle Policy. The scheme enables employees to purchase a bicycle and associated equipment tax-free. The scheme must be operated by an employer. The bicycle can be funded by either the employer or through salary sacrifice of the employee, but it must be purchased by the employer. If employers pay for the bicycle, they can claim it as a tax-exempt benefit-in-kind. Where funded by salary sacrifice there will be savings on tax, PRSI and levies.

The scheme means an effective saving of at least 47 per cent on the cost of a new bicycle for a top rate taxpayer.

- **Cycle Parking - Location, Type and Quantity** – Cycle parking should be provided in a secure and sheltered facility to make this an attractive travel mode.

8.2.2.2. Public Transportation

As mentioned above there is sufficient pedestrian facilities from the nearby bus stops to the subject site. Therefore, the following measures are proposed to encourage staff to avail of public transport for travel to work.

- **Information Sharing** – Timetables and information on routes, ticket prices etc. will be kept on hand at all times and made available to staff.
- **Tax Saver Scheme** – The employer will also promote and distribute information on any special ticket offers such as tax-saver tickets, integrated ticket systems etc. on an on-going basis.

8.2.2.3. Car Sharing

Car sharing would be promoted throughout the staff by the compilation of a database. Staff will be able to avail of this service in order to get in contact with other people who are travelling to and from similar destinations with the aim of sharing the costs and increasing the number of people travelling as passengers.

8.2.2.4. EV Charging Spaces

As a part of the proposed development, the applicant intends to install 8 new fast EV charging stations. This is in line with the government policy which aims to reduce the number of fuel-based vehicles and promote more sustainable modes of transport.

8.2.2.5. Smarter Working Practices

The smarter working practices strategy has the potential to perform an important role in the ultimate objective of reducing private motor vehicle trips to/from the proposed development.

Primarily it is intended that the development will participate in the Smarter Travel Workplaces programme, this programme assists companies in encouraging staff to travel by means other than by car through various schemes and plans. More information on this programme can be found at www.smartertravelworkplaces.ie As mentioned, the 'Cycle to Work' scheme will also be promoted with staff members and any other scheme that may come on stream from the Local Authority or Government will also be promoted.

8.3. Implementation, Monitoring and Review

The MMP strategy and measures outlined will be implemented over a period of time which will be continuously monitored to ensure the MMP continues to deliver on its objectives and targets.

A key aspect of the MMP is the promotion and awareness of the MMP for the staff of the development. This will be undertaken by the Mobility Manager appointed by the company with the dissemination of information using some of not all of the methods outlined below.

- Induction Meetings for new staff
- Staff meetings
- Dedicated Page on the Company's Website
- Company Newsletter
- Text Messaging

Monitoring of the MMP will be important in understanding the changing nature of the staff and resident travel habits and the effectiveness of the MMP initiatives. The monitoring process, which will be carried out by the appointed Mobility Manager, will involve annual travel surveys undertaken, starting one year from the initial post-occupation travel surveys to assess changes to the mode share of trips to the development site over a medium-term period of three years and a long-term period of five years. This will have a particular focus on the level of usage of the bicycle parking and the uptake the car-sharing scheme to determine whether and when additional spaces are required.

An annual monitoring report would be produced for the site by the Mobility Manager, setting out the results of the travel surveys and highlighting any issues arising from the review of the MMP initiatives. The report would set out appropriate changes to existing initiatives if required to meet the MMP objectives.

9. Road Safety

Historical collision data for the surrounding road network were collected from RSA website. The figure below summarises the collision history from 2005 to 2016.

Figure 9-1 - Historical Collision Data

There were no fatal accidents near the subject site at Tootenhill, while a serious collision was observed along the N7 eastbound line. However, this was dated back to the year 2005 and no major collisions have happened along the mainline in recent years.

The analysis undertaken as part of this TTA shows that there is more than adequate capacity at both the merge and diverges from the N7 to ensure that the proposed development will have no impact on the safety and operation of this section of national road.

A Stage 1 Road Safety Audit will be carried out on the internal layout and included as part of the planning application.

10. Construction Traffic Management Plan

This section of the report deals with the impacts of construction of the subject development. As with any construction project, the contractor will be required to prepare a comprehensive traffic management plan for the construction phase. The purpose of such a plan is to outline measures to manage the expected construction traffic activity during the construction period.

This section will provide an overview of the likely routing of construction vehicles, based on a most likely scenario of construction. It should be noted that the impacts of the construction will be temporary, and it will be the contractor's responsibility to prepare a Construction Traffic Management Plan (CTMP) for approval in advance of any works.

10.1. Policy Guidance

Guidance for the temporary control of traffic at road works to facilitate the safety of the public during the works is provided below:

- Traffic Signs Manual Chapter 8, Temporary Measures and Sign Roadworks (2019).
- Traffic Management Guidelines, Department of Transport (2003).

10.2. Construction Vehicle Access and Parking Arrangements

It is recommended that construction traffic will access the site from the long off-slip from the N7 only rather than the short off-slip. This will make sure that construction vehicles do not interfere with the movement of the motorists availing of the facilities at the subject site. Traffic exiting the site will access the N7 via the existing merge lane and will join the existing traffic entering and exiting the site.

In addition, it is recommended that construction traffic is routed via the N7, which is an appropriate use of the strategic national network rather than routing it into Rathcoole where it may have determinantal impacts on the local road network.

10.3. Parking Arrangements

Since there is sufficient vacant land within the area, it is intended that all construction vehicles will be accommodated within the subject site.

10.4. Traffic Management Measures

Below is a list of proposed traffic management measures to be adopted during the construction works. Note that this is not an exhaustive list, and it will be the appointed contractor's responsibility to prepare a detailed Construction Management Plan.

- Warning signs / Advanced warning signs will be installed at appropriate locations in advance of the construction access.
- Construction and delivery vehicles will be instructed to use only the approved and agrees means of access and movement of construction vehicles will be restricted to these designated routes.
- Appropriate vehicles will be used to minimise environmental impacts from transporting construction material, for example the use of dust covers on trucks carrying dust producing material.
- Speed limits of construction vehicles to be managed by appropriate signage, to promote low vehicular speeds within the site.
- Parking of site vehicles will be managed, and will not be permitted on public roads, unless proposed within that designated area that is subject to traffic management measures.
- A road sweeper will be employed to clean the public roads adjacent to the site of any residual debris that may be deposited on the public road leading away from the construction site.
- On-site wheel washing will be undertaken for construction trucks and vehicles to remove any debris prior to leaving the site, to remove any potential debris on the local roads.
- All vehicles will be suitably serviced and maintained to avoid leaks or spillage of oil, petrol or diesel. Spill kits will be available on site. All scheduled maintenance carried out off site will not be carried out on the public highway.

- Safe and secure pedestrian facilities are to be provided where construction works obscure any existing pedestrian footway. Alternative pedestrian facilities will be provided in these instances, supported by physical barriers to segregate traffic and pedestrian movements, and to be identified by appropriate signage. Pedestrian facilities will cater for vulnerable users and mobility impaired persons.

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

10.4.1. Construction Traffic Volumes

Traffic volumes during construction are unlikely to be any greater than those generated by the proposed development in any given hour and will mostly consist of deliveries and removal of materials to/from the site. Given the above recommendations, these movements can be scheduled to avoid peak periods and will be routed via the N7 so as to avoid additional traffic travelling through Rathcoole. The volume of traffic generated during construction will be negligible compared to the traffic on the N7 and will have little to no impact on the national road.

11. Summary and Conclusion

11.1. Proposed Development Characteristics

The proposed development site at Tootenhill, Rathcoole forms part of a larger brown-field land holding owned by the applicant with an upgraded service station and food court recently opened on the site. Given the site location, there are very limited uses which are appropriate for the subject site. Therefore, an ancillary use associated with the existing filling station development is considered to be the only viable use for this site. Hence, the applicant,. proposes to construct an Electric Vehicle fast-charging hub and coffee drive-thru facility on the lands

11.2. Traffic Impact Summary

The proposed development at the subject site will mainly cater to motorists who are travelling long distance along with the N7 westbound link and will not generate any new trips on the N7.

The analysis contained within this TTA demonstrates that the increase in trips along the diverge and merge connector roads due to the proposed development was around 10% for most of the scenarios with a maximum of 14% observed along the short off-slip connector road in the Opening Year morning peak scenario. The analysis suggests that the maximum number of vehicles along all of the connector roads in all future years is less the maximum number of vehicles that single lane connector roads can cater for and the development will, therefore, have no determinantal impact on the operation of these lanes or the N7 mainline.

