L_{AF90}	Refers to those A-weighted noise levels in the lower 90 percentile of the sampling interval; it is the level which is exceeded for 90% of the measurement period. It will therefore exclude the intermittent features of traffic and is used to estimate a background level. Measured using the "Fast" time weighting.
L_{AT}(DW)	equivalent continuous downwind sound pressure level.
L_{FT}(DW)	equivalent continuous downwind octave-band sound pressure level.
L_{day}	L_{day} is the average noise level during the daytime period of 07:00hrs to 19:00hrs
L_{night}	L_{night} is the average noise level during the night-time period of 23:00hrs to 07:00hrs.
low frequency noise	LFN - noise which is dominated by frequency components towards the lower end of the frequency spectrum.
noise	Any sound, that has the potential to cause disturbance, discomfort or psychological stress to a person exposed to it, or any sound that could cause actual physiological harm to a person exposed to it, or physical damage to any structure exposed to it, is known as noise.
noise sensitive location	NSL – Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
octave band	A frequency interval, the upper limit of which is twice that of the lower limit. For example, the 1,000Hz octave band contains acoustical energy between 707Hz and 1,414Hz. The centre frequencies used for the designation of octave bands are defined in ISO and ANSI standards.
rating level	See $L_{Ar,T}$.
sound power level	The logarithmic measure of sound power in comparison to a referenced sound intensity level of one picowatt (1pW) per m^2 where: $$Lw = 10Log\frac{P}{P_0}\ \text{dB}$$ Where: p is the rms value of sound power in pascals; and P_0 is 1 pW.
sound pressure level	The sound pressure level at a point is defined as:

$$Lp = 20Log\frac{P}{P_0}\ \text{dB}$$

specific noise level

A component of the ambient noise which can be specifically identified by acoustical means and may be associated with a specific source. In BS 4142, there is a more precise definition as follows: 'the equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval ($L_{Aeq,T}$)'.

tonal

Sounds which cover a range of only a few Hz which contains a clearly audible tone i.e. distinguishable, discrete or continuous noise (whine, hiss, screech, or hum etc.) are referred to as being 'tonal'.

11.2 NOISE MODEL PARAMETERS

The following are the main aspects that have been considered in terms of the noise predictions presented in this instance.

Directivity Factor: The directivity factor (D) allows for an adjustment to be made where the sound radiated in the direction of interest is higher than that for which the sound power level is specified. In this case the sound power level is measures in a down wind direction, corresponding to the worst-case propagation conditions and needs no further adjustment.

Ground Effect: Ground effect is the result of sound reflected by the ground interfering with the sound propagating directly from source to receiver. The prediction of ground effects is inherently complex and depend on source height receiver height propagation height between the source and receiver and the ground conditions. The ground conditions are described according to a variable defined as G, which varies between 0.0 for hard ground (including paving, ice concrete) and 1.0 for soft ground (includes ground covered by grass trees or other vegetation) Our predictions have been carried out using various source height specific to each plant item, a receiver heights of 1.6m for single storey properties and 4m for double. An assumed ground factor of G = 0.8 has been applied off site. Noise contours presented in the assessment have been predicted to a height of 4m in all instances. For construction noise predictions have been made at a level of 1.6m as these activities will not occur at night.

Geometrical Divergence This term relates to the spherical spreading in the free-field from a point sound source resulting in attenuation depending on distance according to the following equation:

$$A_{geo} = 20 \times \log(\text{distance from source in meters}) + 11$$

Atmospheric Absorption Sound propagation through the atmosphere is attenuated by the conversion of the sound energy into heat. This attenuation is dependent on the temperature and relative humidity of the air through which the sound is travelling and is frequency dependent with increasing attenuation towards higher frequencies. In these predictions a temperature of 10°C and a relative humidity of 70% have been used, which give relativity low levels of atmosphere attenuation and corresponding worst case noise predictions.

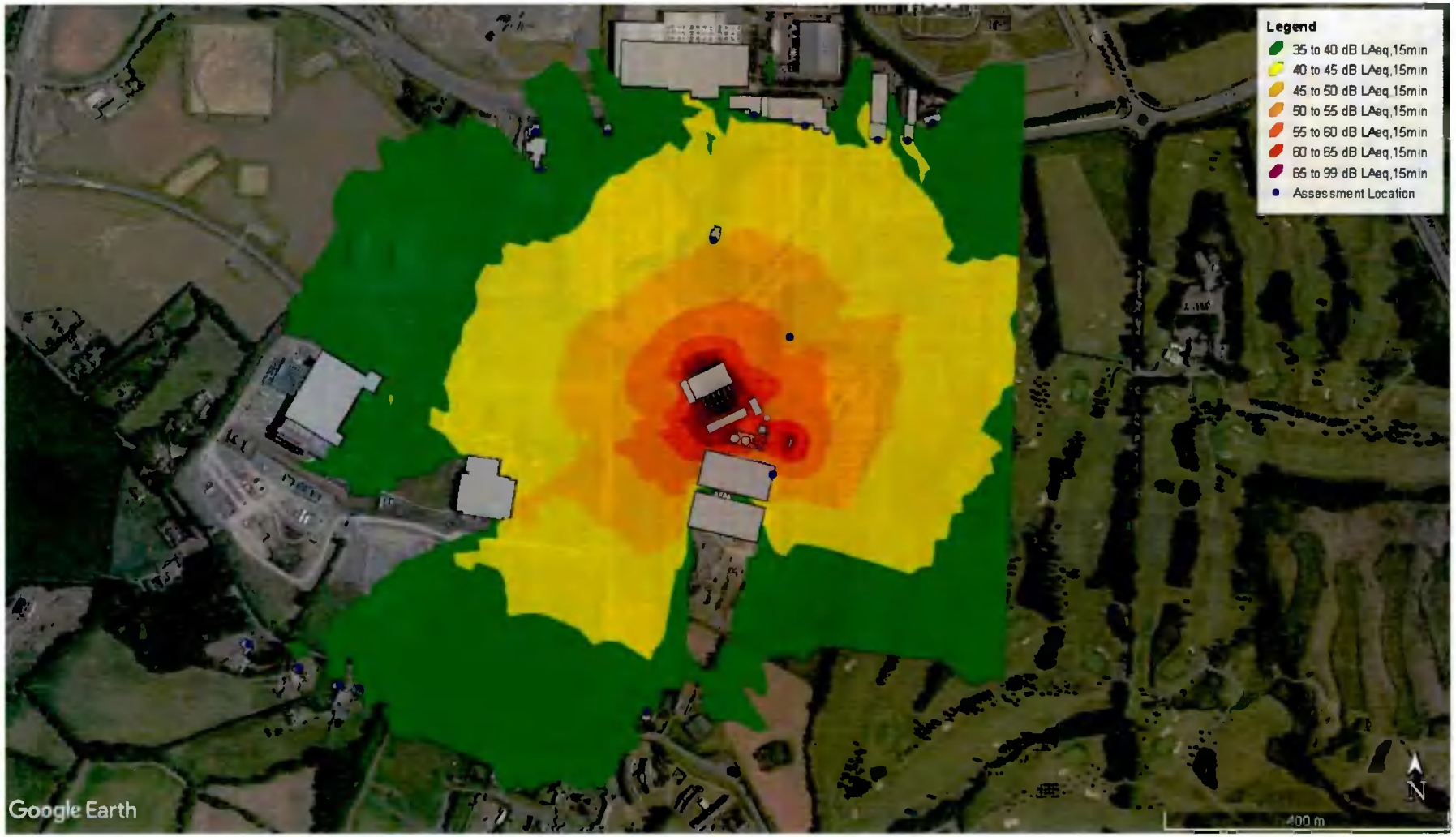
Temp (°C)	% Humidity	Octave Band Centre Frequencies (Hz)							
		63	125	250	500	1k	2k	4k	8k
10	70	0.12	0.41	1.04	1.92	3.66	9.70	33.06	118.4

Barrier Attenuation The effect of any barrier between the noise source and the receiver position is that noise will be reduced according to the

relative heights of the source, receiver and barrier and the frequency spectrum of the noise.

11.3 OPERATION NOISE CONTOUR

See Overleaf


Legend
35 to 40 dB LAeq,15min
40 to 45 dB LAeq,15min
45 to 50 dB LAeq,15min
50 to 55 dB LAeq,15min
55 to 60 dB LAeq,15min
60 to 65 dB LAeq,15min
65 to 99 dB LAeq,15min
Assessment Location
Google Earth
N
400 m

13.1 SMR/RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.	DU021-004
RMP STATUS	Scheduled for inclusion in the next revision of the RMP
TOWNLAND	Kilbride
PARISH	Kilbride
BARONY	Newcastle
I.T.M.	703754,730071
CLASSIFICATION	Castle - unclassified
DIST. FROM DEVELOPMENT	391m south
DESCRIPTION	Situated in a narrow valley. There are farm buildings on the site. There is no visible trace above ground (Ball 1906, 66).
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU021-005002
RMP STATUS	Scheduled for inclusion in the next revision of the RMP
TOWNLAND	Kilbride
PARISH	Kilbride
BARONY	Newcastle
I.T.M.	703865,730030
CLASSIFICATION	Graveyard
DIST. FROM DEVELOPMENT	393m south
DESCRIPTION	Located in a circular raised graveyard (L 42m, Wth 30) on the edge of a valley. Encloses the remains of a medieval church (DU021-005001-).

REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU021-005003
RMP STATUS	Scheduled for inclusion in the next revision of the RMP
TOWNLAND	Kilbride
PARISH	Kilbride
BARONY	Newcastle
I.T.M.	703865,730030
CLASSIFICATION	Ecclesiastical enclosure
DIST. FROM DEVELOPMENT	393m south
DESCRIPTION	The church of Kilbride is located in a circular raised graveyard (L 42m, Wth 30) on the edge of a valley. This may be the remains of an early ecclesiastical enclosure.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	DU021-005001
RMP STATUS	Scheduled for inclusion in the next revision of the RMP
TOWNLAND	Kilbride
PARISH	Kilbride
BARONY	Newcastle
I.T.M.	703864,730032
CLASSIFICATION	Church
DIST. FROM DEVELOPMENT	412m south
DESCRIPTION	Located in a circular raised graveyard (L 42m, Wth 30) on the edge of a valley (DU021-005002-). This may be the remains of an early ecclesiastical enclosure (DU021-005003-). In 1228 the archbishop of Dublin granted the

	church of Kilbride to Andrew de Monevea as a prebend and later conferred it on the Canons of St Patrick's Cathedral (Mc Neill 1950, 75). In 1630 it was described as ruinous (Ronan 1941, 80). This church was attached to St. Patrick's Cathedral and was described at the dissolution in 1547 as an old chapel (Ball 1906, 68-70). Consists of a small rectangular building (int. dims L5.8m, Wth 3.63m, T 0.85m) with a NW turret in ruinous condition. Formerly entered through an opening in the W end (now damaged). Built of randomly coursed masonry. There is an aumbry in the E end of the N wall of the church. The E window has a S jamb of tufa. There are remnants of another window in the W end of the S wall. The NW turret (L1.35m, Wth 0.77m, H1.78m) is entered through a lintelled doorway off the church. It has a corbelled roof. There are traces of a stairwell on the S side of the turret (Ni Mharcaigh, 1997, 268-269).
REFERENCE	www.archaeology.ie/ SMR file

13.2 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht, and the Islands 1999, 35). This is undertaken in accordance with the provisions of the *European Convention on the Protection of the Archaeological Heritage* (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2014* and relevant provisions of the *National Cultural Institutions Act 1997* are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2). A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months' notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation

must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht, and the Islands (now the Minister for Housing, Local Government and Heritage) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition, they are liable for costs for the repair of the damage caused.

In addition to this, under the *European Communities (Environmental Impact Assessment) Regulations 1989,* Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological, and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2000

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2000 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

South Dublin County Council Development Plan, 2016–2022

It is the policy of the Council to manage development in a manner that protects and conserves the Archaeological Heritage of the County and avoids adverse impacts on sites, monuments, features or objects of significant historical or archaeological interest.

HCL2 Objective 1:

To favour the preservation in-situ of all sites, monuments and features of significant historical or archaeological interest in accordance with the recommendations of the Framework and Principles for the Protection of Archaeological Heritage, DAHGI (1999), or any superseding national policy document.

HCL2 Objective 2:

To ensure that development is designed to avoid impacting on archaeological heritage that is of significant interest including previously unknown sites, features and objects.

HCL2 Objective 3:

To protect and enhance sites listed in the Record of Monuments and Places and ensure that development in the vicinity of a Recorded Monument or Area of Archaeological Potential does not detract from the setting of the site, monument, feature or object and is sited and designed appropriately.

HCL2 Objective 4:

To protect and preserve the archaeological value of underwater archaeological sites including associated features and any discovered battlefield sites of significant archaeological potential within the County.

HCL2 Objective 5:

To protect historical burial grounds within South Dublin County and encourage their maintenance in accordance with conservation principles.

13.3 IMPACT ASSESSMENT AND THE CULTURAL HERITAGE RESOURCE

POTENTIAL IMPACTS ON ARCHAEOLOGICAL AND HISTORICAL REMAINS

Impacts are defined as 'the degree of change in an environment resulting from a development' (Environmental Protection Agency 2017). They are described as profound, significant, or slight impacts on archaeological remains. They may be negative, positive, or neutral, direct, indirect, or cumulative, temporary, or permanent.

Impacts can be identified from detailed information about a project, the nature of the area affected, and the range of archaeological and historical resources potentially affected. Development can affect the archaeological and historical resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.

- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.

- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.

- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences, and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.

- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.

- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.

- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.

Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.

PREDICTED IMPACTS

The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account:

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;

- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;

- Assessment of the levels of noise, visual and hydrological impacts, either in general or site-specific terms, as may be provided by other specialists.

13.4 MITIGATION MEASURES AND THE CULTURAL HERITAGE RESOURCE

POTENTIAL MITIGATION STRATEGIES FOR CULTURAL HERITAGE REMAINS

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce, or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

DEFINITION OF MITIGATION STRATEGIES

ARCHAEOLOGICAL RESOURCE

The ideal mitigation for all archaeological sites is preservation *in situ*. This is not always a practical solution. Therefore, a series of recommendations are offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

Archaeological Test Trenching can be defined as 'a limited programme of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land, inter-tidal zone or underwater. If such archaeological remains are present field evaluation defines their character, extent, quality, and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate' (CIfA 2014a).

Full Archaeological Excavation can be defined as 'a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design' (CIfA 2014b).

Archaeological Monitoring can be defined as 'a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive (CIfA 2014c).

Underwater Archaeological Assessment consists of a programme of works carried out by a specialist underwater archaeologist, which can involve wade surveys, metal detection surveys and the excavation of test pits within the sea or riverbed. These assessments are able to access and assess the potential of an underwater environment to a much higher degree than terrestrial based assessments.

14.1 PHOTOMONTAGES

Please refer Appendix 14.1 Photomontage Booklet which is provided separately.

14.2 LANDSCAPE PLAN AND SECTIONS

Please refer to Figures LD.PRFLEPRK 1.0 and 1.1 which are provided separately.

15.1 TRAFFIC & TRANSPORTATION ASSESSMENT

TOBIN
CONSULTING ENGINEERS
BUILT ON KNOWLEDGE

Greener Ideas

PROFILE PARK POWER PLANT.

TRAFFIC AND TRANSPORTATION ASSESSMENT

PROPOSED DEVELOPMENT AT PROFILE PARK, CO. DUBLIN

TRAFFIC AND TRANSPORTATION ASSESSMENT

Document Control Sheet	
Document Reference	TR01
Report Status	Stage 1 Submission
Report Date	June 2021
Current Revision	D01
Client:	Greener Ideas Limited
Client Address:	The Seapoint Building, Clontarf Dublin 3 Ireland
Project Number	11069

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Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
D01	Planning Issue	RM	27/04/21	MMC	14/06/21	MMC	18/06/21

TOBIN Consulting Engineers

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Appendices

1.0 NON-TECHNICAL SUMMARY

The Non-Technical Summary is a synopsis of the traffic and transportation assessment for the proposed industrial development at Kilcarbery Dublin 22. The proposed development is located on a 1.8ha greenfield site just south of the R134 in the Profile Park Business Campus.

The proposed development sought by Greener Ideas Limited. for the construction of a power plant:

1. Construction of the plant, consisting of:
    - Site entrance
    - Engine hall comprising 6 no. gas engines and 1 no. exhaust stacks.
    - Electrical annex building.
    - Administration Building.
    - 110kV electrical substation.
    - Engineering Building.
    - Car Park.

A scoping document was issued on the 23rd of February 2021 to South Dublin County Council (SDCC) Roads Department. This document outlined the proposed approach that the Traffic and Transportation Assessment would take and identified the junctions which would be included in the analysis.

A COVID-19 adjustment check was undertaken on the traffic count data to determine if the traffic on the date of the traffic count survey is representative of the annual average traffic for the year. The traffic survey data was assessed for a COVID-19 adjustment and it was determined that on date of the survey traffic volume was below average compared to the historical annual average daily traffic (AADT) in the area. (Confirmed through historical and recent ATC counts carried out on the 24th of March 2021 and historically obtained data pre COVID, Jan 2018) and hence an adjustment factor of 1.21 was applied to the data.

Given that operational traffic for the proposed development (less than 5 vehicle movements per day), assessments were carried out on the Construction Phase traffic impact to the site rather than as per the TII Traffic and Transportation Assessment Guidelines.

TII Traffic and Transportation Assessment Guidelines require the following assessments to be undertaken:

- the operating year 2025.
- the design years 2030 (+ 5 years); and
- the design year 2040 (+ 15 years).

Following Consultation with SDCC, the assessment has focused on the following items:

- the beginning of construction and 1 month in (to coincide with peak traffic volumes for import of material, 2023; and
- the remainder of the construction phase 15months (to 2025)

The traffic count data was forecasted using the TII Project Appraisal Guidelines Unit 5.3: Travel Demand Projections for high growth.

The assessments were undertaken using JUNCTION 9 ARCADY. The Ratio of Flow to Capacity (RFC) values are shown to be significantly lower than the maximum RFC of 0.85. The maximum RFC of 0.52 was shown at the New Nangor Road / R134 Roundabout Junction.

2.0 INTRODUCTION

2.1 INTRODUCTION

TOBIN Consulting Engineers Ltd have been appointed by Greener Ideas Limited, to prepare a Traffic and Transportation Assessment Report for a proposed power plant development located in Kilcarbery Dublin 22. The existing site area is 1.9 ha, comprising of a green field site.

In preparing this report, TOBIN Consulting Engineers has referred to

- South Dublin County Development Plan 2016 – 2022.
- TII PE-PDV-02045 Traffic and Transport Assessment Guidelines (May 2014); and
- TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3: Travel Demand Projections (May 2019)

2.2 OBJECTIVES

The objective of this report is to assess the impact the proposed development will have on the existing road network. This report will calculate the expected volume of traffic that will be generated by the proposed development and assess the impact that this traffic will have on the operational capacity of the road network in the vicinity of the development. The junctions to be analysed as part of this report are the following:

- Junction 1: The priority junction R134/profile Park/Kilcarbery Park (Roundabout).
- Junction 2: Internal Roundabout Profile Park
- Junction 3: Site Access

2.3 SCOPING

In order to ensure the scope of this report was to the satisfaction of South Dublin County Council, a scoping document was issued on the 23rd of February 2021 to South Dublin County Council Roads Department. This document outlined the proposed approach that the Traffic and Transportation Assessment would take and identified the junctions which would be included in the analysis (Appendix A).

