Volume III - Appendices to Environmental Impact Assessment Report

Proposed Residential Development

Lands at Capdoo & Abbeylands, Clane, Co. Kildare

Westar Investments Ltd

November 2019

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Appendix 2.1 Section 3 of the Architectural Design Statement prepared by the project Architects, Brian Connolly Associates

SECTION 3- Consideration of Alternatives

3.1 Introduction

The scheme proposed has undergone rigorous appraisal and through a number of changes as part of the design development process, while taking into account the parameters of the local area plan and other statutory requirements.

The broad parameters of the scheme are set by the Urban Design Concept principles for the site known as “Key Development Area 1” in the Clane Local Area Plan (2017-2023)

Set out here are 5 intermediate iterations of the scheme that illustrates the evolution of the concept into its current incarnation.

3.2 Iteration 1

Iteration 1 (shown rotated overleaf) was issued for the first consultation with Kildare County Council.

The initial concept shows an entrance point from the existing Brooklands scheme. Even at this early stage the obvious main routes through the scheme had materialised. This connected the parcel of land to the south with the rest of the site. It also allows for the future development and integration of the “Strategic Reserve Lands” to the north.

The built edge along the frontage of the riverside park is given clear definition. There are a number of pocket park throughout the scheme. This gives the majority of the housing direct oversight of Public Open Space. There are a number of transition zones and small streets generated from the main circulation routes to break down the massing of the housing facing the open spaces.

This iteration consisted of a number of streets that were too long a linear run of units. This would have been an issue visually and technically from a road speed point of view (e.g. 144-168 and 170-187)

Fig 23: *- Rotated View above (Site Plan) – Initial sketch Site Plan issued for first consultation with client and Kildare County Council Planners.*

3.3 Iteration 2

Iteration 2 - The main changes here relate to the design of the southern parcel of land.

Following on from our initial consultation with Kildare County Council it was felt that the initial layout would have resulted in long runs of units in too straight a line.

In this iteration we looked at stepping the line of dwellings on the site-plan in the southern parcel of land. We also move the road from the site boundary to further break up the building line.

We also redesigned the dwelling at the pinch point between the two parcels of land. This unit is designed with a dual aspect to address the approach from both sides of the scheme.

Fig 24: *- Rotated View above (Site Plan) – Initial sketch Site Plan issued for consultation with Kildare County Council.*

3.4 Iteration 3

Iteration 3 - Shown rotated below incorporates further changes.

More detailed design work has been carried out for this iteration. This has resulted in more variation in house types and therefore more variety in tenure has been accommodated.

Ultimately when this proposal was presented to the Kildare County Council, we were advised that the density was not high enough in their opinion to be deemed acceptable to be approved by the board. They stated that ABP were consistently looking for higher densities of 35 units per Ha.

The Housing Department of Kildare council when we met them to discuss their Part V requirements stated that they would not look for any units in Blocks A, B, C or D.

Fig 25: *- Rotated View above (Site Plan) – Initial sketch Site Plan issued for consultation with Kildare Co.Co.*

3.5 Iteration 4

This iteration was to form the basis for the initial submission to ABP. Following on from our meeting with Kildare County Council we increased the overall scheme density by adding a number of duplex blocks. We also accommodated the housing departments request for Maisonette units rather than apartments. We also update Apartment Block B to accommodate more units.

At this point in time the adjoining lands along the river and the neighbouring "retirement Village" site were outside the ownership of the applicant. At this point it meant that we could neither create the river linear parkway or the road servicing the retirement village development. We designed the scheme in such a way to integrate with these elements on the assumption of their eventual completion.

The above changes resulted in 230 units on site which equated to 35.7 units per hectare.

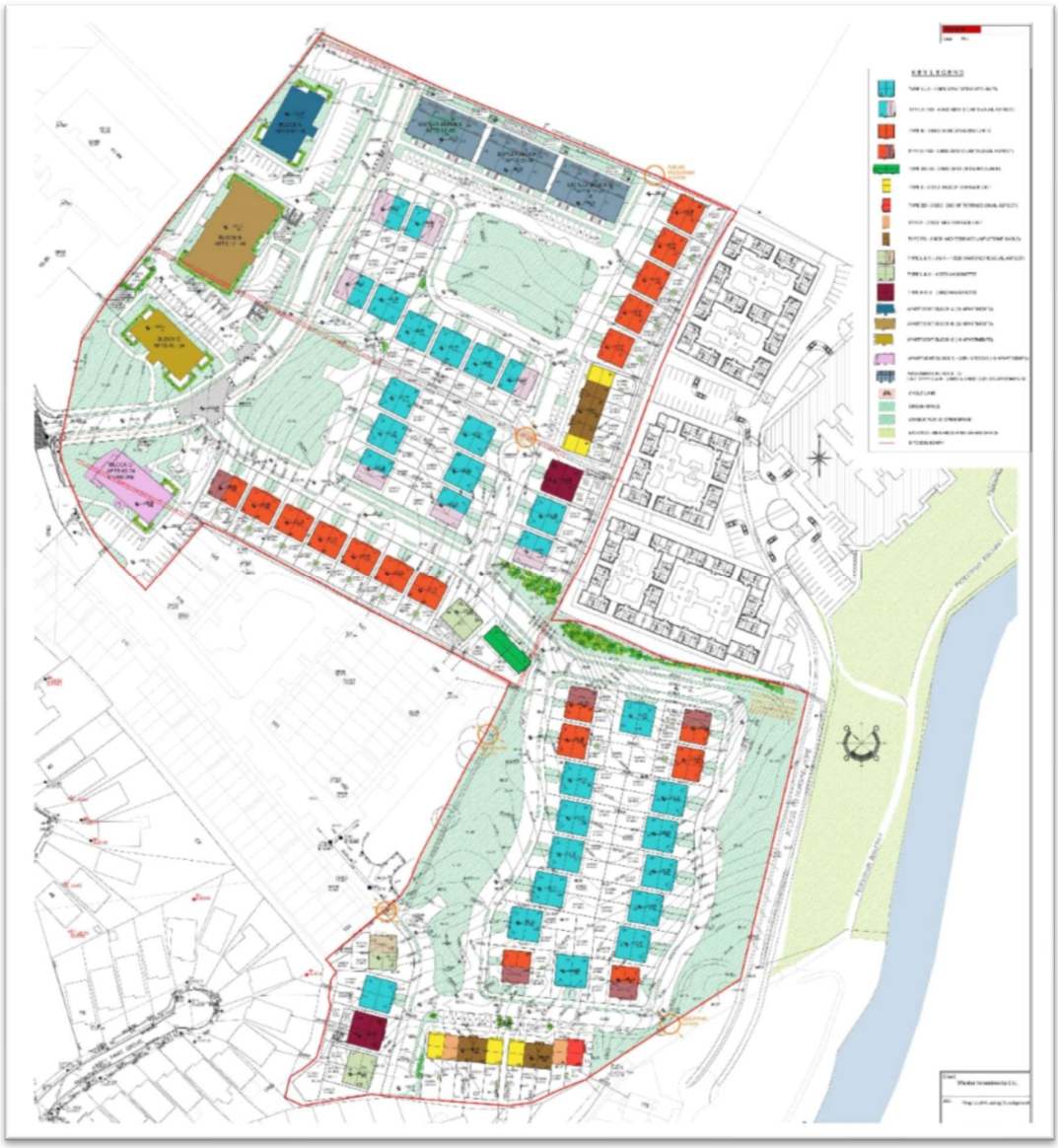

Fig 26: *- Rotated View above (Site Plan) – Initial sketch Site Plan issued for first consultation with Kildare Co.Co.*

3.6 Iteration 5

This iteration is a result of the client acquiring additional lands and a response to Kildare County Council comments from our previous meeting. This revision of the overall scheme was presented to Kildare County Council and received a positive reception.

This is the scheme that went forward for presentation to An Bord Pleanála at our initial Stage 2 presentation with them.

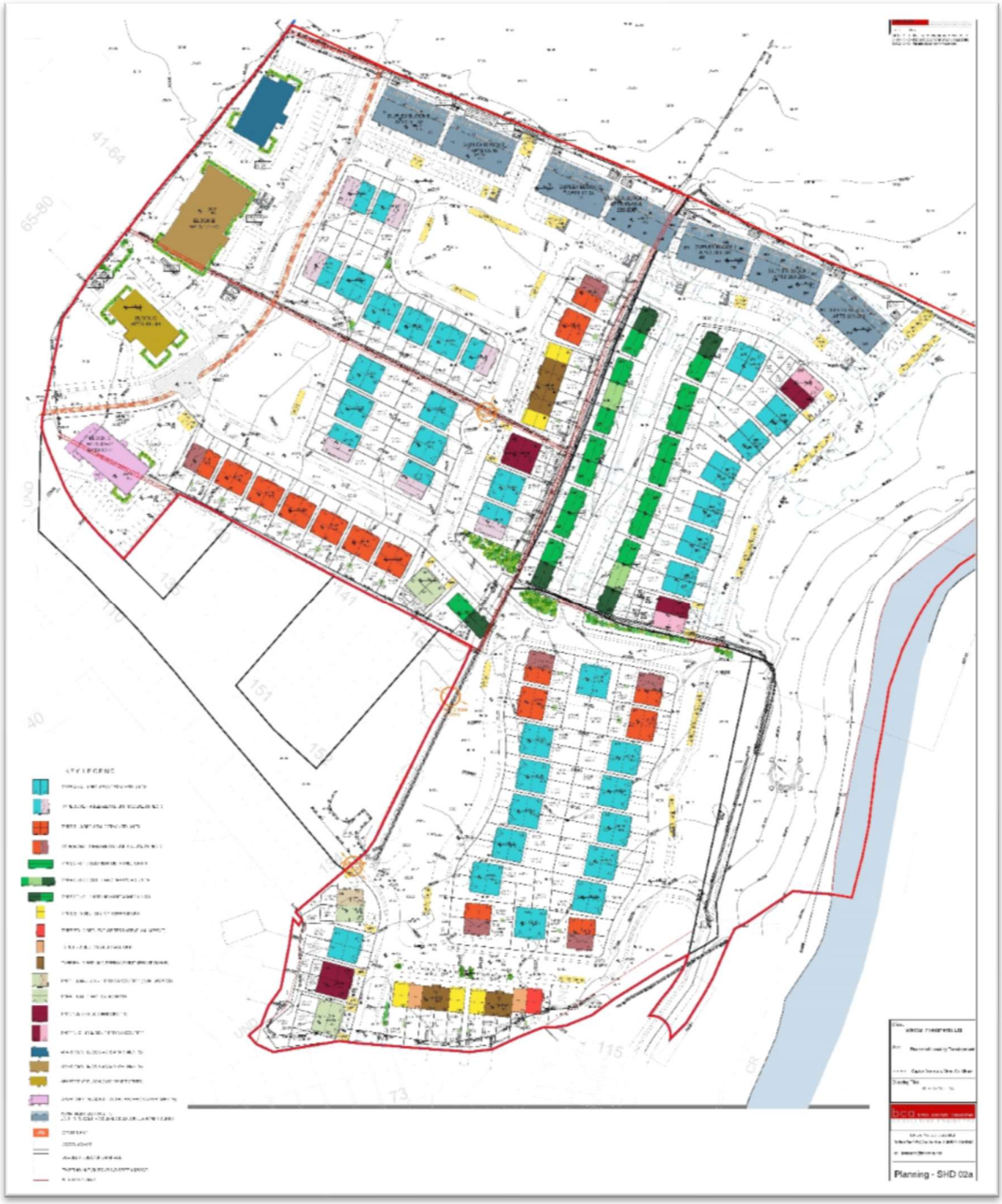

Fig 27: *- Rotated View above (Site Plan) – Initial sketch Site Plan issued for first consultation with Kildare Co.Co.*

3.6.1 - The scheme as presented also includes the requirements of the Housing Department in Kildare County Council. A Part V proposal has been agreed with the Council. The Maisonette proposal agreed for some units allows them to integrated seamlessly into the overall scheme.

3.6.2 - As a result of the additional lands and the required changes in the overall scheme, the overall residential

densities are 37.0 units per Ha. A creche is also included (and has always been included in all iterations of the scheme). It is located in the ground floor of Block D along the shared boundary with Brooklands.

3.6.3 - Probably the most important change from previous iterations is that the applicant now controls the lands along the Liffey. This means that we can now connect our proposal with the road beside the Liffey and the end of Alexandra Walk. It also means that the client controls the "retirement village" site. As our applicant has instructed us to integrate the site with our residential scheme it has meant that we can increase the set back distance between the Liffey and building form when compared to the granted scheme for the retirement village.

3.6.4 - This means that there can be a more consistent treatment of the proposed linear park along the river in line with the objectives for KDA 1 as defined in the LAP for Clane.

Fig 28: *- Proposed Landscaping Plan (Site Plan) – Revised landscaping plan now incorporating the linear park along the river.*

Fig 29: *- Aerial View of the overall scheme from above the Liffey – Revised landscaping plan now incorporating the linear park along the river.*

Fig 30: *- Aerial View of the overall scheme from above the Brooklands Duplex blocks – Revised landscaping plan now incorporating the linear park along the river.*

Appendix 4.1 Site Specific Flood Risk Assessment prepared by IE Consulting

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1 Introduction

IE Consulting was requested by Westar Investments Ltd to undertake a Site Specific Flood Risk Assessment (SSFRA) for an area of lands at Capdoo & Abbeylands, Dublin Road, Clane Co. Kildare. It is proposed to construct 305 no. new dwellings, a childcare facility, associated car parking, surface water attenuation, site entrances and all associated site and development works.

The purpose of this SSFRA is to assess the potential flood risk to the proposed development site and to assess the impact that development of the site may or may not have on the hydrological regime of the area.

Quoted ground levels or estimated flood levels relate to ordnance datum Malin unless stated otherwise.

This flood risk assessment study has been undertaken in consideration of the following guidance document:-

'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' DOEHLG 2009.

2 Proposed Site Description

2.1 General

The proposed development site is located approximately 660m east of Clane town centre, Co Kildare.

The site is bounded to the north and north-west by agricultural lands, to the east by the River Liffey, to the south-east by a drainage channel and to south by an existing residential development. The total area of the proposed development site is approximately 10.32 hectares.

The location of the proposed development site is illustrated on *Figure 1* below and shown on *Drawing Number IE1835-001-A in Appendix A*.

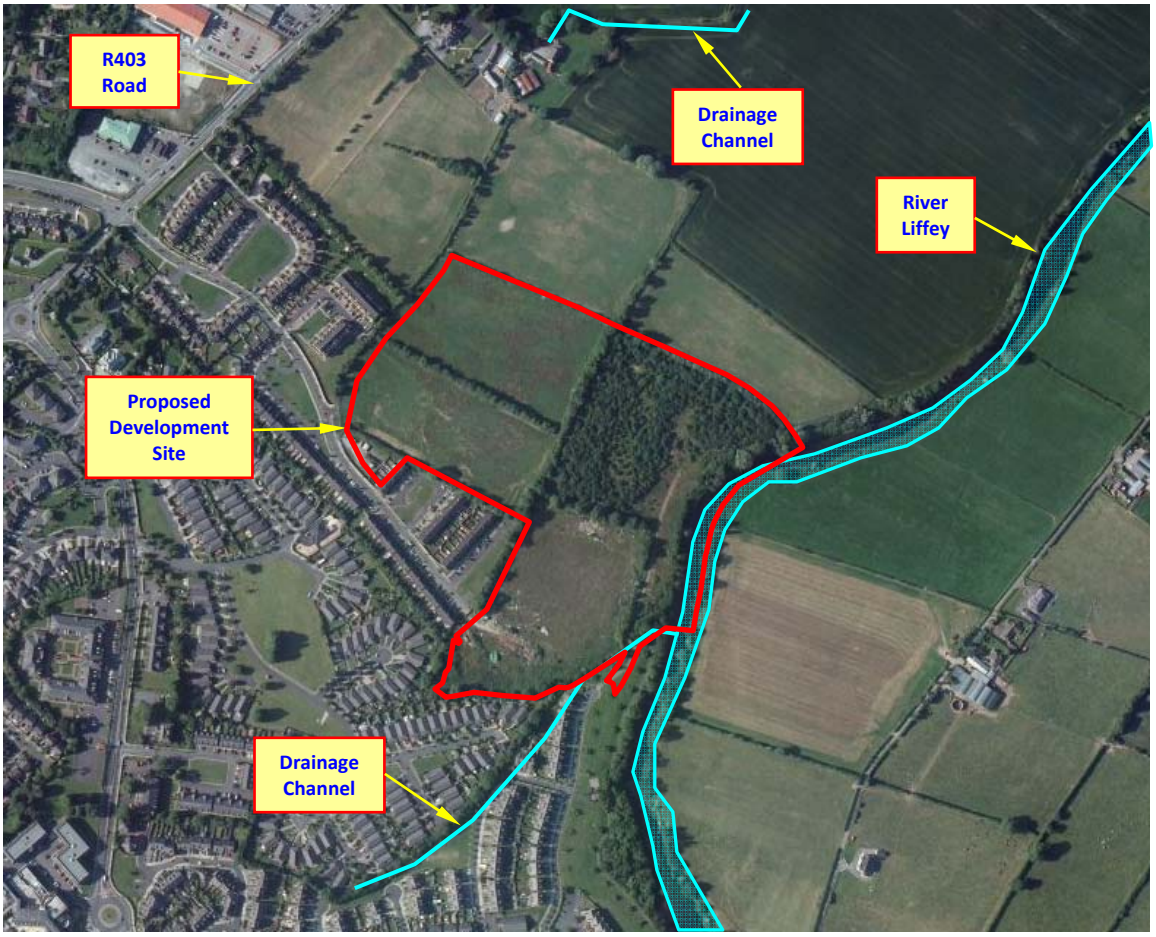


Figure 1 - Site Location

2.2 Existing Topography Levels at Site

The north-west part of the proposed site slopes moderately from a high point at the centre of the site towards the north, north-west and north-east site boundaries at an average gradient of approximately 1.23% (1 in 81). The southern half of the proposed site slopes moderately from a high point at the centre of the site towards the south, south-west and south-east site boundaries at an average gradient of approximately 0.81% (1 in 123). The north-east part of the proposed site slopes moderately from a high point at the centre of the site towards the north and east site boundaries at average gradients of approximately 0.77% (1 in 129) and 4.54% (1 in 22) respectively.

Existing ground elevations within the site boundary range from approximately 67.56 mOD (Malin) at the centre of the site to 63.408mOD (Malin) at the east boundary of the site.

2.3 Local Hydrology, Landuse & Existing Drainage

The most significant hydrological feature in the vicinity of the proposed development site is the River Liffey located adjacent to the eastern site boundary. The River Liffey is a controlled watercourse along the reach upstream and downstream of Clane. Discharge volumes in the River Liffey along this reach are controlled and monitored by the ESB and are dependent on inflows to Pollaphuca and Golden Falls dams. These dams have a significant beneficial effect in attenuating flood flows in the River Liffey.

At its closest position to the proposed development site the River Liffey generally flows in a south to north direction. Utilising the OPW Flood Studies Update (FSU) Portal software, the catchment area of the River Liffey was delineated. As illustrated in *Figure 2* below, the total catchment area of the River Liffey was found to be approximately **647.32 km^2** to a point downstream of the site. Assessment of the River Liffey upstream catchment area indicates that the catchment is predominantly rural in nature with urban development accounting for approximately 3.03% of the total catchment area.

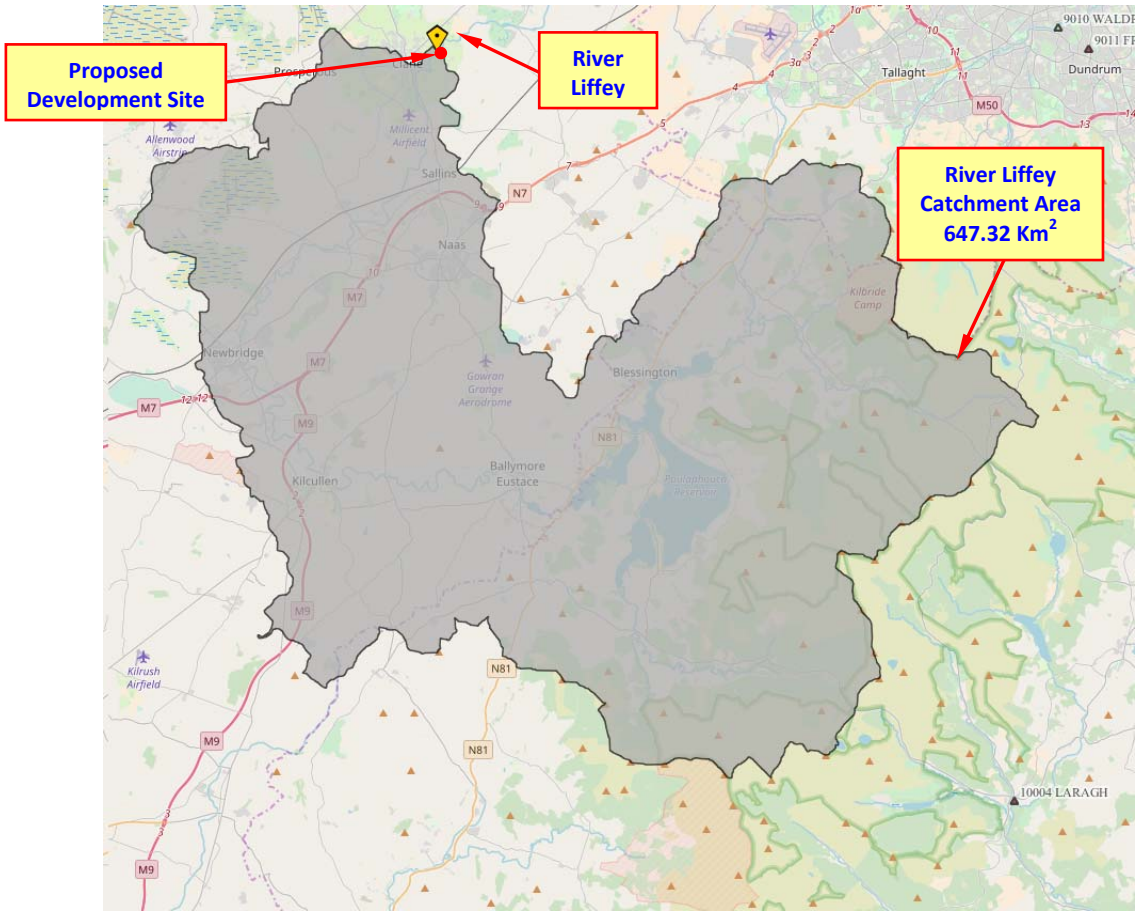


Figure 2 – River Liffey Upstream Catchment Area

3 Initial Flood Risk Assessment

The flood risk assessment for the proposed development site is undertaken in three principle stages, these being *'Step 1 – Screening', 'Step 2 – Scoping'* and *'Step 3 – Assessing'*.

3.1 Possible Flooding Mechanisms

Table 1 below summarises the possible flooding mechanisms in consideration of the proposed development site:-

Source/Pathway	Significant?	Comment/Reason
Tidal/Coastal	No	The site is not located in a coastal or tidally influenced region
Fluvial	Yes	The River Liffey is located adjacent to the eastern site boundary
Pluvial (urban drainage)	No	There is no significant urban drainage infrastructure in the vicinity of the site
Pluvial (overland flow)	No	There site is not surrounded by significantly elevated lands and does not provide an important discharge location to runoff from surrounding lands
Blockage	No	There are no significant hydraulic structures in the vicinity of the site
Groundwater	No	There are no significant springs or groundwater discharges recorded in the immediate vicinity of the site

Table 1

The primary potential flood risk to the proposed development site can be attributed to an extreme fluvial flood event in the River Liffey.