The analysis of the junction of the L6065 with N7 on-slip suggests that the junction will have more than sufficient capacity to cater for the future year traffic and there will be a negligible impact of the additional trips due to the proposed development.

As both diverges from, and the merge onto, the N7 have more than sufficient capacity to cater for the development traffic, the development will not negatively impact on the operation of the adjacent N7 mainline.

11.3. Mobility Management and Construction Traffic Management

The applicant, wherever possible, will promote the sustainable mode of transportation in line with the government Climate Action Policy.

The applicant will make sure that the contractor abides by the comprehensive traffic management plan prepared for the construction phase. The volume of traffic generated during construction is unlikely to have any impact on the adjacent national road network.

Appendices

Appendix A. Traffic Flow Pattern – N7 Westbound Mainline

Figure A-1 - N7 Westbound Traffic Pattern (Between Jn 1 and Jn 2)

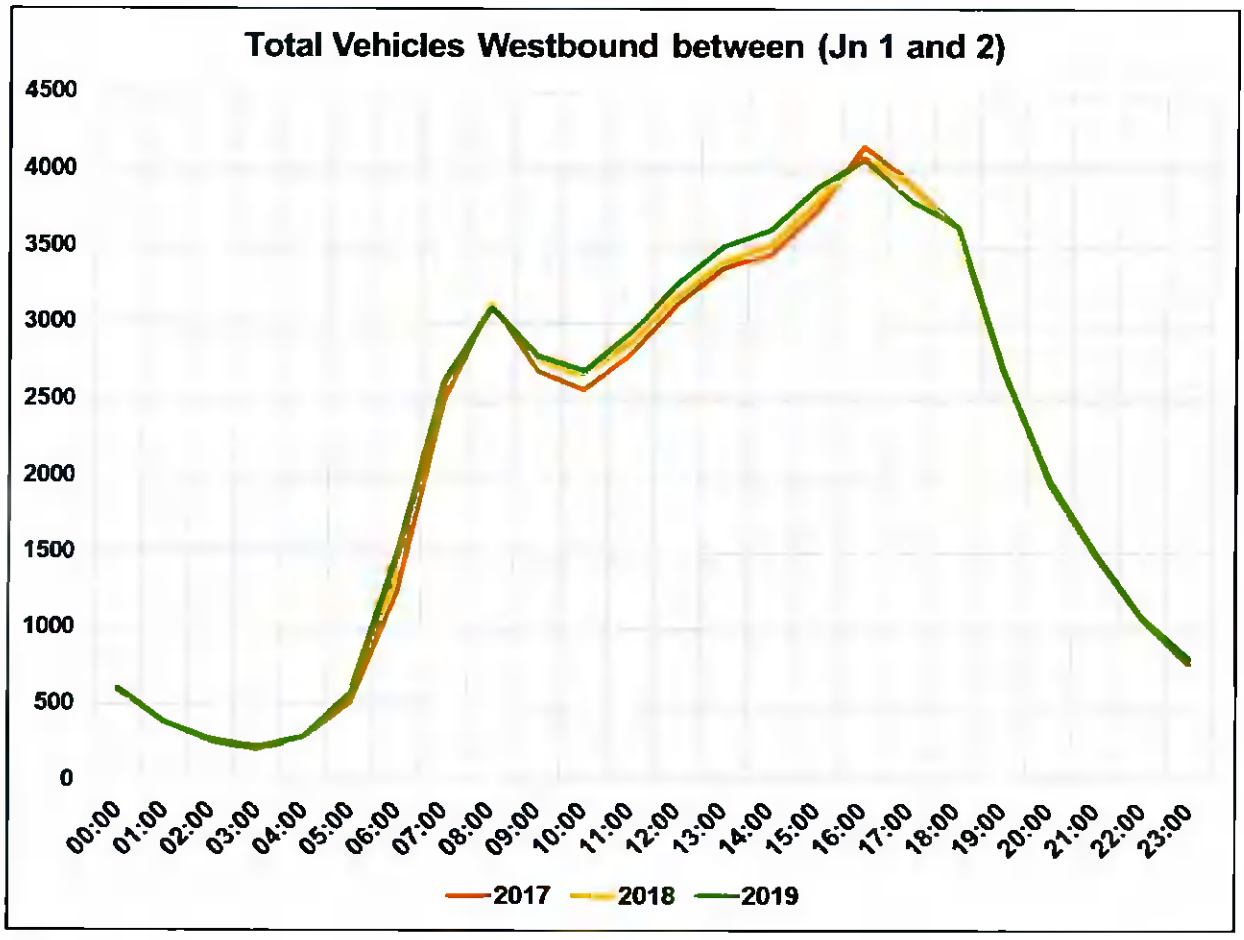


Figure A-2 - N7 Westbound Traffic Pattern (Between Jn 2 and Jn 3)

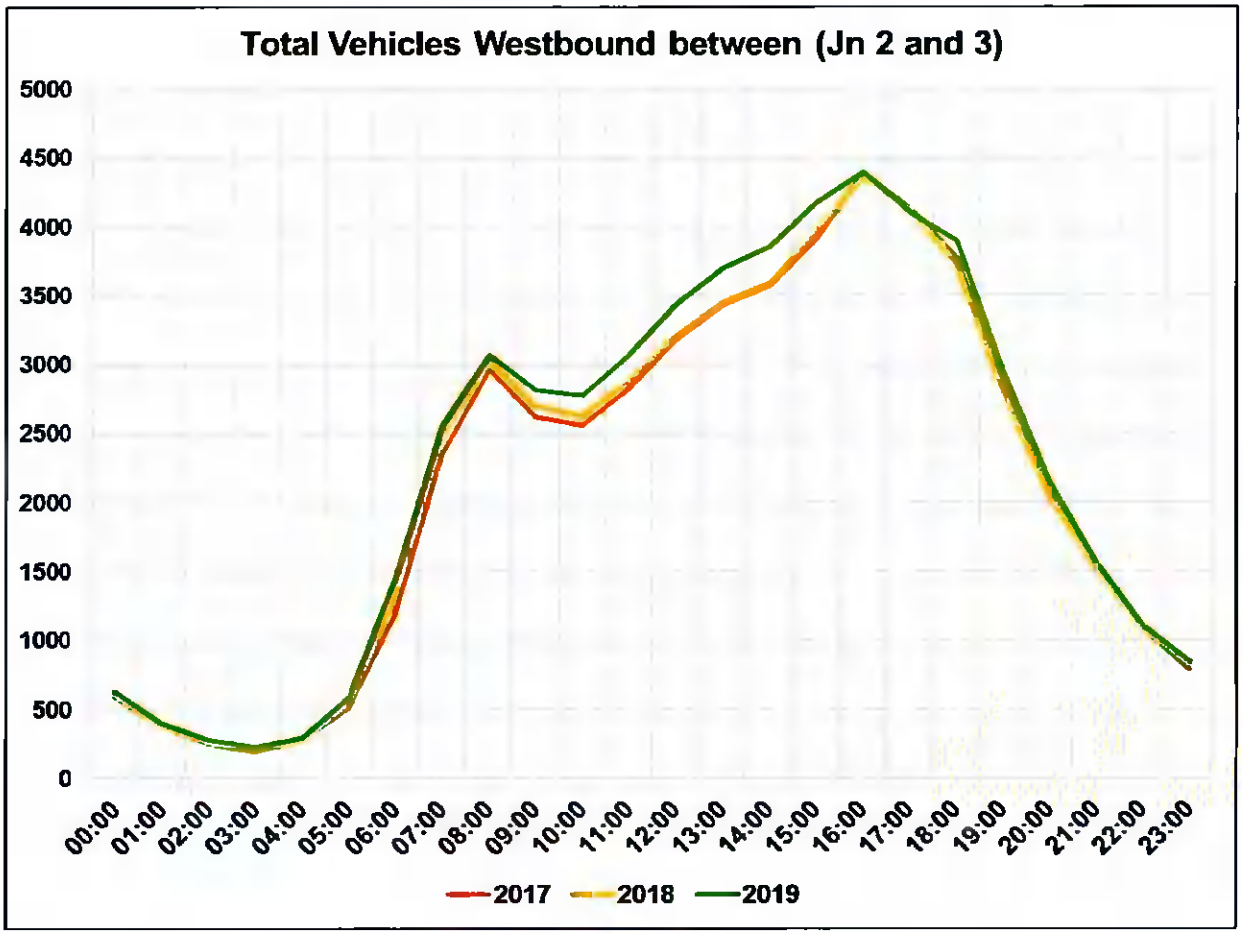
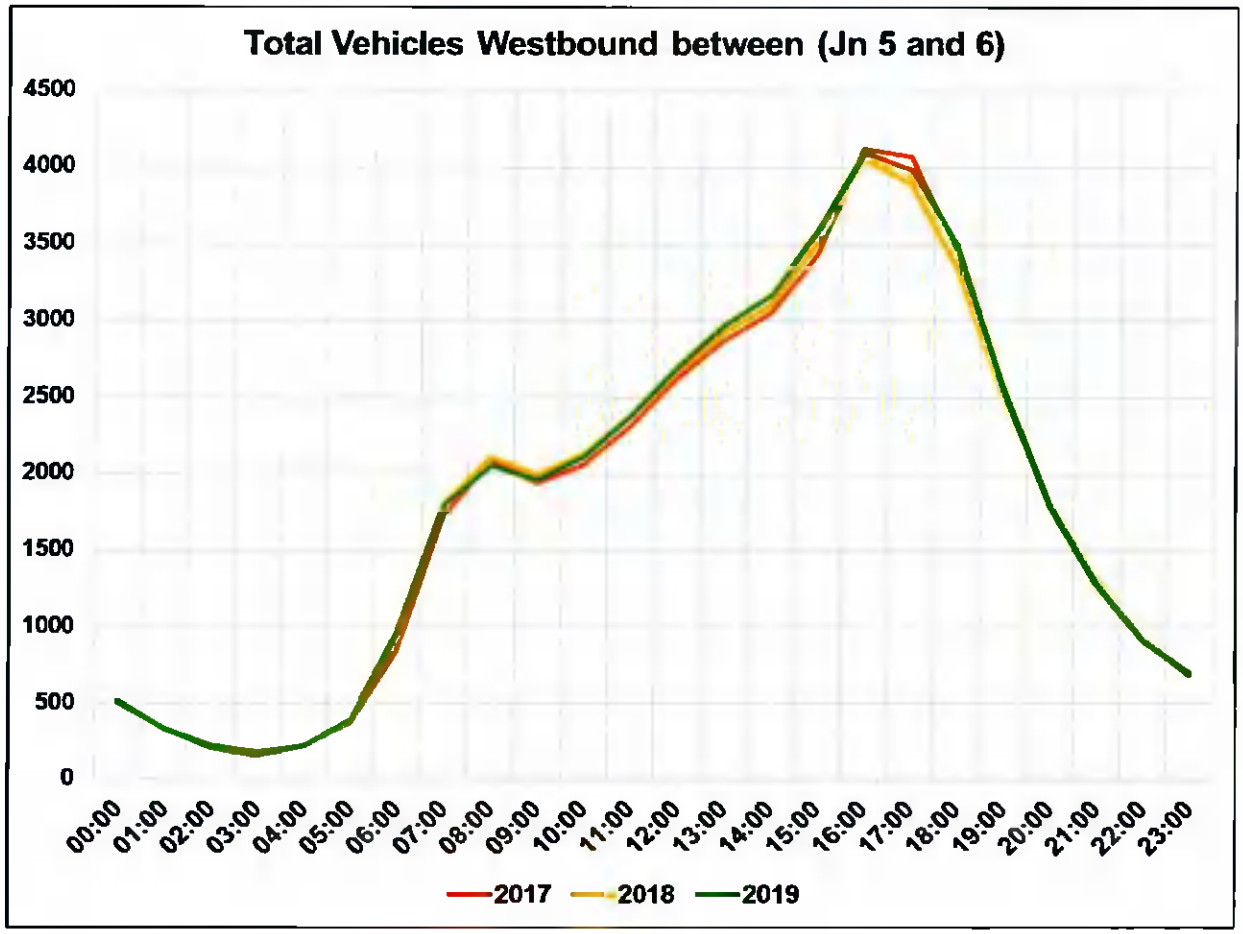