2.4 STRUCTURE OF THE REPORT

This report is divided into eight chapters:

- Chapter 1 is a Non-Technical Summary.
- Chapter 2 includes this introduction.
- Chapter 3 describes the proposed development, and its location.
- Chapter 4 provides an overview of the existing and proposed traffic conditions, explaining how this information was obtained.
- Chapter 5 outlines the assumptions that have been made in the calculation of traffic generated by the development and the factors used to forecast the future road network traffic.
- Chapter 6 explains the methodology used and the results of the analysis performed on the nominated junctions. An investigation into link capacity is also dealt with in this chapter.
- Chapter 7 addresses issues relating to road safety, parking provision, pedestrians & cyclists and access for people with disabilities.
- Chapter 8 concludes the report.

3.0 PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The proposed development site is located at Profile Park Business Campus in the Kilcarbery area of Dublin 22. The site location is shown in Figure 3.1 , with the indicative site layout prepared by the architect (Appendix B).

Profile Park comprises a 100 acre (40.5 Ha) fully enclosed, private business park strategically located on the outskirts of Dublin City the Park is easily accessible from the major arterial roads in the City including the M50, M7 and M4, and is served by public transport links also.

Profile Park is noted for the very heart of what is rapidly becoming "Ireland's Data Centre Cluster" with Google, Microsoft, Digital Realty Trust and Telecity all located in the immediate vicinity.

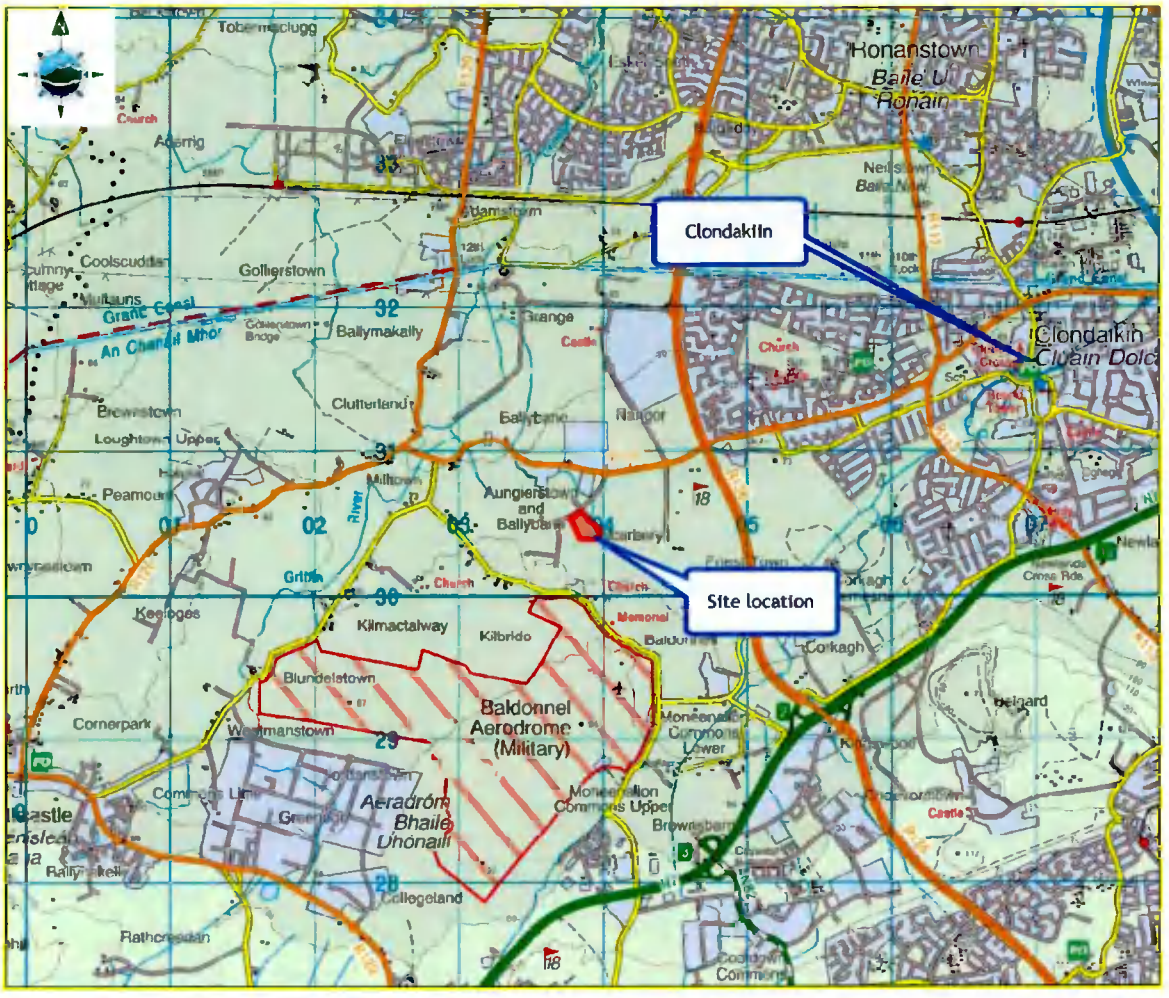


Figure 3.1: Site Location 0016017 © Ordnance Survey Ireland/Government of Ireland.

3.2 JUNCTION LOCATIONS

3.3 DESCRIPTION OF PROPOSED DEVELOPMENT

Planning permission is being sought by Greener Ideas Limited for development of a 1.8ha site on lands on the Profile Park Business Campus.

3.4 CUMULATIVE IMPACTS

A planning search was carried out which revealed some committed development in the area over the period of 2015 to 2021. These other developments are primarily related to ongoing data centre construction and expansion works in the adjacent business parks. These developments are considered to be accounted for in the yearly growth figures, hence the use of the high sensitivity growth rates (TII PE-PAG-02017).

3.5 TRAFFIC SURVEY

In order to determine the magnitude of the existing traffic flows, the results of a manual classified junction turning count was carried out by Nationwide Data Collection on Tuesday 23rd March between the hours 07:00 and 19:00. As shown in Figure 3.2 the count information was obtained for the following junctions:

- Site 1: R134 New Nangor Road – Kilcarbery Park – Profile Park Roundabout
- Site 2: Profile Park Internal Roundabout

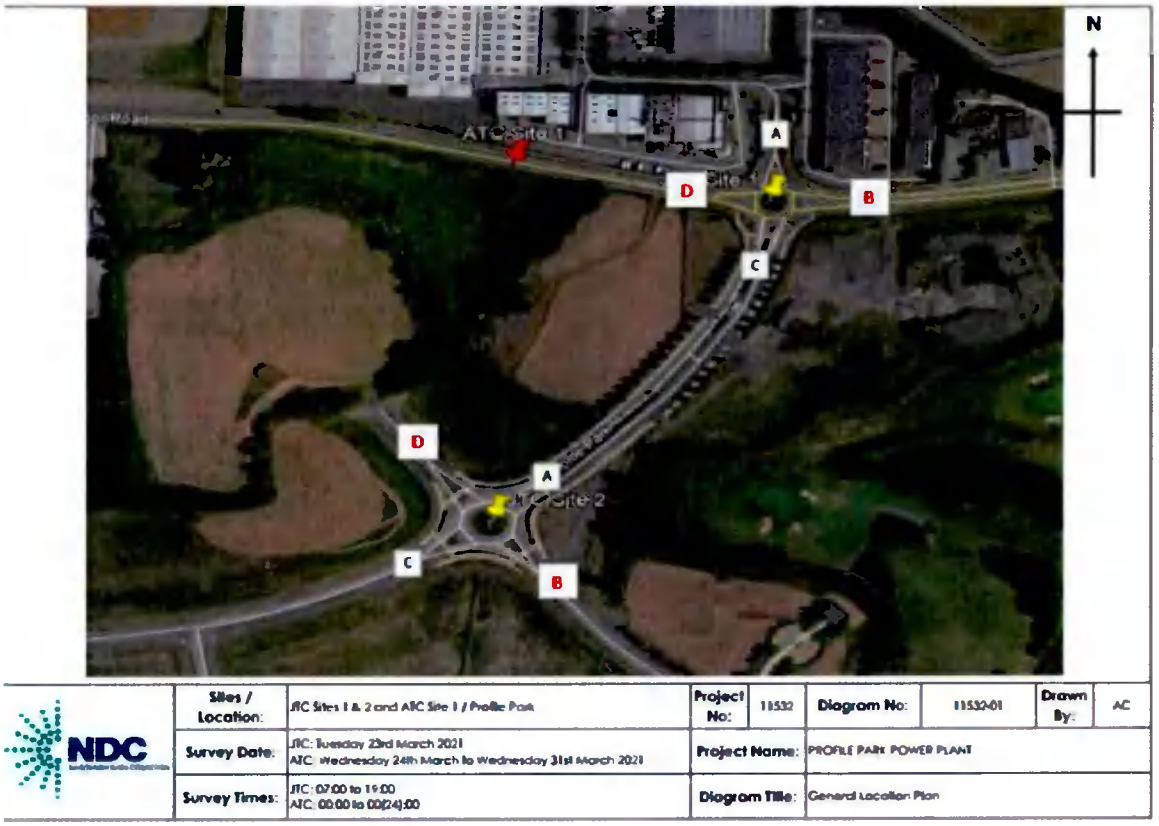


Figure 3.2: Traffic Count Locations

This survey distinguished between light good vehicles and heavy good vehicles. The traffic count data is included in Appendix C of this report. The results of this survey indicated that the peak traffic levels through these junctions occurred between the hours of 08:30 and 09:30, and between three various PM peaks (17:00 and 18:00).

Link-based growth rates (high sensitivity growth rates) were applied to the 2019 traffic flows to determine background traffic flows for the future assessment years.

In addition to the manual traffic counts, Nationwide Data Collection also carried out Automated Traffic Counts Eastbound and Westbound along the R134. In connection with historical traffic count data purchased from IDASO Ltd, TOBIN obtained this ATC data to generate COVID-19 adjusted traffic flows by establishing a base traffic flow and applying an adjustment factor accordingly. The application of this process is outlined in Chapter 4 below.

3.6 EXISTING ROAD NETWORK

The proposed development is to be accessed from the R134 New Nangor Road. The proposed site access is situated within an 60km/h default urban speed zone. The R134 New Nangor Road has a carriageway width of approximately 7.3m in the vicinity of the access to Profile Park Business Park. The R134 also provides a fully segregated two-way cycle facility on the EB side along 2.25m width footpath. Tactile paving crossing points and street lighting are present at the junction along with roadside bus stops.

3.7 PROPOSED NETWORK IMPROVEMENTS

Currently, there are no proposed improvements to the road network in the region.

3.8 PROPOSED SITE ACCESS JUNCTION & TRAFFIC ORIGIN

The existing site access from one of the main arteries within Profile Park will be used, this is a T-junction.

The Business Campus of Profile Park is located of a Regional Road (R134) and is well services by Regional roads such as the R120, R1136 and R113 on its immediate surroundings. The park is situated approx. 5km away from the N4 and M50 to the North and East respectively and approx. 2.5km from the N7 to the South providing excellent access to some of the country's main Infrastructural links. It is envisaged that the origin for all Construction Traffic and Deliveries will be facilitated by either one of these 3 major infrastructure routes with the Regional Roads providing the link right to the site boundary.

4.0 TRIP GENERATION AND DISTRIBUTION

4.1 COVID-19 ADJUSTMENT

In order to undertake an analysis of the key junctions in relation to this Traffic and Transport Assessment in the current climate of COVID-19 and with travel restrictions in place, it is necessary to apply a correction factor. This correction factor is to take the traffic count data recorded onsite and adjust the traffic flows to take account of the significant reduction in traffic volumes currently being experienced. A comparison was undertaken between historical traffic count data along the R134 New Nangor Road from Jan 2018 (Pre-COVID-19) and the TII traffic count information for the day of the survey in March 2021. An analysis of both data sets was carried out and as was expected, the traffic count on the day of the survey was significantly lower than the traffic count data from January 2018.

An adjustment factor was applied to the traffic count data by applying high sensitivity TII growth rates to the 2018 data and comparing the expected 5 day AADT for 2021 against the Surveyed 5 day AADT.

4.2 OPENING AND FUTURE YEAR FLOWS AND ENVIRONMENT

The proposed development will be constructed in one phase with the development planned for opening in 2025. Given the Nature of the development as a Power Plant with minimal daily staff (less than 5 vehicle movements per day once operational), this Traffic Assessment has focused on the Construction elements and the traffic volumes associated over the course of the construction period (2023-2025). The opening year of Construction of 2023 was utilised for the purpose of the traffic assessment having been identified as a period of peak construction. In addition to the opening year, the close out and commissioning period of the construction works (2025) is being utilised for the traffic assessment to ensure that any impacts associated with the traffic element of the construction have adequately been assessed.

The link-based annual growth rates were updated in 2019 by the TII, with annual growth rates shown for each county. Those for Dublin are shown in Table 4.1. The derived growth factors were applied to 2021 traffic flows to determine background traffic flows for the assessment years. The assessment is split into light vehicles and heavy vehicles.

Table 4.1: Growth Factors for light vehicle (LV) and heavy vehicles (HV)

	2016-2030
LV	1.0211
HV	1.0348

4.3 TRIP GENERATION

The volume of traffic expected to be generated during the AM and PM peak hours for the construction phase of the proposed development were established from detailed information provided by the Client. These figures include details of peak construction staff numbers and mass haul movements to identify peak times of Construction activity

4.3.1 TRIP GENERATION OF PROPOSED DEVELOPMENT

Trip Rates for the various uses within the development have been determined for weekdays, Monday to Friday, to coincide with the maximum levels of existing traffic on the adjacent road network. The volume of traffic expected to be generated by the proposed construction phase of the development during the AM and PM peak hours are shown below in Table 4.2 and Table 4.3.

This is expected to be consistent across the 18month Construction period.

Table 4.2: Expected Trip Generation for Proposed Development for AM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT (AM PEAK HOUR)		
	Arrivals	**Departures**
Personal Car Units (PCU's) and Light Goods Vehicles (LGV)	40	
Daily Delivery Heavy Goods Vehicles (HGVs)	5	5
Total	**45**	**5**

Table 4.3: Expected Trip Generation for Proposed Development for PM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT (AM PEAK HOUR)		
	Arrivals	**Departures**
Personal Car Units (PCU's) and Light Goods Vehicles (LGV)		40
Daily Delivery Heavy Goods Vehicles (HGVs)	5	5
Total	**5**	**45**

In addition to the above, the Designer has been informed that during significant volumes of material will be required to be imported as part of the mass haul element to the value of 8,000m3 of material to the site over the initial month. For this period, this will increase the HGV Arrivals and Departures during the peak hours. This additional volume is identified In Tables 4.4 and 4.5 below.

Table 4.4: Expected Trip Generation for Proposed Development for AM Peak Hour (During 1st Month of Construction)

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT (AM PEAK HOUR)		
	Arrivals	**Departures**
Personal Car Units (PCU's) and Light Goods Vehicles (LGV)	40	
Daily Delivery Heavy Goods Vehicles (HGVs)	7	7
Total	**47**	**7**

Table 4.5: Expected Trip Generation for Proposed Development for PM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT (AM PEAK HOUR)		
	Arrivals	**Departures**
Personal Car Units (PCU's) and Light Goods Vehicles (LGV)		40
Daily Delivery Heavy Goods Vehicles (HGVs)	7	7
Total	**7**	**47**

4.3.2 TRIP DISTRIBUTION

4.3.3 TRIP DISTRIBUTION OF PROPOSED DEVELOPMENT

It was envisaged the proposed traffic distribution matches the existing traffic distribution at each of the junctions, with the exception of the site access, Junction 3. The passing traffic shall be utilised for the proposed traffic distribution at Junction 3 as the junction although constructed is not in use / occupied by a development generating traffic. The existing development trip distribution applied to the per peak hour are shown below.