In accordance with 'The Planning System and Flood Risk Management – Guidelines for Planning Authorities - DOEHLG 2009' the potential flood risk to the proposed development site is analysed in the subsequent 'Screening Assessment' and ''Scoping Assessment'' section of this study report.

4 Screening Assessment

The purpose of the screening assessment is to establish the level of flooding risk that may or may not exist for a particular site and to collate and assess existing current or historical information and data which may indicate the level or extent of any flood risk.

If there is a potential flood risk issue then the flood risk assessment procedure should move to *'Step 2 – Scoping Assessment'* or if no potential flood risk is identified from the screening stage then the overall flood risk assessment can end at *'Step 1'*.

The following information and data was collated as part of the flood risk screening assessment for the proposed development site:-

4.1 OPW/EPA/Local Authority Hydrometric Data

Existing sources of OPW, EPA and local authority hydrometric data were investigated. As illustrated in *Figure 3* below, this assessment has determined that there are three hydrometric gauging stations located on the River Liffey in the general regional area of the proposed development site.

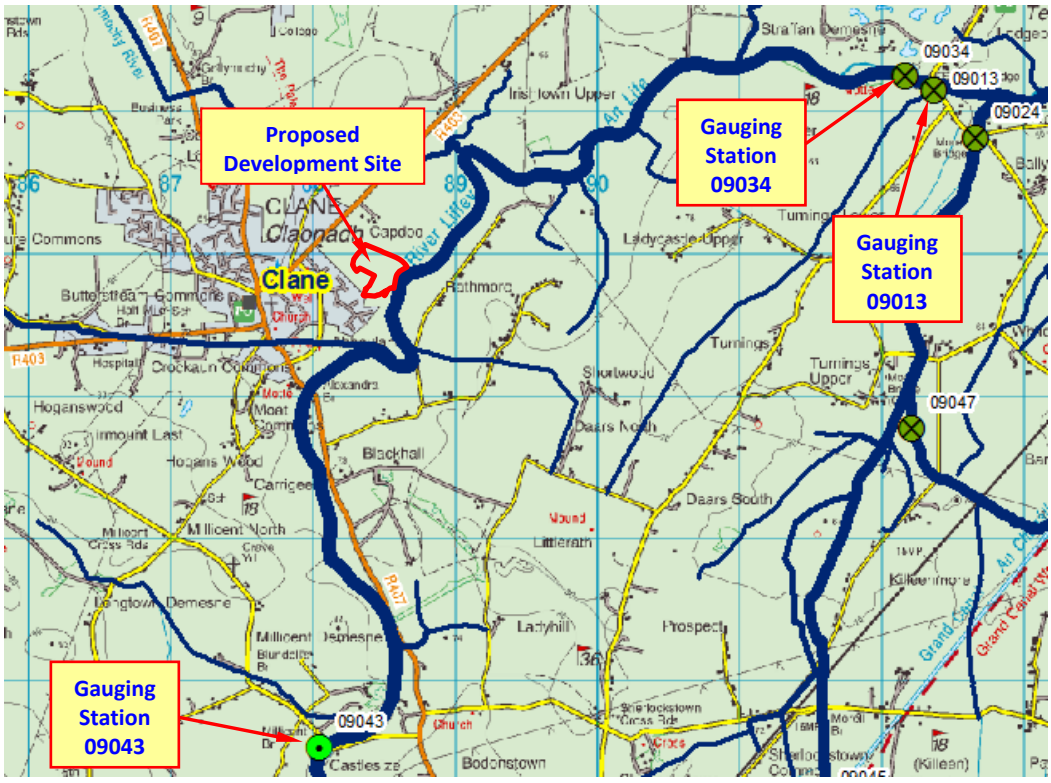


Figure 3 – Hydrometric Gauging Stations

Gauging Station 09043 (Millicent Bridge) is entered in the Register of Hydrometric Stations of Ireland as an inactive staff gauge station with flow measurements recorded for hydrometric years 2000 to 2003. Gauging Station 09034 (Straffan Upstream) is entered into the Register of Hydrometric Stations in Ireland as a data logger station. Gauging Station 09013 (Straffan Downstream) is entered in the Register of Hydrometric Stations of Ireland as an active recorder station.

4.2 OPW PFRA Indicative Flood Mapping

Preliminary Flood Risk Assessment (PFRA) Mapping for Ireland was produced by the OPW in 2011. OPW PFRA flood map number 2019/MAP/236/A illustrates indicative flood zones within this area of County Kildare.

Figure 4 below illustrates an extract from the above predictive flood map in the vicinity of the proposed development site.

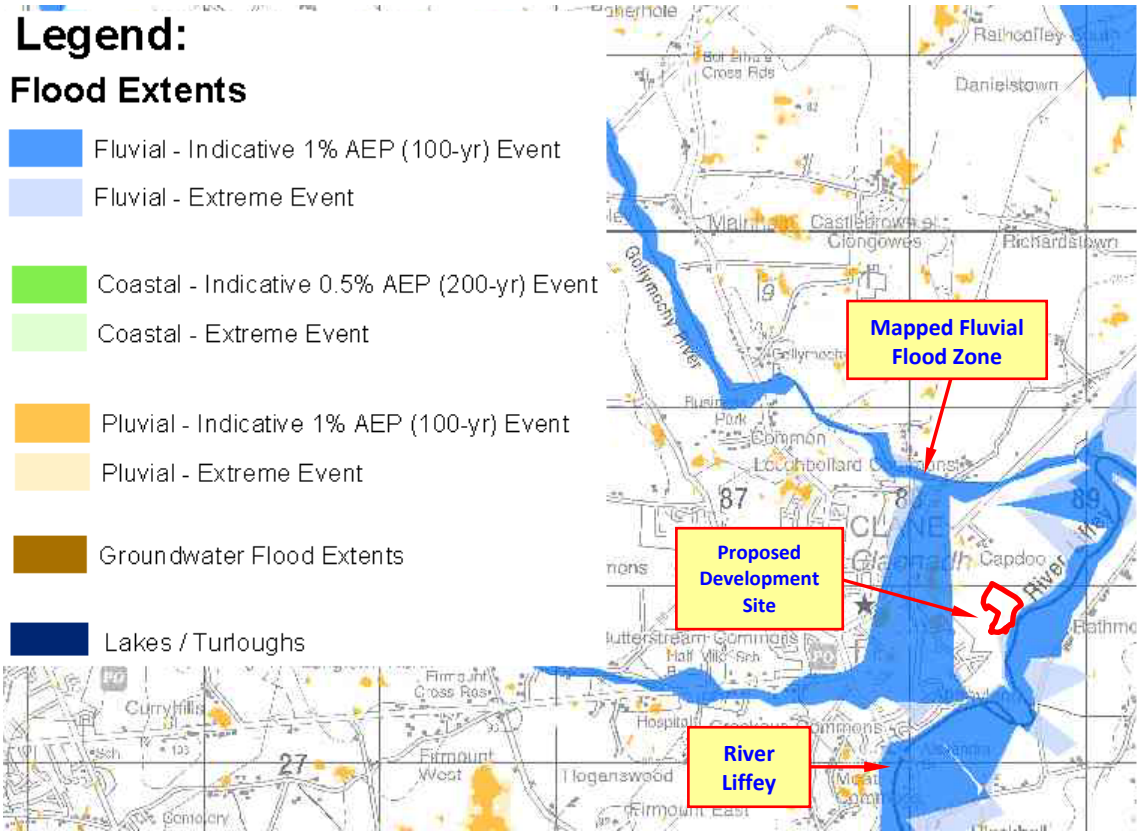


Figure 4 – PFRA Mapping

The PFRA flood mapping indicates mapped indicative fluvial flood zones adjacent to the east site boundary and within the south-east corner of the proposed development site.

No pluvial or groundwater flood zones are mapped within the boundary of the proposed development site.

Figure 5 below illustrates the PFRA predictive flood zones from *Figure 4* overlaid onto higher resolution background mapping.

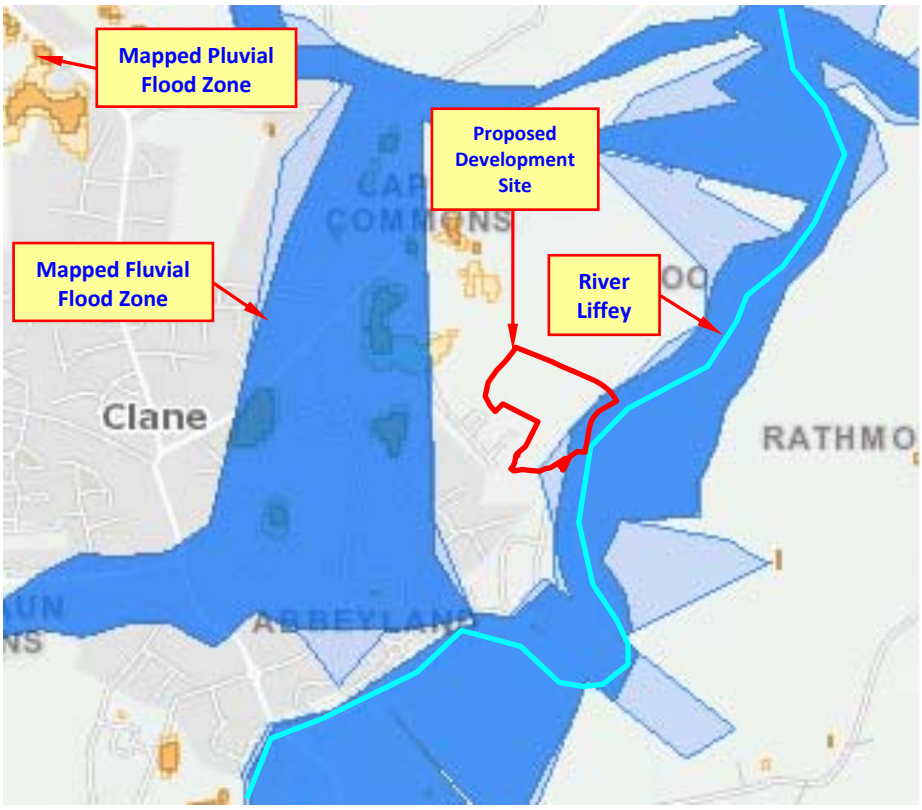


Figure 5 – PFRA Indicative Fluvial Flood Mapping

It should be noted that the predicted extent of flooding illustrated on these maps was developed using a low resolution digital terrain model (DTM) and illustrated flood extents are intended to be indicative only. The flood extents mapped on the PFRA maps are not intended to be used on a site specific basis.

4.3 OPW Flood Maps Website

The OPW Flood Maps Website (www.floodmaps.ie) was consulted in relation to available historical or anecdotal information on any flooding incidences or occurrences in the vicinity of the proposed development site. *Figure 6* below illustrates mapping from the Flood Maps website in the vicinity of the site.

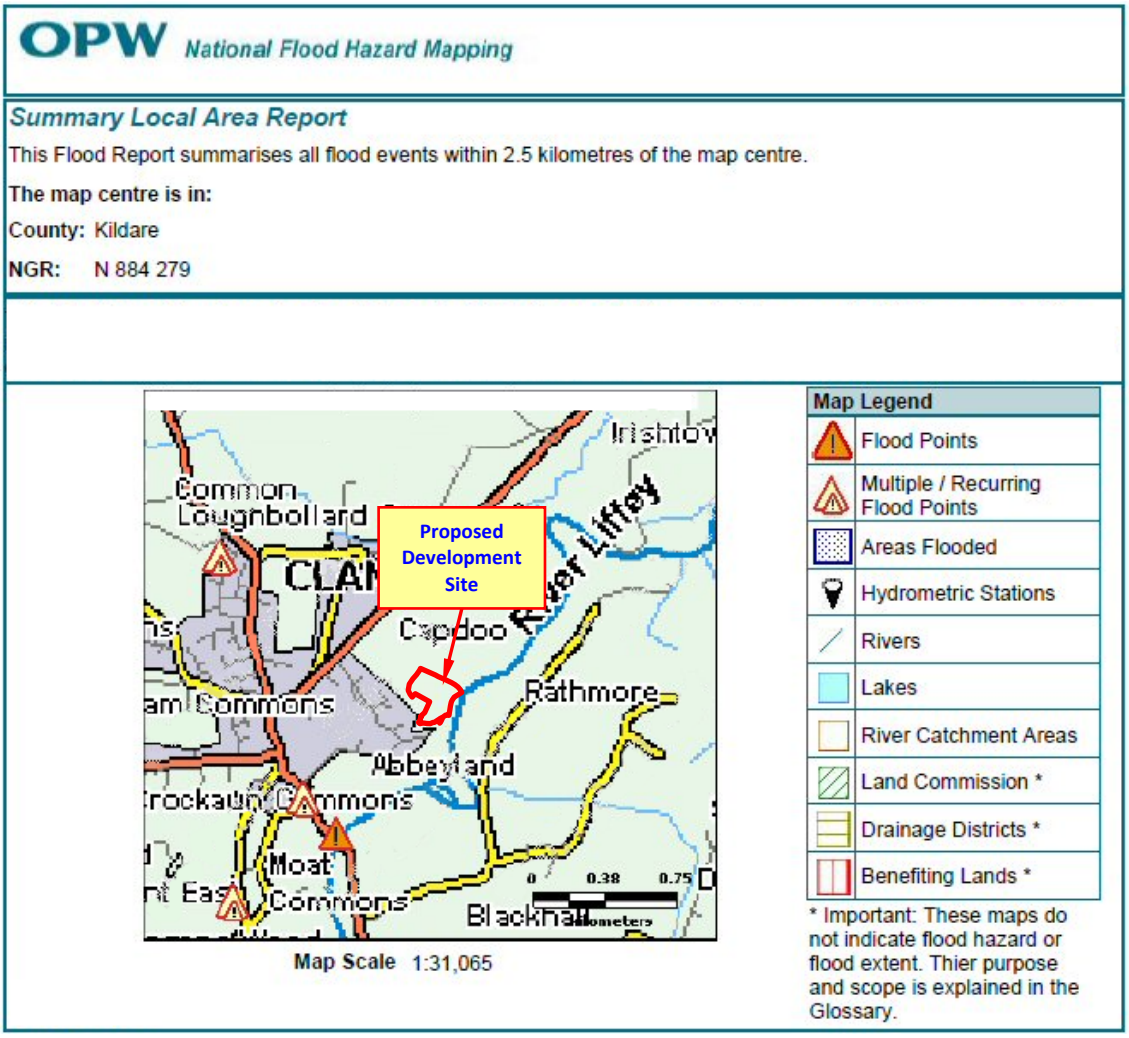


Figure 6 – OPW Flood Maps

Figure 6 above indicates no historic instances of flooding recorded within or adjacent to the proposed development site. A number of historical or anecdotal instances of flooding which have occurred in Clane are indicated however, most notably at Loughbollard, in the vicinity of Alexander Bridge, Millicent Road and Commons.

The OPW Flood Maps website also contains a number of ESB maps that illustrate recorded flood levels during the flood of 1954. This has been documented as a significant flood event in the middle catchment of the River Liffey. *Figure 6A* below illustrates an extract of recorded flood levels at Alexandra Bridge, Clane, which is approximately 1360m upstream of the proposed development site.

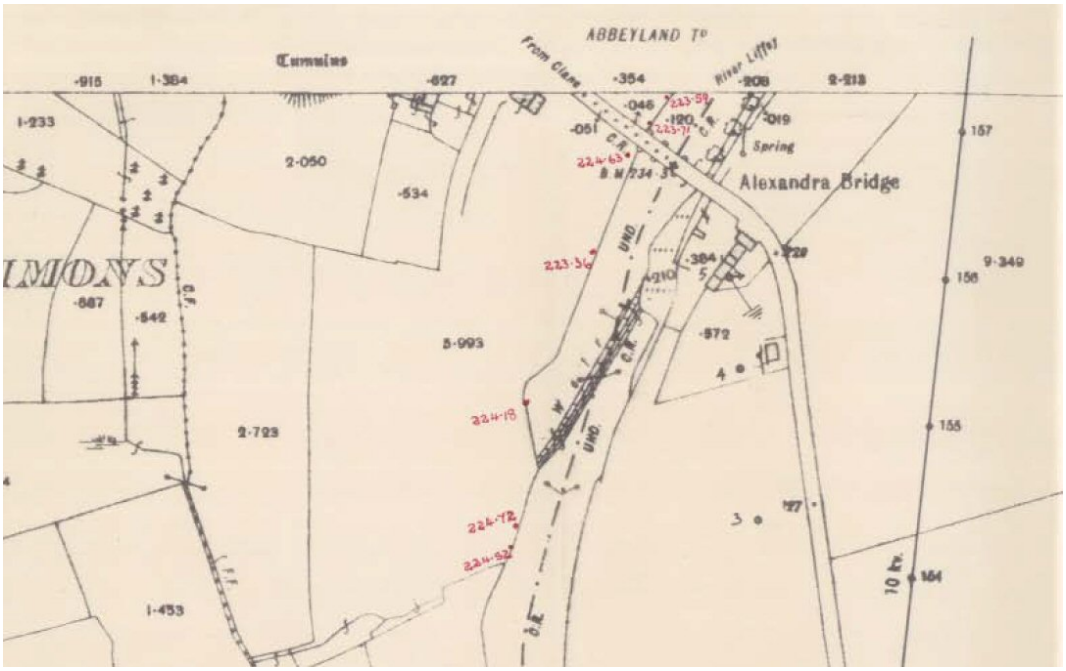


Figure 6A

The levels illustrated in *Figure 6A* above are in feet and reduced to Poolbeg datum. Converting to metres and reducing to Malin datum the recorded flood levels range from 65.49m (OD) to 65.38m (OD) in the vicinity of Alexandra Bridge. The flood event of 1954 has an estimated return period of 1 in 75 years.

4.4 Ordnance Survey Historic Mapping

Available historic mapping for the area was consulted, as this can provide evidence of historical flooding incidences or occurrences. The maps that were consulted were the historical 6-inch maps (pre-1900), and the historic 25-inch map series.

Figures 7 and *8* below show the historic mapping for the area of the proposed development site.

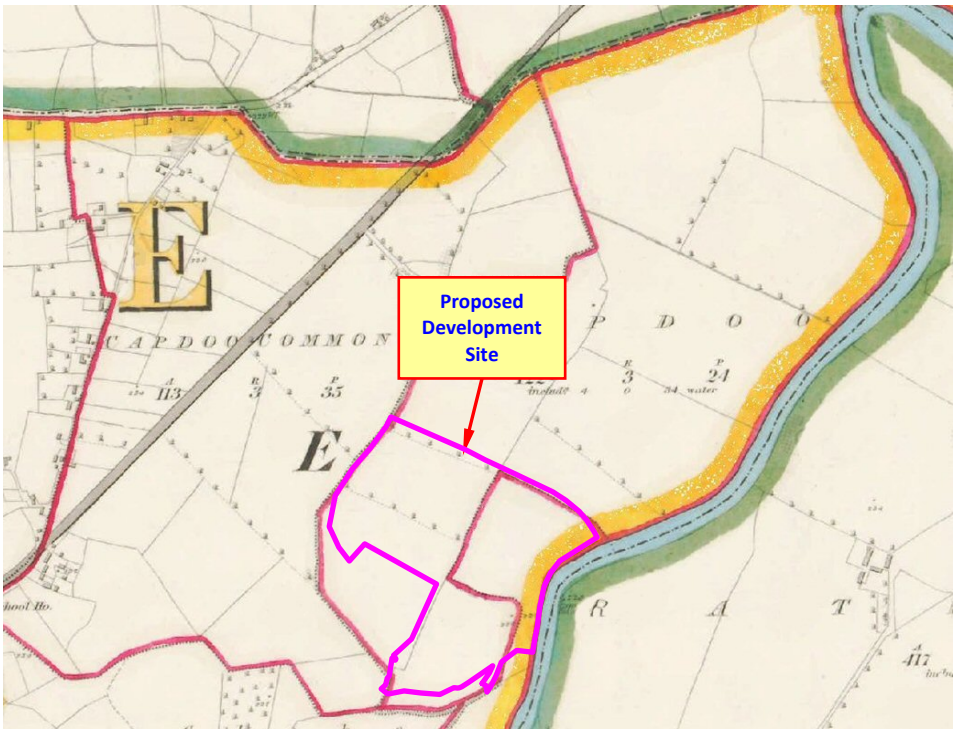


Figure 7 – Historic 6-Inch Mapping

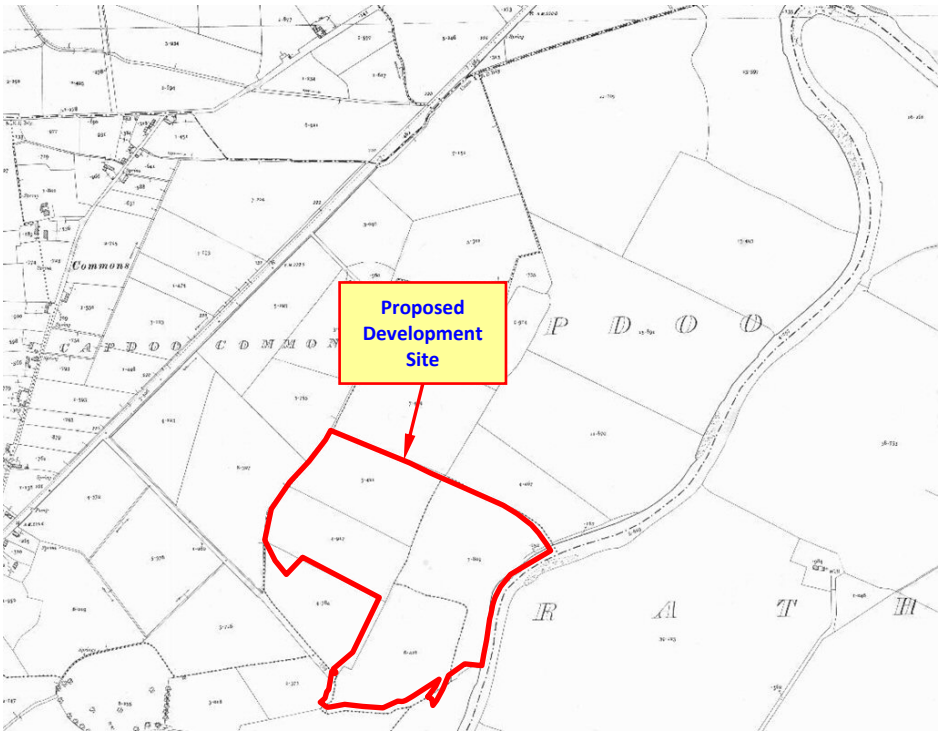


Figure 8 – Historic 25-Inch Mapping

The historic 6 inch and 25 inch mapping does not indicate any historical or anecdotal instances of flooding within or adjacent to the boundary of the proposed development site.

4.5 Geological Survey of Ireland Mapping

The alluvial deposit maps of the Geological Survey of Ireland (GSI) were consulted to assess the extent of any alluvial deposits in the vicinity of the proposed development site. Alluvium deposits can be indicative of areas that have flooded in the recent geological past.