Figure A-3 - N7 Westbound Traffic Pattern (Between Jn 5 and Jn 6)

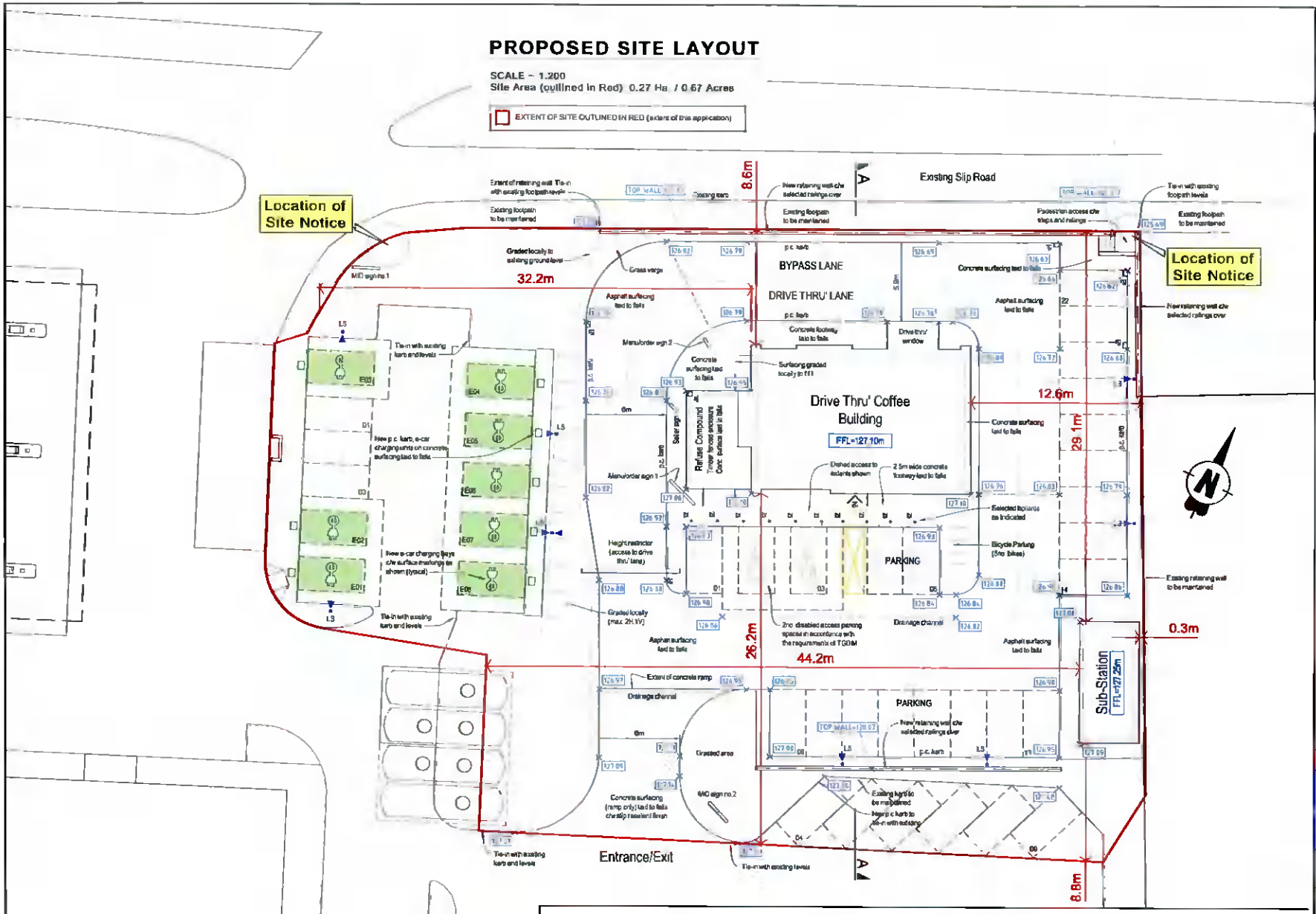


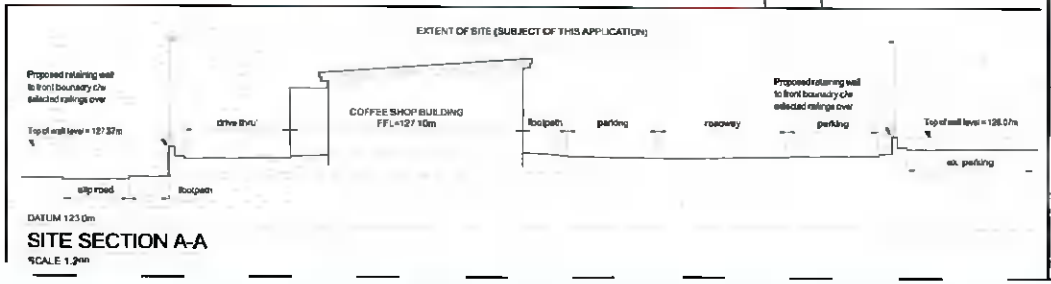
Appendix B. Proposed Layout

PROPOSED SITE LAYOUT

SCALE – 1:200
Site Area (outlined in Red) 0.27 Ha / 0.67 Acres

EXTENT OF SITE OUTLINED IN RED (extent of this application)