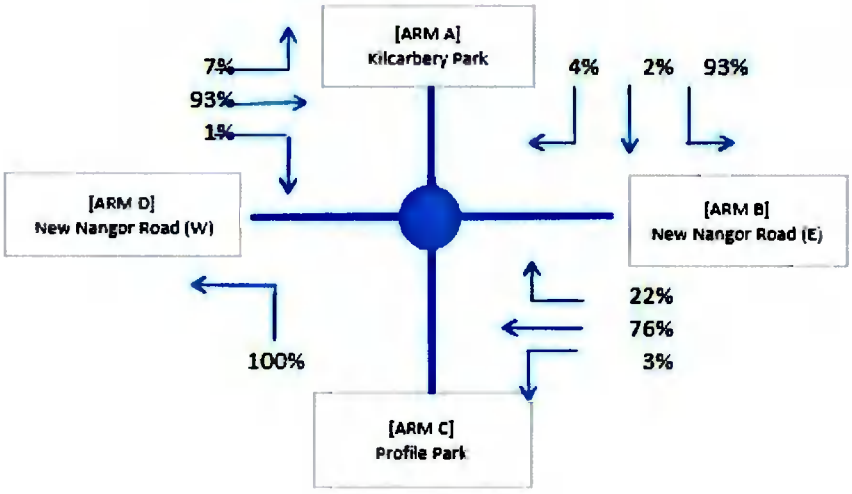


Figure 4.1: Traffic Distribution for AM Peak Hour at Junction 1

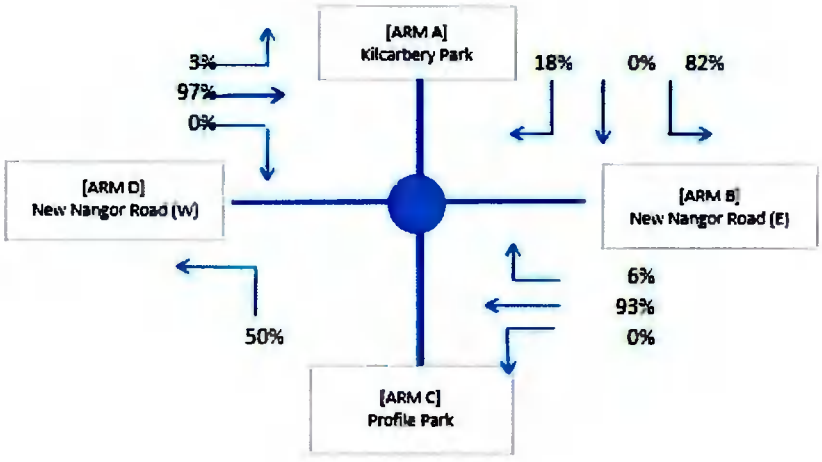


Figure 4.2: Traffic Distribution for PM Peak Hour at Junction 1

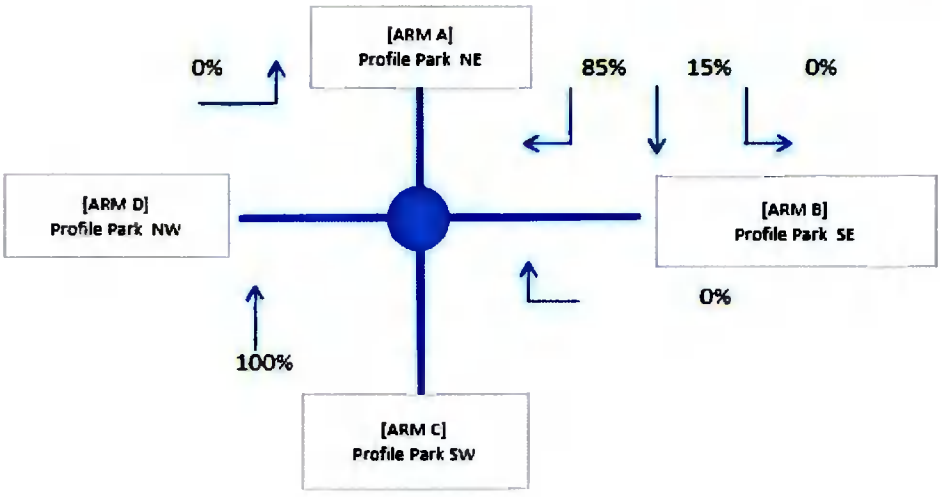


Figure 4.3: Traffic Distribution for AM Peak Hour at Junction 2

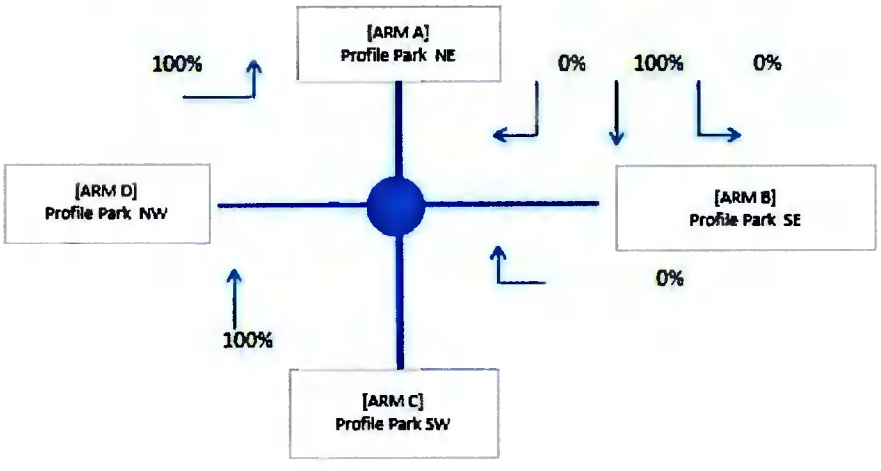


Figure 4.4: Traffic Distribution for PM Peak Hour at Junction 2

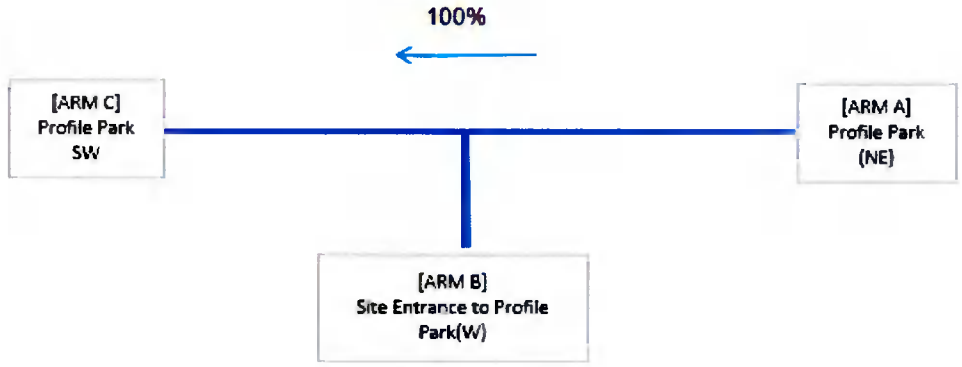


Figure 4.5: Traffic Distribution for AM Peak Hour at Junction 3 (Site Access)

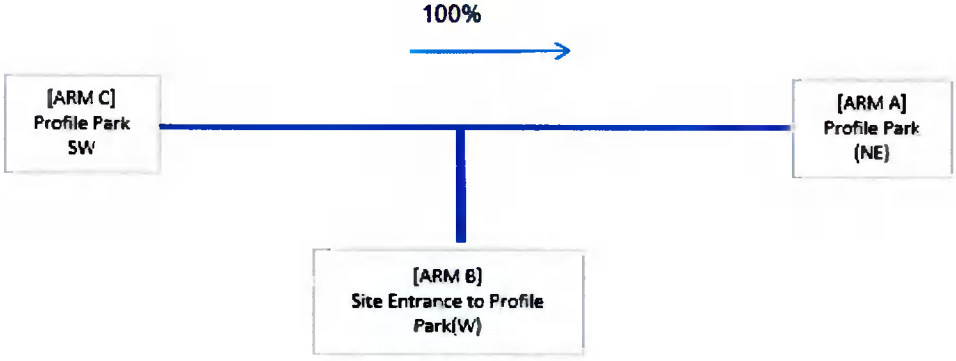


Figure 4.6: Traffic Distribution for PM Peak Hour at Junction 3 (Site Access)

4.4 TRIP DISTRIBUTION OF BASEFLOW PLUS GENERATED TRAFFIC

The baseline plus generated traffic for the year of opening of Construction 2023 and the Completion of Construction, 2025, for both the AM and PM peak hours are shown in the Figures below.

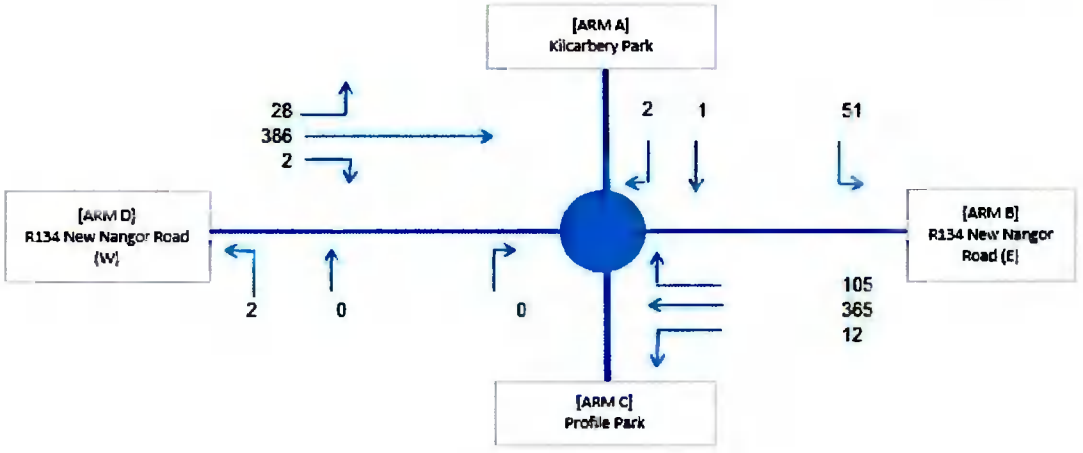


Figure 4.7: Baseflow Traffic 2021 AM Peak - Junction 1

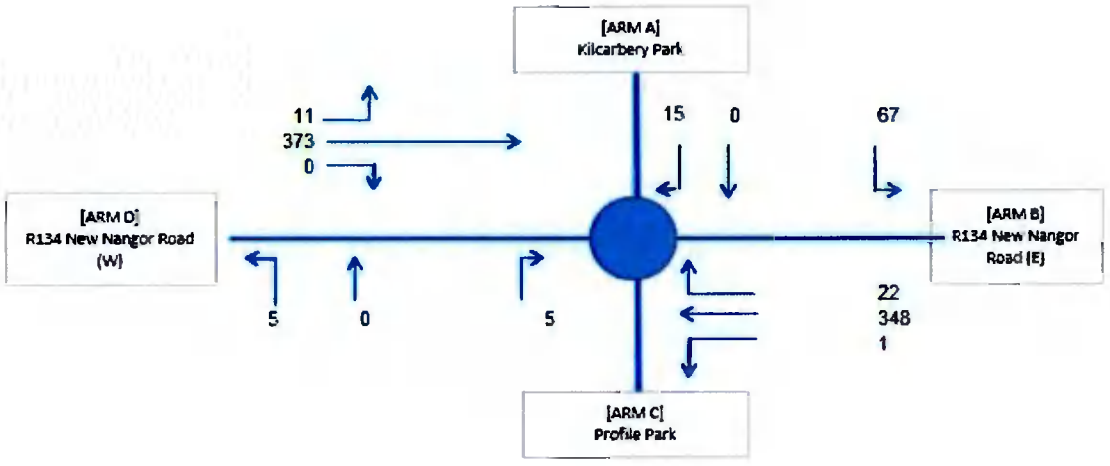


Figure 4.8: Baseflow Traffic 2021 PM Peak - Junction 1

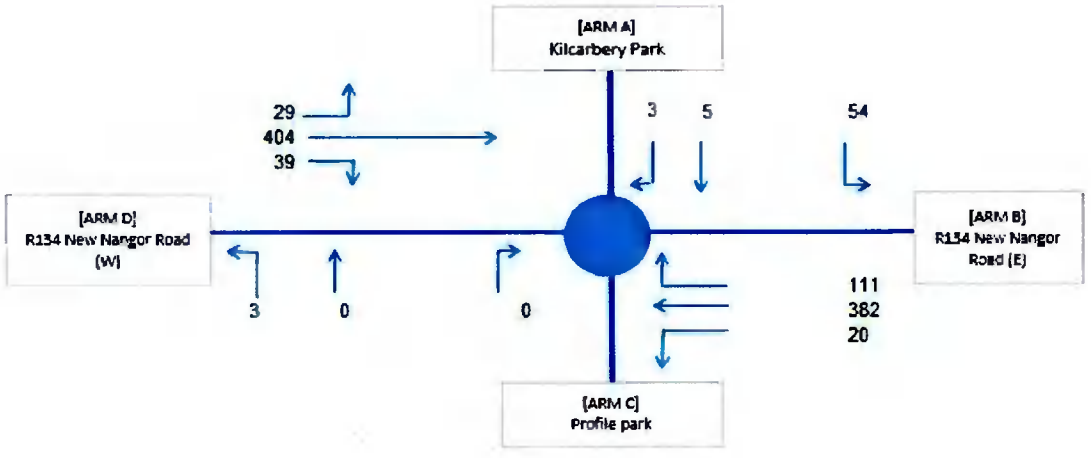


Figure 4.9: Baseflow Plus Generated Traffic 2023 AM Peak (1 month into Construction)- Junction 1

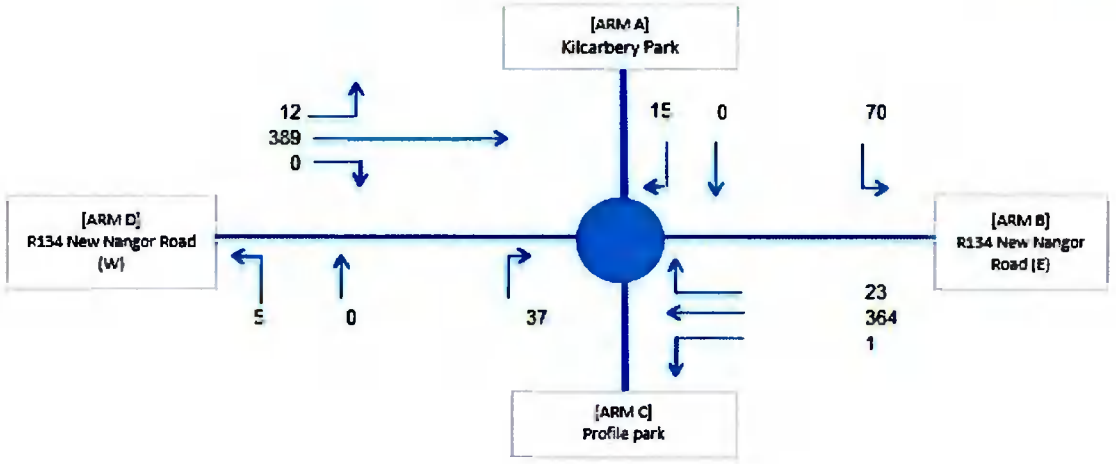


Figure 4.10: Baseflow Plus Generated Traffic 2023 PM Peak (1 month into Construction) - Junction 1

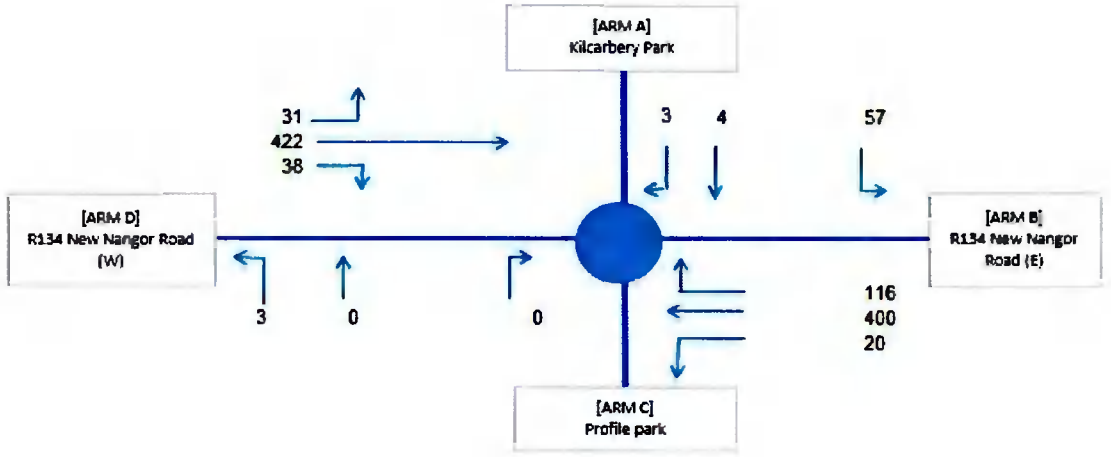


Figure 4.11: Baseflow Plus Generated Traffic 2025 AM Peak (Completion of Construction) - Junction 1

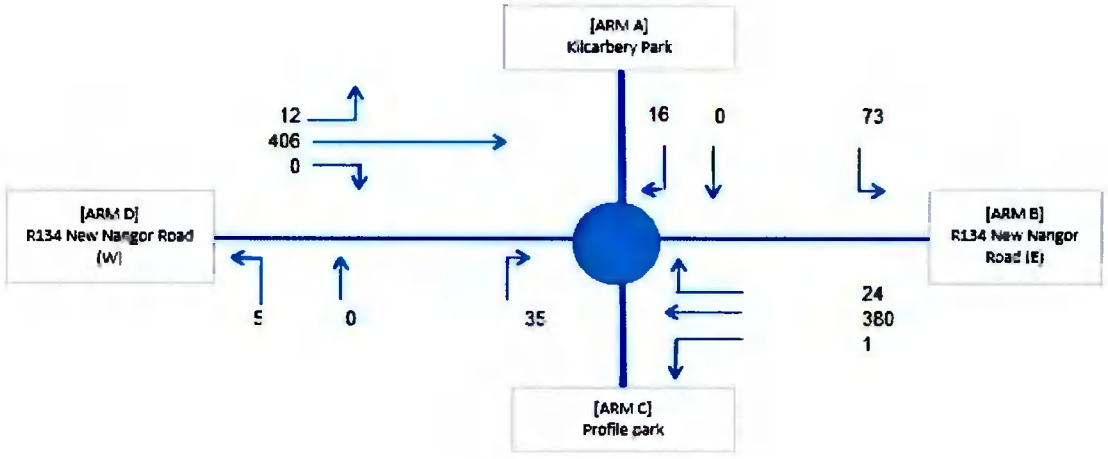


Figure 4.12: Baseflow Plus Generated Traffic 2025 PM Peak (Completion of Construction) - Junction 1