Figure 9 below illustrates the sub-soils mapping for the general area of the proposed development site.

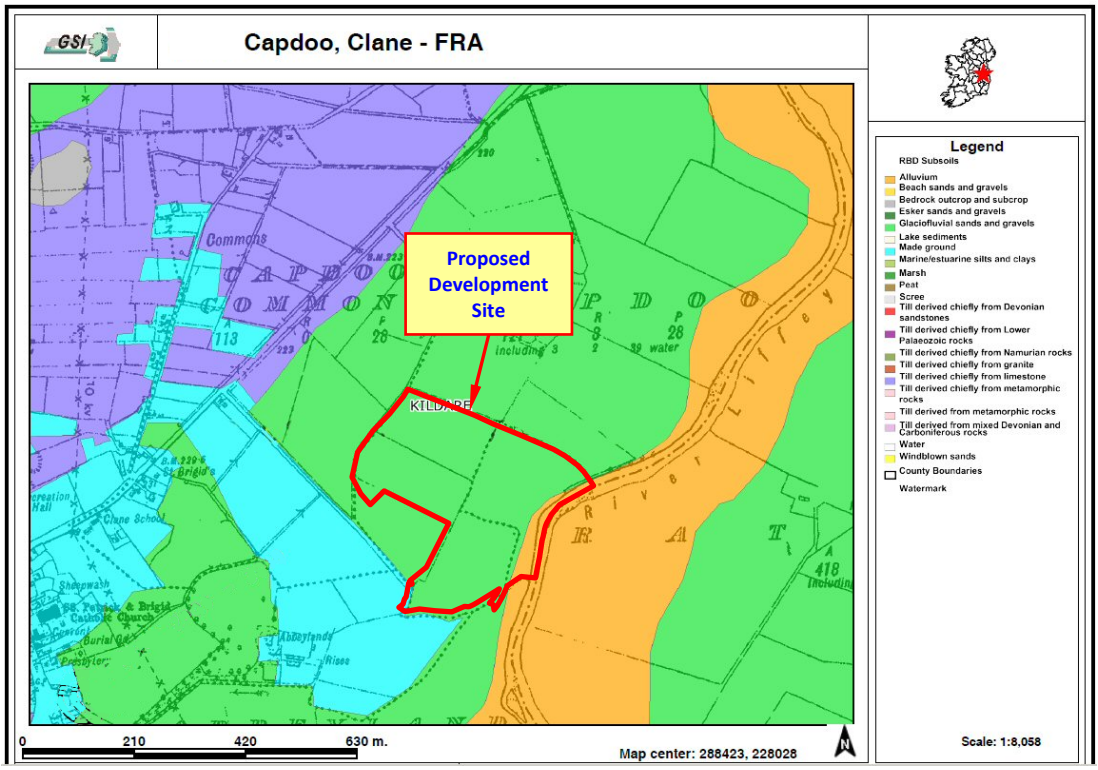


Figure 9 – GSI Subsoil Mapping

Figure 9 above indicates that the sub-soil conditions at the proposed development site consist mostly of Glaciofluvial sands and gravel. An area of Alluvium deposits is mapped within the eastern boundary of the site and adjacent to the River Liffey.

4.6 Eastern CFRAM Study

The Eastern Region Catchment Flood Risk & Management Study (CFRAMS) has been undertaken by the OPW and the Final version of the flood maps were issued in June 2016. Flood risk extent and depth maps for further assessment areas within Co Kildare have also been produced. OPW CFRAMS predictive flood map number *E09LA_EXFCD_F1_10* illustrates predictive extreme fluvial flood extent zones associated with the River Liffey in the vicinity of the proposed development site.

Figure 10 below (extracted from CFRAMS flood map *E09CAM_EXFCD_F1_24*), illustrates the predicted extreme 10% AEP (1 in 10 year), 1% AEP (1 in 100 year) or 0.1% AEP (1 in 1000 year) fluvial flood extents in the vicinity of the proposed development site.

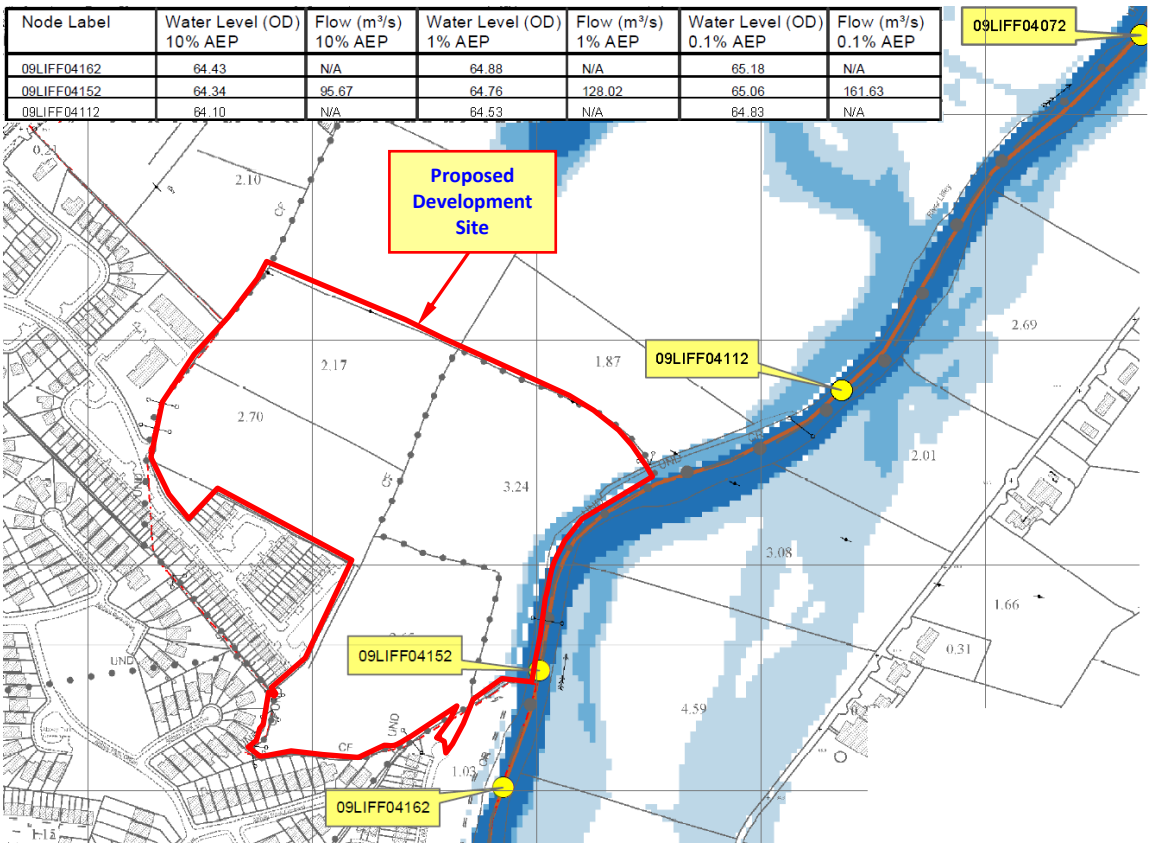


Figure 10 – Eastern CFRAMS Fluvial Flood Maps

Figure 10 above indicates that an area of the proposed development site falls within a 1% AEP (1 in 100 year) and 0.1% AEP (1 in 1000 year) fluvial flood event in the River Liffey.

The CFRAMS flood map also provides information on predicted water levels & flows for 10% AEP, 1% AEP and 0.1% AEP fluvial flood events at various node points along the River Liffey.

The node points closest to the proposed development site are referenced as node point *09LIFF04162* located at the upstream boundary of the proposed site, node point *09LIFF04152* located adjacent to the proposed site and *node point 09LIFF04112* located at the downstream boundary of the proposed site. Details of the predicted extreme fluvial flood levels & flood volumes for the CFRAMS node points in the general vicinity of the proposed development site are listed in *Table 2* below, which has been extracted from CFRAMS flood map reference *E09CAM_EXFCD_F1_24.*

Node Label	Water Level (mOD) 10% AEP	Flow (m3/s) 10% AEP	Water Level (mOD) 1% AEP	Flow (m3/s) 1% AEP	Water Level (mOD) 0.1% AEP	Flow (m3/s) 0.1% AEP
09LIFF04162	64.43	-	64.88	-	65.18	-
09LIFF04152	64.34	95.67	64.76	128.02	65.06	161.63
09LIFF04112	64.10	-	64.53	-	64.83	-

Table 2 –CFRAMS Fluvial Map - Predicted Flood Volumes & Levels

Predictive fluvial flood depth maps have also been produced as part of the Eastern CFRAM Study for this area of Clane. *Figure 11* and *Figure 12* below, duplicated from the Eastern CFRAM Study, illustrate the predictive flood depths for the area of the proposed development for the 1% AEP (1 in 100 year) and 0.1% AEP (1 in 1000 year) fluvial flood events respectively.

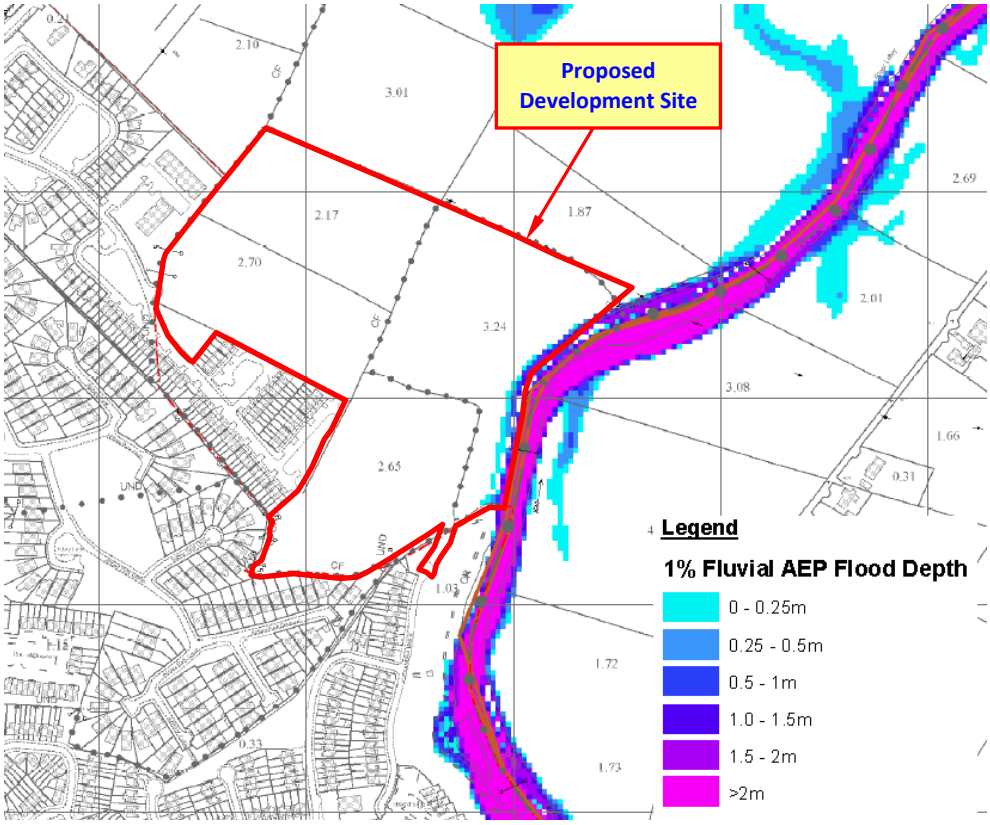


Figure 11 – Eastern CFRAMS 1% AEP Fluvial Flood Depth Map

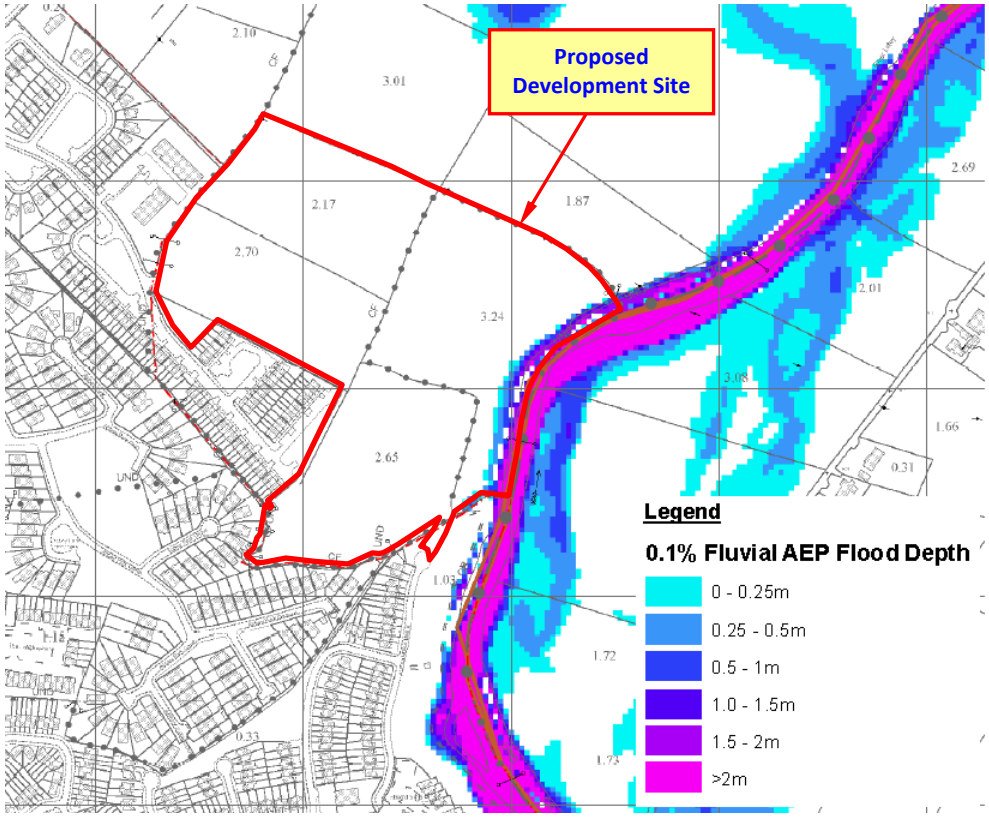


Figure 12 – Eastern CFRAMS 0.1% AEP Fluvial Flood Depth Map

Figure 11 and *Figure 12* above indicate predicted 1% AEP and 0.1% AEP fluvial flood depths of 0.25m-1.0m along the eastern boundary of the proposed development site.

The Eastern CFRAM flood maps are predictive flood maps, in that they provide predicted flood extent and depth information for a 'design' flood event that has an estimated probability of occurrence (e.g., the 1% AEP event), rather than information for floods that have occurred in the past.

4.7 Kildare County Development Plan

Reference to Map 9.1 (Drawing Number 200/16/1000) of the Kildare County Development Plan 2017-2023 indicates that a mapped fluvial 'Flood Zone B' is located close to the east site boundary. An extract from the above map is illustrated in *Figure 13* below:-

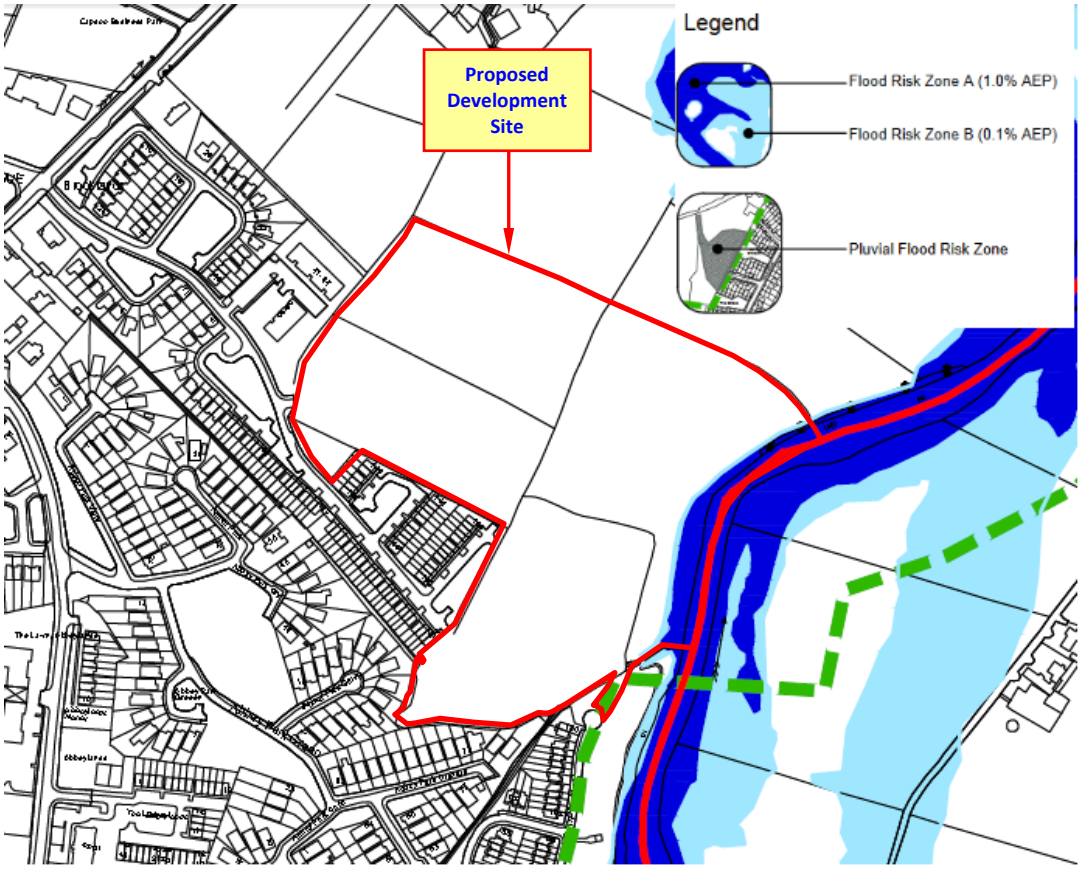


Figure 13 – Kildare County Development Plan Map

Figure 13 above indicates that the proposed development site would not be significantly impacted by a 1% AEP (1 in 100 year) or 0.1% AEP (1 in 1000 year) fluvial flood event.

5 Scoping Assessment

The purpose of the scoping stage is to identify possible flood risks and to implement the necessary level of detail and assessment to assess these possible risks, and to ensure these can be adequately addressed in the flood risk assessment. The scoping exercise should also identify that sufficient quantitative information is already available to complete a flood risk assessment appropriate to the scale and nature of the development proposed.

The above screening assessment indicates that an area of proposed development site may be at risk from fluvial flooding but that the area of the site is not at significant risk from pluvial or groundwater flooding.

In consideration of the information collated as part of the screening exercise, and the availability of other information and data specific to the area of the proposed development site, it is considered that sufficient quantitative information to complete an appropriate flood risk assessment for the proposed development site cannot be derived from the information collated as part of the screening exercise alone.

While the current flood extent maps for the area produced as part of the Eastern CFRAM study are based on the results of detailed hydraulic modelling undertaken along the River Liffey and do provide a reasonably accurate delineation of flood zones and prediction of flood depths in the general vicinity of the proposed development site, this mapping is based on a localised digital terrain model (DTM) of the general Clane area and can be subject to local DTM errors or variations. It is therefore necessary to undertake a more accurate site specific delineation of the predictive 1% AEP and 0.1% AEP fluvial flood extents at the location of the proposed development site.

The potential or possible flood risk to the proposed development site is assessed in the subsequent 'Assessing Flood Risk' stage of this study report.

6 Assessment of Flood Risk

Flood risk from a particular watercourse is normally assessed for a 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) flood event, in accordance with Kildare County Council development plans and with the DOEHLG guidelines *'The Planning System and Flood Risk Management Guidelines'*.

The following sections present an analysis and assessment of the estimated 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) extreme flood events in the River Liffey adjacent to the proposed development site.

6.1 Estimation of Extreme Flood Levels in the River Liffey

Extreme flood levels at the location of the proposed development site have been derived as part of the Eastern CFRAM Study. The most relevant node points in respect of the proposed development site are Node Point *09LIFF04162, 09LIFF04152* and *09LIFF04112* that are located just upstream, adjacent to the east site boundary and 185m downstream of the site respectively. Predicted 1% AEP (1 in 100 year) and 0.1% AEP (1 in 1000 year) flood levels at these node points are applicable for the purpose of assessing fluvial flood risk to the proposed development site.

Table 2 above lists the predicted extreme flood levels for these node points.

6.2 Climate Change

In general, it is a requirement of Kildare County Council that the required Design Flow to be used for flood extent delineation is the 1 in 100 year flood flow event plus 20% in order to allow for climate change'.

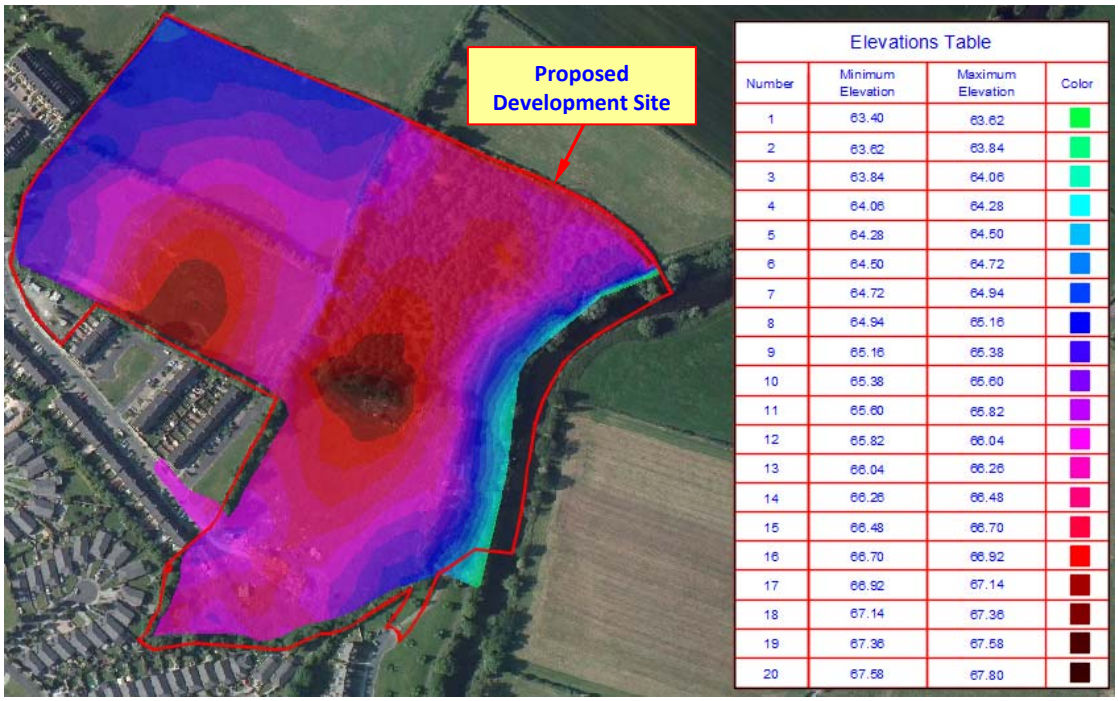
'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' DOEHLG 2009 Technical Appendix A, Section 1.6 recommends that, where mathematical models are not available climate change flood extents can be assessed by using the Flood Zone B outline as a surrogate for Flood Zone A with allowance for the possible impacts of climate change. Therefore, the predicted 0.1% AEP flood levels listed in *Table 2* above are considered to be representative of the 1% AEP plus climate change food levels.