SITE SECTION A-A

SCALE 1:200

GENERAL NOTES

- Written dimensions take precedent over scaled dimensions
- All dimensions are in metres unless noted otherwise
- Any discrepancies found on this drawing should be immediately reported to the engineers
- This drawing is to be read in conjunction with all relevant engineers drawings, specifications and contract documents
- All works are to be in accordance with the relevant and current Health and Safety legislation
- Specification of the works to be to the appropriate Irish standard of the equivalent British standard

Proposed Finished Road Levels 32.00

Refer to Survey drawing for existing levels & further details

LS New lighting standard

NOTE
New site lighting shall be recessed or cowled so as to prevent glare & intrusion on adjacent properties and shall be directed away from public roadway.
Lighting lux levels and lamp standard locations to be designed by others at construction stage and be subject to approval by the Local Authority

ComfortVision or similar approved high-efficiency, asymmetric floodlight, distributing a low-glare beam
The pole top luminaire to have an asymmetric louver which allows light to be directed only to the Service Station direction
Light spillage to be kept to a minimum
NOTE.. Refer to Site Layout Plan for locations of Lighting Standards

TO BE CONFIRMED

TYPICAL LIGHTING STANDARD

SCALE: Not to Scale

TYPICAL ARRANGEMENT FOR PROPOSED LIGHTING STANDARDS (to provide minimum back spill)

PARKING SCHEDULE

TYPE	No.	Notes
GENERAL (1)	20	Inside of Drive-thru' facility
DISABLED PARKING	2	Inside of Drive-thru' facility
GENERAL (2)	9	Outside of Drive-thru' facility
E-CHARGE	8	Outside of Drive-thru' facility

Rev.	Drawn	Chkd	Appd	Description	Date
-	MN	AOD	JG	PLANNING APPLICATION ISSUE	MAR.22

PLANNING APPLICATION PURPOSES ONLY

JA Gorman consulting engineers project managers
Forest Park, Mullingar, Co. Westmeath.
Tel: 044-9347338 / 9347341
Fax: 044-9347400
Email: info@jagorman.ie
Web: www.jagorman.ie

CLIENT
PETROGAS GROUP LTD

PROJECT TITLE
Electric Vehicle fast-charging hub & Coffee Drive-thru Facility at Tootenhill, Rathcoole, Co.Dublin

DRAWING TITLE
PROPOSED SITE LAYOUT GENERAL ARRANGEMENT

PLOT SIZE	PLOT SCALE	DRAWN BY
A2	1:200	MN
PROJECT No	DRAWING No	REV
3644	P3644-C004	-

Appendix C. Traffic Data from TMU Counters

Table C-1 - Traffic Growth on N7 Westbound (2017 - 2019)

Year	LV Volume	Percentage Increase	HV Volume	Percentage Increase
Between TMU Junction 1 and Junction 2				
2017	46231		4158	
2018	46725	101.07%	4442	106.83%
2019	47163	100.94%	4510	101.53%
Average		**101.00%**		**104.18%**
Between TMU Junction 2 and Junction 3				
2017	47486		4040	
2018	47788	100.64%	4325	107.05%
2019	49786	104.18%	4602	106.40%
Average		**102.41%**		**106.77%**
Between TMU Junction 5 and Junction 6				
2017	38581		5000	
2018	38755	100.45%	5168	103.36%
2019	38949	100.50%	5293	102.42%
Average		**100.48%**		**102.89%**

Appendix D. Coffee Drive Thru – TRICS Output

Atkins Airside Swords Licence No: 332901

Filtering Summary

Land Use	06/D	HOTEL, FOOD & DRINK/FAST FOOD - DRIVE THR(
Selected Trip Rate Calculation Parameter Range	123-800 sqm GFA	
Actual Trip Rate Calculation Parameter Range	210-726 sqm GFA	
Date Range	Minimum: 01/01/12	Maximum: 24/09/20
Parking Spaces Range	All Surveys Included	
Days of the week selected	Monday	1
	Tuesday	4
	Wednesday	1
	Thursday	2
	Friday	6
	Saturday	8
	Sunday	2
Main Location Types selected	Edge of Town Centre	6
	Suburban Area (PPS6 Out of Centre)	6
	Edge of Town	7
	Neighbourhood Centre (PPS6 Local Centre)	4
	Free Standing (PPS6 Out of Town)	1
Population within 500m	All Surveys Included	
Population <1 Mile ranges selected	1,000 or Less	1
	1,001 to 5,000	1
	5,001 to 10,000	2
	10,001 to 15,000	3
	15,001 to 20,000	5
	20,001 to 25,000	4
	25,001 to 50,000	6
	50,001 to 100,000	2
Population <5 Mile ranges selected	5,001 to 25,000	1
	25,001 to 50,000	3
	75,001 to 100,000	2
	100,001 to 125,000	4
	125,001 to 250,000	8
	250,001 to 500,000	2
	500,001 or More	4
Car Ownership <5 Mile ranges selected	0.6 to 1.0	11
	1.1 to 1.5	13
PTAL Rating	No PTAL Present	21
	2 Poor	1
	3 Moderate	2

Calculation Reference: AUDIT-332901-210126-0154

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : D - FAST FOOD - DRIVE THROUGH
TOTAL VEHICLES

Selected regions and areas:

01	**GREATER LONDON**		
	BK	BARKING	1 days
	EG	EALING	1 days
	HO	HOUNSLOW	1 days
02	**SOUTH EAST**		
	EX	ESSEX	1 days
	SO	SLOUGH	1 days
03	**SOUTH WEST**		
	BR	BRISTOL CITY	1 days
	DV	DEVON	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LN	LINCOLNSHIRE	1 days
06	**WEST MIDLANDS**		
	WM	WEST MIDLANDS	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	SY	SOUTH YORKSHIRE	1 days
09	**NORTH**		
	TV	TEES VALLEY	1 days
	TW	TYNE & WEAR	1 days
10	**WALES**		
	CE	CEREDIGION	1 days
	VG	VALE OF GLAMORGAN	1 days
11	**SCOTLAND**		
	AD	ABERDEEN CITY	2 days
	FI	FIFE	1 days
13	**MUNSTER**		
	CR	CORK	1 days
14	**LEINSTER**		
	KK	KILKENNY	1 days
15	**GREATER DUBLIN**		
	DL	DUBLIN	1 days
16	**ULSTER (REPUBLIC OF IRELAND)**		
	DN	DONEGAL	1 days
17	**ULSTER (NORTHERN IRELAND)**		
	DE	DERRY	1 days

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

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:	210 to 726 (units: sqm)
Range Selected by User:	123 to 800 (units: sqm)

Parking Spaces Range: **All Surveys Included**

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 24/09/20

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

Selected survey days:

Monday	1 days
Tuesday	4 days
Wednesday	1 days
Thursday	2 days
Friday	6 days
Saturday	8 days
Sunday	2 days

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

Selected survey types:

Manual count	24 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	6
Suburban Area (PPS6 Out of Centre)	6
Edge of Town	7
Neighbourhood Centre (PPS6 Local Centre)	4
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	3
Development Zone	3
Residential Zone	4
Retail Zone	4
Built-Up Zone	5
Out of Town	1
High Street	1
No Sub Category	3

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

Secondary Filtering selection:

Use Class:

A3	23 days
A5	1 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:

1,000 or Less	1 days
1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	5 days
20,001 to 25,000	4 days
25,001 to 50,000	6 days
50,001 to 100,000	2 days

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

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	3 days
75,001 to 100,000	2 days
100,001 to 125,000	4 days
125,001 to 250,000	8 days
250,001 to 500,000	2 days
500,001 or More	4 days

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

Car ownership within 5 miles:

0.6 to 1.0	11 days
1.1 to 1.5	13 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	24 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	21 days
2 Poor	1 days
3 Moderate	2 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

LIST OF SITES relevant to selection parameters

1 **AD-06-D-01** **MCDONALD' S** **ABERDEEN CITY**
BEDFORD ROAD
ABERDEEN
KITTYBREWSTER RET. PK
Edge of Town Centre
Retail Zone
Total Gross floor area: 472 sqm
Survey date: TUESDAY *19/11/19* *Survey Type: MANUAL*

2 **AD-06-D-02** **BURGER KING** **ABERDEEN CITY**
WELLINGTON ROAD
ABERDEEN
ALTENS
Edge of Town
No Sub Category
Total Gross floor area: 300 sqm
Survey date: FRIDAY *22/11/19* *Survey Type: MANUAL*