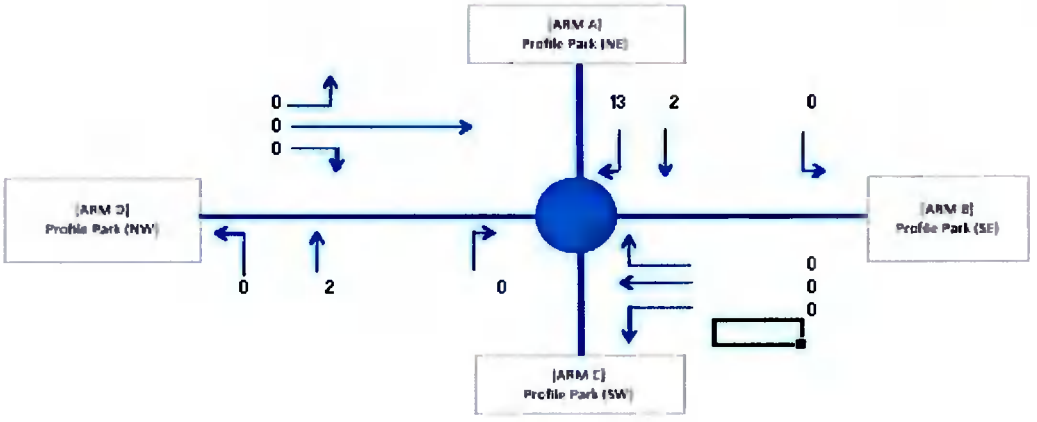


Figure 4.13: Baseflow Traffic 2021 AM Peak - Junction 2

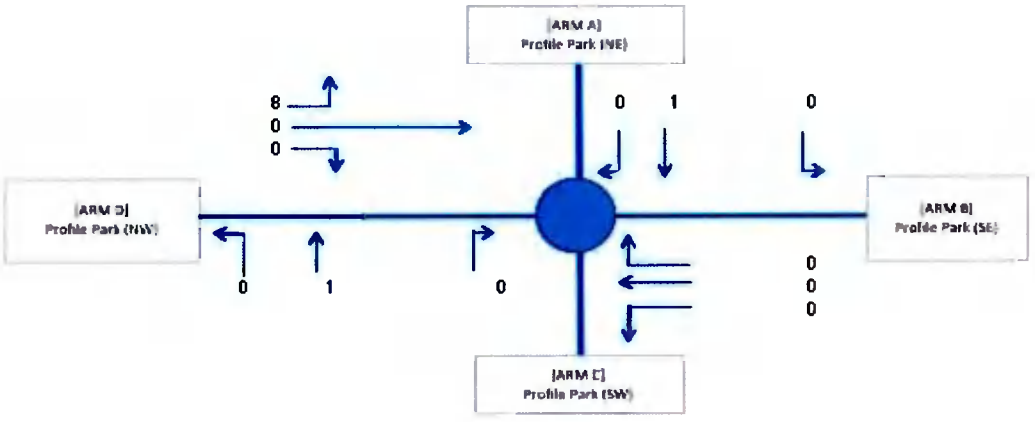


Figure 4.14: Baseflow Traffic 2021 PM Peak - Junction 2

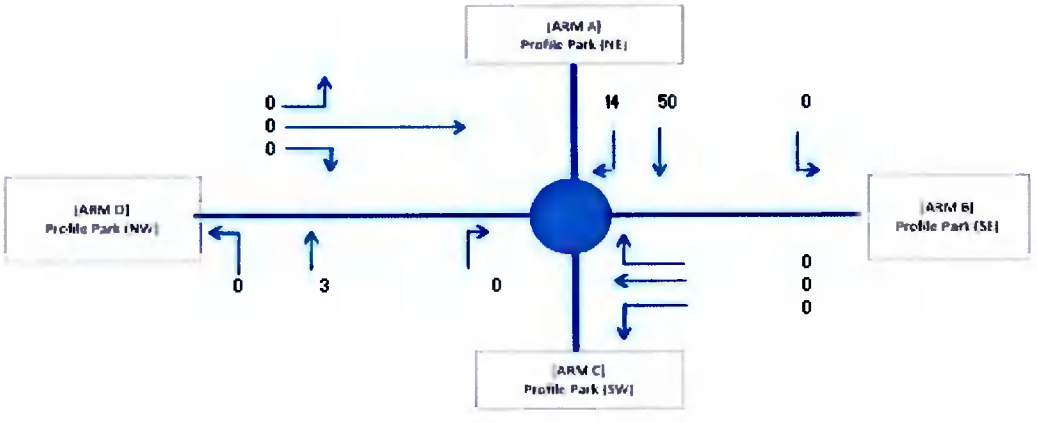


Figure 4.15: Baseflow Plus Generated Traffic 2023 AM Peak - Junction 2

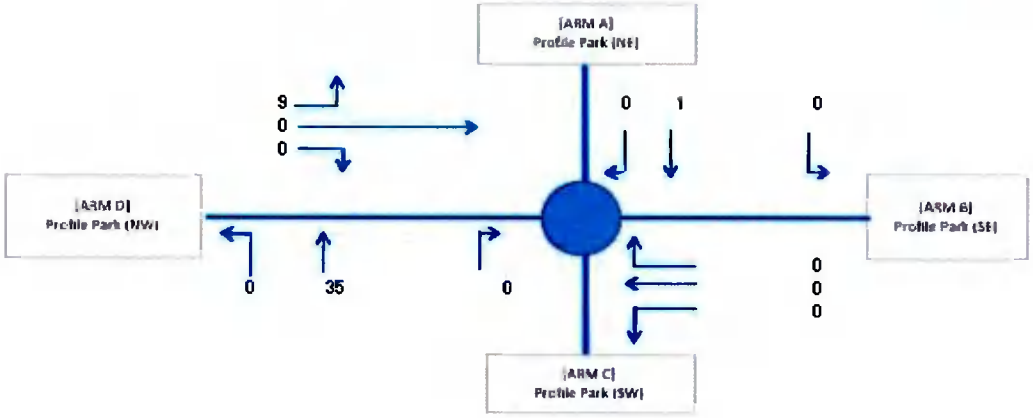


Figure 4.16: Baseflow Plus Generated Traffic 2023 PM Peak - Junction 2

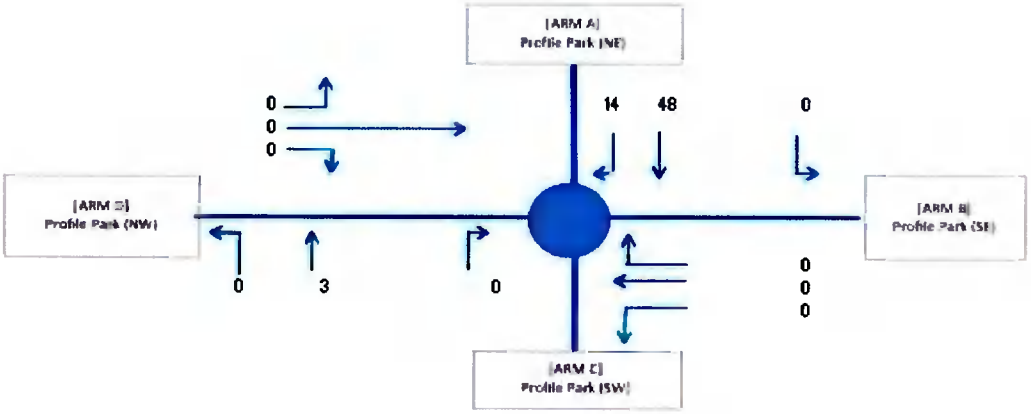


Figure 4.17: Baseflow Plus Generated Traffic 2025 AM Peak - Junction 2

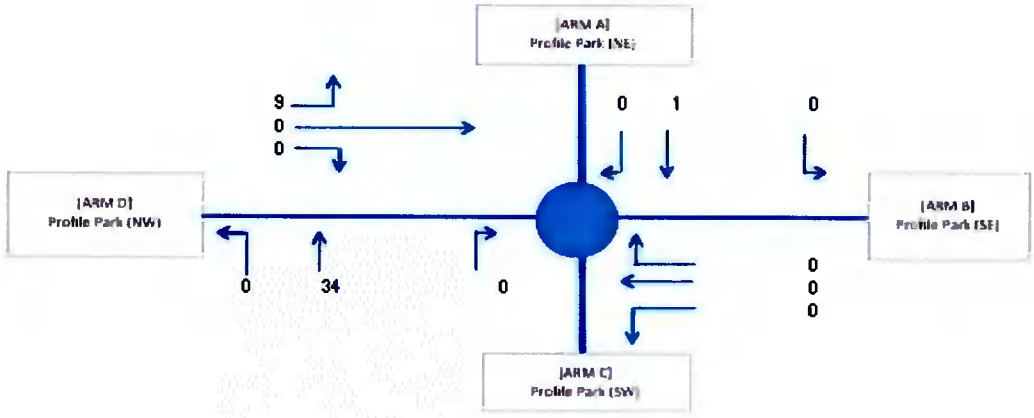


Figure 4.18: Baseflow Plus Generated Traffic 2025 PM Peak - Junction 2

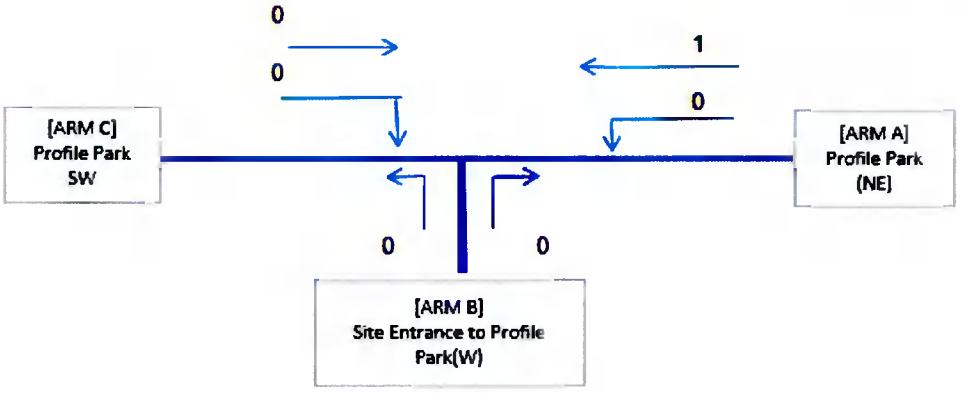


Figure 4.19: Baseflow Traffic 2021 AM Peak - Junction 3

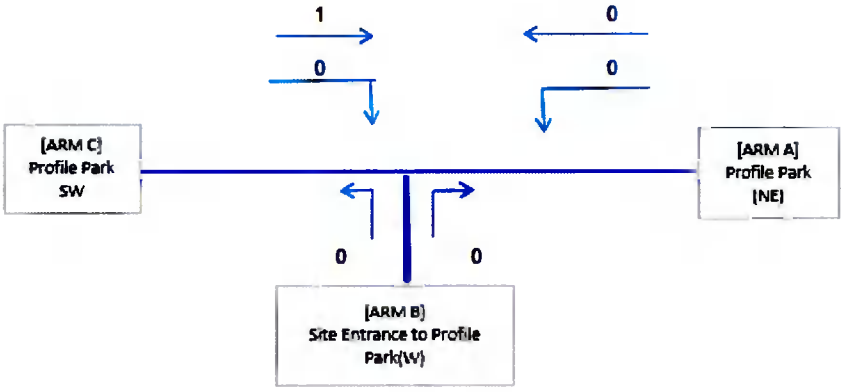


Figure 4.20: Baseflow Traffic 2021 PM Peak - Junction 3

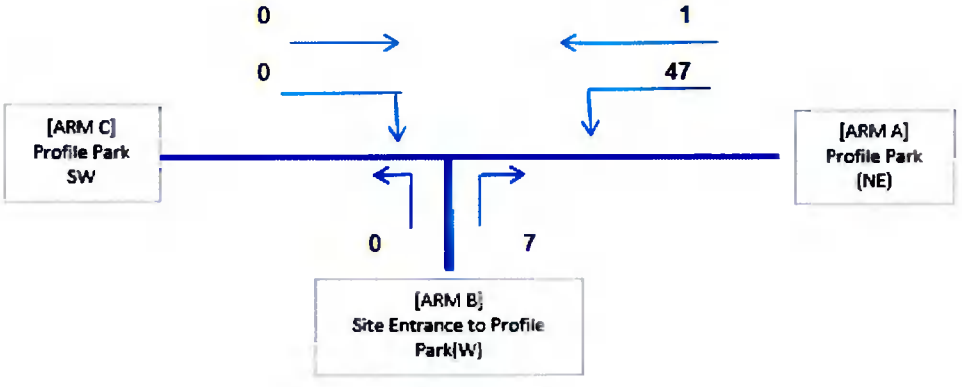


Figure 4.21: Baseflow Plus Generated Traffic 2023 AM Peak - Junction 3

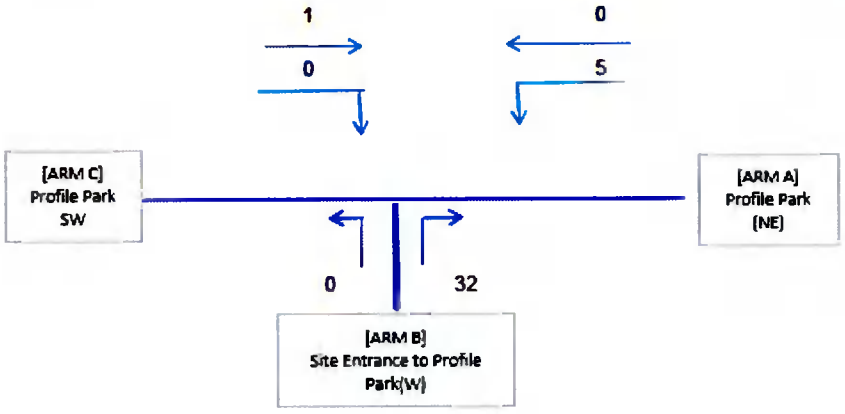


Figure 4.228: Baseflow Plus Generated Traffic 2023 PM Peak - Junction 3

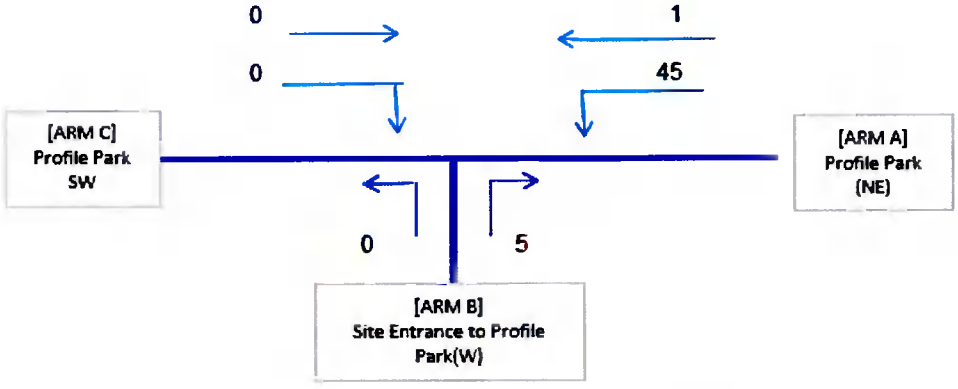


Figure 4.239: Baseflow Plus Generated Traffic 2025 AM Peak - Junction 3

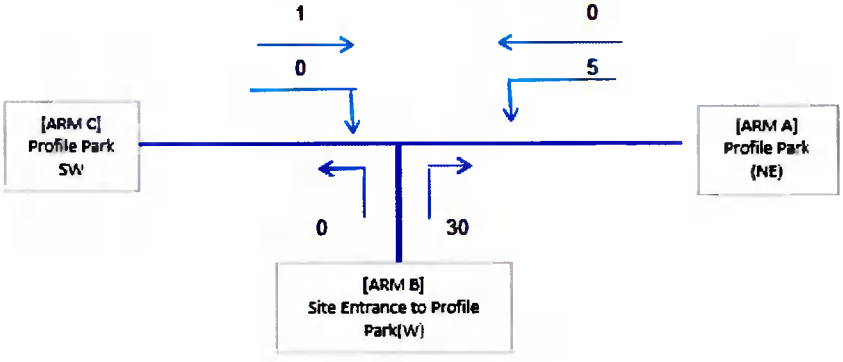


Figure 4.40: Baseflow Plus Generated Traffic 2025 PM Peak - Junction 3

5.0 TRAFFIC IMPACT

5.1 JUNCTION ANALYSIS

5.1.1 INTRODUCTION AND METHODOLOGY

The proposed site access T-junction (Junction 3), the internal Profile Park roundabout junction to the Northeast of the Proposed Site Access (Junction 2) and the R134 New Nangor Road / Kilcarbery Park / Profile Park Roundabout to the northeast of the proposed development (Junction 1) have been analysed using the Transport Research Laboratory (TRL) computer program JUNCTION 9 PICADY and ARCADY, widely accepted tools used for the analysis of priority junctions and roundabouts.

The key parameters examined in the results of the analysis are the Ratio of Flow to Capacity Value (RFC value – desirable value for PICADY and ARCADY should be no greater than 0.85 – values over 1.00 indicate the approach arm is over capacity), the maximum queue length on any approach to the junctions and the average delay for each vehicle passing through the junction during the modelled period.

PICADY and ARCADY requires the following input data:

- Basic modelling parameters (usually peak hour traffic counts synthesised over a 90-minute model period)
- Geometric parameters (including lane numbers & widths, visibility, storage provision etc)
- Traffic demand data (usually peak hour origin/destination table with composition of heavy goods vehicles input*)

*For the purpose of this report, the varying vehicle types have been segregated into light vehicles (LV) and Heavy Vehicles (HV) prior to input. Traffic volumes input into PICADY and ARCADY were in vehicles and, accordingly, commercial vehicle composition was set to the percentage of that arm.

The results of the PICADY and ARCADY analysis are presented in Section 5.1.3. The origin/destination traffic demand tables for all the different scenarios tested for the analysed junctions are provided in Appendix D.

5.1.2 ASSESSMENT TIME AND YEARS

The performance of the junction has been analysed for the critical AM peak and PM peak hours. This analysis was carried out for the year of construction commencing coinciding with peak construction volumes, 2023 and for the completion of the Construction Phase 2025

5.1.3 ANALYSIS RESULTS

5.1.3.1 Junction 1 – R134 New Nangor Road / Kilcarbery Park / Profile Park - Roundabout

A summary of the analysis results for the R134 New Nangor Road / Kilcarbery Park / Profile park Roundabout for the AM and PM peak hours are provided below in Table 5-1. Full outputs from JUNCTION 9 ARCADY are included in Appendix E.

Table 5.1: Junction 1 Results: R134 New Nangor Road / Kilcarbery Park / Profile Park AM & PM Peak Hours

	AM				PM				
	95% Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS
	2019 Baseflows								
Arm 1	0.5	5.16	0.08	A	0.1	0.5	3.53	0.08	A
Arm 2	2.1	5.63	0.45	A	0.4	1.8	4.19	0.3	A
Arm 3	~1	0	0	A	0	~1	0	0	A
Arm 4	2.7	5.21	0.4	A	0.4	1.8	4.16	0.31	A
	2023 No Construction								
Arm 1	0.5	5.29	0.09	A	0.1	0.5	3.6	0.09	A
Arm 2	1.8	5.91	0.48	A	0.5	2	4.29	0.32	A
Arm 3	~1	0	0	A	0	~1	0	0	A
Arm 4	2.6	5.42	0.42	A	0.5	2.1	4.26	0.32	A
	2023 With Construction								
Arm 1	0.5	5.37	0.09	A	0.1	0.5	4.05	0.1	A
Arm 2	1.7	6.23	0.49	A	0.5	2.5	4.45	0.35	A
Arm 3	0.5	2.76	0	A	0	0.5	3.11	0.04	A
Arm 4	2.2	5.79	0.46	A	0.6	2.6	4.66	0.36	A
	2025 No Construction								
Arm 1	0.5	5.41	0.09	A	0.1	0.5	4.3	0.1	A
Arm 2	1.6	6.17	0.5	A	0.6	2.6	4.57	0.36	A
Arm 3	~1	0	0	A	0	0.5	2.61	0.01	A
Arm 4	2.4	5.64	0.44	A	0.6	2.6	4.64	0.37	A
	2025 With Construction								
Arm 1	0.5	5.46	0.1	A	0.1	0.5	4.14	0.1	A
Arm 2	1.5	6.58	0.52	A	0.6	2.6	4.57	0.36	A
Arm 3	~1	0	0	A	0	0.5	3.01	0.04	A
Arm 4	2	6	0.47	A	0.6	2.6	4.76	0.38	A

The above results indicate that the R134 New Nangor Road / Kilcarbery Park / Profile Park Roundabout will operate below the maximum desirable 0.85 RFC. The maximum RFC reaching 0.52 in the AM peak with the development. It is also noted the queue length does not exceed 2 vehicles and the maximum increase in delay is 6.58 seconds.

5.1.3.2 Junction 2 – Profile Park Internal - Roundabout

A summary of the analysis results for the Internal Profile Park Roundabout for the AM peak and PM peak hours during construction are provided below in Table 5-2. Full outputs from JUNCTION 9 ARCADY are included in Appendix F.