6.3 Topographical Survey & Contour Mapping

In order to assist in the assessment of any potential flood inundation in the general location of the proposed development site, topographical survey information was used to develop a Digital Terrain Model (DTM) of the existing site area. Development of a DTM allows the predicted extreme flood levels listed in *Table 2* above to be analysed in more detail at the specific location of the proposed development site.

The DTM and contour mapping was developed utilising digital survey information of the proposed development site and the Autodesk Civil 3D 2015 software package. The DTM and contour mapping developed for the proposed development site is illustrated in *Figure 14* and *Figure 15* below.

Figure 14 – Contour Mapping



Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	63.40	63.62	
2	63.62	63.84	
3	63.84	64.06	
4	64.06	64.28	
5	64.28	64.50	
6	64.50	64.72	
7	64.72	64.94	
8	64.94	65.16	
9	65.16	65.38	
10	65.38	65.60	
11	65.60	65.82	
12	65.82	66.04	
13	66.04	66.26	
14	66.26	66.48	
15	66.48	66.70	
16	66.70	66.92	
17	66.92	67.14	
18	67.14	67.36	
19	67.36	67.58	
20	67.58	67.80	

Figure 15 – Topographical Survey Derived DTM

6.4 Flood Zone Mapping & Delineation

Utilising the DTM illustrated in *Figure 14* and *Figure 15* above, and the 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) extreme flood levels for the River Liffey for the reach adjacent to the proposed development site, the Site Specific 1% AEP and 0.1% AEP flood zones were delineated using the hydrology module of the Autodesk Civil 3D 2015 software package. The software enables a user defined flood level to be mapped and modelled onto a DTM over the full extent of the area being assessed.

Drawing Number IE1835-002-A, Appendix A illustrates the delineated 1 in 100 year flood extent (Flood Zone 'A') and 1 in 1000 year flood extent (Flood Zone 'B') over the full area of the proposed development site.

Drawing Number IE1835-003-A, Appendix A illustrates representative cross-sectional elevations through the site, illustrating existing and proposed ground levels and finished floor levels relative to predictive 1% AEP and 0.1% AEP flood levels in the River Liffey.

The above analysis and flood zone delineation undertaken as part of this Site Specific Flood Risk Assessment (SSFRA) indicates that no works are proposed within a delineated flood zone. The area of the proposed development site works is therefore not susceptible to flood inundation during an extreme fluvial event in the River Liffey.

However, in order to ensure sustainable development of this particular site the following is recommended:-

- *Proposed finished ground levels (road levels, etc) should be constructed to a minimum level of 0.15m above the maximum predicted 0.1% AEP flood level – i.e. 65.18m + 0.15m =* ***65.33m OD****.*
- *Proposed finished floor levels should be constructed to a minimum level of 0.30m above the maximum predicted 0.1% AEP flood level – i.e. 65.18m + 0.30m =* ***65.48m OD****.*
- *The proposed development site should incorporate an appropriately designed stormwater management system that should limited stormwater runoff from the site to existing pre-development runoff rates.*

In consideration of the assessment and analysis undertaken as part of this Site Specific Flood Risk Assessment, and the recommendations above, development of the site as proposed would not result in an adverse impact to the existing hydrological regime of the area and would not result in an increased flood risk elsewhere.

7 Proposed Development in the Context of the Guidelines

In the context of the *'Planning System and Flood Risk Management Guidelines, DOEHLG, 2009'* three flood zones are designated in consideration of flood risk to a particular development site.

Flood Zone 'A' – where the probability of flooding from rivers and watercourses is the highest (greater than 1% or 1 in 100 year for river and watercourse flooding and 0.5% or 1 on 200 for coastal or tidal flooding).

Flood Zone 'B' – where the probability of flooding from rivers and watercourses is moderate (between 0.1% or 1 in 1000 year for river and watercourse flooding and 0.5% or 1 on 200 for coastal or tidal flooding).

Flood Zone 'C' – where the probability of flooding from rivers and watercourses is low or negligible (less than 0.1% of 1 in 1000 year for both river and watercourse and coastal flooding). *Flood Zone 'C'* covers all areas that are not in *Zones 'A'* or '*B*'.

The *'Planning System and Flood Risk Management Guidelines'* list the planning implications for each flood zone, as summarised below:-

Zone A – High Probability of Flooding. Most types of development would not be considered in this zone. Development in this zone should be only be considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the *'Planning System and Flood Risk Management Guidelines'* justification test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space and outdoor sports and reaction would be considered appropriate in this zone.

Zone B – Moderate Probability of Flooding. Highly vulnerable development such as hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses, strategic transport and essential utilities infrastructure would generally be considered inappropriate in this zone, unless the requirements of the justification test can be met. Less vulnerable development such as retail, commercial and industrial uses and recreational facilities might be considered appropriate in this zone.

In general however, less vulnerable development should only be considered in this zone if adequate lands or sites are not available in *Zone 'C'* and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to the development can be adequately managed and that development in this zone will not adversely affect adjacent lands and properties.

Zone C – Low to Negligible Probability of Flooding. Development in this zone is appropriate from a flood risk perspective. Developments in this zone are generally not considered at risk of fluvial flooding and would not adversely affect adjacent lands and properties from a flood risk perspective.

In the context of the '*Planning System and Flood Risk Management Guidelines, DOEHLG, 2009*' this flood risk assessment has determined that the area of the proposed development site works is not at significant risk of fluvial, coastal or direct pluvial flooding and therefore falls within Flood Zone 'C'.

Development of the site as proposed is therefore not subject to the requirements of The Justification Test.

8 Summary Conclusions

In consideration of the findings of this site specific flood risk assessment and analysis the following conclusions and recommendations are made in respect of the proposed development site:-

- *A Site Specific Flood Risk (SSFRA) assessment, appropriate to the type and scale of development proposed, and in accordance with 'The Planning System and Flood Risk Management Guidelines – DoEHLG-2009' has been undertaken.*
- *The area of the proposed development site has been screened, scoped and assessed for flood risk in accordance with the above guidelines.*
- *The primary flood risk to the proposed development site can be attributed to potential fluvial flooding from the River Liffey.*
- *The proposed development site is not at risk from pluvial or groundwater flooding.*
- *Utilising the Eastern CFRAM study estimated extreme flood water levels and a detailed DTM, constructed using topographical survey data of the existing site, the 1 in 100 year and 1 in 100 year plus climate change flood extents were delineated.*
- *This analysis has determined that the area of the proposed site falls within Flood Zone 'C'*. This is in agreement with the predictive 1% AEP and 0.1% AEP fluvial flood extents illustrated on the OPW CFRAMS flood maps.
- *Development proposals for the site are therefore not subject to the requirements of the Justification Test.*
- *In summary, and in consideration of the findings and recommendations of this Site Specific Flood Risk Assessment, development of the site as proposed would not result in an adverse impact to the existing hydrological regime of the area and would not result in an increased flood risk elsewhere.*
- *The development as proposed is therefore considered to be appropriate from a flood risk perspective.*

9 Summary Recommendations

- *It is recommended that proposed finished ground levels (road levels, etc) should be constructed to a minimum level of 0.15m above the maximum predicted 0.1% AEP flood level upstream of the site – i.e. 65.18m + 0.15m =* ***65.33m OD****.*
- *It is recommended that proposed finished floor levels should be constructed to a minimum level of 0.30m above the maximum predicted 0.1% AEP flood level upstream of the site – i.e. 65.18m + 0.30m =* ***65.48m OD****.*

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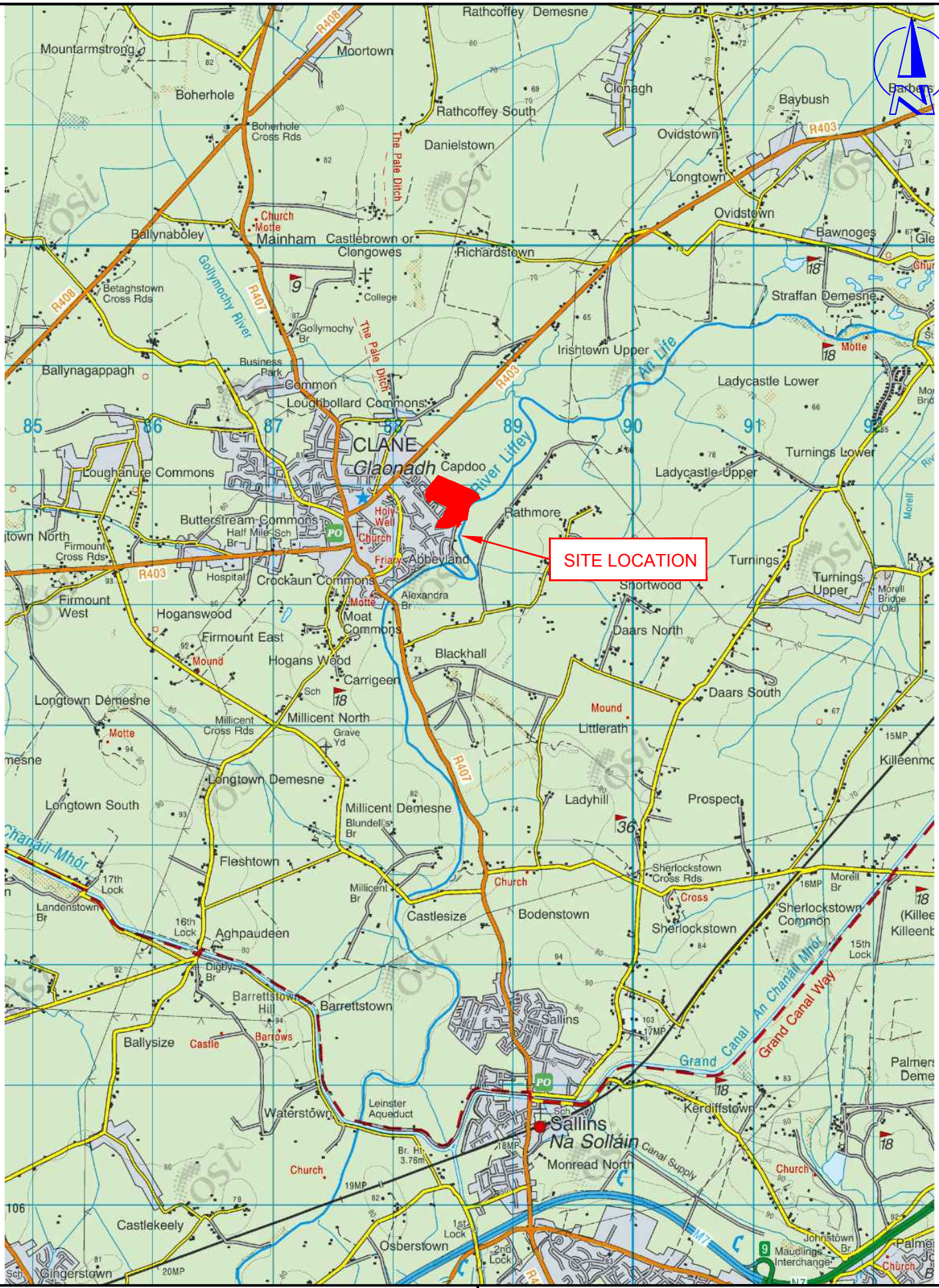
WATER-ENVIRONMENTAL-CIVIL

APPENDIX A

Drawing Number IE1835-001-A

Drawing Number IE1835-002-A

Drawing Number IE1835-003-A



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IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL

Project Title:	FLOOD RISK ASSESSMENT
Project Address:	Capdoo & Abbeylands, Dublin Road, Clane Co. Kildare
Client:	WEST STAR GROUP LTD.
Drg. Title:	SITE LOCATION MAP

Dwg.Scale:	Date:	Dwg.No:	Job No:	Revision:	Dwg.By:
NTS	14-03-19	IE1835-001	IE1835	A	LMc

LEGEND

- SITE BOUNDARY
- 100 YEAR FLOOD EXTENT (1% AEP) FLOOD ZONE 'A'
- 1000 YEAR FLOOD EXTENT (0.1% AEP) FLOOD ZONE 'B'
- FLOOD ZONE 'C'

rev.	date	amendment	drn	ckd
A	15.03.19	PLANNING	LMc	PMS

PROPOSED DEVELOPMENT AT
CAPDOO & ABBEYLANDS, DUBLIN ROAD,
CLANE, CO. KILDARE,

SITE SPECIFIC FLOOD
RISK ASSESSMENT

1 IN 100 YEAR (1% AEP) &
1 IN 1000 YEAR (0.1% AEP)
FLUVIAL FLOOD EXTENTS

IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL

INNOVATION CENTRE
GREEN ROAD
CARLOW

TELEPHONE: 059 91 33084
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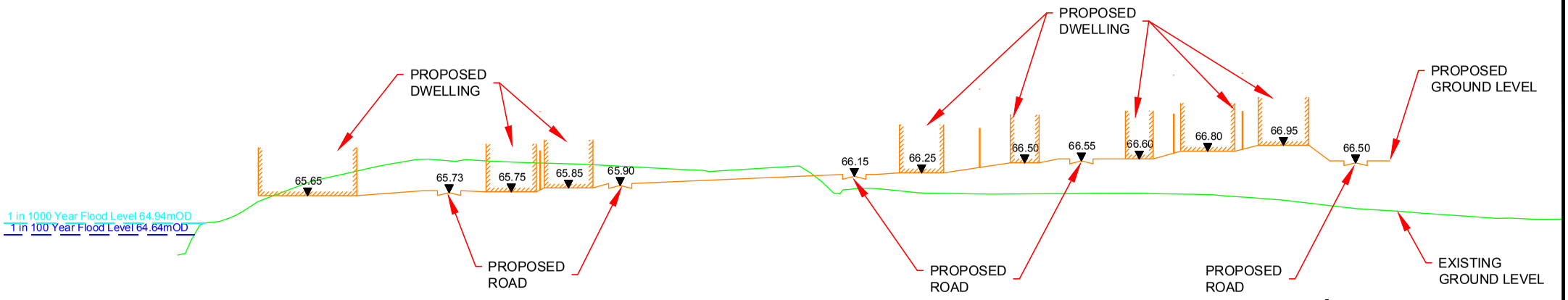
file location: N:\IE1835\DRAWINGS		scale: 1:2000	A3
drawing status: PLANNING		datum: MALIN	
		drawn: LMC	
drawing no. IE1835-002	rev A	checked: NOM	
		approved: PMS	
		date: 14.03.2019	

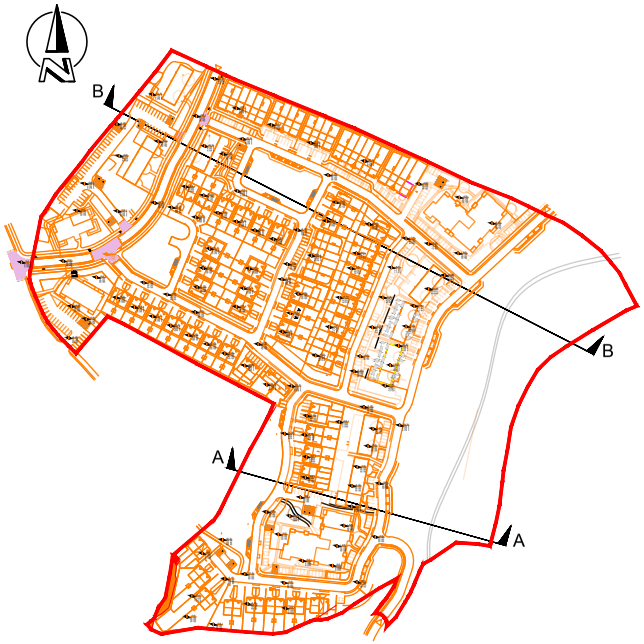
LEGEND

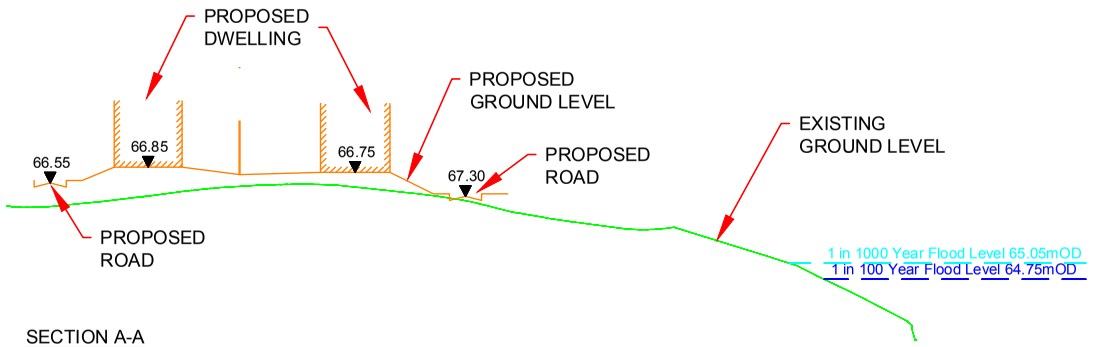
SITE BOUNDARY



SECTION B-B

SCALE: H 1/1000 : V 1/100





SECTION A-A

SCALE: H 1/1000 : V 1/100

rev.	date	amendment	drn	ckd
A	21.03.19	PLANNING	LMc	PMS

PROPOSED DEVELOPMENT AT
CAPDOO&ABBEYLANDS, DUBLIN ROAD,
CLANE,
CO. KILDARE.

SITE SPECIFIC FLOOD
RISK ASSESSMENT

PROPOSED & EXISTING
CROSS SECTIONS

IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL

INNOVATION CENTRE
GREEN ROAD
CARLOW

TELEPHONE: 059 91 33084
FAX: 059 91 40499
EMAIL: info@iece.ie

file location: N:\IE1835\DRAWINGS		scale: AS SHOWN @ A3	
drawing status: PLANNING		datum: MALIN	
		drawn: LMC	
drawing no. IE1835-003	rev A	checked: NOM	
		approved: PMS	
		date: 21.03.2019	

Appendix 6.1 Infiltration Test Report

IGSL Limited

Westar Group

Dublin Road, Clane

Infiltration Test Report

Project No. 21680

April 2019

Report

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Document Verification

Project: Dublin Road, Clane

Project No. 21680

Revision	Date	Title		
Rev 0	15/04/2019	Report		
	Copies	Document Format	Prepared By	Reviewed By
	1	Digital	Brian Green Chartered Engineer	David Green Chartered Engineer
	To	Westar Group		
Revision	**Date**	**Title**		
	Copies	Document Format	Prepared By	Reviewed By
	To			
Revision	**Date**	**Title**		
	Copies	Document Format	Prepared By	Reviewed By
	To			
Revision	**Date**	**Title**		
	Copies	Document Format	Prepared By	Reviewed By
	To			

Report on Infiltration Testing
At
Housing Development
Dublin Road, Clane
On behalf of
Westar Group

Report No. 21680

Contents

Appendices

Report on Infiltration Testing
At
Housing Development
Dublin Road, Clane
On behalf of
Westar Group

Report No. 21680 Date April 2019

1.0 Introduction

The proposed new housing development at Dublin Road, Clane will include a system for the storage and dispersion of storm water. Infiltration tests were, therefore, carried out to ascertain the suitability of the sub-soils for permeable pavement purposes.

2.0 Sub-soil conditions

The test pits revealed brown sandy clay with occasional gravel to the excavated depth of 0.65 metres. No groundwater was encountered during the course of excavation operations

3.0 Infiltration Testing

The infiltration tests were performed in accordance with BRE Digest 365 'Soakaway Design'.

To obtain a measure of the infiltration rate of the sub-soils, water was poured into each of the three test pits, and records taken of the fall in water level against time. This procedure was repeated twice more to ensure saturation of the sub-soils.

The infiltration rate is the volume of water dispersed per unit exposed area per unit of time, and is generally expressed as metres/minute or metres/second. Designs are based on the slowest infiltration rate, which is generally calculated from the final cycle.

The results for the final two stages of testing, following the saturation periods, are enclosed in appendix1.

4.0 Principles of Permeable Pavement

Permeable paving systems are designed to provide temporary storage of water in a reservoir of crushed stone underlying the paved area. In an attenuation system where the sub-soils are relatively impermeable the base and sides of the reservoir are lined with an impermeable membrane and the stored water is discharged through an outflow pipe to a suitable surface water system. Where the sub-soils can provide infiltration a geotextile replaces the impermeable liner. As an added precaution an overflow pipe can be installed to avoid flooding of the paved area in extreme storm conditions.

5.0 Results

The infiltration rates indicated by the field tests are shown in Table 1.

Location	Infiltration Rate (f-value)	
	* (First Cycle) (m/min)	* (Second Cycle) (m/min)
SA01	0.0003	0.0001
SA02	0.00007	0
SA03	0.00006	0
SA04	0.0002	0.00008
SA05	0.0023	0.002
SA06	0	
SA07	0	

* First and second measured cycles were preceded by saturation stages

Table 1

The results indicate that the soils in the vicinity of SA02, SA03, SA06 and SA07 are relatively impermeable.