3 **BK-06-D-01** **MCDONALD'S** **BARKING**
WHALEBONE LANE NORTH
MARKS GATE

Edge of Town
Residential Zone
Total Gross floor area: 343 sqm
Survey date: SATURDAY *12/09/20* *Survey Type: MANUAL*

4 **BR-06-D-01** **MCDONALD'S** **BRISTOL CITY**
SHEENE ROAD
BRISTOL
BEDMINSTER
Neighbourhood Centre (PPS6 Local Centre)
High Street
Total Gross floor area: 210 sqm
Survey date: MONDAY *21/09/15* *Survey Type: MANUAL*

5 **CA-06-D-02** **MCDONALD'S** **CAMBRIDGESHIRE**
NEWMARKET ROAD
CAMBRIDGE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 435 sqm
Survey date: TUESDAY *19/09/17* *Survey Type: MANUAL*

6 **CE-06-D-01** **MCDONALD'S** **CEREDIGION**
FFORDD PARC Y LLYN
ABERYSTWYTH

Edge of Town
Retail Zone
Total Gross floor area: 350 sqm
Survey date: SATURDAY *09/05/15* *Survey Type: MANUAL*

7 **CR-06-D-01** **MCDONALD'S** **CORK**
COMMONS ROAD
CORK

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 372 sqm
Survey date: SATURDAY *15/12/12* *Survey Type: MANUAL*

8 **DE-06-D-01** **KFC** **DERRY**
STRAND ROAD
LONDONDERRY

Suburban Area (PPS6 Out of Centre)
Development Zone
Total Gross floor area: 240 sqm
Survey date: THURSDAY *21/06/12* *Survey Type: MANUAL*

9 **DL-06-D-02** **MCDONALD'S** **DUBLIN**
SHEEPMOOR ROAD
DUBLIN
BLANCHARDSTOWN
Neighbourhood Centre (PPS6 Local Centre)
Retail Zone
Total Gross floor area: 362 sqm
Survey date: SATURDAY *15/09/12* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 **DN-06-D-02** **KFC** **DONEGAL**
PORT ROAD
LETTERKENNY

Edge of Town Centre
Residential Zone
Total Gross floor area: 225 sqm
Survey date: SATURDAY *01/12/12* *Survey Type: MANUAL*

11 **DS-06-D-01** **KFC** **DERBYSHIRE**
WYVERN WAY
DERBY
PRIDE PARK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total Gross floor area: 370 sqm
Survey date: SUNDAY *26/07/15* *Survey Type: MANUAL*

12 **DV-06-D-01** **MCDONALD'S** **DEVON**
HELE ROAD
TORQUAY

Suburban Area (PPS6 Out of Centre)
Retail Zone
Total Gross floor area: 447 sqm
Survey date: SATURDAY *30/03/19* *Survey Type: MANUAL*

13 **EG-06-D-01** **MCDONALD'S** **EALING**
UXBRIDGE ROAD
SOUTHALL

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Gross floor area: 726 sqm
Survey date: FRIDAY *11/05/12* *Survey Type: MANUAL*

14 **EX-06-D-01** **MCDONALD'S** **ESSEX**
LONDON ROAD
HARLOW
HASTINGWOOD
Free Standing (PPS6 Out of Town)
Out of Town
Total Gross floor area: 425 sqm
Survey date: SATURDAY *09/07/16* *Survey Type: MANUAL*

15 **FI-06-D-02** **KFC** **FIFE**
WHIMBREL PLACE
DUNFERMLINE
HALBEATH
Edge of Town
Development Zone
Total Gross floor area: 275 sqm
Survey date: TUESDAY *22/03/16* *Survey Type: MANUAL*

16 **HO-06-D-01** **MCDONALD'S** **HOUNSLOW**
HIGH STREET
BRENTFORD

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 378 sqm
Survey date: FRIDAY *07/12/12* *Survey Type: MANUAL*

17 **KK-06-D-01** **MCDONALD'S** **KILKENNY**
HEBRON ROAD
KILKENNY

Edge of Town
Industrial Zone
Total Gross floor area: 583 sqm
Survey date: FRIDAY *04/10/19* *Survey Type: MANUAL*

18 **LN-06-D-01** **MCDONALD'S** **LINCOLNSHIRE**
RUSTON WAY
LINCOLN

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 435 sqm
Survey date: FRIDAY *28/06/19* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

19 **SO-06-D-01** **MCDONALD'S** **SLOUGH**
WINDSOR ROAD
SLOUGH

Edge of Town
Residential Zone
Total Gross floor area: 480 sqm
Survey date: WEDNESDAY *21/11/12* *Survey Type: MANUAL*

20 **SY-06-D-02** **MCDONALD'S** **SOUTH YORKSHIRE**
UPPER NEW STREET
BARNSLEY

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 415 sqm
Survey date: TUESDAY *08/09/20* *Survey Type: MANUAL*

21 **TV-06-D-01** **MCDONALD'S** **TEES VALLEY**
BURN ROAD
HARTLEPOOL

Edge of Town Centre
Industrial Zone
Total Gross floor area: 400 sqm
Survey date: FRIDAY *04/09/20* *Survey Type: MANUAL*

22 **TW-06-D-01** **KFC** **TYNE & WEAR**
CLIFFORD STREET
NEWCASTLE
BYKER
Neighbourhood Centre (PPS6 Local Centre)
Built-Up Zone
Total Gross floor area: 317 sqm
Survey date: SATURDAY *14/11/15* *Survey Type: MANUAL*

23 **VG-06-D-01** **MCDONALD'S** **VALE OF GLAMORGAN**
CARDIFF ROAD
BARRY

Edge of Town
Industrial Zone
Total Gross floor area: 405 sqm
Survey date: THURSDAY *24/09/20* *Survey Type: MANUAL*

24 **WM-06-D-02** **MCDONALD'S** **WEST MIDLANDS**
BRISTOL ROAD SOUTH
BIRMINGHAM
LONGBRIDGE
Neighbourhood Centre (PPS6 Local Centre)
No Sub Category
Total Gross floor area: 375 sqm
Survey date: SUNDAY *08/11/15* *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 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH
TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	3	403	0.828	3	403	0.248	3	403	1.076
06:00 - 07:00	12	428	4.848	12	428	3.738	12	428	8.586
07:00 - 08:00	18	401	9.848	18	401	8.726	18	401	18.574
08:00 - 09:00	18	401	12.687	18	401	12.119	18	401	24.806
09:00 - 10:00	20	390	14.372	20	390	13.987	20	390	28.359
10:00 - 11:00	24	389	13.137	24	389	13.512	24	389	26.649
11:00 - 12:00	24	389	15.332	24	389	13.887	24	389	29.219
12:00 - 13:00	24	389	22.677	24	389	21.242	24	389	43.919
13:00 - 14:00	**24**	**389**	**22.859**	**24**	**389**	**23.769**	**24**	**389**	**46.628**
14:00 - 15:00	24	389	19.026	24	389	19.443	24	389	38.469
15:00 - 16:00	24	389	19.358	24	389	18.929	24	389	38.287
16:00 - 17:00	24	389	19.379	24	389	19.764	24	389	39.143
17:00 - 18:00	24	389	21.221	24	389	20.653	24	389	41.874
18:00 - 19:00	24	389	21.617	24	389	21.670	24	389	43.287
19:00 - 20:00	24	389	19.026	24	389	20.418	24	389	39.444
20:00 - 21:00	24	389	14.775	24	389	15.878	24	389	30.653
21:00 - 22:00	24	389	11.574	24	389	11.906	24	389	23.480
22:00 - 23:00	17	372	8.395	17	372	9.771	17	372	18.166
23:00 - 24:00	15	383	5.009	15	383	5.791	15	383	10.800
Total Rates:			275.968			275.451			551.419

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:	210 - 726 (units: sqm)
Survey date date range:	01/01/12 - 24/09/20
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	8
Number of Sundays:	2
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. Committed Development Trips – Existing Service Station

Table E-1 - Committed Development - Previous Planning Application (SD16A/0280)

Time	N7 westbound main line traffic	Traffic diverted along short slip approach	Traffic diverted along long slip approach	Total
Opening Year (2022)				
AM Peak (08:00 – 09:00)	2798	94	55	149
PM Peak (16:00 – 17:00)	5427	183	106	289
Opening Year + 5 (2027)				
AM Peak (08:00 – 09:00)	3064	103	60	163
PM Peak (16:00 – 17:00)	5913	199	116	315
Opening Year + 15 (2037)				
AM Peak (08:00 – 09:00)	3391	114	67	181
PM Peak (16:00 – 17:00)	6237	210	122	332