Table 5.2: Junction 2 Results – Internal Profile Park Roundabout AM & PM Peak Hours

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2019 Baseflows							
Arm 1	0	5.23	0.02	A	0	0	0	A
Arm 2	0	0	0	A	0	0	0	A
Arm 3	0	0	0	A	0	0	0	A
Arm 4	0	0	0	A	0	4.84	0.01	A
	2023 No Construction							
Arm 1	0	5.36	0.03	A	0	0	0	A
Arm 2	0	0	0	A	0	0	0	A
Arm 3	0	0	0	A	0	0	0	A
Arm 4	0	0	0	A	0	4.85	0.01	A
	2023 With Construction							
Arm 1	0.1	6.15	0.13	A	0	0	0	A
Arm 2	0	0	0	A	0	0	0	A
Arm 3	0	4.9	0.01	A	0.1	6.18	0.06	A
Arm 4	0	0	0	A	0	4.98	0.01	A
	2025 No Construction							
Arm 1	0	5.36	0.03	A	0	0	0	A
Arm 2	0	0	0	A	0	0	0	A
Arm 3	0	0	0	A	0	0	0	A
Arm 4	0	0	0	A	0	4.85	0.01	A
	2025 With Construction							
Arm 1	0.1	6	0.12	A	0	0	0	A
Arm 2	0	0	0	A	0	0	0	A
Arm 3	0	4.9	0.01	A	0.1	5.95	0.06	A
Arm 4	0	0	0	A	0	4.97	0.01	A

The above results indicate that the Profile park Internal Rounadbout will operate below the maximum desirable 0.85 RFC. The maximum RFC reaching 0.13 in the AM peak with the development. It is also noted the queue length does not exceed 1 vehicle and the maximum increase in delay is 6.15 seconds.

5.1.3.3 Junction 3 – Proposed Site Access - T Junction

A summary of the analysis results for the Proposed Site Access - T Junction for the AM peak and PM peak hours during construction are provided below in Table 5-3. Full outputs from JUNCTION 9 PICADY are included in Appendix G.

Table 5.3: Junction 3 Results – Proposed Site Access – T Junction, AM & PM Peak Hours

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2019 Baseflows							
Stream B-AC	0	0	0	A	0	0	0	A
Stream C-AB	0	0	0	A	0	0	0	A
	2023 No Construction							
Stream B-AC	0	0	0	A	0	0	0	A
Stream C-AB	0	0	0	A	0	0	0	A
	2023 With Construction							
Stream B-AC	0	5.78	0.01	A	0.1	7.36	0.07	A
Stream C-AB	0	0	0	A	0	0	0	A
	2025 No Construction							
Stream B-AC	0	0	0	A	0	0	0	A
Stream C-AB	0	0	0	A	0	0	0	A
	2025 With Construction							
Stream B-AC	0	11.49	0.02	B	0.1	6.97	0.06	A
Stream C-AB	0	0	0	A	0	0	0	A

The above results indicate that the Old Church Street - The Square T Junction will operate below the maximum desirable 0.85 RFC. The maximum RFC reaching 0.07 in the PM peak with the development. It is also noted the queue length does not exceed 1 vehicle and the maximum increase in delay is 11.49 seconds.

6.0 OTHER ROAD ISSUES

6.1 ROAD SAFETY

Entry to and from the proposed site within profile park does not raise any road safety concerns. Profile Park is well managed with no visibility restrictions and the entrance has been sited 50m away from the roundabout itself in accordance with TII standards with a 50m stagger provided between the proposed development and the next nearest site entry.

An investigation of road collision data from the Road Safety Authority website (source https://www.rsa.ie/RSA/Road-Safety/RSA-Statistics/Collision-Statistics/Ireland-Road-Collisions/ :) (see Figure 6.1 for map) indicates that there has been no serious collisions and seven minor collisions recorded in the vicinity between 2005 and 2016.

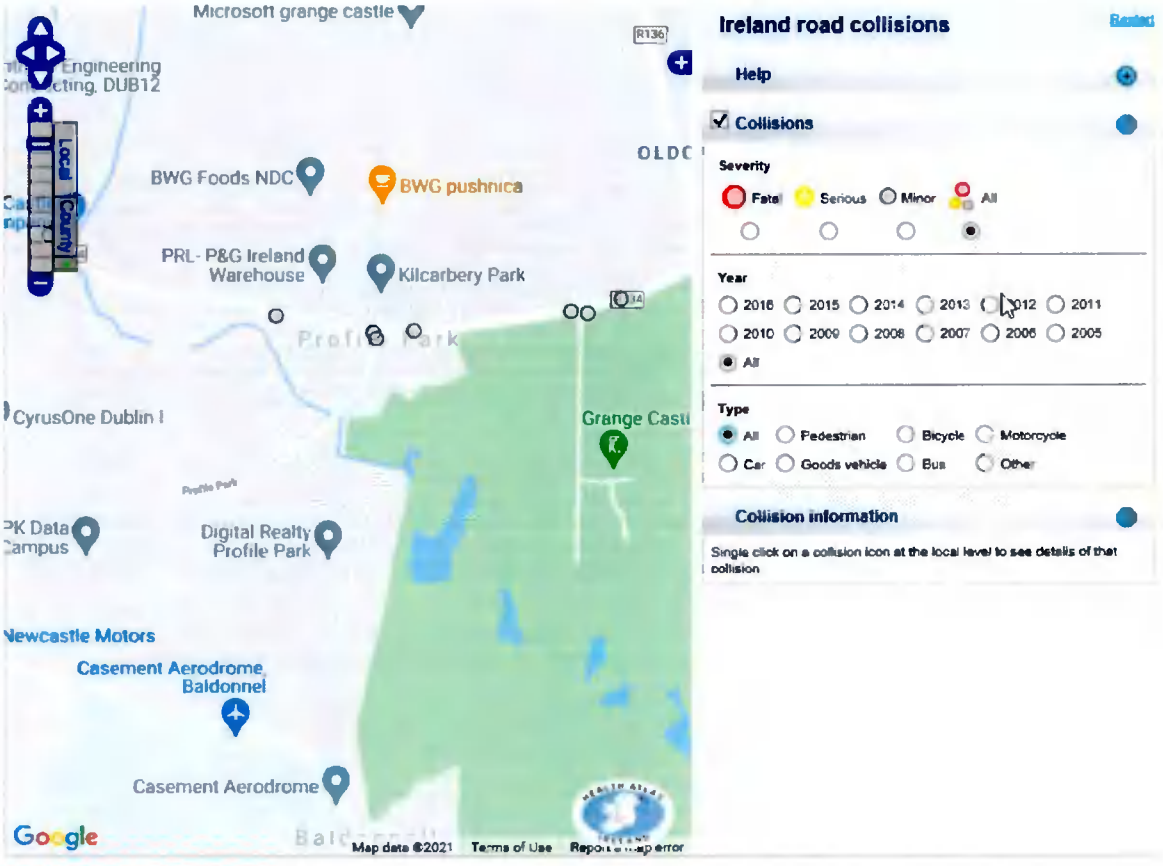


Figure 6.1: RSA Irish Road Collision Statistics

6.2 PARKING PROVISION

Parking requirements are in accordance with the Design Standards for New Apartments 1998 and South Dublin County Council Development Plan 2016-2022. 12 no. car parking provisions at the site have been proposed as follows;

- 10 standard spaces for Staff and Visitors including 2 no. dedicated electric vehicle parking spaces with charging points;
- 2 Un-abled user spaces for Staff and Visitors

6.3 SWEPT PATH ANALYSIS

Swept path analysis has been undertaken using AutoTURN at the site access from the Profile Park Main Internal Road to the site. The purpose of the Autotracks is to identify and resolve potential issues and conflict points during the design stage. The analyses were undertaken to include for the largest service vehicle, an articulated vehicle (16.5m long). Details of this analysis on the final layout can be found on Planning Application Drawing 11069-2004.

7.0 MOBILITY MANAGEMENT

7.1 PEDESTRIANS & CYCLISTS

Segregated Pedestrian and Cycle access routes are provided in the Profile Park development and along the R134 providing the main access route into Profile Park.

7.2 PUBLIC TRANSPORT

Dublin bus 68/a runs at regular intervals along the R134.

7.3 ACCESS FOR PEOPLE WITH DISABILITIES

As recommended dropped kerbing and tactile paving slabs will be installed at all crossing points, in accordance with "Guidance on the Use of Tactile Paving Slabs".

It is further recommended that disabled parking spaces, in accordance with the South Dublin Development Plan, be provided and located in accordance with the National Disability Authorities "Building for Everyone". 5% of the proposed parking provisions have been designated for disabled parking as per Building for Everyone.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

The junction assessments indicate that none of the junctions assessed are currently exceeding desirable capacity of 0.85. The maximum RFC of 0.52 was shown at the New Nangor Road / R134 Roundabout Junction of those assessed with a maximum RFC of 0.13 on the internal Profile Park Roundabout and 0.02 at the entrance to the proposed development.

The development is located in close proximity to public transport links on the R134 and the business park has well developed offline pedestrian and cycle facilities.

8.2 RECOMMENDATIONS

This report recommends that:

- Site access junction visibility splays should be kept free of all restrictions including signage.
- Pedestrian footway links with associated dropped kerbing and tactile paving to be provided at all pedestrian crossing points internally in the site

Appendix A. Scoping Document

TOBIN
CONSULTING ENGINEERS

SCOPING STUDY FOR: Profile Park Power Plant Development, Kilcarbery, Dublin 22

CLIENT: Centrica PLC

LOCAL AUTHORITY: South Dublin County Council

SCOPING FORM SENT TO: Mr. John Joe Hegarty, Senior Executive Engineer, South Dublin County Council

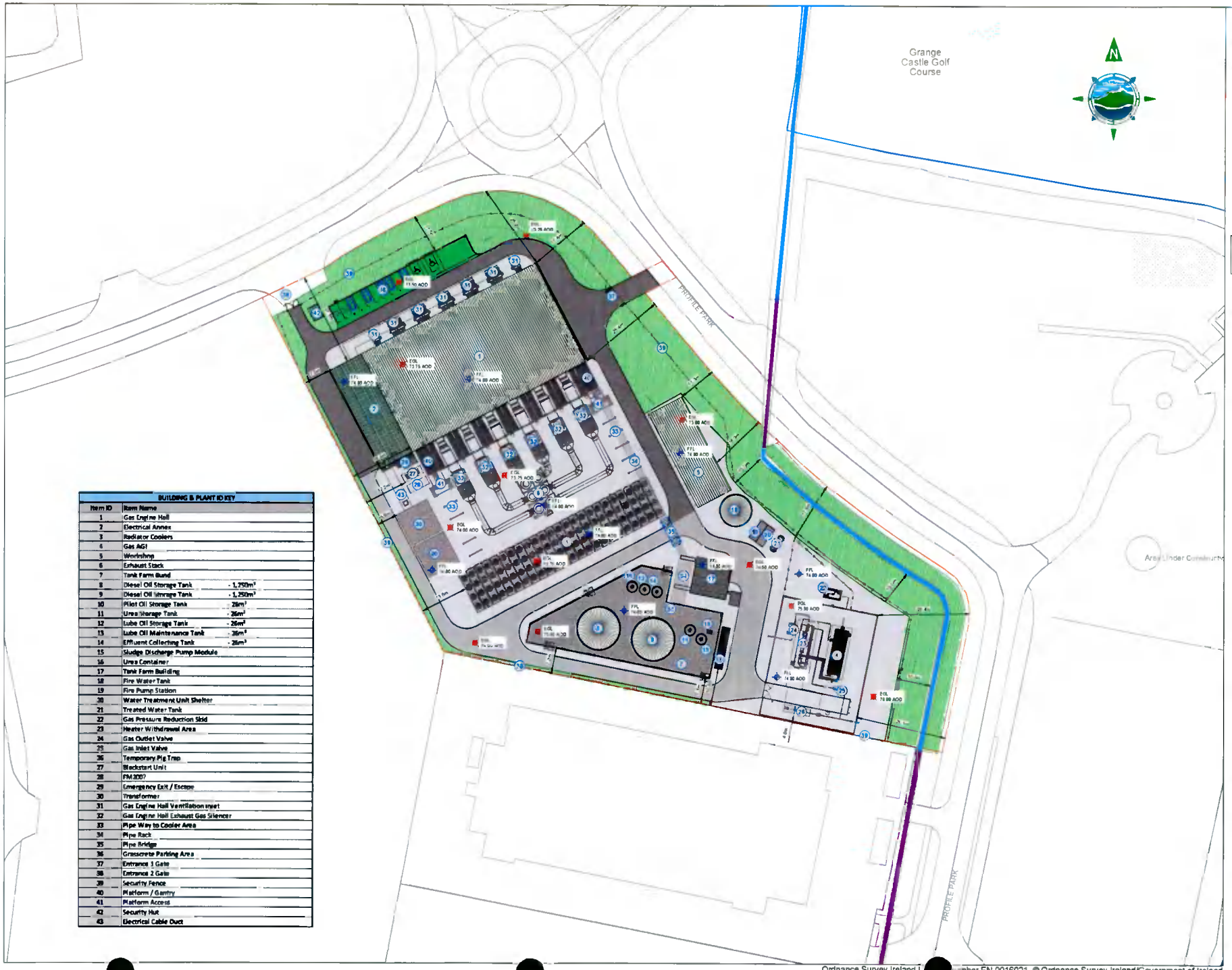
SENT BY: Ronan Murtagh **DATE:** 22.02.2021

Ref	Item	Requirements
1	Location, size, operating hours and nature of proposed description of proposal	The proposed Industrial development is located at Profile Park, Kilcarbery, Dublin 22. The development consists of a gas engine Power Plant and associated Infrastructure on a 1.8ha site within the business park for export to the National Grid. The proposed development will be operating 24 hours a day with minimal operational staff on a day-to-day basis. It is envisaged that the Construction element will create the greatest traffic flows of up to 40 passenger vehicles and 5hgvs arriving per day in the morning peak 8:00-9:00 and 25 passenger vehicles and 5 hgvs leaving in the evening peak 18:00-20:00
2	Is the development in line with National, County and Local Area Plan policy?	Yes – Industrial, enterprise & employment
3	Description of existing uses of land	Greenfield Site
4	Does the development involve the relocation of an existing use?	No
5	Is a new or modified highway access likely?	No. Access to the site has already been preconstructed within the Profile Park Business Campus
6	What existing / proposed provisions are there for Pedestrians, Cyclists, Public Transport, Disabled access, set down, loading areas? (Rational for no. of provisions)	Segregated Pedestrian and Cycle access routes are provided in the Profile Park development and along the R134 providing the main access route into Profile Park
7	What background data / information available? (i.e. staffing number, weighbridge data etc)	Previous Traffic Counts taken at Entrance to Kilcarbery Park and R134 New Nangor Road from IDASO Traffic Count sub-consultant.
8	Are traffic surveys of the existing conditions available or required?	IDASO data available on the R134 New Nangor Road
9	What will be the area of impact of the proposal, i.e. which adjacent local regional and National Road routes and junctions will be affected and require capacity calculations?	• Junction 1: R134/profile Park/Kilcarbery Park (Roundabout); • Junction 2: Internal Roundabout Profile Park
10	Are trip distribution and assignment models to be used? or Existing trip distribution?	Match existing distributions

Ref	Item	Requirements
11	Are additional traffic scenarios to be assessed? (e.g. rat running, stress tests etc)	No
12	What will be the trip generation for the proposals? (e.g. pro rata, TRICS, other)	Client Provided Information for Construction and Operation Phase
13	Are further traffic generation surveys required? (i.e. if traffic surveys to develop pro rata rates etc)	No
14	What seasonal adjustment is to be undertaken?	COVID-19 Adjustment to surveyed traffic volumes
15	Link based Growth Rates? (Low Sensitivity, Central, High Sensitivity)	TII Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections
16	When are the critical time periods for assessment? (i.e. AM, PM and Noon peak hours)	AM PM Peaks
17	When will the site become fully operational?	Construction to commence 2023, Plant Operational 2025
18	What are the assessment years? (Base, opening & future (+5 years & +15 years of operation or any additional)	Construction 2023-2025 Opening 2025 Based on negligible impacts for operational traffic volumes (less than 5 pcu movements per day)
19	Are there significant phases to the project?	The Construction Phase is estimated to produce the most significant traffic demand. It is envisaged that the Construction element will create traffic flows of up to 40 passenger vehicles and 5hgvs arriving per day in the morning peak 8:00-9:00 and 25 passenger vehicles and 5 hgvs leaving in the evening peak 18:00-20:00 In addition to this, the site is estimated to need an import of 8000m^3 which equates to 2 HGV deliveries per hour to and from the site for the initial month of the works
20	Will the site attract traffic from the other adjacent sites? (Pass-by Traffic)	No
21	Are there any significant committed developments? (Granted Planning within the past 5 years and not commenced)	Developments within Profile Park Inc. Construction of a Distribution Warehouse Developments within Grange Castle Business Park South over the next 10years inc 3 2-storey data centres
22	Details of any adjacent highway improvement proposals?	TBC
23	What capacity tests / traffic modelling software is to be used? (i.e. JUNCTION 9: PICADY/ ARCADY & OSCADY PRO)	ARCADY & PICADY
24	Will adjacent links become overloaded or significantly impacted? (Design Standards: Urban – UK DMRB TA 79/99 or Rural – TII DN-GEO-03031 (formerly TD9/12) Table 6/1 or alternative Rural to RT 180 when single carriageway width is less than 6.0m)	TBC
25	What are the sightlines / visibility splays requirements?	Upgrades to the R134 have been carried out including an upgrade of all junctions to

Ref	Item	Requirements
	Are they available? (DMURS, TII DN0-GEO-0343, Development Plan etc)	roundabout or signalised Junction standard to cater for significant developments within the area. Given the R134 as a regional road, It is assumed that these upgrades have all been carried out to DMRB standard. TBC with the SDCC. Profile Park alignment appears to be have been designed and constructed to TII standards also with good visibility splays and siting distances between junctions and accesses
26	Are there ways to reduce car dependency? Is a workplace travel plan / statement required? (formerly mobility management plans)	Public Transport and Cycling links are present. None will be required given operational staff levels of less than 5 persons per day
27	What are the targets for mode share and how are they achieved?	TBC
28	What level of car parking provision is proposed? To what standard? (included disabled parking provisions)	5 car parking spots (including 1 un-abled parking provision)
29	Are special provisions required for cyclists? To what standard?	Site and surrounds are served with offline cycle facilities
30	Are special provisions required for pedestrians or disabled facilities? To what standard?	Site and Surrounds are served with fully accessible pedestrian and vulnerable road user facilities
31	Proposals (if necessary) for public transport facilities?	None additional proposed
32	Will the proposals have an impact on road safety?	N/A
33	Is a Road Safety Impact Assessment or Road Safety Audit required?	No, access to site has been previously developed
34	What Stage RSA?	N/A
35	Are there any other special circumstances relevant to this proposal?	N/A

Appendix B. Drawings (Site Layout and Road Layout)



BUILDING & PLANT ID KEY	
Item ID	Item Name
1	Gas Engine Hall
2	Electrical Annex
3	Radiator Coolers
4	Gas AGI
5	Workshop
6	Exhaust Stack
7	Tank Farm Bund
8	Diesel Oil Storage Tank - 1,750m³
9	Diesel Oil Storage Tank - 1,250m³
10	Pilot Oil Storage Tank - 25m³
11	Urea Storage Tank - 25m³
12	Lube Oil Storage Tank - 25m³
13	Lube Oil Maintenance Tank - 25m³
14	Effluent Collecting Tank - 25m³
15	Sludge Discharge Pump Module
16	Urea Container
17	Tank Farm Building
18	Fire Water Tank
19	Fire Pump Station
20	Water Treatment Unit Shelter
21	Treated Water Tank
22	Gas Pressure Reduction Skid
23	Heater Withdrawal Area
24	Gas Outlet Valve
25	Gas Inlet Valve
26	Temporary Pig Trap
27	Blackstart Unit
28	FM200?
29	Emergency Exit / Escape
30	Transformer
31	Gas Engine Hall Ventilation inlet
32	Gas Engine Hall Exhaust Gas Silencer
33	Pipe Way to Cooler Area
34	Pipe Rack
35	Pipe Bridge
36	Grasscrete Parking Area
37	Entrance 1 Gate
38	Entrance 2 Gate
39	Security Fence
40	Platform / Gantry
41	Platform Access
42	Security Hut
43	Electrical Cable Duct

THE INFORMATION ON THIS DRAWING IS TO THE ORDNANCE SURVEY IRELAND ITM COORDINATE SYSTEM

GENERAL LEGEND

PLANNING APPLICATION BOUNDARY

TARMAC SURFACED ACCESS ROADS

GRAVEL SURFACED ACCESS ROADS

CRUSHED ROCK HARDSTAND AREA

CONCRETE HARDSTAND AREA

GRASSCRETE PARKING AREA

AREA RESERVED FOR LANDSCAPING

OPEN LAND DRAIN

EXISTING GROUND LVL

FINISHED FLOOR LVL

BUILDING ID TAG

As agreed with South Dublin County Council in the pre-application consultation meeting the final finishes, including cladding materials and colour codes, will be agreed with the Council post planning through planning condition. Greener Ideas Limited will ensure only Council approved finished are applied on site.