Appendix 1 Infiltration Test Results

Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA01 (First Cycle)
Engineer Westar Group
Date: 05.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Dry
0.20	0.65	Firm brown/light brown sandy CLAY with rare gravel, locally very sandy	

Field Data

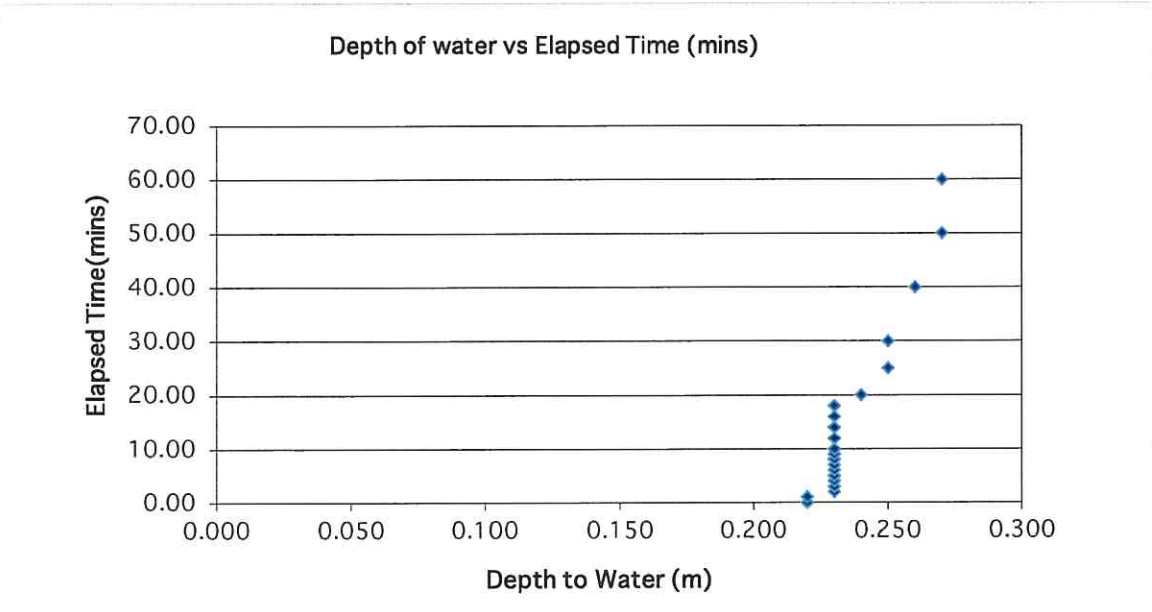
Depth to Water (m)	Elapsed Time (min)
0.220	0.00
0.220	1.00
0.230	2.00
0.230	3.00
0.230	4.00
0.230	5.00
0.230	6.00
0.230	7.00
0.230	8.00
0.230	9.00
0.230	10.00
0.230	12.00
0.230	14.00
0.230	16.00
0.230	18.00
0.240	20.00
0.250	25.00
0.250	30.00
0.260	40.00
0.270	50.00
0.270	60.00

Field Test

Depth of Pit (D)	0.65	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.20	m
Initial depth to Water =	0.22	m
Final depth to water =	0.270	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.65	m
Base area=	0.72	m2
*Av. side area of permeable stratum over test perio	1.458	m2
Total Exposed area =	2.178	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0.0003 m/min or 4.59137E-06 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Capdoo, Clane, Co. Kildare — Contract No. 21680
Test No. SA01 (Second Cycle)
Engineer Westar Group
Date: 05.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	
0.20	0.65	Firm brown/light brown sandy CLAY with rare gravel, locally very sandy	Dry

Field Data

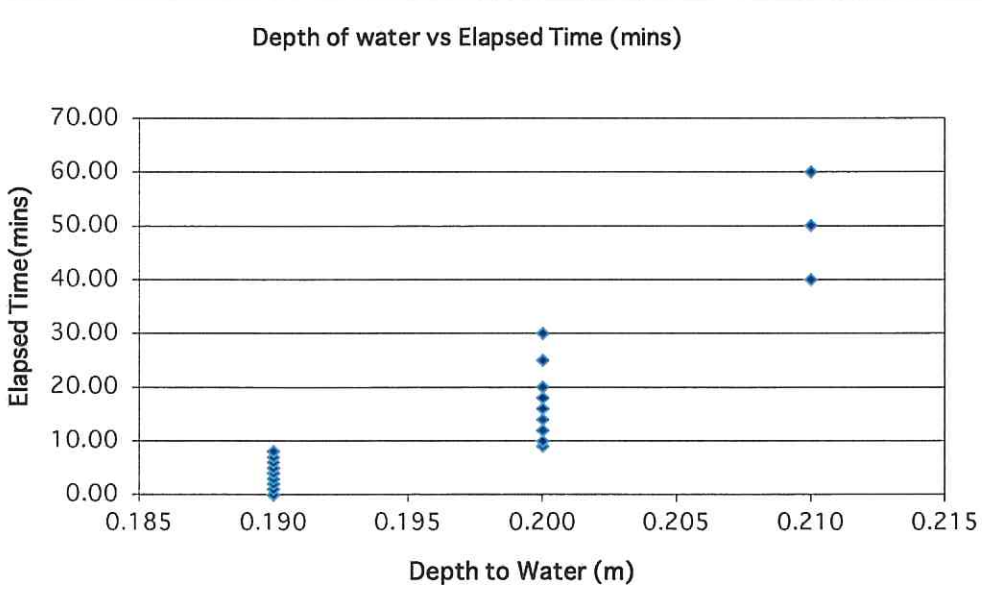
Depth to Water (m)	Elapsed Time (min)
0.190	0.00
0.190	1.00
0.190	2.00
0.190	3.00
0.190	4.00
0.190	5.00
0.190	6.00
0.190	7.00
0.190	8.00
0.200	9.00
0.200	10.00
0.200	12.00
0.200	14.00
0.200	16.00
0.200	18.00
0.200	20.00
0.200	25.00
0.200	30.00
0.210	40.00
0.210	50.00
0.210	60.00

Field Test

Depth of Pit (D)	0.65	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.20	m
Initial depth to Water =	0.19	m
Final depth to water =	0.210	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.65	m
Base area=	0.72	m2
*Av. side area of permeable stratum over test perio	1.62	m2
Total Exposed area =	2.34	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0.0001 m/min or 1.7094E-06 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA02 (First Cycle)
Engineer Westar Group
Date: 05.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Dry
0.20	0.60	Firm brown/light brown sandy CLAY with rare gravel	

Field Data

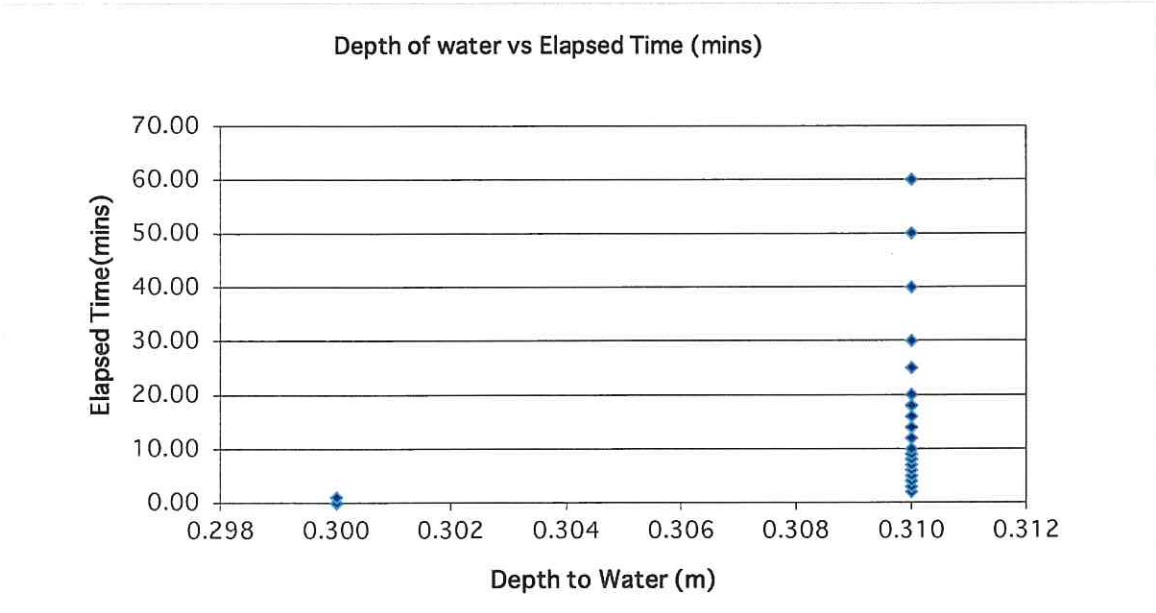
Depth to Water (m)	Elapsed Time (min)
0.300	0.00
0.300	1.00
0.310	2.00
0.310	3.00
0.310	4.00
0.310	5.00
0.310	6.00
0.310	7.00
0.310	8.00
0.310	9.00
0.310	10.00
0.310	12.00
0.310	14.00
0.310	16.00
0.310	18.00
0.310	20.00
0.310	25.00
0.310	30.00
0.310	40.00
0.310	50.00
0.310	60.00

Field Test

Depth of Pit (D)	0.60	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.00	m
Initial depth to Water =	0.30	m
Final depth to water =	0.310	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.60	m
Base area=	0.8	m2
*Av. side area of permeable stratum over test perio	1.062	m2
Total Exposed area =	1.862	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 7E-05 m/min or 1.19346E-06 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA02 (Second Cycle)
Engineer Westar Group
Date: 05.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Dry
0.20	0.60	Firm brown/light brown sandy CLAY with rare gravel	

Field Data

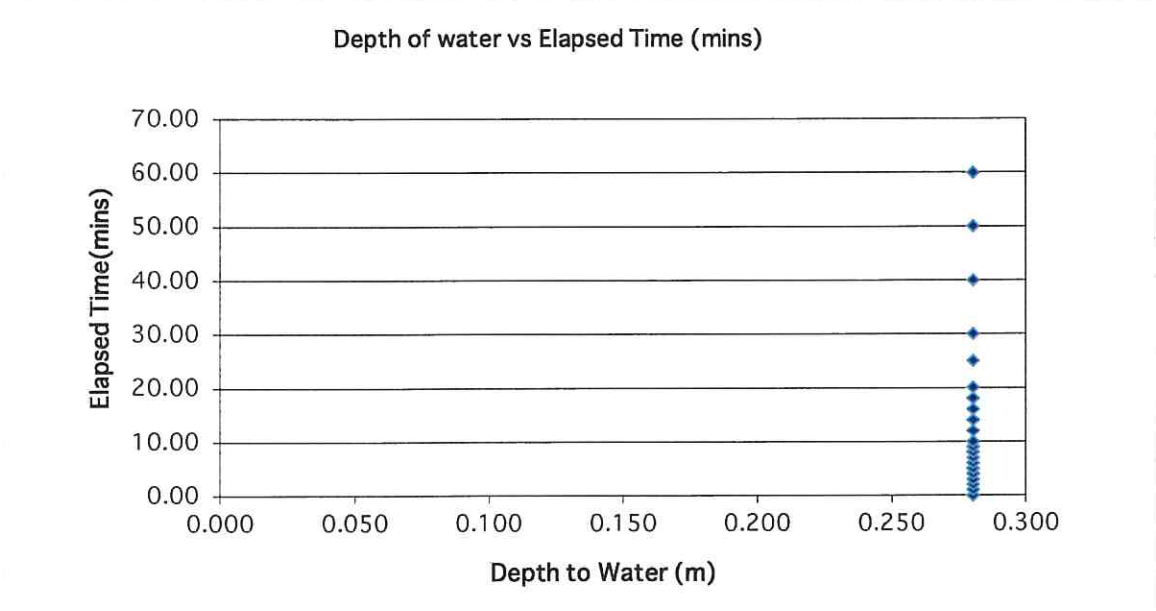
Depth to Water (m)	Elapsed Time (min)
0.280	0.00
0.280	1.00
0.280	2.00
0.280	3.00
0.280	4.00
0.280	5.00
0.280	6.00
0.280	7.00
0.280	8.00
0.280	9.00
0.280	10.00
0.280	12.00
0.280	14.00
0.280	16.00
0.280	18.00
0.280	20.00
0.280	25.00
0.280	30.00
0.280	40.00
0.280	50.00
0.280	60.00

Field Test

Depth of Pit (D)	0.60	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.00	m
Initial depth to Water =	0.28	m
Final depth to water =	0.280	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.60	m
Base area=	0.8	m2
*Av. side area of permeable stratum over test perio	1.152	m2
Total Exposed area =	1.952	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA03 (First Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Dry
0.20	0.65	Firm brown/brownish grey very sandy SILT with occasional gravel, gravel	
		content increases with depth	

Field Data

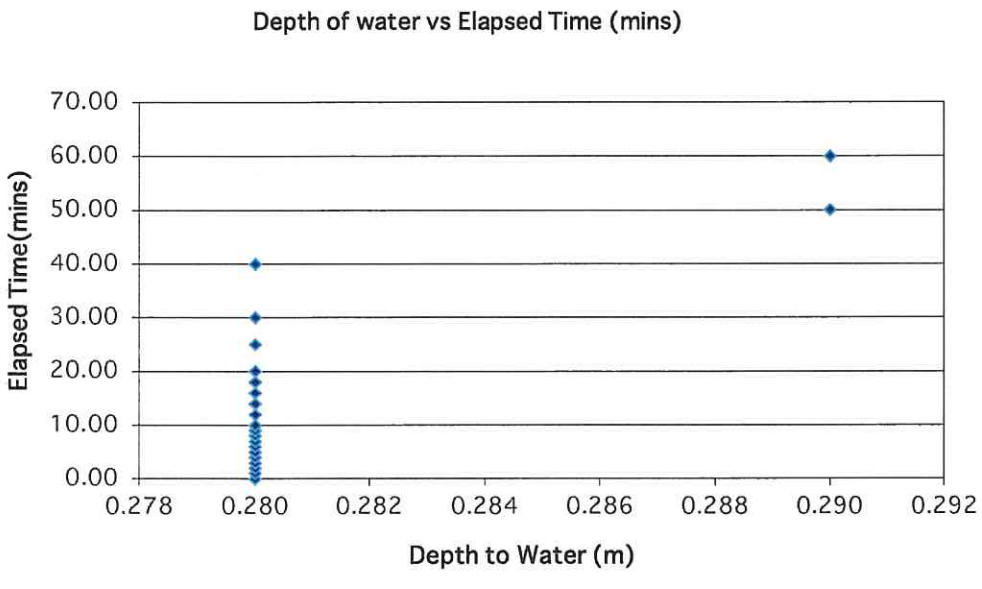
Depth to Water (m)	Elapsed Time (min)
0.280	0.00
0.280	1.00
0.280	2.00
0.280	3.00
0.280	4.00
0.280	5.00
0.280	6.00
0.280	7.00
0.280	8.00
0.280	9.00
0.280	10.00
0.280	12.00
0.280	14.00
0.280	16.00
0.280	18.00
0.280	20.00
0.280	25.00
0.280	30.00
0.280	40.00
0.290	50.00
0.290	60.00

Field Test

Depth of Pit (D)	0.65	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.00	m
Initial depth to Water =	0.28	m
Final depth to water =	0.290	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.65	m
Base area=	0.8	m2
*Av. side area of permeable stratum over test perio	1.314	m2
Total Exposed area =	2.114	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 6E-05 m/min or 1.05119E-06 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA03 (Second Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	
0.20	0.65	Firm brown/brownish grey very sandy SILT with occasional gravel, gravel	Dry
		content increases with depth	

Field Data

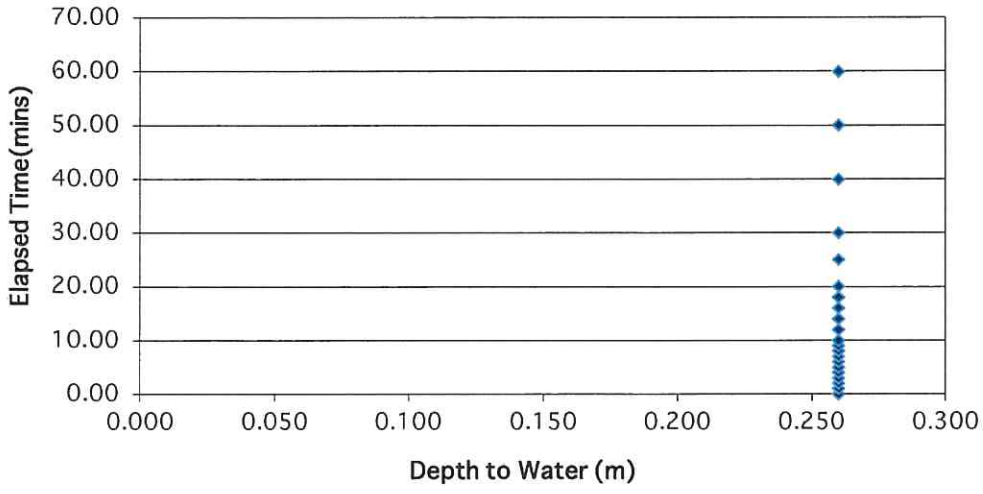
Depth to Water (m)	Elapsed Time (min)
0.260	0.00
0.260	1.00
0.260	2.00
0.260	3.00
0.260	4.00
0.260	5.00
0.260	6.00
0.260	7.00
0.260	8.00
0.260	9.00
0.260	10.00
0.260	12.00
0.260	14.00
0.260	16.00
0.260	18.00
0.260	20.00
0.260	25.00
0.260	30.00
0.260	40.00
0.260	50.00
0.260	60.00

Field Test

Depth of Pit (D)	0.65	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.00	m
Initial depth to Water =	0.26	m
Final depth to water =	0.260	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.65	m
Base area=	0.8	m2
*Av. side area of permeable stratum over test perio	1.404	m2
Total Exposed area =	2.204	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA04 (First Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Dry
0.20	0.65	Firm brown slightly sandy SILT with rare gravel	

Field Data

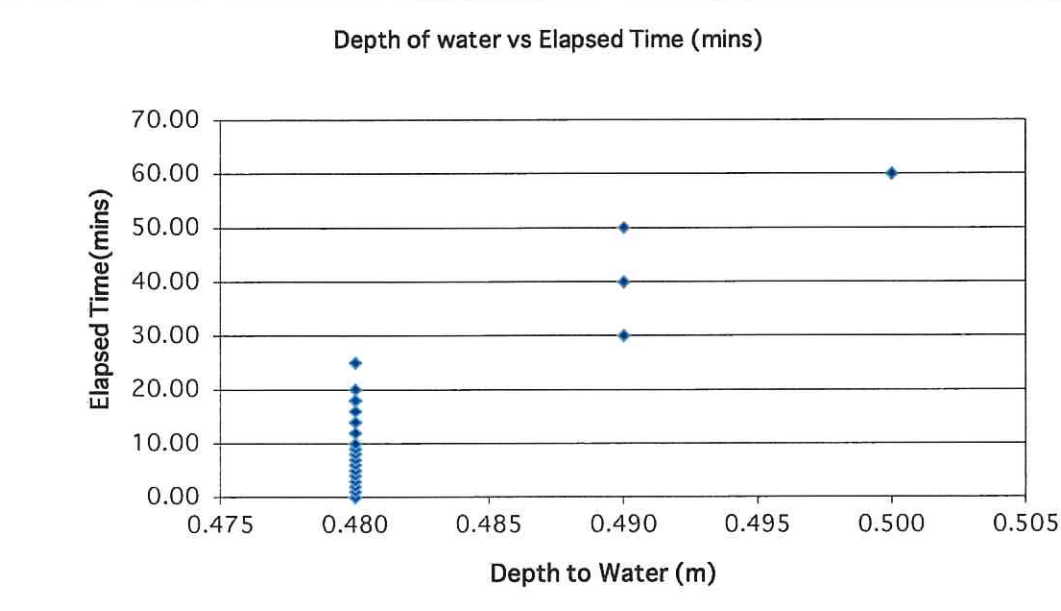
Depth to Water (m)	Elapsed Time (min)
0.480	0.00
0.480	1.00
0.480	2.00
0.480	3.00
0.480	4.00
0.480	5.00
0.480	6.00
0.480	7.00
0.480	8.00
0.480	9.00
0.480	10.00
0.480	12.00
0.480	14.00
0.480	16.00
0.480	18.00
0.480	20.00
0.480	25.00
0.490	30.00
0.490	40.00
0.490	50.00
0.500	60.00

Field Test

Depth of Pit (D)	0.65	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.40	m
Initial depth to Water =	0.48	m
Final depth to water =	0.500	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.65	m
Base area=	1.12	m2
*Av. side area of permeable stratum over test perio	0.704	m2
Total Exposed area =	1.824	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0.0002 m/min or 3.41131E-06 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA04 (Second Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Dry
0.20	0.65	Firm brown slightly sandy SILT with rare gravel	

Field Data

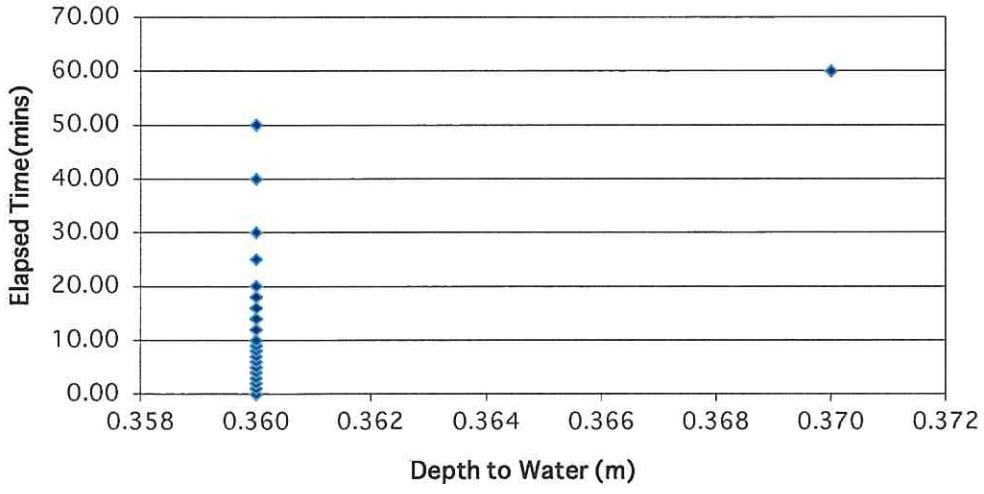
Depth to Water (m)	Elapsed Time (min)
0.360	0.00
0.360	1.00
0.360	2.00
0.360	3.00
0.360	4.00
0.360	5.00
0.360	6.00
0.360	7.00
0.360	8.00
0.360	9.00
0.360	10.00
0.360	12.00
0.360	14.00
0.360	16.00
0.360	18.00
0.360	20.00
0.360	25.00
0.360	30.00
0.360	40.00
0.360	50.00
0.370	60.00

Field Test

Depth of Pit (D)	0.65	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.40	m
Initial depth to Water =	0.36	m
Final depth to water =	0.370	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.65	m
Base area=	1.12	m2
*Av. side area of permeable stratum over test perio	1.254	m2
Total Exposed area =	2.374	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 8E-05 m/min or 1.31049E-06 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA05 (First Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Medium dense grey very silty GRAVELwith brick fragments	Dry
0.20	0.70	Firm brownish grey/grey sandy very gravelly SILT with rare cobbles up to 1(	

Field Data

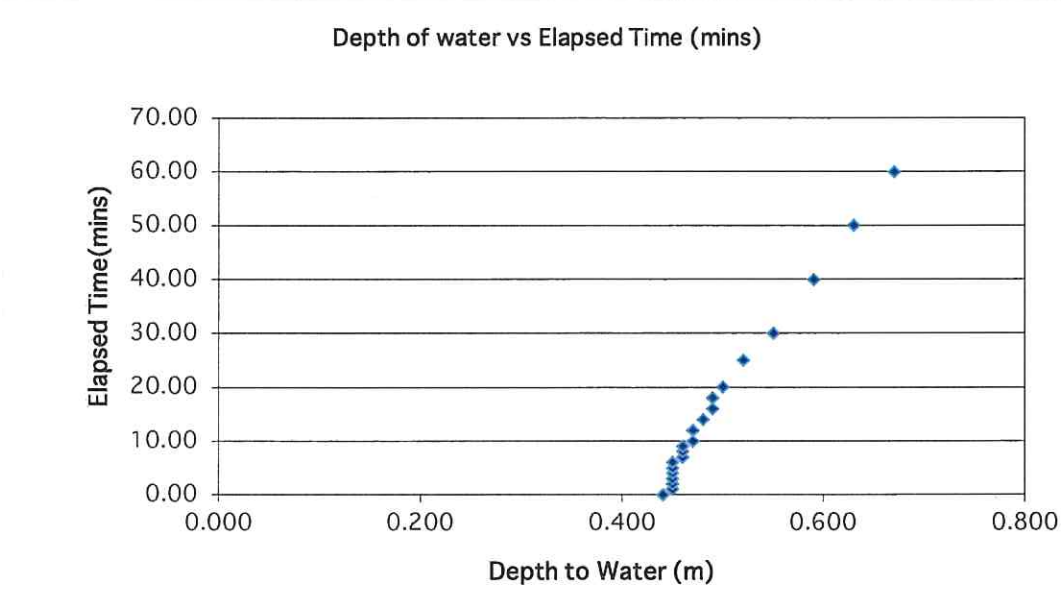
Depth to Water (m)	Elapsed Time (min)
0.440	0.00
0.450	1.00
0.450	2.00
0.450	3.00
0.450	4.00
0.450	5.00
0.450	6.00
0.460	7.00
0.460	8.00
0.460	9.00
0.470	10.00
0.470	12.00
0.480	14.00
0.490	16.00
0.490	18.00
0.500	20.00
0.520	25.00
0.550	30.00
0.590	40.00
0.630	50.00
0.670	60.00