Appendix F. Trip Distribution & Percentage Impact of Development

Table F-1 - Distribution of Development Trips on Off-Slip Diverge Connector Roads

Time	N7 baseline westbound traffic	Development Trips on Short Off-Slip	Development Trips on Long Off-Slip	Total trips
Opening Year (2022)				
AM Peak (08:00 – 09:00)	2798	13	8	21
PM Peak (16:00 – 17:00)	5427	21	12	33
Opening Year + 5 (2027)				
AM Peak (08:00 – 09:00)	3064	13	8	21
PM Peak (16:00 – 17:00)	5913	21	12	33
Opening Year + 15 (2037)				
AM Peak (08:00 – 09:00)	3391	13	8	21
PM Peak (16:00 – 17:00)	6237	21	12	33

Table F-2 - Percentage Impact of Development Traffic

Time Period	Base Traffic	Development Traffic	% Increase
Short off-slip connector road – Opening Year (2022)			
AM Peak (08:00 – 09:00)	94	13	14.2%
PM Peak (16:00 – 17:00)	183	21	11.4%
Long off-slip connector road – Opening Year (2022)			
AM Peak (08:00 – 09:00)	96	8	8.1%
PM Peak (16:00 – 17:00)	132	12	9.2%
Merge connector road – Opening Year (2022)			
AM Peak (08:00 – 09:00)	240	21	8.8%
PM Peak (16:00 – 17:00)	321	33	10.3%
L6065/On-slip Junction – Opening Year (2022)			
AM Peak (08:00 – 09:00)	281	21	7.5%
PM Peak (16:00 – 17:00)	346	33	9.5%
Short-slip connector road – Opening Year + 5 (2027)			
AM Peak (08:00 – 09:00)	103	13	13.0%
PM Peak (16:00 – 17:00)	199	21	10.5%
Long-slip connector road – Opening Year + 5 (2027)			
AM Peak (08:00 – 09:00)	105	8	7.4%
PM Peak (16:00 – 17:00)	144	12	8.4%

Time Period	Base Traffic	Development Traffic	% Increase
Merge connector road – Opening Year + 5 (2027)			
AM Peak (08:00 – 09:00)	262	21	8.1%
PM Peak (16:00 – 17:00)	350	33	10.3%
L6065/On-slip Junction – Opening Year + 5 (2027)			
AM Peak (08:00 – 09:00)	307	21	6.9%
PM Peak (16:00 – 17:00)	346	33	8.7%
Short-slip connector road – Opening Year + 15 (2037)			
AM Peak (08:00 – 09:00)	114	13	11.7%
PM Peak (16:00 – 17:00)	218	21	9.5%
Long-slip connector road – Opening Year + 15 (2037)			
AM Peak (08:00 – 09:00)	115	8	6.8%
PM Peak (16:00 – 17:00)	158	12	7.7%
Merge connector road – Opening Year + 15 (2037)			
AM Peak (08:00 – 09:00)	279	21	7.6%
PM Peak (16:00 – 17:00)	380	33	8.7%
L6065/On-slip Junction – Opening Year + 15 (2037)			
AM Peak (08:00 – 09:00)	337	21	6.3%
PM Peak (16:00 – 17:00)	415	33	8.0%

Appendix G. Total Traffic Volume on Connector Roads for Capacity Analysis

Table G-1 - Total Traffic Along Diverge/Merge Connector Roads

Time Period	Baseline Traffic to Service Station	Baseline Traffic to/from L6065	Proposed Development Traffic	Total Traffic along Connector Road
Short off-slip connector road				
Opening Year – AM Peak	94	0	13	107
Opening Year – PM Peak	183	0	21	204
Opening Year + 5 - AM Peak	103	0	13	117
Opening Year + 5 - PM Peak	199	0	21	220
Opening Year + 15 - AM Peak	114	0	13	128
Opening Year + 15 - PM Peak	218	0	21	239
Long off-slip connector road				
Opening Year – AM Peak	55	41	8	104
Opening Year – PM Peak	106	26	12	144
Opening Year + 5 - AM Peak	60	45	8	113
Opening Year + 5 - PM Peak	116	28	12	156
Opening Year + 15 - AM Peak	66	49	8	123
Opening Year + 15 - PM Peak	127	31	12	170
Merge connector road				
Opening Year – AM Peak	149	91	21	261
Opening Year – PM Peak	289	32	33	354
Opening Year + 5 - AM Peak	163	99	21	283

Time Period	Baseline Traffic to Service Station	Baseline Traffic to/from L6065	Proposed Development Traffic	Total Traffic along Connector Road
Opening Year + 5 - PM Peak	315	35	33	383
Opening Year + 15 - AM Peak	181	99	21	301
Opening Year + 15 - PM Peak	346	35	33	413

Appendix H. L6065/On-Slip Merge Connector Road Junction Analysis Results

Table H-1 - AM Peak Results

Arm	Without Development				With Development			
	Avg Queue (pcu)	Avg. Delay (s)	RFC	LOS	Avg Queue (pcu)	Avg. Delay (s)	RFC	LOS
Opening Year (2022)								
L6065	0.2	6.61	0.16	A	0.2	6.70	0.16	A
Opening Year + 5 (2027)								
L6065	0.2	6.82	0.18	A	0.2	6.91	0.18	A
Opening Year + 15 (2037)								
L6065	0.2	7.07	0.20	A	0.3	7.16	0.20	A

Table H-2 - PM Peak Results

Arm	Without Development				With Development			
	Avg Queue (pcu)	Avg. Delay (s)	RFC	LOS	Avg Queue (pcu)	Avg. Delay (s)	RFC	LOS
Opening Year (2022)								
L6065	0.1	6.35	0.06	A	0.1	6.74	0.06	A
Opening Year + 5 (2027)								
L6065	0.1	6.50	0.07	A	0.1	6.63	0.07	A
Opening Year + 15 (2037)								
L6065	0.1	6.71	0.08	A	0.1	6.85	0.08	A

Appendix I. Junctions 9 Output

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

Filename: Local Road Junction.j9
Path: U:\5203597\7 Calcs\72Model\Junction 9 Model
Report generation date: 27/01/2021 10:48:56

Summary of junction performance

	AM_without_development				PM_without_development				AM_with_development				PM_with_development			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	OY															
Stream B-AC	0.2	6.61	0.16	A	0.1	6.35	0.06	A	0.2	6.70	0.16	A	0.1	6.47	0.06	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	OY+5															
Stream B-AC	0.2	6.82	0.18	A	0.1	6.50	0.07	A	0.2	6.91	0.18	A	0.1	6.63	0.07	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	OY+15															
Stream B-AC	0.2	7.07	0.20	A	0.1	6.71	0.08	A	0.3	7.16	0.20	A	0.1	6.85	0.08	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	27/01/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATKINSMCCARTHY\manand
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)	Run automatically	Relationship type	Relationship
D1	OY	AM_without_development	ONE HOUR	07:45	09:15	15	✓		
D2	OY	PM_without_development	ONE HOUR	15:45	17:15	15	✓		
D3	OY+5	AM_without_development	ONE HOUR	07:45	09:15	15	✓		
D4	OY+5	PM_without_development	ONE HOUR	15:45	17:15	15	✓		
D5	OY+15	AM_without_development	ONE HOUR	07:45	09:15	15	✓		
D6	OY+15	PM_without_development	ONE HOUR	15:45	17:15	15	✓		
D7	Development Flow	AM	ONE HOUR	07:45	09:15	15			
D8	Development Flow	PM	ONE HOUR	15:45	17:15	15			
D9	OY	AM_with_development	ONE HOUR	07:45	09:15	15	✓	Simple	D1+D7
D10	OY	PM_with_development	ONE HOUR	15:45	17:15	15	✓	Simple	D2+D8
D11	OY+5	AM_with_development	ONE HOUR	07:45	09:15	15	✓	Simple	D3+D7
D12	OY+5	PM_with_development	ONE HOUR	15:45	17:15	15	✓	Simple	D4+D8
D13	OY+15	AM_with_development	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D7
D14	OY+15	PM_with_development	ONE HOUR	15:45	17:15	15	✓	Simple	D6+D8

Analysis Set Details

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

OY, AM_without_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Apple Green		Major
B	Local Road		Minor
C	On Slip		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	4.00			100.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	4.00	45	38