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER/EMPLOYERS REPRESENTATIVE AS APPROPRIATE TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES ABOVE AND BELOW GROUND BEFORE ANY WORK COMMENCES
5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

CO. DUBLIN

OSI 1:2,500 Sheet No's 3325-B 3325-D 3326-A & 3326-C

10m 0 10m 20m 30m

Rev	Date	Description	By	Chkd
A	18.06.21	PLANNING ISSUE	MM	MMcC

Client: Greener Ideas

Project: PROFILE PARK POWER PLANT

Title: SITE LAYOUT PLAN

Scale @ A1	1:500	
Prepared by	Checked	Date
M. Nolan	M. McCarthy	June 2021
Project Director	S. Tinnelly	
Drawing Status	Planning	

TOBIN
CONSULTING ENGINEERS
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www.tobin.ie

Drawing No: 11069-2003 Revision: A

Appendix C. Origin / Destination Matrices

Traffic Calculations for Profile Park

Site 1 - R134 New Nangor Road - Kilcarbery Park - Profile Park Roundabout

At Present AM Peak (08:30 - 09:30)

COVID Adjusted 2021

2023 - Year of Construction Commencing (1 month into construction)

	DUBLIN	LGV	HGV
2016-2030		1.0211	1.0348
	Years	2	2
Growth Factor		1.043	1.071

2025 Year of Construction Completion

	DUBLIN	LGV	HGV
2016-2030		1.0211	1.0348
	Years	4	4
Growth Factor		1.087	1.147

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	23	28	1	0	0	2
B	79	27	0	0	11	1	318	47
C	0	0	0	0	0	0	2	0
D	23	5	345	41	2	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	30	1	0	0	3
B	82	29	0	0	11	1	332	51
C	0	0	0	0	0	0	3	0
D	24	5	360	44	3	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	25	32	1	0	0	3
B	85	31	0	0	12	1	346	54
C	0	0	0	0	0	0	3	0
D	25	6	375	47	3	0	0	0

AM PEAK GENERATED TRAFFIC

Site 1 - R134 New Nangor Road - Kilcarbery Park - Profile Park Roundabout

WITH DEVELOPMENT

Generated Traffic at Peak 1 month into Construction (Import of Material)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	3	1	0	0
B	0	0	0	0	6	1	0	0
C	0	0	0	0	0	0	0	0
D	0	0	0	0	31	5	0	0

2023 - Year of Construction Commencing (1 month into construction)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	30	4	1	0	3
B	82	29	0	0	17	2	332	51
C	0	0	0	0	0	0	3	0
D	24	5	360	44	34	5	0	0

Traffic Calculations for Profile Park

Site 1 - R134 New Nangor Road - Kilcarbery Park - Profile Park Roundabout

At Present PM Peak (17:00 - 18:00)

COVID Adjusted 2021

2023 - Year of Construction Commencing (1 month into construction)

	DUBLIN	LGV	HGV
2018-2030		1.0211	1.0348
	Years	2	2
Growth Factor		1.043	1.071

2025 Year of Construction Completion

	DUBLIN	LGV	HGV
2018-2030		1.0211	1.0348
	Years	4	4
Growth Factor		1.087	1.147

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	53	13	0	0	13	1
B	15	7	4	0	1	0	325	23
C	0	0	5	0	0	0	5	0
D	4	7	352	21	0	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	56	14	0	0	14	1
B	15	8	4	0	1	0	339	25
C	0	0	5	0	0	0	5	0
D	4	8	367	22	0	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	58	15	0	0	14	1
B	16	8	4	0	1	0	354	26
C	0	0	5	0	0	0	5	0
D	4	8	383	24	0	0	1	0

AM PEAK GENERATED TRAFFIC

Site 1 - R134 New Nangor Road - Kilcarbery Park - Profile Park Roundabout

WITH DEVELOPMENT

Generated Traffic at Peak 1 month into Construction (Import of Material)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	0	25	7	0	0	0	0
D	0	0	0	0	0	0	0	0

2023 - Year of Construction Commencing (1 month into construction)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	56	14	0	0	14	1
B	15	8	4	0	1	0	339	25
C	0	0	30	7	0	0	5	0
D	4	8	367	22	0	0	1	0

Traffic Calculations for Profile Park

Site 2 - Profile Park Internal Roundabout

At Present AM Peak (08:30 - 09:30)

COVID Adjusted 2021

2023 - Year of Construction Commencing (1 month into construction)

	DUBLIN	LGV	HGV
2018-2030		*1.0211*	*1.0348*
	Years	*2*	*2*
Growth Factor		***1.043***	***1.071***

2025 Year of Construction Completion

	DUBLIN	LGV	HGV
2018-2030		*1.0211*	*1.0348*
	Years	*4*	*4*
Growth Factor		***1.087***	***1.147***

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	1	13	0
B	0	0	0	0	0	0	0	0
C	2	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	1	14	0
B	0	0	0	0	0	0	0	0
C	3	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	1	14	0
B	0	0	0	0	0	0	0	0
C	3	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

AM PEAK GENERATED TRAFFIC

Site 2 - Profile Park Internal Roundabout

WITH DEVELOPMENT

Generated Traffic at Peak 1 month into Construction (Import of Material)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	40	7	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

2023 - Year of Construction Commencing (1 month into construction)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	41	8	14	0
B	0	0	0	0	0	0	0	0
C	3	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Traffic Calculations for Profile Park

Site 2 - Profile Park internal Roundabout

AI Present PM Peak(16:15 - 17:15)

COVID Adjusted 2021

2023 - Year of Construction Commencing (1 month into construction)

	DUBLIN	LGV	HGV
2018-2030		1.0211	1.0348
	Years	2	2
Growth Factor		1.043	1.071

2025 Year of Construction Completion

	DUBLIN	LGV	HGV
2018-2030		1.0211	1.0348
	Years	4	4
Growth Factor		1.087	1.147

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	0	0	0
B	0	0	0	0	0	0	0	0
C	1	0	0	0	0	0	0	0
D	8	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	0	0	0
B	0	0	0	0	0	0	0	0
C	1	0	0	0	0	0	0	0
D	8	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	0	0	0
B	0	0	0	0	0	0	0	0
C	1	0	0	0	0	0	0	0
D	9	0	0	0	0	0	0	0

AM PEAK GENERATED TRAFFIC

Site 2 - Profile Park internal Roundabout

WITH DEVELOPMENT

Generated Traffic at Peak 1 month into Construction (Import of Material)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	25	7	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

2023 - Year of Construction Commencing (1 month into construction)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	1	0	0	0
B	0	0	0	0	0	0	0	0
C	27	7	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Traffic Calculations for Profile Park

Site 3 - Profile Park Access to Site

At Present AM Peak (08:30 - 09:30)

COVID Adjusted 2021

2023 - Year of Construction Commencing (1 month into construction)

	DUBLIN	LGV	HGV
2016-2030		1.0211	1.0348
	Years	2	2
Growth Factor		1.043	1.071

2025 Year of Construction Completion

	DUBLIN	LGV	HGV
2016-2030		1.0211	1.0348
	Years	4	4
Growth Factor		1.087	1.147

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	0	1	1
B	0	0	0	0	0	0
C	2	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	0	1	1
B	0	0	0	0	0	0
C	3	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	0	1	1
B	0	0	0	0	0	0
C	3	0	0	0	0	0

AM PEAK GENERATED TRAFFIC

Site 3 - Profile Park Access to Site

WITH DEVELOPMENT

Generated Traffic at Peak 1 month into Construction (Import of Material)

Route	A	HGV	B	HGV	C	HGV
A	0	0	40	7	0	0
B	0	7	0	0	0	0
C	0	0	0	0	0	0

2023 - Year of Construction Commencing (1 month into construction)

Route	A	HGV	B	HGV	C	HGV
A	0	0	40	7	1	1
B	0	7	0	0	0	0
C	3	0	0	0	0	0

Traffic Calculations for Profile Park

Site 3 - Profile Park Access to Site

At Present PM Peak (16:15 - 17:15)

COVID Adjusted 2021

2023 - Year of Construction Commencing (1 month into construction)

	DUBLIN	LGV	HGV
2016-2030		1.0211	1.0348
	Years	2	2
Growth Factor		1.043	1.071

2025 Year of Construction Completion

	DUBLIN	LGV	HGV
2016-2030		1.0211	1.0348
	Years	4	4
Growth Factor		1.087	1.147

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	0	1	0
B	0	0	0	0	0	0
C	1	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	0	1	0
B	0	0	0	0	0	0
C	1	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	0	1	0
B	0	0	0	0	0	0
C	1	0	0	0	0	0

PM PEAK GENERATED TRAFFIC

Site 3 - Profile Park Access to Site

WITH DEVELOPMENT

Generated Traffic at Peak 1 month into Construction (Import of Material)

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	5	0	0
B	25	7	0	0	0	0
C	0	0	0	0	0	0

2023 - Year of Construction Commencing (1 month into construction)

Route	A	HGV	B	HGV	C	HGV
A	0	0	0	5	1	0
B	26	7	0	0	0	0
C	1	0	0	0	0	0

Appendix D. JUNCTION 9 ARCADY Detailed Output - Junction 1

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Junction 1 j9
Path: \\FSERVER4-DUB\Tobin\Projects\11069 - Centrica - Profile Park Power Plant\05-Design\01-Calculations\Traffic
Report generation date: 07/05/2021 16:50:39

Summary of junction performance

	AM								PM							
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
2019 Baseflows																		
Arm 1	D1	0.1	0.5	5.16	0.08	A	5.42	A	103 % [Arm 2]	D2	0.1	0.5	3.53	0.08	A	4.10	A	184 % [Arm 2]
Arm 2		0.8	2.1	5.53	0.45	A					0.4	1.8	4.19	0.30	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 4		0.7	2.7	5.21	0.40	A					0.4	1.8	4.16	0.31	A			
2023 No Construction																		
Arm 1	D3	0.1	0.5	5.29	0.09	A	5.66	A	93 % [Arm 2]	D7	0.1	0.5	3.60	0.09	A	4.20	A	171 % [Arm 2]
Arm 2		0.9	1.8	5.91	0.48	A					0.5	2.0	4.29	0.32	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 4		0.7	2.6	5.42	0.42	A					0.5	2.1	4.26	0.32	A			
2023 With Construction																		
Arm 1	D8	0.1	0.5	5.37	0.09	A	5.96	A	82 % [Arm 2]	D9	0.1	0.5	4.05	0.10	A	4.44	A	141 % [Arm 4]
Arm 2		1.0	1.7	6.23	0.49	A					0.5	2.5	4.45	0.35	A			
Arm 3		0.0	0.5	2.76	0.00	A					0.0	0.5	3.11	0.04	A			
Arm 4		0.8	2.2	5.79	0.48	A					0.6	2.6	4.66	0.36	A			
2025 No Construction																		
Arm 1	D10	0.1	0.5	5.41	0.09	A	5.89	A	84 % [Arm 2]	D11	0.1	0.5	4.30	0.10	A	4.55	A	142 % [Arm 4]
Arm 2		1.0	1.6	6.17	0.50	A					0.6	2.6	4.57	0.36	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	0.5	2.61	0.01	A			
Arm 4		0.8	2.4	5.64	0.44	A					0.6	2.6	4.64	0.37	A			
2025 With Construction																		
Arm 1	D12	0.1	0.5	5.46	0.10	A	6.25	A	74 % [Arm 2]	D13	0.1	0.5	4.14	0.10	A	4.54	A	133 % [Arm 4]
Arm 2		1.1	1.5	6.58	0.52	A					0.6	2.6	4.57	0.36	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	0.5	3.01	0.04	A			
Arm 4		0.9	2.6	6.00	0.47	A					0.6	2.6	4.76	0.38	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. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Junction 1
Location	Grange Castle
Site number	
Date	30/04/2021
Version	
Status	(new file)
Identifier	
Client	11059
Jobnumber	
Enumerator	TOBIN\Maria Rooney
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseflows	AM	ONE HOUR	08:15	09:45	15	✓
D2	2019 Baseflows	PM	ONE HOUR	16:00	17:30	15	✓
D3	2023 No Construction	AM	ONE HOUR	08:15	09:45	15	✓
D7	2023 No Construction	PM	ONE HOUR	16:00	17:30	15	✓
D8	2023 With Construction	AM	ONE HOUR	08:15	09:45	15	✓
D9	2023 With Construction	PM	ONE HOUR	16:00	17:30	15	✓
D10	2025 No Construction	AM	ONE HOUR	08:15	09:45	15	✓
D11	2025 No Construction	PM	ONE HOUR	16:00	17:30	15	✓
D12	2025 With Construction	AM	ONE HOUR	08:15	09:45	15	✓
D13	2025 With Construction	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

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

2019 Baseflows , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.42	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	103	Arm 2

Arms

Arms

Arm	Name	Description
1	Kilcarbery Park	
2	New Nangor Road (W)	
3	Profile Park	
4	New Nangor Road (E)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	5.06	5.58	9.1	3.0	13.0	0.0	
2	4.64	5.60	12.5	3.0	13.0	0.0	
3	6.20	7.12	5.2	3.0	13.0	0.0	
4	4.85	7.02	2.5	3.0	13.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.559	1442
2	0.541	1358
3	0.612	1700
4	0.541	1358

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseflows	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	54	100.000
2		ONE HOUR	✓	482	100.000
3		ONE HOUR	✓	2	100.000
4		ONE HOUR	✓	416	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	51	1	2
	2	105	0	12	365
	3	0	0	0	2
	4	28	386	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	55	0	100
	2	25	0	10	13
	3	0	0	0	0
	4	17	11	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.08	5.16	0.1	0.5	A	50	74
2	0.45	5.63	0.8	2.1	A	442	663
3	0.00	0.00	0.0	~1	A	0	0
4	0.40	5.21	0.7	2.7	A	382	573

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	41	10	291	811	0.050	40	100	0.0	0.1	4.671	A
2	363	91	4	1171	0.310	361	327	0.0	0.4	4.435	A
3	0	0	354	1449	0.000	0	11	0.0	0.0	0.000	A
4	313	78	79	1171	0.267	312	275	0.0	0.4	4.181	A

2019 Baseflows , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.10	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	184	Arm 2

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	2019 Baseflows	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	86	100.000
2		ONE HOUR	✓	342	100.000
3		ONE HOUR	✓	0	100.000
4		ONE HOUR	✓	347	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	15	0	71
	2	2	0	0	340
	3	0	0	0	0
	4	25	318	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	25	0	8
	2	0	0	0	6
	3	0	0	0	0
	4	50	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.08	3.53	0.1	0.5	A	79	118
2	0.30	4.19	0.4	1.8	A	314	471
3	0.00	0.00	0.0	~1	A	0	0
4	0.31	4.16	0.4	1.8	A	318	478

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	65	16	238	1174	0.055	65	23	0.0	0.1	3.245	A
2	257	64	53	1250	0.206	256	250	0.0	0.3	3.620	A
3	0	0	310	1499	0.000	0	0	0.0	0.0	0.000	A
4	261	65	1	1247	0.209	260	308	0.0	0.3	3.643	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	77	19	288	1149	0.067	77	28	0.1	0.1	3.359	A
2	307	77	64	1244	0.247	307	299	0.3	0.3	3.841	A
3	0	0	371	1459	0.000	0	0	0.0	0.0	0.000	A
4	312	78	2	1247	0.250	312	369	0.3	0.3	3.845	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	95	24	350	1115	0.085	95	34	0.1	0.1	3.527	A
2	377	94	78	1236	0.305	376	368	0.3	0.4	4.153	A
3	0	0	454	1405	0.000	0	0	0.0	0.0	0.000	A
4	382	96	2	1247	0.306	382	452	0.3	0.4	4.157	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	95	24	350	1115	0.085	95	34	0.1	0.1	3.528	A
2	377	94	78	1236	0.305	377	367	0.4	0.4	4.186	A
3	0	0	455	1404	0.000	0	0	0.0	0.0	0.000	A
4	382	96	2	1247	0.306	382	453	0.4	0.4	4.161	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	77	19	288	1148	0.067	77	28	0.1	0.1	3.363	A
2	307	77	64	1244	0.247	308	300	0.4	0.3	3.645	A
3	0	0	372	1458	0.000	0	0	0.0	0.0	0.000	A
4	312	78	2	1247	0.250	312	370	0.4	0.3	3.651	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	65	16	240	1173	0.055	65	23	0.1	0.1	3.247	A
2	257	64	53	1250	0.206	256	251	0.3	0.3	3.631	A
3	0	0	311	1496	0.000	0	0	0.0	0.0	0.000	A
4	261	65	2	1247	0.209	262	310	0.3	0.3	3.651	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.28	0.00	0.00	0.28	0.28			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.03	0.25	0.45	0.48			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.03	0.28	0.47	0.49			N/A	N/A
2	0.44	0.03	0.25	0.45	0.48			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.44	0.03	0.25	0.45	0.48			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.00	0.00	0.09	0.09			N/A	N/A
2	0.44	0.03	0.31	1.35	1.82			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.44	0.03	0.31	1.35	1.84			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.26	0.00	0.00	0.26	0.26			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.27	0.00	0.00	0.27	0.27			N/A	N/A

2023 No Construction, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.66	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	93	Arm 2

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	2023 No Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	58	100.000
2		ONE HOUR	✓	506	100.000
3		ONE HOUR	✓	3	100.000
4		ONE HOUR	✓	436	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	54	1	3
	2	111	0	13	382
	3	0	0	0	3
	4	29	404	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	55	0	100
	2	28	0	10	13
	3	0	0	0	0
	4	18	11	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.09	5.29	0.1	0.5	A	53	80
2	0.45	5.91	0.9	1.8	A	464	696
3	0.00	0.00	0.0	~1	A	0	0
4	0.42	5.42	0.7	2.6	A	400	600