Field Test

Depth of Pit (D)	0.70	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.00	m
Initial depth to Water =	0.44	m
Final depth to water =	0.670	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.70	m
Base area=	0.8	m2
*Av. side area of permeable stratum over test perio	0.522	m2
Total Exposed area =	1.322	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0.0023 m/min or 3.8662E-05 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA05 (Second Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Medium dense grey very silty GRAVELwith brick fragments	Dry
0.20	0.70	Firm brownish grey/grey sandy very gravelly SILT with rare cobbles up to 1(	

Field Data

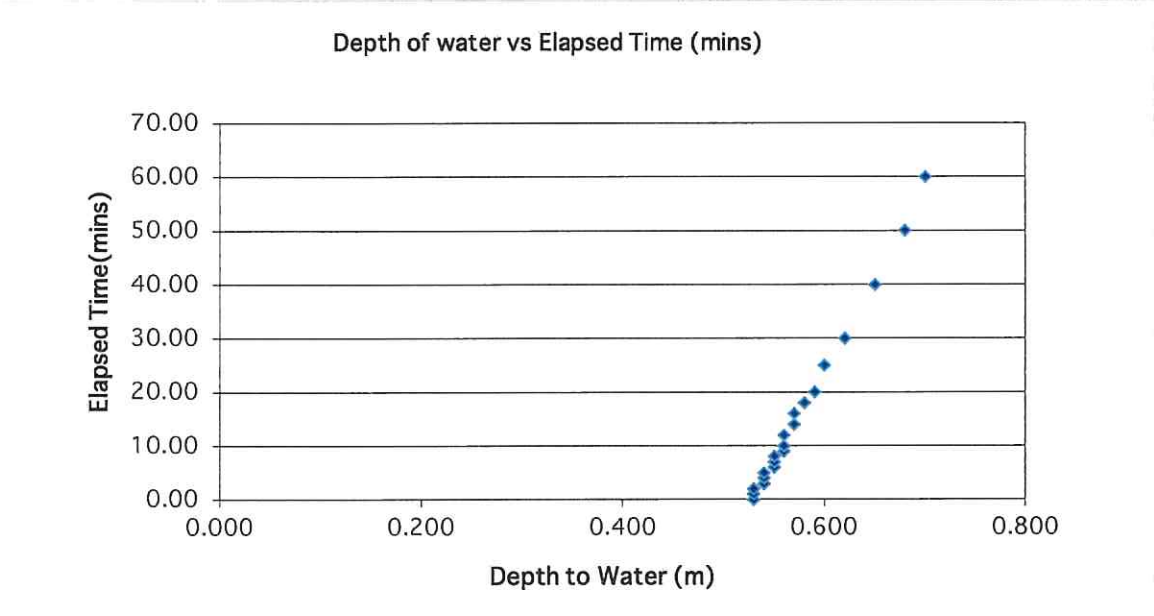
Depth to Water (m)	Elapsed Time (min)
0.530	0.00
0.530	1.00
0.530	2.00
0.540	3.00
0.540	4.00
0.540	5.00
0.550	6.00
0.550	7.00
0.550	8.00
0.560	9.00
0.560	10.00
0.560	12.00
0.570	14.00
0.570	16.00
0.580	18.00
0.590	20.00
0.600	25.00
0.620	30.00
0.650	40.00
0.680	50.00
0.700	60.00

Field Test

Depth of Pit (D)	0.70	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.00	m
Initial depth to Water =	0.53	m
Final depth to water =	0.700	m
Elapsed time (mins)=	60.00	
Top of permeable soil	0.20	m
Base of permeable soil	0.70	m
Base area=	0.8	m2
*Av. side area of permeable stratum over test perio	0.306	m2
Total Exposed area =	1.106	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0.002 m/min or 3.41571E-05 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA06 (First Cycle)
Engineer Westar Group
Date: 04.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	
0.20	0.70	Stiff brown/brownish grey sandy CLAY with rare to occasional gravel	Seepage at 1.8m
0.70	1.30	Firm brownsh grey very sandy CLAY with occasional gravel	
1.30	2.00	Firm light brownish grey clayey SAND with rare gravel	

Field Data

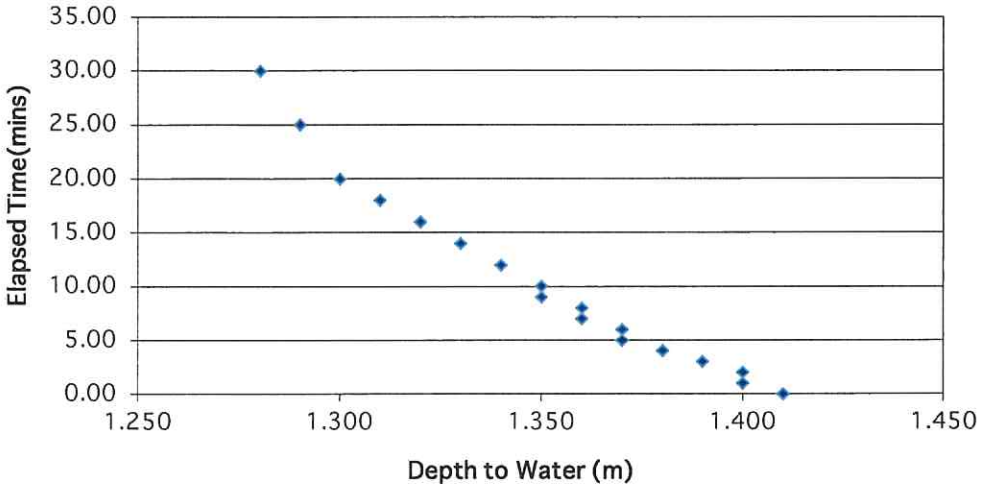
Depth to Water (m)	Elapsed Time (min)
1.410	0.00
1.400	1.00
1.400	2.00
1.390	3.00
1.380	4.00
1.370	5.00
1.370	6.00
1.360	7.00
1.360	8.00
1.350	9.00
1.350	10.00
1.340	12.00
1.330	14.00
1.320	16.00
1.310	18.00
1.300	20.00
1.290	25.00
1.280	30.00

Field Test

Depth of Pit (D)	2.00	m
Width of Pit (B)	0.80	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.41	m
Final depth to water =	1.280	m
Elapsed time (mins)=	30.00	
Top of permeable soil	0.20	m
Base of permeable soil	2.00	m
Base area=	1.2	m2
*Av. side area of permeable stratum over test perio	3.013	m2
Total Exposed area =	4.213	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Capdoo, Clane, Co. Kildare Contract No. 21680
Test No. SA07 (First Cycle)
Engineer Westar Group
Date: 05.04.2019

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL	Seepage at 1.75m
0.20	0.90	Firm brown/light brown sandy CLAY with rare gravel	
0.90	2.10	Firm grey/brownish grey very sandy CLAY with occasional gravel, contains	
		very clayey sand pockets	

Field Data

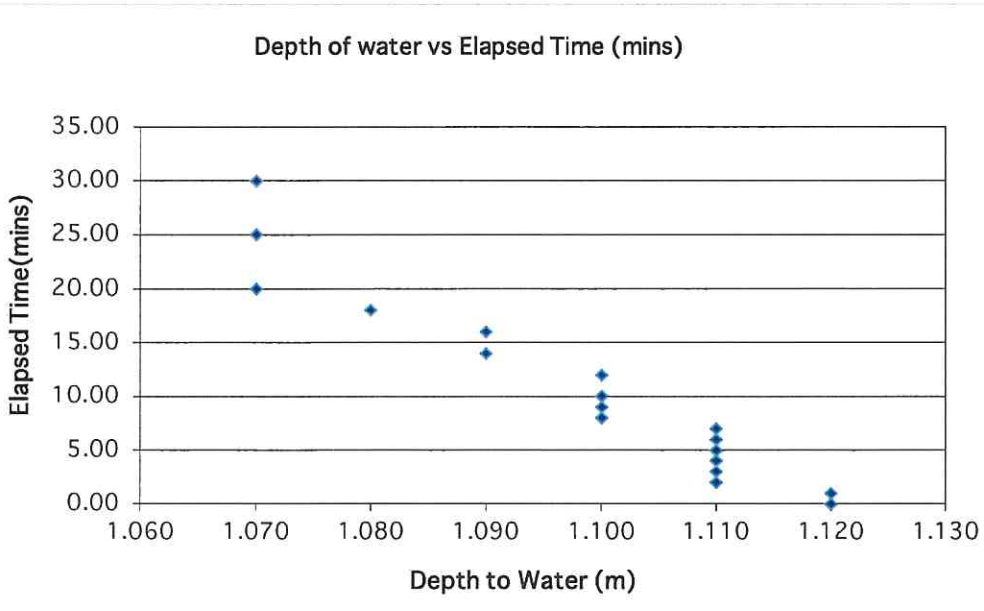
Depth to Water (m)	Elapsed Time (min)
1.120	0.00
1.120	1.00
1.110	2.00
1.110	3.00
1.110	4.00
1.110	5.00
1.110	6.00
1.110	7.00
1.100	8.00
1.100	9.00
1.100	10.00
1.100	12.00
1.090	14.00
1.090	16.00
1.080	18.00
1.070	20.00
1.070	25.00
1.070	30.00

Field Test

Depth of Pit (D)	2.10	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.40	m
Initial depth to Water =	1.12	m
Final depth to water =	1.070	m
Elapsed time (mins)=	30.00	
Top of permeable soil	0.20	m
Base of permeable soil	2.10	m
Base area=	0.84	m2
*Av. side area of permeable stratum over test perio	4.02	m2
Total Exposed area =	4.86	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Appendix 2 Photographs

SA01 1 of 4

SA01 2 of 4

SA01 3 of 4

SA01 4 of 4

SA02 1 of 4

SA02 2 of 4

SA02 3 of 4

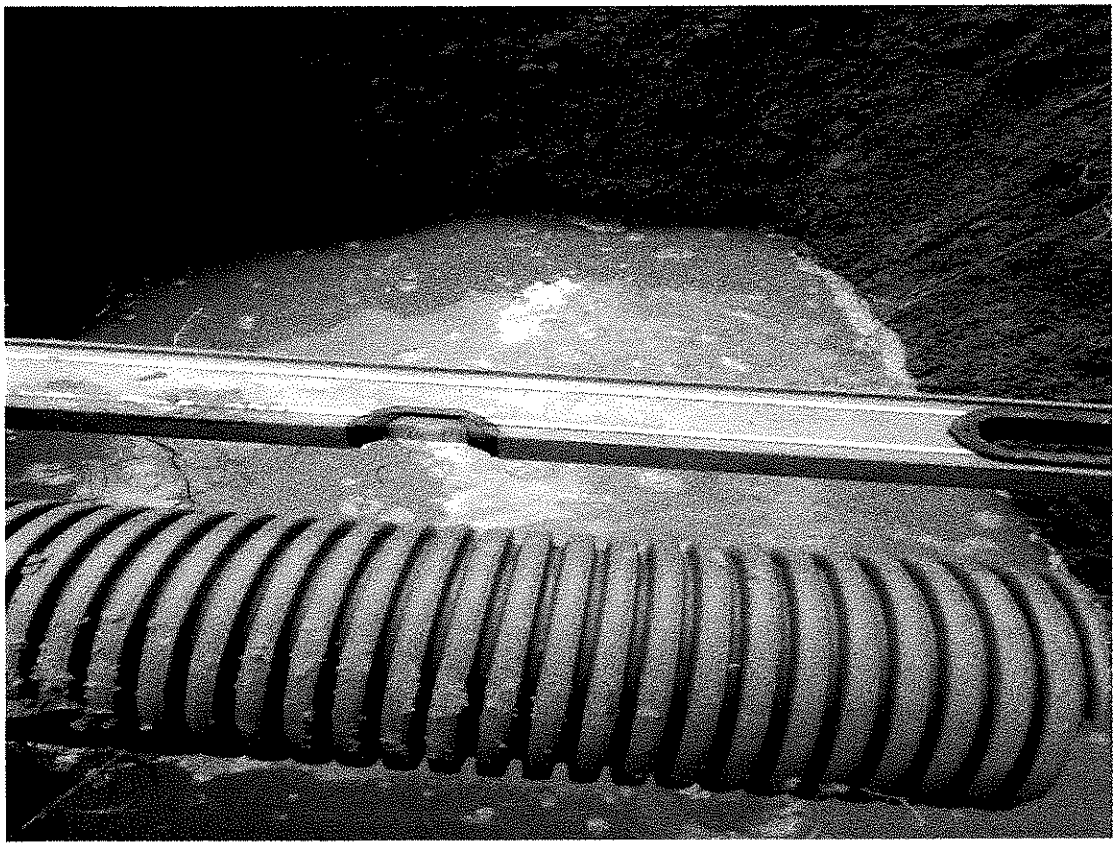
SA02 4 of 4

SA03 1 of 4

SA03 2 of 4

SA03 3 of 4

SA03 4 of 4

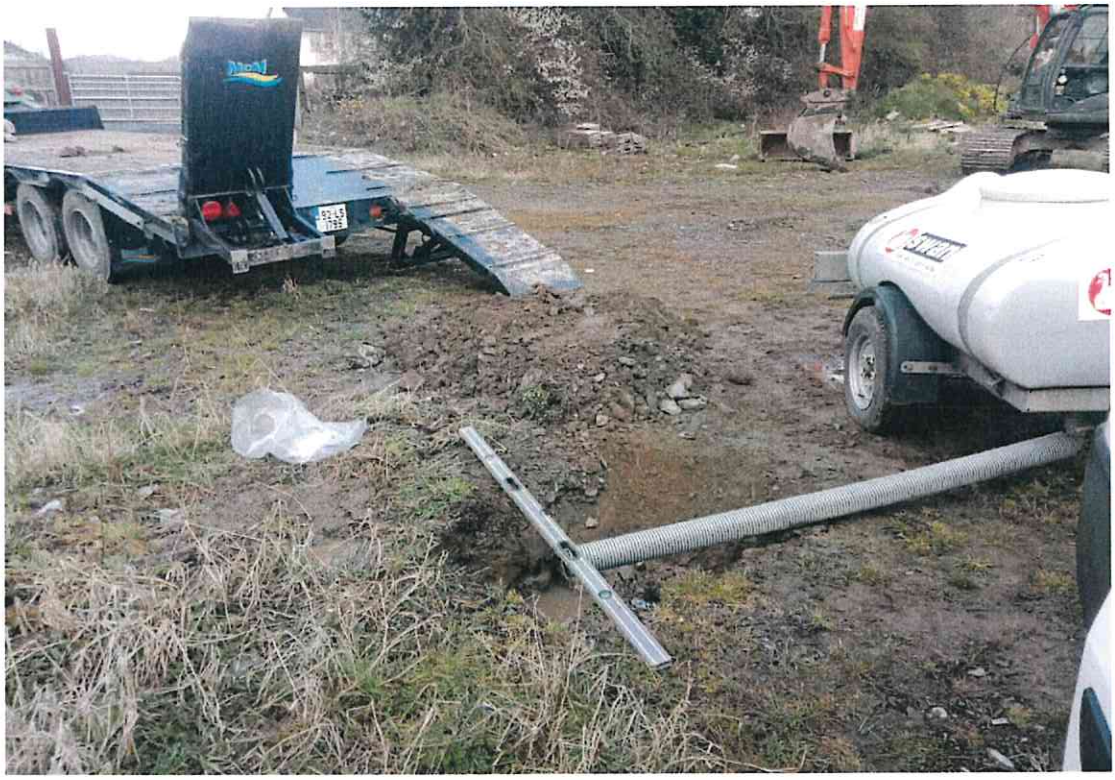


SA04 1 of 3

SA04 2 of 3

SA04 3 of 3

SA05 1 of 3



SA05 2 of 3

SA05 3 of 3

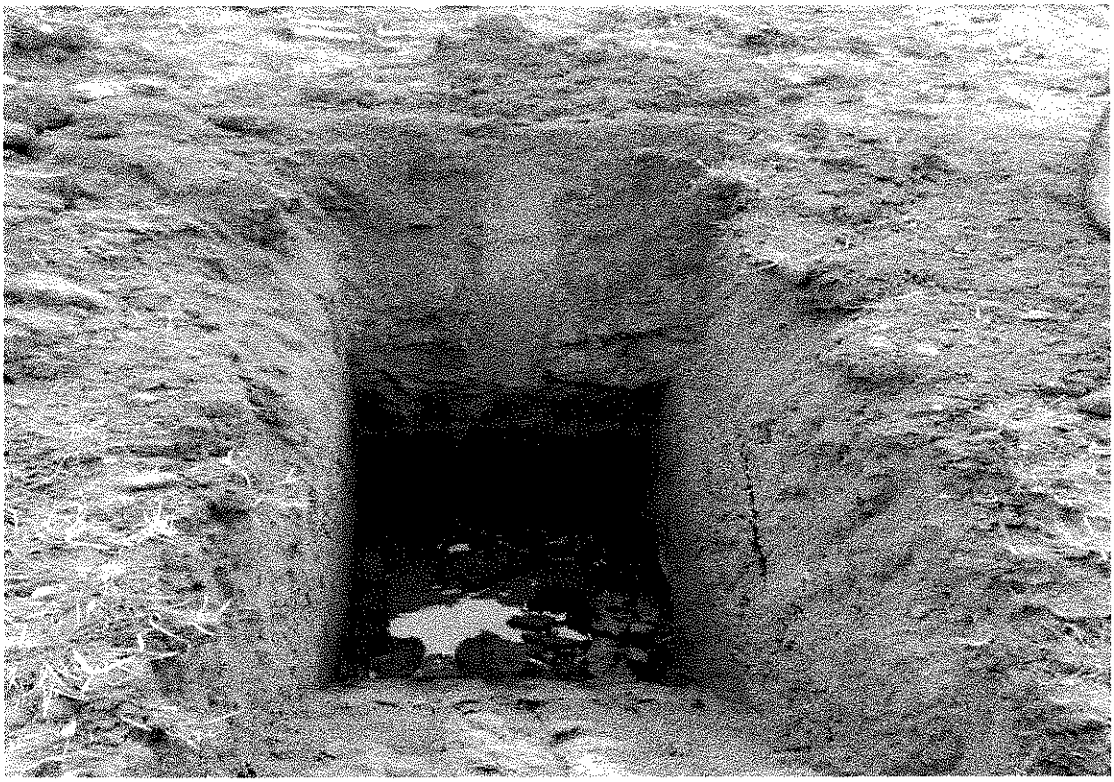
SA06 1 of 4

SA06 2 of 4

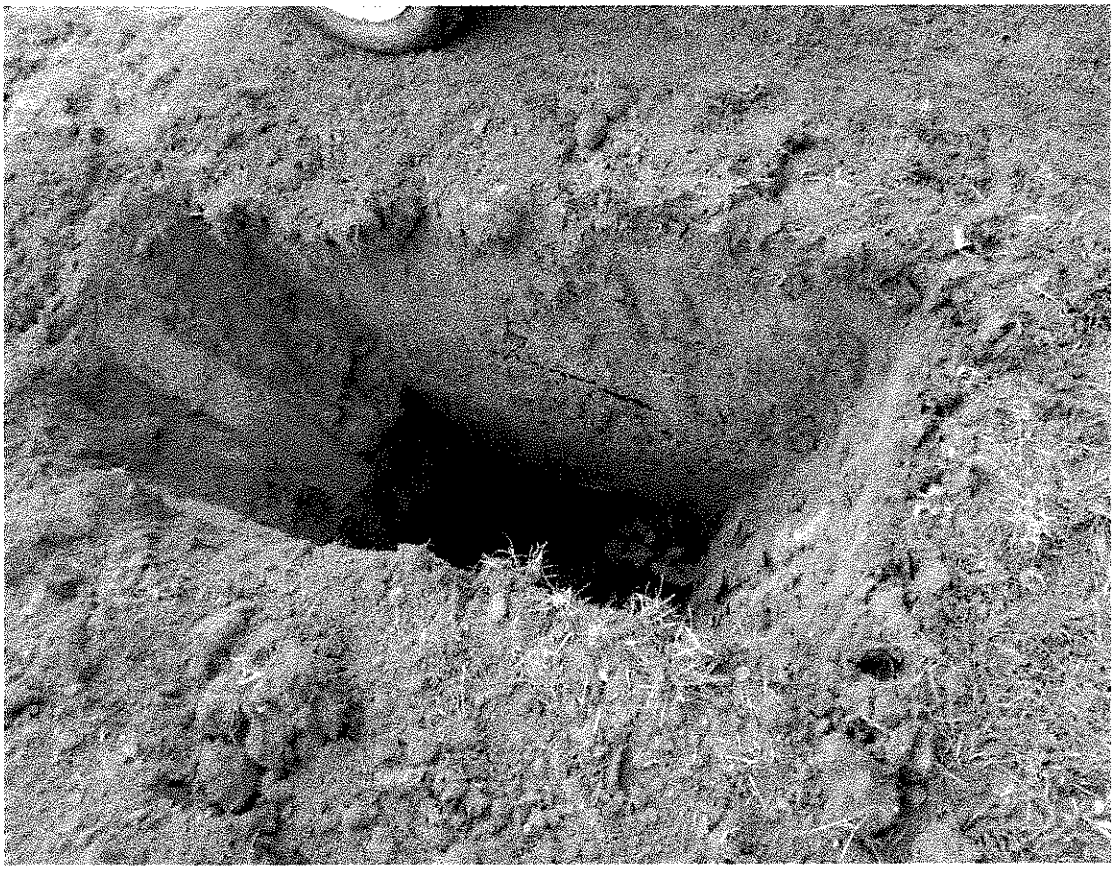
SA06 3 of 4

SA06 4 of 4

SA07 1 of 5



SA07 2 of 5



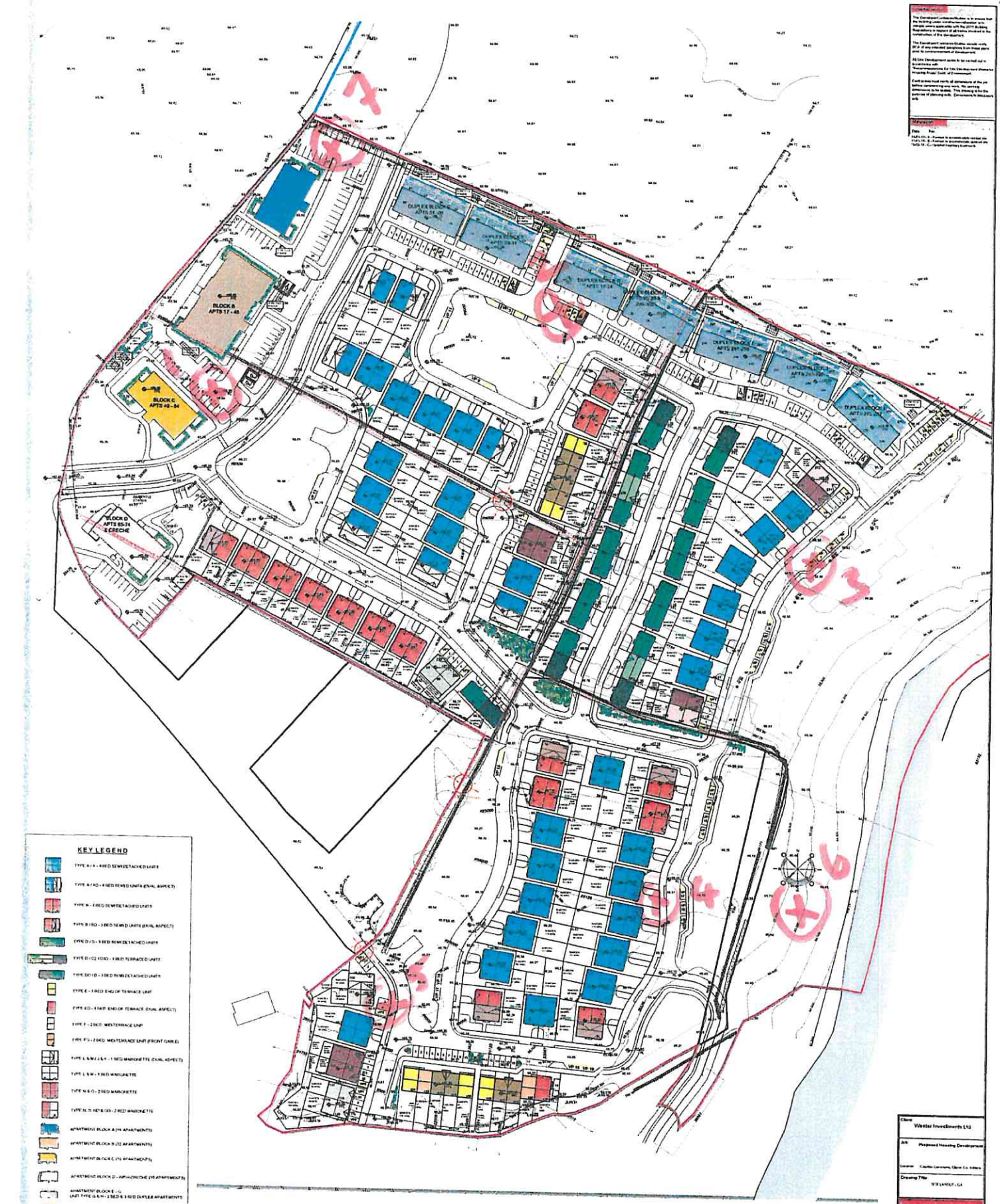
SA07 3 of 5

SA07 4 of 5

SA07 5 of 5

Appendix 3 Site Plan


Search Google Maps
See travel times, traffic and nearby places
Autoline Car Sales
Lidl
R403
Maxol Behan's
Capdoo Park
Capdoo Ave
Tesco Metro
Kinesicare
Clane Motor Factors
Clane Tennis Club
Central Park
Central Park Ave
Abbey Park View
Abbeylands
SA1
SA2
SA3
SA4
SA5
SA6
SA7
Map
3D
Google
Imagery ©2019 Google, Map data ©2019 Google
Ireland
Terms
Send feedback
100 m