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	562	0.111	0.281	0.177	0.402
B-C	713	0.119	0.300	-	-
C-B	632	0.266	0.266	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	OY	AM_without_development	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 (%)
A		ONE HOUR	✓	214	100.000
B		ONE HOUR	✓	96	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	41	173
	B	0	0	96
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.16	6.61	0.2	A	88	132
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					38	56
A-C					159	238

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	72	18	670	0 108	72	0 0	0.1	6 013	A
C-A	0	0			0				
C-B	0	0	589	0.000	0	0.0	0 0	0.000	A
A-B	31	8			31				
A-C	130	33			130				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	86	22	662	0.130	86	0 1	0.1	6 253	A
C-A	0	0			0				
C-B	0	0	581	0 000	0	0 0	0 0	0.000	A
A-B	37	9			37				
A-C	156	39			156				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	106	26	650	0 163	106	0.1	0 2	6.608	A
C-A	0	0			0				
C-B	0	0	569	0.000	0	0.0	0.0	0.000	A
A-B	45	11			45				
A-C	190	48			190				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	106	26	650	0.163	106	0.2	0.2	6 610	A
C-A	0	0			0				
C-B	0	0	569	0.000	0	0.0	0 0	0 000	A
A-B	45	11			45				
A-C	190	48			190				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	86	22	662	0.130	86	0 2	0.2	6 259	A
C-A	0	0			0				
C-B	0	0	581	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	156	39			156				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	72	18	670	0.108	72	0.2	0 1	6.024	A
C-A	0	0			0				
C-B	0	0	589	0 000	0	0.0	0 0	0 000	A
A-B	31	8			31				
A-C	130	33			130				

OY, PM_without_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	OY	PM_without_development	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	343	100.000
B		ONE HOUR	✓	35	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	30	313
	B	0	0	35
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.06	6.35	0.1	A	32	48
C-A					0	0
C-B	0 00	0.00	0.0	A	0	0
A-B					28	41
A-C					287	431

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	7	639	0.041	26	0.0	0.0	5.870	A
C-A	0	0			0				
C-B	0	0	563	0.000	0	0 0	0 0	0.000	A
A-B	23	6			23				
A-C	236	59			236				

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	8	625	0 050	31	0.0	0.1	6 064	A
C-A	0	0			0				
C-B	0	0	550	0.000	0	0.0	0.0	0 000	A
A-B	27	7			27				
A-C	281	70			281				

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	605	0.064	38	0.1	0.1	6.350	A
C-A	0	0			0				
C-B	0	0	531	0.000	0	0.0	0 0	0.000	A
A-B	33	8			33				
A-C	345	86			345				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	605	0.064	39	0 1	0.1	6.350	A
C-A	0	0			0				
C-B	0	0	531	0.000	0	0.0	0.0	0 000	A
A-B	33	8			33				
A-C	345	86			345				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	8	625	0.050	32	0.1	0.1	6.065	A
C-A	0	0			0				
C-B	0	0	550	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	281	70			281				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	7	639	0.041	26	0.1	0.0	5.873	A
C-A	0	0			0				
C-B	0	0	563	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	236	59			236				

OY+5, AM_without_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	OY+5	AM_without_development	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 (%)
A		ONE HOUR	✓	236	100.000
B		ONE HOUR	✓	105	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	191
	B	0	0	105
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	6.82	0.2	A	96	145
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					41	62
A-C					175	263

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	666	0.119	79	0.0	0.1	6.127	A
C-A	0	0			0				
C-B	0	0	585	0.000	0	0.0	0.0	0.000	A
A-B	34	8			34				
A-C	144	36			144				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	24	656	0.144	94	0.1	0.2	6.402	A
C-A	0	0			0				
C-B	0	0	575	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	172	43			172				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	116	29	644	0.180	115	0.2	0.2	6.814	A
C-A	0	0			0				
C-B	0	0	563	0.000	0	0.0	0.0	0.000	A
A-B	50	12			50				
A-C	210	53			210				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	116	29	644	0.180	116	0.2	0.2	6.815	A
C-A	0	0			0				
C-B	0	0	563	0.000	0	0.0	0.0	0.000	A
A-B	50	12			50				
A-C	210	53			210				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	24	656	0.144	95	0.2	0.2	6.409	A
C-A	0	0			0				
C-B	0	0	575	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	172	43			172				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	666	0.119	79	0.2	0.1	6.140	A
C-A	0	0			0				
C-B	0	0	585	0.000	0	0.0	0.0	0.000	A
A-B	34	8			34				
A-C	144	36			144				

OY+5, PM_without_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m
Warning	Vehicle Mix		HV% is zero for all movements / time segments Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	OY+5	PM_without_development	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	373	100.000
B		ONE HOUR	✓	38	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	342
	B	0	0	38
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.07	6.50	0.1	A	35	52
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					28	43
A-C					314	471

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	633	0.045	28	0.0	0.0	5.956	A
C-A	0	0			0				
C-B	0	0	557	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	257	64			257				

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	617	0.055	34	0.0	0.1	6.174	A
C-A	0	0			0				
C-B	0	0	543	0.000	0	0.0	0.0	0.000	A
A-B	28	7			28				
A-C	307	77			307				

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	10	596	0.070	42	0.1	0.1	6.499	A
C-A	0	0			0				
C-B	0	0	523	0.000	0	0.0	0.0	0.000	A
A-B	34	9			34				
A-C	377	94			377				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	10	596	0.070	42	0.1	0.1	6.499	A
C-A	0	0			0				
C-B	0	0	523	0.000	0	0.0	0.0	0.000	A
A-B	34	9			34				
A-C	377	94			377				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	617	0.055	34	0.1	0.1	6.176	A
C-A	0	0			0				
C-B	0	0	543	0.000	0	0.0	0.0	0.000	A
A-B	28	7			28				
A-C	307	77			307				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	633	0.045	29	0.1	0.0	5.962	A
C-A	0	0			0				
C-B	0	0	557	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	257	64			257				

OY+15, AM_without_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	OY+15	AM_without_development	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 (%)
A		ONE HOUR	✓	262	100.000
B		ONE HOUR	✓	115	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	49	213
	B	0	0	115
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	7.07	0.2	A	106	158
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					45	67
A-C					195	293

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	22	660	0.131	86	0.0	0.1	6.262	A
C-A	0	0			0				
C-B	0	0	579	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	160	40			160				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	650	0.159	103	0.1	0.2	6.582	A
C-A	0	0			0				
C-B	0	0	569	0.000	0	0.0	0.0	0.000	A
A-B	44	11			44				
A-C	191	48			191				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32	636	0.199	126	0.2	0.2	7.062	A
C-A	0	0			0				
C-B	0	0	555	0.000	0	0.0	0.0	0.000	A
A-B	54	13			54				
A-C	235	59			235				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32	636	0.199	127	0.2	0.2	7.067	A
C-A	0	0			0				
C-B	0	0	555	0.000	0	0.0	0.0	0.000	A
A-B	54	13			54				
A-C	235	59			235				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	650	0.159	104	0.2	0.2	6.593	A
C-A	0	0			0				
C-B	0	0	569	0.000	0	0.0	0.0	0.000	A
A-B	44	11			44				
A-C	191	48			191				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	22	660	0.131	87	0.2	0.2	6.278	A
C-A	0	0			0				
C-B	0	0	579	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	160	40			160				

OY+15, PM_without_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	OY+15	PM_without_development	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	415	100.000
B		ONE HOUR	✓	42	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	36	379
	B	0	0	42
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	6.71	0.1	A	39	58
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					33	50
A-C					348	522

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	624	0.051	31	0.0	0.1	6.075	A
C-A	0	0			0				
C-B	0	0	549	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	285	71			285				

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	9	607	0.062	38	0.1	0.1	6.327	A
C-A	0	0			0				
C-B	0	0	533	0.000	0	0.0	0.0	0.000	A
A-B	32	8			32				
A-C	341	85			341				

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	12	583	0.079	46	0.1	0.1	6.709	A
C-A	0	0			0				
C-B	0	0	510	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	417	104			417				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	12	583	0.079	46	0.1	0.1	6.709	A
C-A	0	0			0				
C-B	0	0	510	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	417	104			417				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	9	607	0.062	38	0.1	0.1	6.329	A
C-A	0	0			0				
C-B	0	0	533	0.000	0	0.0	0.0	0.000	A
A-B	32	8			32				
A-C	341	85			341				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	624	0.051	32	0.1	0.1	6.079	A
C-A	0	0			0				
C-B	0	0	549	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	285	71			285				

OY, AM_with_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.94	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)	Run automatically	Relationship type	Relationship
D9	OY	AM_with_development	ONE HOUR	07:45	09:15	15	✓	Simple	D1+D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	235	100.000
B		ONE HOUR	✓	96	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	41	194
	B	0	0	96
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.16	6.70	0.2	A	88	132
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					38	56
A-C					178	267