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	44	11	305	801	0.054	43	105	0.0	0.1	4.748	A
2	381	95	5	1167	0.326	379	343	0.0	0.5	4.555	A
3	0	0	372	1436	0.000	0	13	0.0	0.0	0.000	A
4	328	82	83	1168	0.281	327	288	0.0	0.4	4.272	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	52	13	365	777	0.067	52	126	0.1	0.1	4.962	A
2	455	114	6	1167	0.390	454	411	0.5	0.6	5.045	A
3	0	0	445	1353	0.000	0	15	0.0	0.0	0.000	A
4	392	98	100	1158	0.339	391	345	0.4	0.5	4.695	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	54	16	447	745	0.066	64	154	0.1	0.1	5.284	A
2	557	139	8	1166	0.478	555	503	0.8	0.9	5.892	A
3	0	0	545	1312	0.000	0	19	0.0	0.0	0.000	A
4	480	120	122	1144	0.420	479	423	0.5	0.7	5.408	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	64	16	445	745	0.086	64	154	0.1	0.1	5.288	A
2	557	139	8	1166	0.478	557	504	0.9	0.9	5.913	A
3	0	0	546	1311	0.000	0	19	0.0	0.0	0.000	A
4	480	120	122	1144	0.420	480	424	0.7	0.7	5.421	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	52	13	367	777	0.067	52	126	0.1	0.1	4.867	A
2	455	114	6	1167	0.390	456	413	0.9	0.6	5.071	A
3	0	0	447	1352	0.000	0	15	0.0	0.0	0.000	A
4	392	98	100	1155	0.339	393	347	0.7	0.5	4.712	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	44	11	307	801	0.055	44	105	0.1	0.1	4.757	A
2	381	95	5	1167	0.326	382	345	0.6	0.5	4.584	A
3	0	0	374	1434	0.000	0	13	0.0	0.0	0.000	A
4	328	82	84	1168	0.281	329	290	0.5	0.4	4.294	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.45	0.00	0.00	0.45	0.45			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.39	0.00	0.00	0.39	0.39			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.03	0.25	0.45	0.45			N/A	N/A
2	0.63	0.13	0.88	1.38	1.44			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.51	0.51	1.00	1.40	1.45			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.26	0.47	0.49			N/A	N/A
2	0.50	0.03	0.26	0.50	0.50			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.72	0.03	0.25	0.72	0.72			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.00	0.00	0.09	0.09			N/A	N/A
2	0.91	0.03	0.27	0.91	1.81			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.72	0.03	0.25	0.72	2.57			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.64	0.22	0.94	1.39	1.44			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.52	0.52	1.00	1.40	1.45			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.49	0.04	0.44	1.27	1.38			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.39	0.00	0.00	0.39	0.39			N/A	N/A

2023 No Construction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.20	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	171	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023 No Construction	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	90	100.000
2		ONE HOUR	✓	358	100.000
3		ONE HOUR	✓	0	100.000
4		ONE HOUR	✓	383	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	15	0	75
	2	3	0	0	355
	3	0	0	0	0
	4	31	332	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	26	0	9
	2	0	0	0	6
	3	0	0	0	0
	4	51	5	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.09	3.60	0.1	0.5	A	83	124
2	0.32	4.29	0.5	2.0	A	329	493
3	0.00	0.00	0.0	-1	A	0	0
4	0.32	4.26	0.5	2.1	A	333	500

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	68	17	249	1159	0.058	68	25	0.0	0.1	3.297	A
2	270	67	56	1246	0.216	268	260	0.0	0.3	3.671	A
3	0	0	325	1459	0.000	0	0	0.0	0.0	0.000	A
4	273	68	2	1245	0.219	272	322	0.0	0.3	3.697	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	81	20	295	1133	0.071	81	31	0.1	0.1	3.420	A
2	322	80	67	1242	0.259	322	312	0.3	0.3	3.910	A
3	0	0	359	1447	0.000	0	0	0.0	0.0	0.000	A
4	326	82	3	1245	0.262	326	388	0.3	0.4	3.917	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99	25	365	1098	0.090	99	37	0.1	0.1	3.602	A
2	394	99	83	1234	0.320	394	382	0.3	0.5	4.264	A
3	0	0	476	1350	0.000	0	0	0.0	0.0	0.000	A
4	400	100	3	1245	0.321	399	473	0.4	0.5	4.256	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99	25	366	1098	0.090	99	37	0.1	0.1	3.603	A
2	394	99	83	1234	0.320	394	382	0.5	0.5	4.268	A
3	0	0	477	1350	0.000	0	0	0.0	0.0	0.000	A
4	400	100	3	1245	0.321	400	473	0.5	0.5	4.260	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	81	20	299	1133	0.071	81	31	0.1	0.1	3.421	A
2	322	80	67	1242	0.259	322	312	0.5	0.4	3.916	A
3	0	0	350	1446	0.000	0	0	0.0	0.0	0.000	A
4	326	82	3	1245	0.262	327	367	0.5	0.4	3.922	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	65	17	250	1158	0.058	66	26	0.1	0.1	3.302	A
2	270	67	57	1248	0.216	270	262	0.4	0.3	3.682	A
3	0	0	326	1455	0.000	0	0	0.0	0.0	0.000	A
4	273	68	2	1245	0.219	274	324	0.4	0.3	3.708	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.27	0.00	0.00	0.27	0.27			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.45	0.48			N/A	N/A
2	0.35	0.00	0.00	0.35	0.35			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.03	0.25	0.47	0.49			N/A	N/A
2	0.47	0.03	0.25	0.47	0.48			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.47	0.03	0.25	0.47	0.48			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.00	0.00	0.10	0.10			N/A	N/A
2	0.47	0.03	0.31	1.37	2.02			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.47	0.03	0.30	1.36	2.06			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.35	0.00	0.00	0.35	0.35			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.36	0.00	0.00	0.36	0.36			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.28	0.00	0.00	0.28	0.28			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A

2023 With Construction, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.96	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	82	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023 With Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	62	100.000
2		ONE HOUR	✓	513	100.000
3		ONE HOUR	✓	5	100.000
4		ONE HOUR	✓	472	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	54	5	3
	2	111	0	20	382
	3	0	0	0	5
	4	29	404	39	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	55	19	100
	2	26	0	12	13
	3	0	0	0	0
	4	15	11	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.09	5.37	0.1	0.6	A	57	85
2	0.49	6.23	1.0	1.7	A	471	706
3	0.00	2.76	0.0	0.5	A	5	7
4	0.46	5.79	0.8	2.2	A	433	650

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	47	12	332	801	0.058	46	105	0.0	0.1	4.765	A
2	386	97	35	1151	0.335	384	343	0.0	0.5	4.680	A
3	4	0.94	371	1436	0.003	4	48	0.0	0.0	2.513	A
4	355	89	83	1166	0.305	354	292	0.0	0.4	4.424	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	56	14	398	775	0.072	56	126	0.1	0.1	5.006	A
2	461	115	42	1147	0.402	461	411	0.5	0.7	5.232	A
3	4	1	445	1353	0.003	4	57	0.0	0.0	2.611	A
4	424	106	100	1156	0.367	424	350	0.4	0.6	4.919	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	68	17	457	739	0.092	68	154	0.1	0.1	5.387	A
2	565	141	52	1142	0.494	564	503	0.7	1.0	6.209	A
3	6	1	545	1312	0.004	6	70	0.0	0.0	2.755	A
4	520	130	122	1142	0.455	519	425	0.6	0.8	5.766	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	68	17	456	739	0.092	68	154	0.1	0.1	5.370	A
2	565	141	52	1142	0.495	565	504	1.0	1.0	6.234	A
3	6	1	545	1311	0.004	6	70	0.0	0.0	2.755	A
4	520	130	122	1142	0.455	520	429	0.8	0.8	5.785	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	56	14	399	774	0.072	56	126	0.1	0.1	5.011	A
2	461	115	42	1147	0.402	462	413	1.0	0.7	5.283	A
3	4	1	447	1352	0.003	4	58	0.0	0.0	2.615	A
4	424	106	100	1155	0.367	425	351	0.8	0.6	4.939	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	47	12	334	800	0.058	47	106	0.1	0.1	4.778	A
2	386	97	35	1151	0.335	387	345	0.7	0.5	4.715	A
3	4	0.94	374	1434	0.003	4	48	0.0	0.0	2.517	A
4	355	89	84	1165	0.305	356	294	0.6	0.4	4.452	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.50	0.50	1.00	1.40	1.45			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.45	0.46			N/A	N/A
2	0.67	0.13	0.88	1.38	1.44			N/A	N/A
3	0.00	0.00	0.25	0.45	0.46			N/A	N/A
4	0.55	0.10	0.84	1.37	1.43			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.03	0.28	0.47	0.49			N/A	N/A
2	0.97	0.03	0.28	0.97	0.97			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.83	0.03	0.28	0.83	0.83			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.00	0.00	0.10	0.10			N/A	N/A
2	0.97	0.03	0.27	0.97	1.70			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.82	0.03	0.27	0.83	2.22			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.65	0.21	0.93	1.39	1.44			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.59	0.55	1.00	1.40	1.45			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.51	0.05	0.49	1.30	1.40			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.44	0.03	0.32	1.05	1.27			N/A	N/A

2023 With Construction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.44	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	141	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2023 With Construction	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	55	100.000
2		ONE HOUR	✓	392	100.000
3		ONE HOUR	✓	42	100.000
4		ONE HOUR	✓	402	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	70	0	15
	2	23	4	1	364
	3	0	37	0	5
	4	12	389	0	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	0	9
	2	34	0	0	7
	3	0	19	0	0
	4	67	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.10	4.05	0.1	0.5	A	78	117
2	0.35	4.45	0.5	2.5	A	360	540
3	0.04	3.11	0.0	0.5	A	39	58
4	0.36	4.66	0.6	2.6	A	369	553

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	64	16	323	1058	0.060	64	26	0.0	0.1	3.620	A
2	295	74	12	1243	0.237	294	375	0.0	0.3	3.757	A
3	32	8	305	1263	0.025	32	0.75	0.0	0.0	2.870	A
4	303	76	48	1230	0.246	301	289	0.0	0.3	3.872	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	76	19	387	1026	0.075	76	31	0.1	0.1	3.791	A
2	352	88	14	1242	0.284	352	445	0.3	0.4	4.046	A
3	35	9	366	1249	0.030	35	0.90	0.0	0.0	2.972	A
4	361	90	57	1224	0.295	361	345	0.3	0.4	4.171	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	94	23	474	982	0.095	93	38	0.1	0.1	4.053	A
2	432	108	18	1240	0.348	431	550	0.4	0.5	4.447	A
3	46	12	448	1202	0.038	46	1	0.0	0.0	3.114	A
4	443	111	70	1216	0.364	442	423	0.4	0.6	4.648	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	94	23	475	981	0.095	94	39	0.1	0.1	4.058	A
2	432	108	18	1240	0.348	432	551	0.5	0.5	4.452	A
3	46	12	448	1202	0.038	46	1	0.0	0.0	3.115	A
4	443	111	70	1216	0.364	443	424	0.6	0.6	4.656	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	76	19	358	1025	0.075	77	32	0.1	0.1	3.797	A
2	352	88	14	1242	0.284	353	450	0.5	0.4	4.052	A
3	38	9	366	1245	0.030	38	0.80	0.0	0.0	2.976	A
4	361	90	58	1224	0.295	362	347	0.6	0.4	4.180	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	64	16	325	1057	0.061	64	28	0.1	0.1	3.624	A
2	295	74	12	1243	0.237	295	377	0.4	0.3	3.802	A
3	32	8	307	1252	0.025	32	0.75	0.0	0.0	2.880	A
4	303	76	48	1229	0.246	303	290	0.4	0.3	3.888	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.31	0.00	0.00	0.31	0.31			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.32	0.00	0.00	0.32	0.32			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.48	0.48			N/A	N/A
2	0.35	0.00	0.00	0.39	0.39			N/A	N/A
3	0.03	0.03	0.25	0.48	0.48			N/A	N/A
4	0.42	0.00	0.00	0.42	0.42			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.03	0.25	0.47	0.48			N/A	N/A
2	0.53	0.03	0.25	0.53	0.53			N/A	N/A
3	0.04	0.03	0.25	0.48	0.48			N/A	N/A
4	0.57	0.03	0.25	0.57	0.57			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	0.53	0.00	0.30	1.25	2.47			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.57	0.03	0.25	1.21	2.51			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.40	0.00	0.00	0.40	0.40			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.42	0.00	0.00	0.42	0.42			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.31	0.00	0.00	0.31	0.31			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A

2025 No Construction , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.89	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	84	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2025 No Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	61	100.000
2		ONE HOUR	✓	529	100.000
3		ONE HOUR	✓	3	100.000
4		ONE HOUR	✓	456	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	57	1	3
	2	116	0	13	400
	3	0	0	0	3
	4	31	422	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	56	0	100
	2	28	0	13	13
	3	0	0	0	0
	4	16	11	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.09	5.41	0.1	0.5	A	56	84
2	0.50	6.17	1.0	1.6	A	485	728
3	0.00	0.00	0.0	-1	A	0	0
4	0.44	5.64	0.8	2.4	A	419	628

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	45	11	318	792	0.055	46	110	0.0	0.1	4.824	A
2	398	100	5	1167	0.341	396	359	0.0	0.5	4.856	A
3	0	0	389	1423	0.000	0	13	0.0	0.0	0.000	A
4	343	86	87	1165	0.295	342	302	0.0	0.4	4.361	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	55	14	382	767	0.072	55	132	0.1	0.1	5.055	A
2	476	119	6	1157	0.408	475	430	0.5	0.7	5.197	A
3	0	0	466	1368	0.000	0	15	0.0	0.0	0.000	A
4	410	102	104	1155	0.355	409	362	0.4	0.5	4.826	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	67	17	457	733	0.092	67	162	0.1	0.1	5.404	A
2	582	146	8	1166	0.500	581	528	0.7	1.0	6.145	A
3	0	0	570	1294	0.000	0	19	0.0	0.0	0.000	A
4	502	126	127	1141	0.440	501	443	0.5	0.8	5.621	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	67	17	456	733	0.092	67	162	0.1	0.1	5.407	A
2	582	146	8	1166	0.500	582	527	1.0	1.0	6.170	A
3	0	0	571	1293	0.000	0	19	0.0	0.0	0.000	A
4	502	126	128	1140	0.440	502	444	0.8	0.8	5.638	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	55	14	353	788	0.072	55	132	0.1	0.1	5.062	A
2	475	119	6	1167	0.406	477	432	1.0	0.7	5.225	A
3	0	0	468	1357	0.000	0	15	0.0	0.0	0.000	A
4	410	102	106	1155	0.355	411	383	0.8	0.6	4.845	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	45	11	329	791	0.056	46	111	0.1	0.1	4.534	A
2	395	100	5	1167	0.341	399	361	0.7	0.5	4.690	A
3	0	0	391	1421	0.000	0	13	0.0	0.0	0.000	A
4	343	86	87	1165	0.295	344	304	0.6	0.4	4.357	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.51	0.51	1.00	1.43	1.45			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.25	0.45	0.48			N/A	N/A
2	0.68	0.13	0.58	1.38	1.44			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.55	0.55	1.00	1.43	1.45			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.03	0.26	0.47	0.49			N/A	N/A
2	0.99	0.03	0.26	0.99	0.99			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.78	0.03	0.26	0.78	0.78			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.00	0.00	0.10	0.10			N/A	N/A
2	0.99	0.03	0.27	0.99	1.57			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.78	0.03	0.25	0.78	2.40			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.69	0.23	0.94	1.39	1.44			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.55	0.55	1.00	1.43	1.45			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.52	0.05	0.54	1.31	1.40			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.42	0.00	0.00	0.42	0.42			N/A	N/A

2025 No Construction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.55	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	142	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2025 No Construction	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	89	100.000
2		ONE HOUR	✓	405	100.000
3		ONE HOUR	✓	10	100.000
4		ONE HOUR	✓	419	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	73	0	16
	2	24	4	1	380
	3	0	5	0	5
	4	12	406	0	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	29	0	9
	2	35	0	0	7
	3	0	0	0	0
	4	68	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.10	4.30	0.1	0.5	A	52	123
2	0.36	4.57	0.6	2.6	A	375	583
3	0.01	2.61	0.0	0.5	A	9	14
4	0.37	4.64	0.6	2.6	A	384	577

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	67	17	312	1003	0.067	67	27	0.0	0.1	3.844	A
2	308	77	13	1242	0.248	307	366	0.0	0.3	3.643	A
3	8	2	319	1459	0.005	8	0.75	0.0	0.0	2.430	A
4	315	79	25	1244	0.254	314	301	0.0	0.3	3.585	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	80	20	374	974	0.082	80	32	0.1	0.1	4.025	A
2	368	92	15	1241	0.296	367	436	0.3	0.4	4.120	A
3	9	2	382	1447	0.006	9	0.90	0.0	0.0	2.503	A
4	377	94	30	1241	0.304	376	361	0.3	0.4	4.160	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	98	24	457	934	0.105	98	40	0.1	0.1	4.303	A
2	450	113	19	1239	0.364	450	537	0.4	0.6	4.560	A
3	11	3	467	1350	0.008	11	1	0.0	0.0	2.610	A
4	461	115	36	1237	0.373	461	442	0.4	0.6	4.633	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	98	24	458	934	0.105	98	40	0.1	0.1	4.305	A
2	450	113	19	1239	0.364	450	537	0.6	0.6	4.565	A
3	11	3	468	1359	0.008	11	1	0.0	0.0	2.611	A
4	461	115	36	1237	0.373	461	442	0.6	0.6	4.641	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	80	20	375	973	0.082	80	32	0.1	0.1	4.031	A
2	368	92	15	1241	0.296	368	439	0.6	0.4	4.129	A
3	9	2	383	1446	0.006	9	0.90	0.0	0.0	2.505	A
4	377	94	30	1241	0.304	377	362	0.6	0.4	4.172	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	67	17	314	1002	0.067	67	27	0.1	0.1	3.851	A
2	308	77	13	1242	0.248	308	368	0.4	0.3	3.857	A
3	8	2	320	1457	0.005	8	0.75	0.0	0.0	2.434	A
4	315	79	25	1244	0.254	316	303	0.4	0.3	3.881	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.03	0.26	0.47	0.49			N/A	N/A
2	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.12	0.03	0.26	0.48	0.49			N/A	N/A
2	0.57	0.03	0.25	0.57	0.57			N/A	N/A
3	0.01	0.01	0.25	0.47	0.49			N/A	N/A
4	0.59	0.03	0.25	0.59	0.59			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.12	0.00	0.00	0.12	0.12			N/A	N/A
2	0.57	0.03	0.29	1.20	2.59			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.59	0.03	0.29	1.13	2.63			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.00	0.00	0.09	0.09			N/A	N/A
2	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

2025 With Construction , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.25	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	74	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2025 With Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	64	100.000
2		ONE HOUR	✓	536	100.000
3		ONE HOUR	✓	3	100.000
4		ONE HOUR	✓	491	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	57	4	3
	2	116	0	20	400
	3	0	0	0	3
	4	31	422	35	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	56	0	100
	2	28	0	12	14
	3	0	0	0	0
	4	16	11	11	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.10	5.46	0.1	0.5	A	59	88
2	0.52	6.58	1.1	1.5	A	492	738
3	0.00	0.00	0.0	-1	A	0	0
4	0.47	6.00	0.9	2.0	A	451	676