SITE LAYOUT-GA

Scale 1:500 @ A0

Client: Westar InvestSmyth Ltd

Proposed Housing Development

Drawing Title: SITE LAYOUT - GA

Planning - SHD 02a

301C

Appendix 7.1 Site Specific Flood Risk Assessment

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SITE SPECIFIC FLOOD RISK ASSESSMENT

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WATER-ENVIRONMENTAL-CIVIL

IE CONSULTING
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WESTAR INVESTMENTS LTD

PROPOSED DEVELOPMENT AT CAPDOO & ABBEYLANDS,

DUBLIN ROAD, CLANE, CO. KILDARE

SITE SPECIFIC FLOOD RISK ASSESSMENT

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BT35 6PH

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Email: info@iece.ie
Web: www.iece.ie

Client :-
Westar Investments Ltd
Dublin Road,
Clane
Co Kildare

Document No:	IE1835-3147
Issue No:	01-ISSUE
Project No:	IE1835
Date:	22nd October 2019
Revision:	3.0
Prepared By:	L McMillan BEng(Hons) MIEI
Checked By:	P McShane BEng(Hons) MIEI

Table of Contents

1 Introduction

IE Consulting was requested by Westar Investments Ltd to undertake a Site Specific Flood Risk Assessment (SSFRA) for an area of lands at Capdoo & Abbeylands, Dublin Road, Clane Co. Kildare. It is proposed to construct 305 no. new dwellings, a childcare facility, associated car parking, surface water attenuation, site entrances and all associated site and development works.

The purpose of this SSFRA is to assess the potential flood risk to the proposed development site and to assess the impact that development of the site may or may not have on the hydrological regime of the area.

Quoted ground levels or estimated flood levels relate to ordnance datum Malin unless stated otherwise.

This flood risk assessment study has been undertaken in consideration of the following guidance document:-

'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' DOEHLG 2009.

2 Proposed Site Description

2.1 General

The proposed development site is located approximately 660m east of Clane town centre, Co Kildare.

The site is bounded to the north and north-west by agricultural lands, to the east by the River Liffey, to the south-east by a drainage channel and to south by an existing residential development. The total area of the proposed development site is approximately 10.32 hectares.

The location of the proposed development site is illustrated on *Figure 1* below and shown on *Drawing Number IE1835-001-A in Appendix A*.

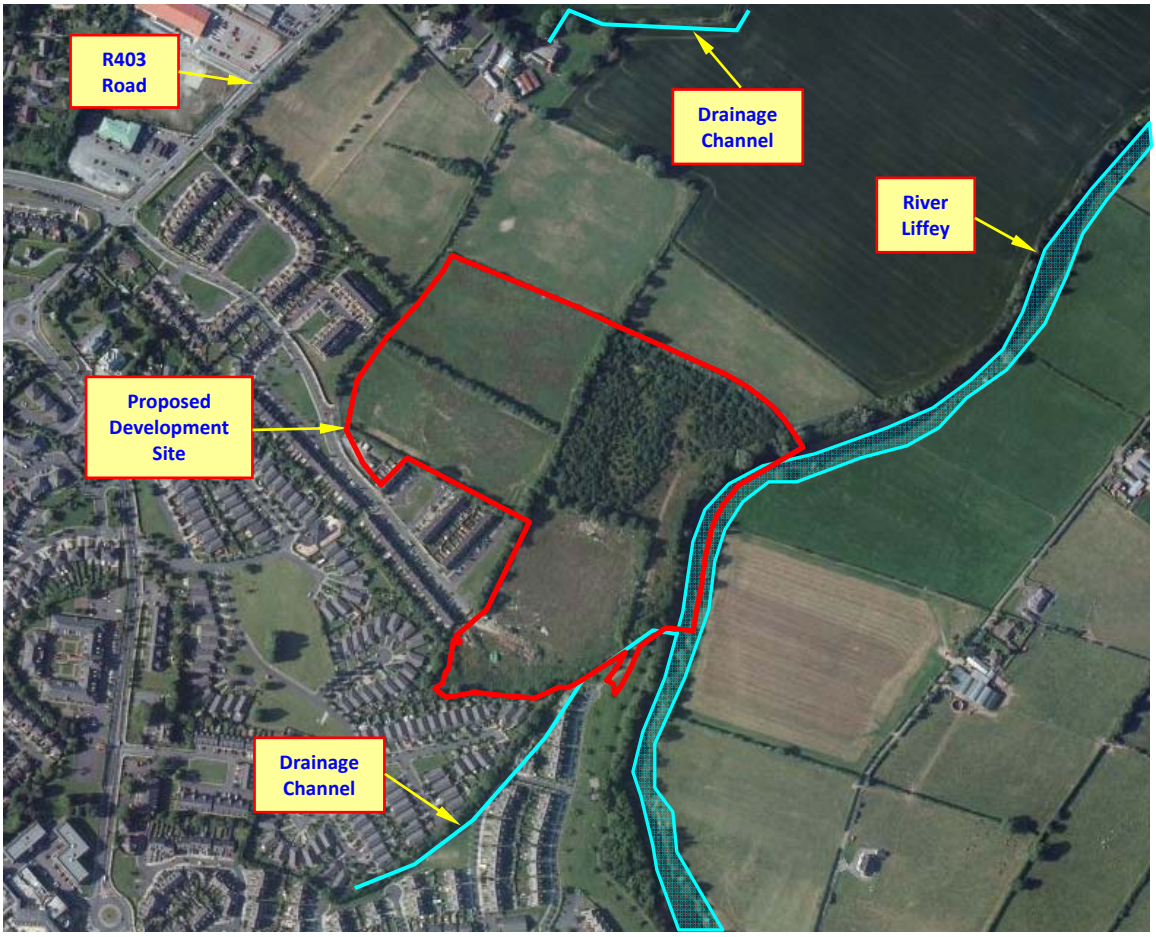


Figure 1 - Site Location

2.2 Existing Topography Levels at Site

The north-west part of the proposed site slopes moderately from a high point at the centre of the site towards the north, north-west and north-east site boundaries at an average gradient of approximately 1.23% (1 in 81). The southern half of the proposed site slopes moderately from a high point at the centre of the site towards the south, south-west and south-east site boundaries at an average gradient of approximately 0.81% (1 in 123). The north-east part of the proposed site slopes moderately from a high point at the centre of the site towards the north and east site boundaries at average gradients of approximately 0.77% (1 in 129) and 4.54% (1 in 22) respectively.

Existing ground elevations within the site boundary range from approximately 67.56 mOD (Malin) at the centre of the site to 63.408mOD (Malin) at the east boundary of the site.

2.3 Local Hydrology, Landuse & Existing Drainage

The most significant hydrological feature in the vicinity of the proposed development site is the River Liffey located adjacent to the eastern site boundary. The River Liffey is a controlled watercourse along the reach upstream and downstream of Clane. Discharge volumes in the River Liffey along this reach are controlled and monitored by the ESB and are dependent on inflows to Pollaphuca and Golden Falls dams. These dams have a significant beneficial effect in attenuating flood flows in the River Liffey.

At its closest position to the proposed development site the River Liffey generally flows in a south to north direction. Utilising the OPW Flood Studies Update (FSU) Portal software, the catchment area of the River Liffey was delineated. As illustrated in *Figure 2* below, the total catchment area of the River Liffey was found to be approximately **647.32 km^2** to a point downstream of the site. Assessment of the River Liffey upstream catchment area indicates that the catchment is predominantly rural in nature with urban development accounting for approximately 3.03% of the total catchment area.

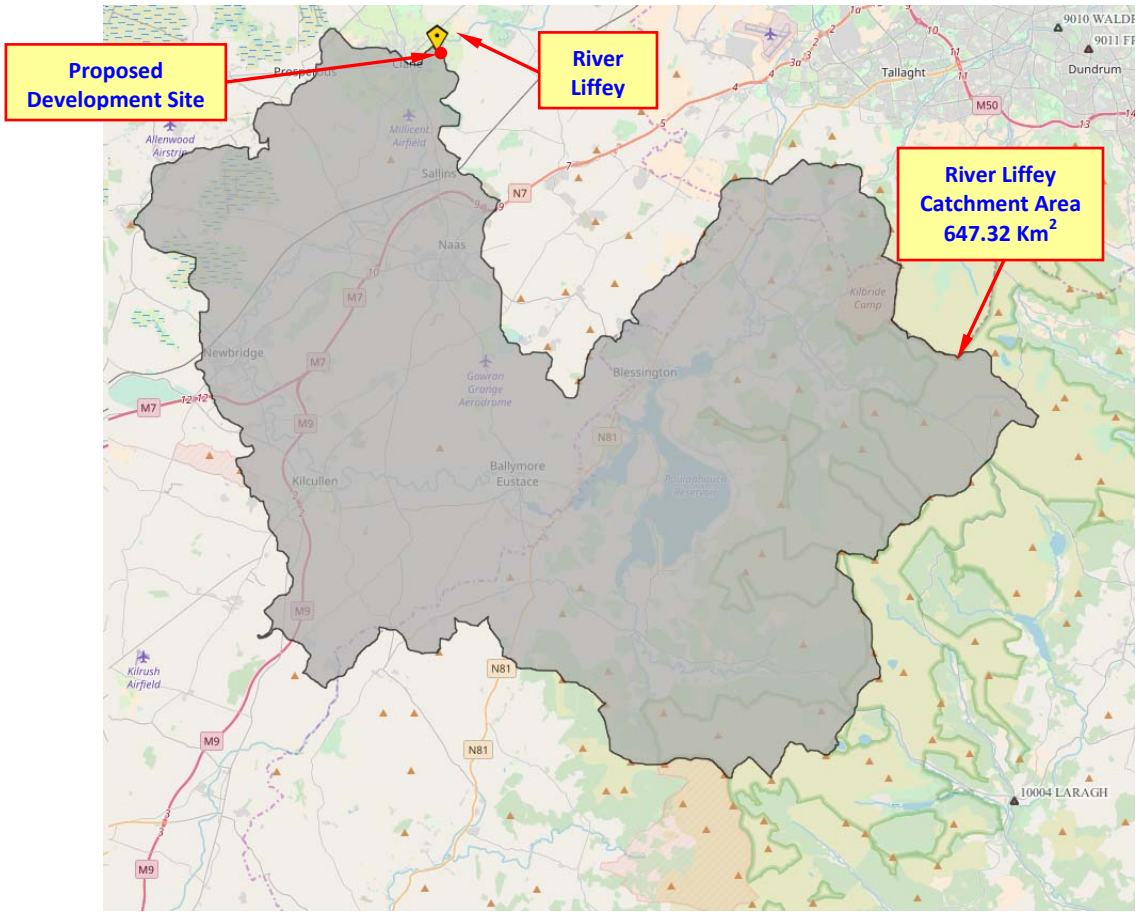


Figure 2 – River Liffey Upstream Catchment Area

3 Initial Flood Risk Assessment

The flood risk assessment for the proposed development site is undertaken in three principle stages, these being *'Step 1 – Screening', 'Step 2 – Scoping'* and *'Step 3 – Assessing'*.

3.1 Possible Flooding Mechanisms

Table 1 below summarises the possible flooding mechanisms in consideration of the proposed development site:-

Source/Pathway	Significant?	Comment/Reason
Tidal/Coastal	No	The site is not located in a coastal or tidally influenced region
Fluvial	Yes	The River Liffey is located adjacent to the eastern site boundary
Pluvial (urban drainage)	No	There is no significant urban drainage infrastructure in the vicinity of the site
Pluvial (overland flow)	No	There site is not surrounded by significantly elevated lands and does not provide an important discharge location to runoff from surrounding lands
Blockage	No	There are no significant hydraulic structures in the vicinity of the site
Groundwater	No	There are no significant springs or groundwater discharges recorded in the immediate vicinity of the site

Table 1

The primary potential flood risk to the proposed development site can be attributed to an extreme fluvial flood event in the River Liffey.

In accordance with 'The Planning System and Flood Risk Management – Guidelines for Planning Authorities - DOEHLG 2009' the potential flood risk to the proposed development site is analysed in the subsequent 'Screening Assessment' and ''Scoping Assessment'' section of this study report.

4 Screening Assessment

The purpose of the screening assessment is to establish the level of flooding risk that may or may not exist for a particular site and to collate and assess existing current or historical information and data which may indicate the level or extent of any flood risk.

If there is a potential flood risk issue then the flood risk assessment procedure should move to *'Step 2 – Scoping Assessment'* or if no potential flood risk is identified from the screening stage then the overall flood risk assessment can end at *'Step 1'*.

The following information and data was collated as part of the flood risk screening assessment for the proposed development site:-

4.1 OPW/EPA/Local Authority Hydrometric Data

Existing sources of OPW, EPA and local authority hydrometric data were investigated. As illustrated in *Figure 3* below, this assessment has determined that there are three hydrometric gauging stations located on the River Liffey in the general regional area of the proposed development site.

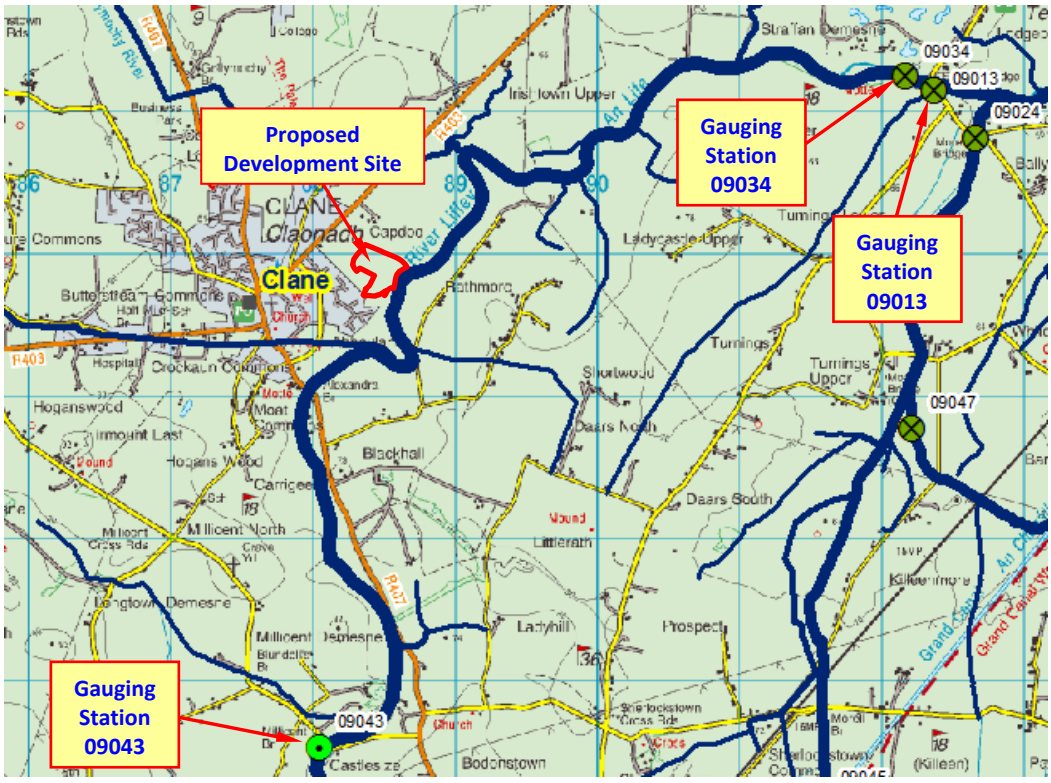


Figure 3 – Hydrometric Gauging Stations

Gauging Station 09043 (Millicent Bridge) is entered in the Register of Hydrometric Stations of Ireland as an inactive staff gauge station with flow measurements recorded for hydrometric years 2000 to 2003. Gauging Station 09034 (Straffan Upstream) is entered into the Register of Hydrometric Stations in Ireland as a data logger station. Gauging Station 09013 (Straffan Downstream) is entered in the Register of Hydrometric Stations of Ireland as an active recorder station.

4.2 OPW PFRA Indicative Flood Mapping

Preliminary Flood Risk Assessment (PFRA) Mapping for Ireland was produced by the OPW in 2011. OPW PFRA flood map number 2019/MAP/236/A illustrates indicative flood zones within this area of County Kildare.

Figure 4 below illustrates an extract from the above predictive flood map in the vicinity of the proposed development site.

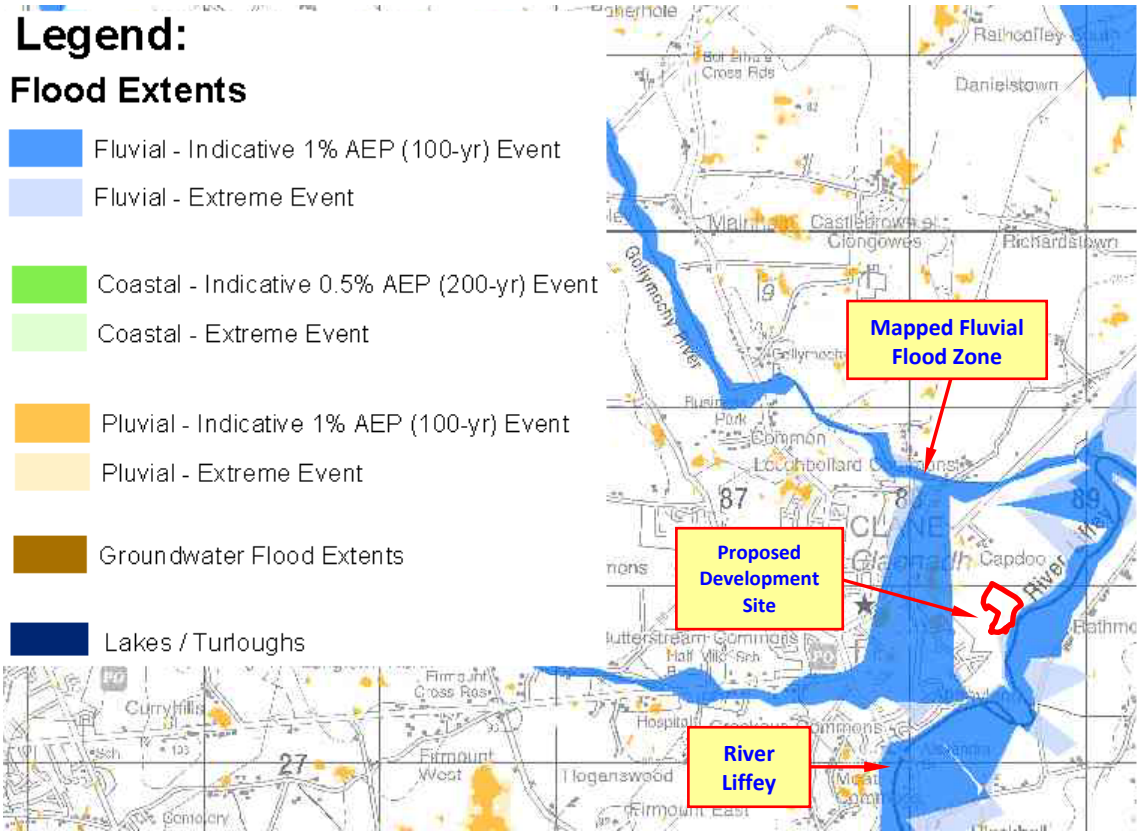


Figure 4 – PFRA Mapping

The PFRA flood mapping indicates mapped indicative fluvial flood zones adjacent to the east site boundary and within the south-east corner of the proposed development site.

No pluvial or groundwater flood zones are mapped within the boundary of the proposed development site.

Figure 5 below illustrates the PFRA predictive flood zones from *Figure 4* overlaid onto higher resolution background mapping.