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	72	18	665	0.109	72	0.0	0.1	6.061	A
C-A	0	0			0				
C-B	0	0	585	0.000	0	0.0	0.0	0.000	A
A-B	31	8			31				
A-C	146	37			146				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	86	22	656	0.132	86	0.1	0.2	6.316	A
C-A	0	0			0				
C-B	0	0	576	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	174	44			174				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	106	26	643	0.164	106	0.2	0.2	6.693	A
C-A	0	0			0				
C-B	0	0	563	0.000	0	0.0	0.0	0.000	A
A-B	45	11			45				
A-C	214	53			214				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	106	26	643	0.164	106	0.2	0.2	6.696	A
C-A	0	0			0				
C-B	0	0	563	0.000	0	0.0	0.0	0.000	A
A-B	45	11			45				
A-C	214	53			214				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	86	22	656	0.132	86	0.2	0.2	6.324	A
C-A	0	0			0				
C-B	0	0	576	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	174	44			174				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	72	18	665	0.109	72	0.2	0.1	6.075	A
C-A	0	0			0				
C-B	0	0	585	0.000	0	0.0	0.0	0.000	A
A-B	31	8			31				
A-C	146	37			146				

OY, PM_with_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D10	OY	PM_with_development	ONE HOUR	15:45	17:15	15	✓	Simple	D2+D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	376	100.000
B		ONE HOUR	✓	35	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	30	346
	B	0	0	35
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.06	6.47	0.1	A	32	48
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					28	41
A-C					317	476

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	7	632	0.042	26	0.0	0.0	5.942	A
C-A	0	0			0				
C-B	0	0	557	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	260	65			260				

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	8	616	0.051	31	0.0	0.1	6.156	A
C-A	0	0			0				
C-B	0	0	542	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	311	78			311				

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	594	0.065	38	0.1	0.1	6.475	A
C-A	0	0			0				
C-B	0	0	522	0.000	0	0.0	0.0	0.000	A
A-B	33	8			33				
A-C	381	95			381				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10	594	0.065	39	0.1	0.1	6.475	A
C-A	0	0			0				
C-B	0	0	522	0.000	0	0.0	0.0	0.000	A
A-B	33	8			33				
A-C	381	95			381				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	8	616	0.051	32	0.1	0.1	6.160	A
C-A	0	0			0				
C-B	0	0	542	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	311	78			311				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	26	7	632	0.042	26	0.1	0.0	5.948	A
C-A	0	0			0				
C-B	0	0	557	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	260	65			260				

OY+5, AM_with_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.00	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)	Run automatically	Relationship type	Relationship
D11	OY+5	AM_with_development	ONE HOUR	07:45	09:15	15	✓	Simple	D3+D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	257	100.000
B		ONE HOUR	✓	105	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	212
	B	0	0	105
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	6.91	0.2	A	96	145
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					41	62
A-C					195	292

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	661	0.120	79	0.0	0.1	6.177	A
C-A	0	0			0				
C-B	0	0	580	0.000	0	0.0	0.0	0.000	A
A-B	34	8			34				
A-C	160	40			160				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	24	651	0.145	94	0.1	0.2	6.467	A
C-A	0	0			0				
C-B	0	0	570	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	191	48			191				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	116	29	637	0.182	115	0.2	0.2	6.901	A
C-A	0	0			0				
C-B	0	0	557	0.000	0	0.0	0.0	0.000	A
A-B	50	12			50				
A-C	233	58			233				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	116	29	637	0.182	116	0.2	0.2	6.906	A
C-A	0	0			0				
C-B	0	0	557	0.000	0	0.0	0.0	0.000	A
A-B	50	12			50				
A-C	233	58			233				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	94	24	651	0.145	95	0.2	0.2	6.475	A
C-A	0	0			0				
C-B	0	0	570	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	191	48			191				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	661	0.120	79	0.2	0.1	6.193	A
C-A	0	0			0				
C-B	0	0	580	0.000	0	0.0	0.0	0.000	A
A-B	34	8			34				
A-C	160	40			160				

OY+5, PM_with_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	OY+5	PM_with_development	ONE HOUR	15:45	17:15	15	✓	Simple	D4+D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	406	100.000
B		ONE HOUR	✓	38	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	375
	B	0	0	38
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.07	6.63	0.1	A	35	52
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					28	43
A-C					344	516

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	625	0.046	28	0.0	0.0	6.031	A
C-A	0	0			0				
C-B	0	0	551	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	282	71			282				

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	608	0.056	34	0.0	0.1	6.270	A
C-A	0	0			0				
C-B	0	0	535	0.000	0	0.0	0.0	0.000	A
A-B	28	7			28				
A-C	337	84			337				

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	10	585	0.072	42	0.1	0.1	6.630	A
C-A	0	0			0				
C-B	0	0	513	0.000	0	0.0	0.0	0.000	A
A-B	34	9			34				
A-C	413	103			413				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	10	585	0.072	42	0.1	0.1	6.630	A
C-A	0	0			0				
C-B	0	0	513	0.000	0	0.0	0.0	0.000	A
A-B	34	9			34				
A-C	413	103			413				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	608	0.056	34	0.1	0.1	6.274	A
C-A	0	0			0				
C-B	0	0	535	0.000	0	0.0	0.0	0.000	A
A-B	28	7			28				
A-C	337	84			337				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	625	0.046	29	0.1	0.0	6.036	A
C-A	0	0			0				
C-B	0	0	551	0.000	0	0.0	0.0	0.000	A
A-B	23	6			23				
A-C	282	71			282				

OY+15, AM_with_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.07	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)	Run automatically	Relationship type	Relationship
D13	OY+15	AM_with_development	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	283	100.000
B		ONE HOUR	✓	115	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	49	234
	B	0	0	115
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	7.16	0.3	A	106	158
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					45	67
A-C					215	322

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	22	655	0.132	86	0.0	0.2	6.315	A
C-A	0	0			0				
C-B	0	0	575	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	176	44			176				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	644	0.160	103	0.2	0.2	6.651	A
C-A	0	0			0				
C-B	0	0	564	0.000	0	0.0	0.0	0.000	A
A-B	44	11			44				
A-C	210	53			210				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32	629	0.201	126	0.2	0.2	7.159	A
C-A	0	0			0				
C-B	0	0	549	0.000	0	0.0	0.0	0.000	A
A-B	54	13			54				
A-C	258	64			258				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32	629	0.201	127	0.2	0.3	7.165	A
C-A	0	0			0				
C-B	0	0	549	0.000	0	0.0	0.0	0.000	A
A-B	54	13			54				
A-C	258	64			258				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	103	26	644	0.160	104	0.3	0.2	6.659	A
C-A	0	0			0				
C-B	0	0	564	0.000	0	0.0	0.0	0.000	A
A-B	44	11			44				
A-C	210	53			210				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	22	655	0.132	87	0.2	0.2	6.333	A
C-A	0	0			0				
C-B	0	0	575	0.000	0	0.0	0.0	0.000	A
A-B	37	9			37				
A-C	176	44			176				

OY+15, PM_with_development

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	OY+15	PM_with_development	ONE HOUR	15:45	17:15	15	✓	Simple	D6+D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	448	100.000
B		ONE HOUR	✓	42	100.000
C		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	36	412
	B	0	0	42
	C	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	6.85	0.1	A	39	58
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					33	50
A-C					378	567

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	616	0.051	31	0.0	0.1	6.153	A
C-A	0	0			0				
C-B	0	0	542	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	310	78			310				

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	9	598	0.063	38	0.1	0.1	6.428	A
C-A	0	0			0				
C-B	0	0	525	0.000	0	0.0	0.0	0.000	A
A-B	32	8			32				
A-C	370	93			370				

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	12	572	0.081	46	0.1	0.1	6.848	A
C-A	0	0			0				
C-B	0	0	501	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	454	113			454				

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	12	572	0.081	46	0.1	0.1	6.848	A
C-A	0	0			0				
C-B	0	0	501	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	454	113			454				

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	9	598	0.063	38	0.1	0.1	6.430	A
C-A	0	0			0				
C-B	0	0	525	0.000	0	0.0	0.0	0.000	A
A-B	32	8			32				
A-C	370	93			370				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	8	616	0.051	32	0.1	0.1	6.156	A
C-A	0	0			0				
C-B	0	0	542	0.000	0	0.0	0.0	0.000	A
A-B	27	7			27				
A-C	310	78			310				

WS Atkins Ireland Limited
Atkins House
150 Airside Business Park
Swords
Co. Dublin
K67 K5W4