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	48	12	345	795	0.061	45	110	0.0	0.1	4.818	A
2	404	101	34	1145	0.352	401	359	0.0	0.5	4.826	A
3	0	0	359	1422	0.000	0	45	0.0	0.0	0.000	A
4	370	92	87	1165	0.317	368	302	0.0	0.5	4.508	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	55	14	413	767	0.075	57	132	0.1	0.1	5.070	A
2	482	120	40	1142	0.422	481	430	0.5	0.7	5.444	A
3	0	0	466	1366	0.000	0	58	0.0	0.0	0.000	A
4	441	110	104	1154	0.382	441	382	0.5	0.6	5.040	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	70	18	505	730	0.096	70	161	0.1	0.1	5.454	A
2	590	148	49	1137	0.519	589	528	0.7	1.1	6.553	A
3	0	0	570	1291	0.000	0	68	0.0	0.0	0.000	A
4	541	135	127	1140	0.474	539	443	0.6	0.9	5.982	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	70	18	506	730	0.097	70	162	0.1	0.1	5.459	A
2	590	148	50	1137	0.519	590	527	1.1	1.1	6.584	A
3	0	0	571	1290	0.000	0	68	0.0	0.0	0.000	A
4	541	135	128	1140	0.474	541	444	0.9	0.9	6.004	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	58	14	415	767	0.075	58	133	0.1	0.1	5.078	A
2	452	120	41	1142	0.422	453	432	1.1	0.7	5.480	A
3	0	0	466	1365	0.000	0	56	0.0	0.0	0.000	A
4	441	110	105	1154	0.382	442	383	0.9	0.6	5.065	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	48	12	347	794	0.061	48	111	0.1	0.1	4.529	A
2	404	101	34	1145	0.352	404	361	0.7	0.5	4.883	A
3	0	0	391	1420	0.000	0	47	0.0	0.0	0.000	A
4	370	92	87	1165	0.317	370	304	0.6	0.5	4.535	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.54	0.54	1.00	1.40	1.45			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.26	0.46	0.49			N/A	N/A
2	0.72	0.13	0.58	1.38	1.45			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.61	0.12	0.87	1.37	1.44			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.26	0.47	0.49			N/A	N/A
2	1.06	0.03	0.26	1.06	1.06			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.89	0.03	0.26	0.89	0.89			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	1.07	0.03	0.27	1.07	1.46			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.90	0.03	0.27	0.90	1.95			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.74	0.20	0.93	1.39	1.45			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.62	0.19	0.92	1.35	1.44			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.55	0.06	0.60	1.32	1.41			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.47	0.04	0.39	1.22	1.36			N/A	N/A

2025 With Construction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.54	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	133	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2025 With Construction	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	59	100.000
2		ONE HOUR	✓	409	100.000
3		ONE HOUR	✓	40	100.000
4		ONE HOUR	✓	419	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	73	0	16
	2	24	4	1	380
	3	0	35	0	5
	4	12	403	0	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	21	0	9
	2	35	0	0	7
	3	0	14	0	0
	4	66	6	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.10	4.14	0.1	0.5	A	82	123
2	0.36	4.57	0.6	2.6	A	375	563
3	0.04	3.01	0.0	0.5	A	37	55
4	0.38	4.76	0.6	2.6	A	384	577

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	67	17	334	1046	0.064	67	27	0.0	0.1	3.675	A
2	308	77	13	1242	0.248	307	365	0.0	0.3	3.643	A
3	30	8	319	1328	0.023	30	0.75	0.0	0.0	2.777	A
4	315	79	47	1231	0.256	314	301	0.0	0.3	3.920	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	80	20	401	1013	0.079	80	32	0.1	0.1	3.555	A
2	368	92	16	1241	0.296	367	455	0.3	0.4	4.120	A
3	36	9	382	1259	0.028	36	0.90	0.0	0.0	2.872	A
4	377	94	57	1225	0.307	376	361	0.3	0.4	4.239	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	96	24	490	965	0.101	95	40	0.1	0.1	4.137	A
2	450	113	19	1239	0.364	450	570	0.4	0.6	4.560	A
3	44	11	467	1235	0.036	44	1	0.0	0.0	3.014	A
4	461	115	69	1215	0.379	461	442	0.4	0.6	4.752	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	96	24	491	965	0.101	95	40	0.1	0.1	4.139	A
2	450	113	19	1239	0.364	450	570	0.6	0.6	4.565	A
3	44	11	466	1235	0.036	44	1	0.0	0.0	3.015	A
4	461	115	69	1218	0.379	461	443	0.6	0.6	4.759	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	80	20	402	1012	0.079	80	32	0.1	0.1	3.863	A
2	368	92	15	1241	0.296	368	456	0.6	0.4	4.129	A
3	36	9	353	1258	0.028	36	0.90	0.0	0.0	2.674	A
4	377	94	57	1225	0.307	377	362	0.6	0.4	4.248	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	67	17	336	1045	0.064	67	27	0.1	0.1	3.679	A
2	308	77	13	1242	0.248	308	390	0.4	0.3	3.857	A
3	30	8	320	1325	0.023	30	0.75	0.0	0.0	2.779	A
4	315	79	47	1231	0.256	316	303	0.4	0.3	3.937	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.03	0.26	0.47	0.50			N/A	N/A
2	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.03	0.25	0.48	0.49			N/A	N/A
2	0.57	0.03	0.25	0.57	0.57			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.60	0.03	0.25	0.60	0.60			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.11	0.00	0.00	0.11	0.11			N/A	N/A
2	0.57	0.03	0.25	1.20	2.55			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.61	0.03	0.25	1.09	2.64			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.00	0.00	0.09	0.09			N/A	N/A
2	0.42	0.00	0.00	0.42	0.42			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.45	0.00	0.00	0.45	0.45			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A

Appendix E. JUNCTION 9 ARCADY Detailed Output - Junction 2

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Junction 2.j9
Path: \\FSERVER4-DUB\Tobin\Projects\11069 - Centrica - Profile Park Power Plant\05-Design\01-Calculations\Traffic
Report generation date: 07/05/2021 16:49:19

Summary of junction performance

	AM								PM							
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
2019 Baseflows																		
Arm 1	D1	0.0	0.5	5.23	0.02	A	5.23	A	900 % []	D2	0.0	~1	0.00	0.00	A	4.84	A	900 % []
Arm 2		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 4		0.0	~1	0.00	0.00	A					0.0	0.5	4.84	0.01	A			
2023 No Construction																		
Arm 1	D3	0.0	0.5	5.36	0.03	A	5.36	A	900 % []	D7	0.0	~1	0.00	0.00	A	4.85	A	900 % []
Arm 2		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 4		0.0	~1	0.00	0.00	A					0.0	0.5	4.85	0.01	A			
2023 With Construction																		
Arm 1	D8	0.1	0.5	6.07	0.11	A	6.07	A	708 % [Arm 1]	D9	0.0	~1	0.00	0.00	A	5.97	A	900 % []
Arm 2		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 3		0.0	~1	0.00	0.00	A					0.1	0.5	6.18	0.06	A			
Arm 4		0.0	~1	0.00	0.00	A					0.0	0.5	4.98	0.01	A			
2025 No Construction																		
Arm 1	D10	0.0	0.5	5.36	0.03	A	5.36	A	900 % []	D11	0.0	~1	0.00	0.00	A	4.85	A	900 % []
Arm 2		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 3		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 4		0.0	~1	0.00	0.00	A					0.0	0.5	4.85	0.01	A			
2025 With Construction																		
Arm 1	D12	0.1	0.5	5.86	0.10	A	5.86	A	763 % [Arm 1]	D13	0.0	~1	0.00	0.00	A	5.77	A	900 % []
Arm 2		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A			
Arm 3		0.0	~1	0.00	0.00	A					0.1	0.5	5.95	0.06	A			
Arm 4		0.0	~1	0.00	0.00	A					0.0	0.5	4.97	0.01	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. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Junction 2
Location	Grange Castle
Site number	
Date	30/04/2021
Version	
Status	(new file)
Identifier	
Client	11069
Jobnumber	
Enumerator	TOBIN\Maria Rooney
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseflows	AM	ONE HOUR	08:15	09:45	15	✓
D2	2019 Baseflows	PM	ONE HOUR	16:00	17:30	15	✓
D3	2023 No Construction	AM	ONE HOUR	08:15	09:45	15	✓
D7	2023 No Construction	PM	ONE HOUR	16:00	17:30	15	✓
D8	2023 With Construction	AM	ONE HOUR	08:15	09:45	15	✓
D9	2023 With Construction	PM	ONE HOUR	16:00	17:30	15	✓
D10	2025 No Construction	AM	ONE HOUR	08:15	09:45	15	✓
D11	2025 No Construction	PM	ONE HOUR	16:00	17:30	15	✓
D12	2025 With Construction	AM	ONE HOUR	08:15	09:45	15	✓
D13	2025 With Construction	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	✓	100.000	100.000

2019 Baseflows , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.23	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	500	

Arms

Arms

Arm	Name	Description
1	Profile Park (NE) Profile Park (NE)	
2	Profile Park (SE)	
3	Profile Park (SW)	
4	Profile Park (NW)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.00	3.00	0.0	3.0	13.0	0.0	
2	3.00	3.00	0.0	3.0	13.0	0.0	
3	3.00	3.00	0.0	3.0	13.0	0.0	
4	3.00	3.00	0.0	3.0	13.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.416	752
2	0.416	752
3	0.416	752
4	0.416	752

The slope and intercept shown above include any corrections and adjustments

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Baseflows	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	15	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	2	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	2	13
	2	0	0	0	0
	3	2	0	0	0
	4	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	50	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.02	5.23	0.0	0.5	A	14	21
2	0.00	0.00	0.0	-1	A	0	0
3	0.00	0.00	0.0	-1	A	0	0
4	0.00	0.00	0.0	-1	A	0	0

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	11	3	0	705	0.016	11	0	0.0	0.0	5.190	A
2	0	0	11	747	0.000	0	0	0.0	0.0	0.000	A
3	0	0	10	745	0.000	0	1	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	10	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	13	3	0	705	0.019	13	0	0.0	0.0	5.207	A
2	0	0	13	748	0.000	0	0	0.0	0.0	0.000	A
3	0	0	12	747	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	12	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	17	4	0	705	0.023	16	0	0.0	0.0	5.230	A
2	0	0	16	744	0.000	0	0	0.0	0.0	0.000	A
3	0	0	14	748	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	14	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	17	4	0	705	0.023	17	0	0.0	0.0	5.230	A
2	0	0	17	744	0.000	0	0	0.0	0.0	0.000	A
3	0	0	14	748	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	14	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	13	3	0	705	0.019	14	0	0.0	0.0	5.209	A
2	0	0	14	748	0.000	0	0	0.0	0.0	0.000	A
3	0	0	12	747	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	12	0.0	0.0	0.000	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	11	3	0	705	0.016	11	0	0.0	0.0	5.193	A
2	0	0	11	747	0.000	0	0	0.0	0.0	0.000	A
3	0	0	10	748	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	10	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

2019 Baseflows , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.84	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

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	2019 Baseflows	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	1	100.000
4		ONE HOUR	✓	8	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	1	0
	2	0	0	0	0
	3	1	0	0	0
	4	8	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.00	0.00	0.0	~1	A	0	0
2	0.00	0.00	0.0	~1	A	0	0
3	0.00	0.00	0.0	~1	A	0	0
4	0.01	4.84	0.0	0.5	A	7	11

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	6	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	6	2	0	752	0.008	6	0	0.0	0.0	4.827	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	7	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	7	2	0	752	0.010	7	0	0.0	0.0	4.834	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	9	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	9	2	0	752	0.012	9	0	0.0	0.0	4.845	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	9	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	9	2	0	752	0.012	9	0	0.0	0.0	4.545	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	7	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	7	2	0	752	0.010	7	0	0.0	0.0	4.536	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	6	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	6	2	0	752	0.008	6	0	0.0	0.0	4.529	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.01	0.25	0.45	0.46			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

2023 No Construction, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.36	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

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	2023 No Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	17	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	3	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	3	14
	2	0	0	0	0
	3	3	0	0	0
	4	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	51	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.03	5.36	0.0	0.5	A	16	23
2	0.00	0.00	0.0	~1	A	0	0
3	0.00	0.00	0.0	~1	A	0	0
4	0.00	0.00	0.0	~1	A	0	0

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	13	3	0	690	0.019	13	0	0.0	0.0	5.318	A
2	0	0	13	746	0.000	0	0	0.0	0.0	0.000	A
3	0	0	10	747	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	10	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	15	4	0	690	0.022	15	0	0.0	0.0	5.337	A
2	0	0	15	745	0.000	0	0	0.0	0.0	0.000	A
3	0	0	13	747	0.000	0	3	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	13	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	19	5	0	690	0.027	19	0	0.0	0.0	5.364	A
2	0	0	19	743	0.000	0	0	0.0	0.0	0.000	A
3	0	0	15	745	0.000	0	3	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	15	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	19	5	0	690	0.027	19	0	0.0	0.0	5.364	A
2	0	0	19	743	0.000	0	0	0.0	0.0	0.000	A
3	0	0	15	745	0.000	0	3	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	15	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	15	4	0	690	0.022	15	0	0.0	0.0	5.340	A
2	0	0	15	745	0.000	0	0	0.0	0.0	0.000	A
3	0	0	13	747	0.000	0	3	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	13	0.0	0.0	0.000	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	13	3	0	690	0.019	13	0	0.0	0.0	5.320	A
2	0	0	13	746	0.000	0	0	0.0	0.0	0.000	A
3	0	0	11	747	0.000	0	2	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	11	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.02	0.25	0.45	0.48			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

2023 No Construction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.85	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal unknown	900	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2023 No Construction	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	1	100.000
4		ONE HOUR	✓	9	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	1	0
	2	0	0	0	0
	3	1	0	0	0
	4	9	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.00	0.00	0.0	~1	A	0	0
2	0.00	0.00	0.0	~1	A	0	0
3	0.00	0.00	0.0	~1	A	0	0
4	0.01	4.85	0.0	0.5	A	8	12

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	7	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	7	2	0	752	0.009	7	0	0.0	0.0	4.831	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	8	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	8	2	0	752	0.011	8	0	0.0	0.0	4.840	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	10	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	10	2	0	752	0.013	10	0	0.0	0.0	4.852	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	10	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	10	2	0	752	0.013	10	0	0.0	0.0	4.852	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	8	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	8	2	0	752	0.011	8	0	0.0	0.0	4.842	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	7	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
4	7	2	0	752	0.009	7	0	0.0	0.0	4.833	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

2023 With Construction, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.07	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	708	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2023 With Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	64	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	3	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	50	14
	2	0	0	0	0
	3	3	0	0	0
	4	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	17	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.11	6.07	0.1	0.5	A	59	88
2	0.00	0.00	0.0	~1	A	0	0
3	0.00	0.00	0.0	~1	A	0	0
4	0.00	0.00	0.0	~1	A	0	0

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	48	12	0	864	0.073	48	0	0.0	0.1	5.844	A
2	0	0	48	729	0.000	0	0	0.0	0.0	0.000	A
3	0	0	10	747	0.000	0	37	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	10	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	58	14	0	864	0.067	57	0	0.1	0.1	5.939	A
2	0	0	57	725	0.000	0	0	0.0	0.0	0.000	A
3	0	0	13	747	0.000	0	45	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	13	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	70	18	0	864	0.106	70	0	0.1	0.1	6.068	A
2	0	0	70	719	0.000	0	0	0.0	0.0	0.000	A
3	0	0	15	745	0.000	0	55	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	15	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	70	18	0	864	0.106	70	0	0.1	0.1	6.068	A
2	0	0	70	719	0.000	0	0	0.0	0.0	0.000	A
3	0	0	15	745	0.000	0	55	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	15	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	58	14	0	664	0.087	58	0	0.1	0.1	5.943	A
2	0	0	58	725	0.000	0	0	0.0	0.0	0.000	A
3	0	0	13	747	0.000	0	45	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	13	0.0	0.0	0.000	A

09:30 - 09:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	48	12	0	664	0.073	45	0	0.1	0.1	5.852	A
2	0	0	48	729	0.000	0	0	0.0	0.0	0.000	A
3	0	0	11	747	0.000	0	38	0.0	0.0	0.000	A
4	0	0	0	752	0.000	0	11	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.09	0.03	0.25	0.45	0.48			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.12	0.03	0.25	0.48	0.49			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.12	0.03	0.25	0.45	0.48			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.10	0.00	0.00	0.10	0.10			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:30 - 09:45

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.00	0.00	0.00	0.00	0.00			N/A	N/A
4	0.00	0.00	0.00	0.00	0.00			N/A	N/A

2023 With Construction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.97	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2023 With Construction	PM	ONE HOUR	16:00	17:30	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 (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	35	100.000
4		ONE HOUR	✓	9	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	1	0
	2	0	0	0	0
	3	35	0	0	0
	4	9	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	21	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.00	0.00	0.0	~1	A	0	0
2	0.00	0.00	0.0	~1	A	0	0
3	0.06	6.18	0.1	0.5	A	32	45
4	0.01	4.98	0.0	0.5	A	8	12

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	33	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	26	7	0	621	0.042	26	0	0.0	0.0	6.048	A
4	7	2	26	739	0.009	7	0	0.0	0.0	4.918	A

16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	40	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	31	8	0	621	0.051	31	0	0.0	0.1	6.102	A
4	8	2	31	736	0.011	8	0	0.0	0.0	4.945	A

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	46	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	39	10	0	621	0.062	38	0	0.1	0.1	6.177	A
4	10	2	38	732	0.014	10	0	0.0	0.0	4.952	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	46	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	39	10	0	621	0.062	39	0	0.1	0.1	6.177	A
4	10	2	39	732	0.014	10	0	0.0	0.0	4.952	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	40	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	31	8	0	621	0.051	32	0	0.1	0.1	6.103	A
4	8	2	32	735	0.011	8	0	0.0	0.0	4.945	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	0	0	0	752	0.000	0	33	0.0	0.0	0.000	A
2	0	0	0	752	0.000	0	0	0.0	0.0	0.000	A
3	26	7	0	621	0.042	26	0	0.1	0.0	6.053	A
4	7	2	26	736	0.009	7	0	0.0	0.0	4.921	A

Queue Variation Results for each time segment

16:00 - 16:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

16:15 - 16:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.05	0.03	0.25	0.45	0.45			N/A	N/A
4	0.01	0.01	0.25	0.45	0.45			N/A	N/A

16:30 - 16:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.07	0.03	0.25	0.47	0.49			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.07	0.00	0.00	0.07	0.07			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q85 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.00	0.00	0.00	0.00	0.00			N/A	N/A
2	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A

2025 No Construction , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.36	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2025 No Construction	AM	ONE HOUR	08:15	09:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	17	100.000
2		ONE HOUR	✓	0	100.000
3		ONE HOUR	✓	3	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	3	14
	2	0	0	0	0
	3	3	0	0	0
	4	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	51	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0