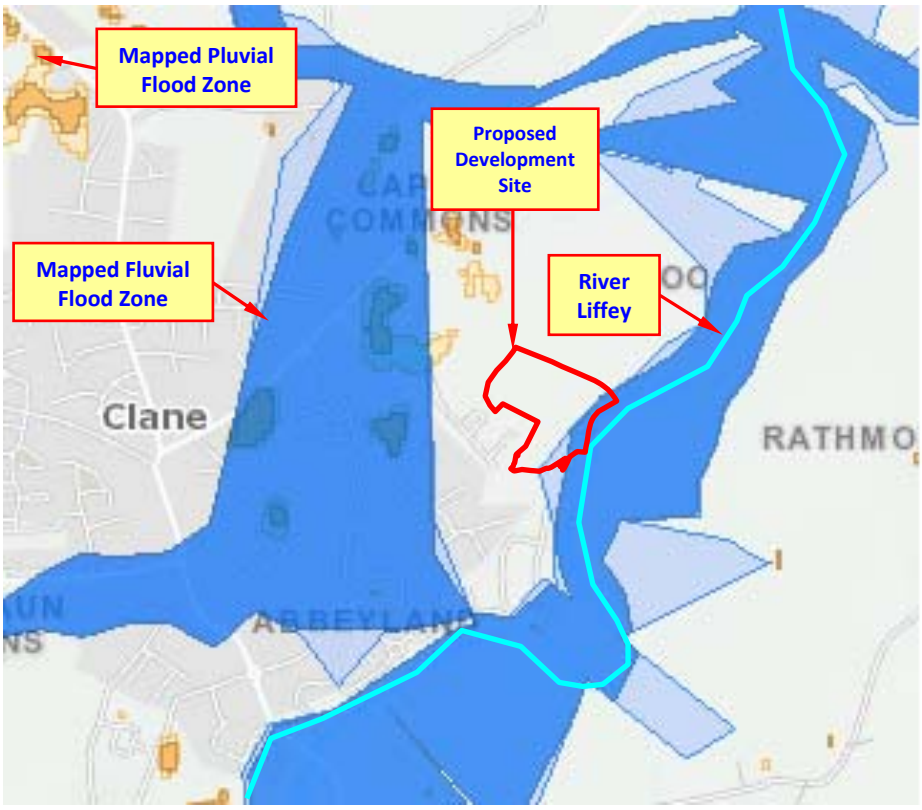


Figure 5 – PFRA Indicative Fluvial Flood Mapping

It should be noted that the predicted extent of flooding illustrated on these maps was developed using a low resolution digital terrain model (DTM) and illustrated flood extents are intended to be indicative only. The flood extents mapped on the PFRA maps are not intended to be used on a site specific basis.

4.3 OPW Flood Maps Website

The OPW Flood Maps Website (www.floodmaps.ie) was consulted in relation to available historical or anecdotal information on any flooding incidences or occurrences in the vicinity of the proposed development site. *Figure 6* below illustrates mapping from the Flood Maps website in the vicinity of the site.

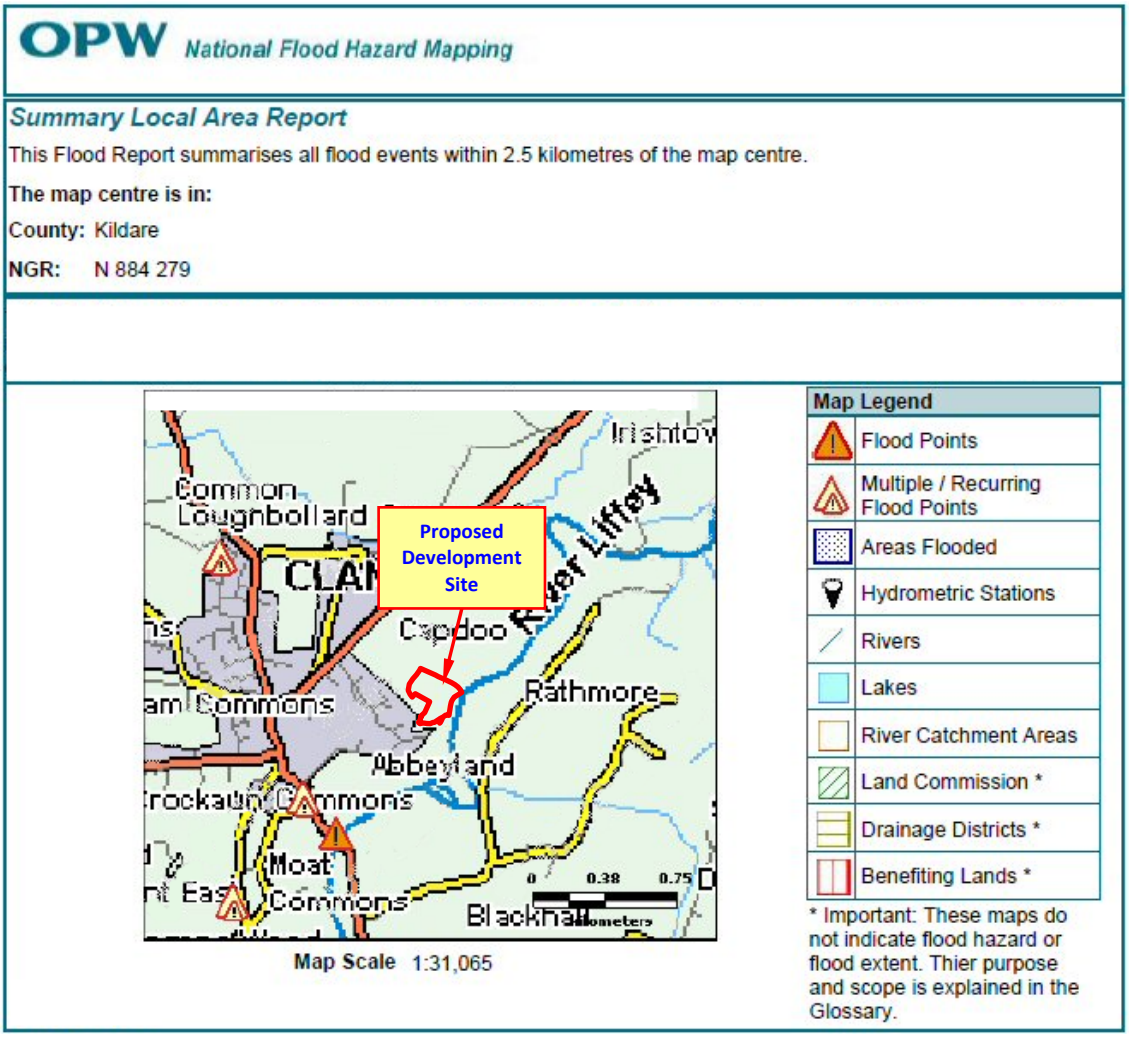


Figure 6 – OPW Flood Maps

Figure 6 above indicates no historic instances of flooding recorded within or adjacent to the proposed development site. A number of historical or anecdotal instances of flooding which have occurred in Clane are indicated however, most notably at Loughbollard, in the vicinity of Alexander Bridge, Millicent Road and Commons.

The OPW Flood Maps website also contains a number of ESB maps that illustrate recorded flood levels during the flood of 1954. This has been documented as a significant flood event in the middle catchment of the River Liffey. *Figure 6A* below illustrates an extract of recorded flood levels at Alexandra Bridge, Clane, which is approximately 1360m upstream of the proposed development site.

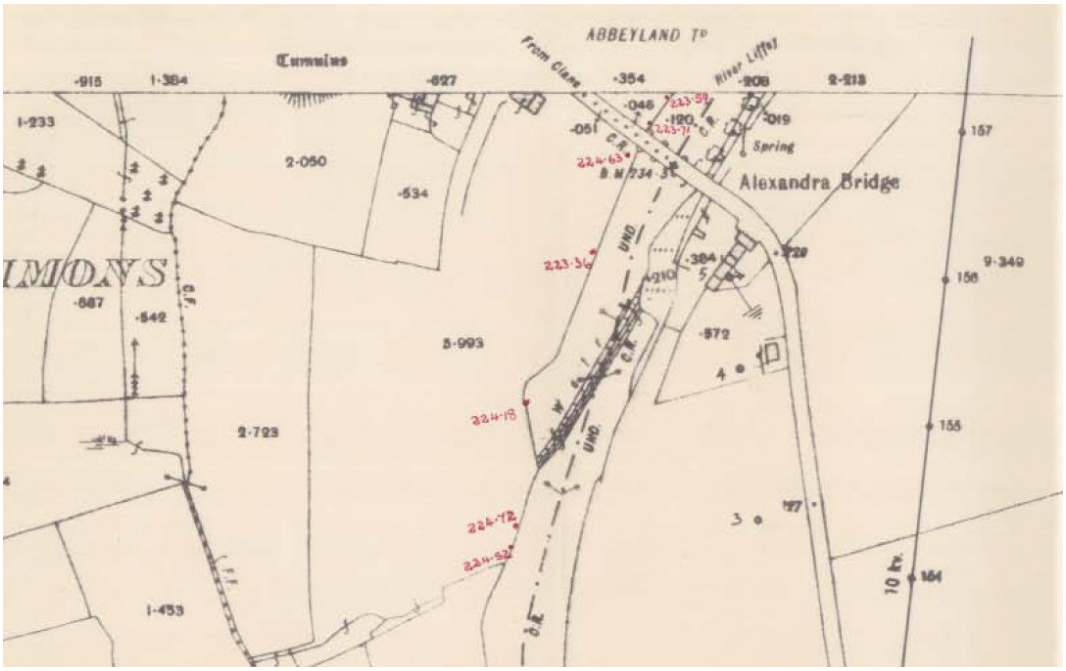


Figure 6A

The levels illustrated in *Figure 6A* above are in feet and reduced to Poolbeg datum. Converting to metres and reducing to Malin datum the recorded flood levels range from 65.49m (OD) to 65.38m (OD) in the vicinity of Alexandra Bridge. The flood event of 1954 has an estimated return period of 1 in 75 years.

4.4 Ordnance Survey Historic Mapping

Available historic mapping for the area was consulted, as this can provide evidence of historical flooding incidences or occurrences. The maps that were consulted were the historical 6-inch maps (pre-1900), and the historic 25-inch map series.

Figures 7 and *8* below show the historic mapping for the area of the proposed development site.

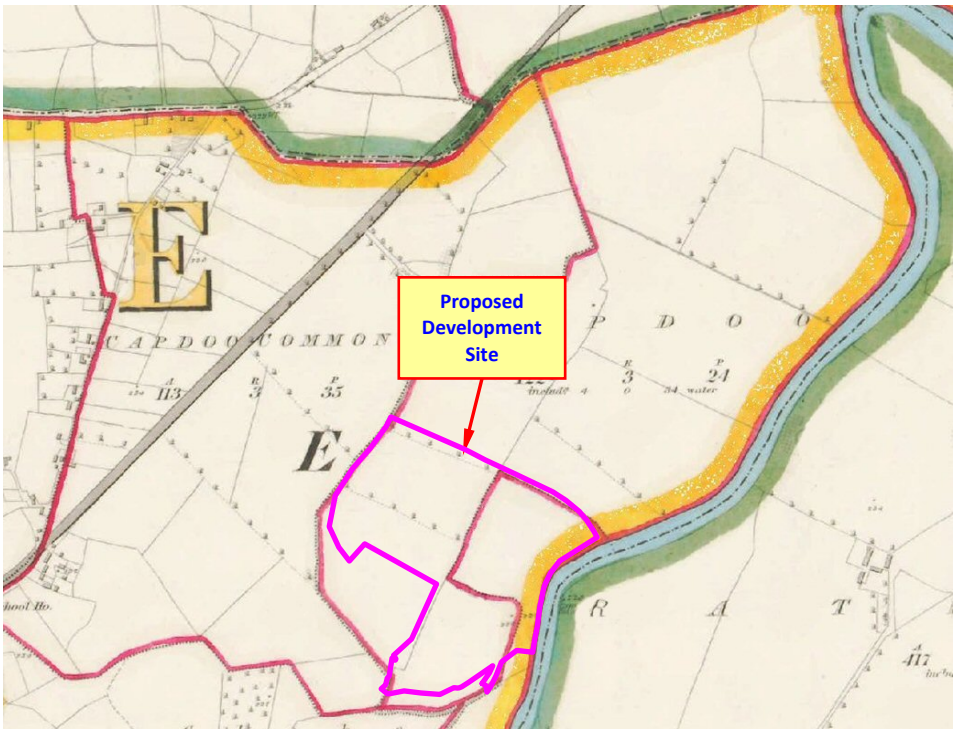


Figure 7 – Historic 6-Inch Mapping

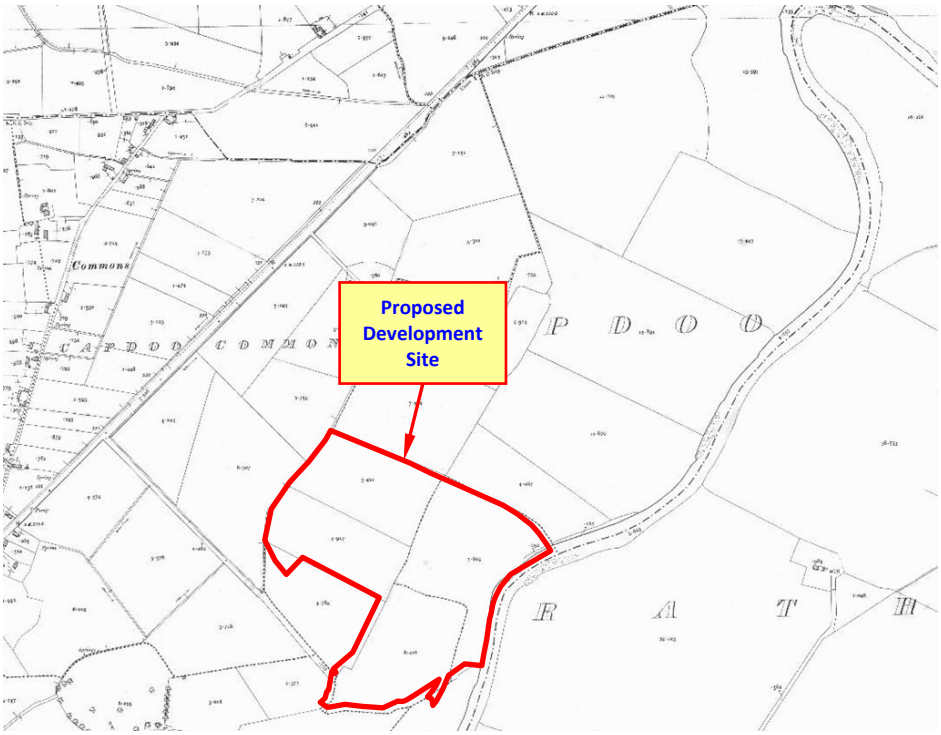


Figure 8 – Historic 25-Inch Mapping

The historic 6 inch and 25 inch mapping does not indicate any historical or anecdotal instances of flooding within or adjacent to the boundary of the proposed development site.

4.5 Geological Survey of Ireland Mapping

The alluvial deposit maps of the Geological Survey of Ireland (GSI) were consulted to assess the extent of any alluvial deposits in the vicinity of the proposed development site. Alluvium deposits can be indicative of areas that have flooded in the recent geological past.

Figure 9 below illustrates the sub-soils mapping for the general area of the proposed development site.

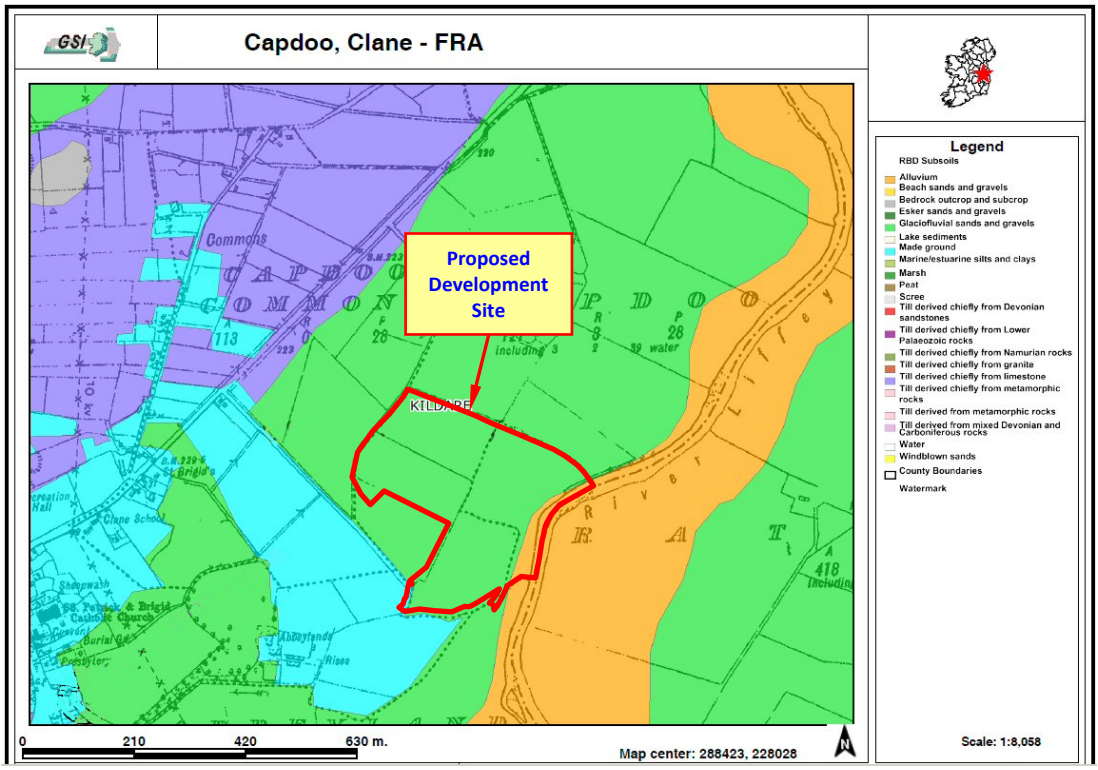


Figure 9 – GSI Subsoil Mapping

Figure 9 above indicates that the sub-soil conditions at the proposed development site consist mostly of Glaciofluvial sands and gravel. An area of Alluvium deposits is mapped within the eastern boundary of the site and adjacent to the River Liffey.

4.6 Eastern CFRAM Study

The Eastern Region Catchment Flood Risk & Management Study (CFRAMS) has been undertaken by the OPW and the Final version of the flood maps were issued in June 2016. Flood risk extent and depth maps for further assessment areas within Co Kildare have also been produced. OPW CFRAMS predictive flood map number *E09LA_EXFCD_F1_10* illustrates predictive extreme fluvial flood extent zones associated with the River Liffey in the vicinity of the proposed development site.

Figure 10 below (extracted from CFRAMS flood map *E09CAM_EXFCD_F1_24*), illustrates the predicted extreme 10% AEP (1 in 10 year), 1% AEP (1 in 100 year) or 0.1% AEP (1 in 1000 year) fluvial flood extents in the vicinity of the proposed development site.

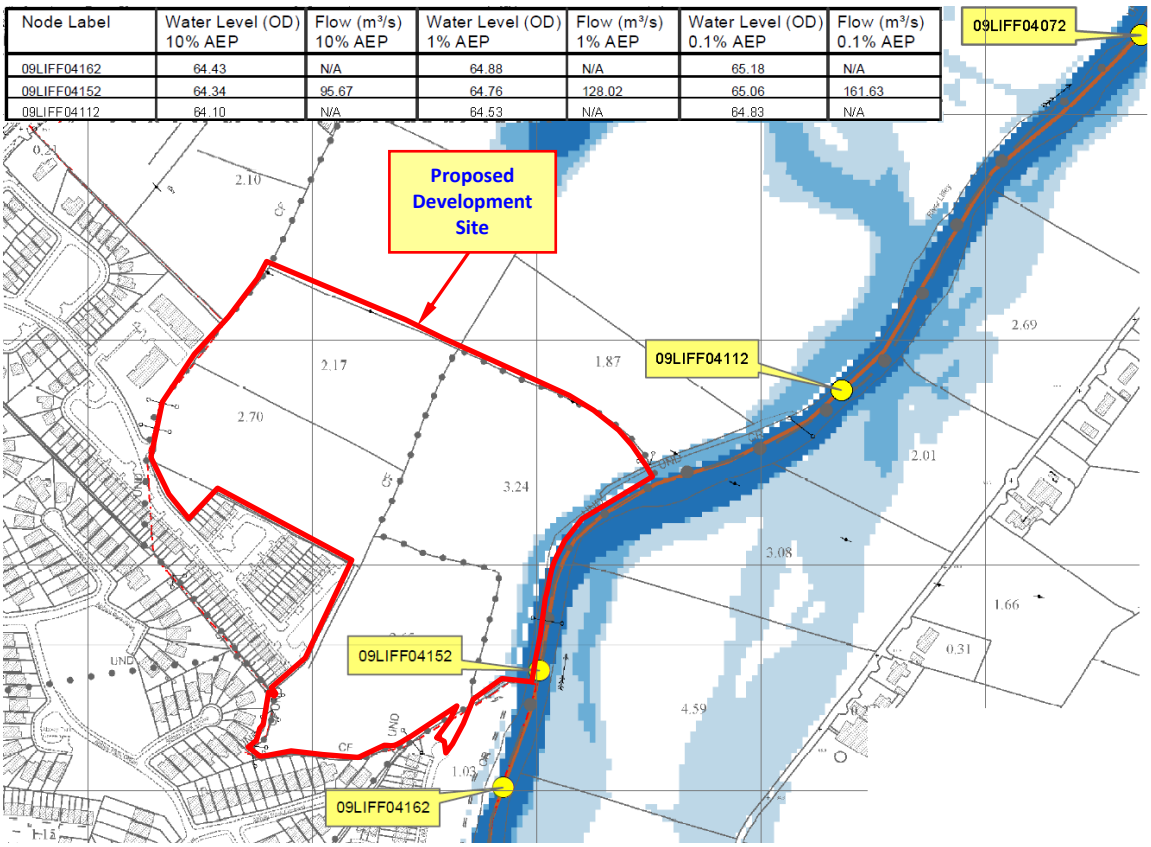


Figure 10 – Eastern CFRAMS Fluvial Flood Maps

Figure 10 above indicates that an area of the proposed development site falls within a 1% AEP (1 in 100 year) and 0.1% AEP (1 in 1000 year) fluvial flood event in the River Liffey.

The CFRAMS flood map also provides information on predicted water levels & flows for 10% AEP, 1% AEP and 0.1% AEP fluvial flood events at various node points along the River Liffey.

The node points closest to the proposed development site are referenced as node point *09LIFF04162* located at the upstream boundary of the proposed site, node point *09LIFF04152* located adjacent to the proposed site and *node point 09LIFF04112* located at the downstream boundary of the proposed site. Details of the predicted extreme fluvial flood levels & flood volumes for the CFRAMS node points in the general vicinity of the proposed development site are listed in *Table 2* below, which has been extracted from CFRAMS flood map reference *E09CAM_EXFCD_F1_24.*

Node Label	Water Level (mOD) 10% AEP	Flow (m3/s) 10% AEP	Water Level (mOD) 1% AEP	Flow (m3/s) 1% AEP	Water Level (mOD) 0.1% AEP	Flow (m3/s) 0.1% AEP
09LIFF04162	64.43	-	64.88	-	65.18	-
09LIFF04152	64.34	95.67	64.76	128.02	65.06	161.63
09LIFF04112	64.10	-	64.53	-	64.83	-

Table 2 –CFRAMS Fluvial Map - Predicted Flood Volumes & Levels

Predictive fluvial flood depth maps have also been produced as part of the Eastern CFRAM Study for this area of Clane. *Figure 11* and *Figure 12* below, duplicated from the Eastern CFRAM Study, illustrate the predictive flood depths for the area of the proposed development for the 1% AEP (1 in 100 year) and 0.1% AEP (1 in 1000 year) fluvial flood events respectively.

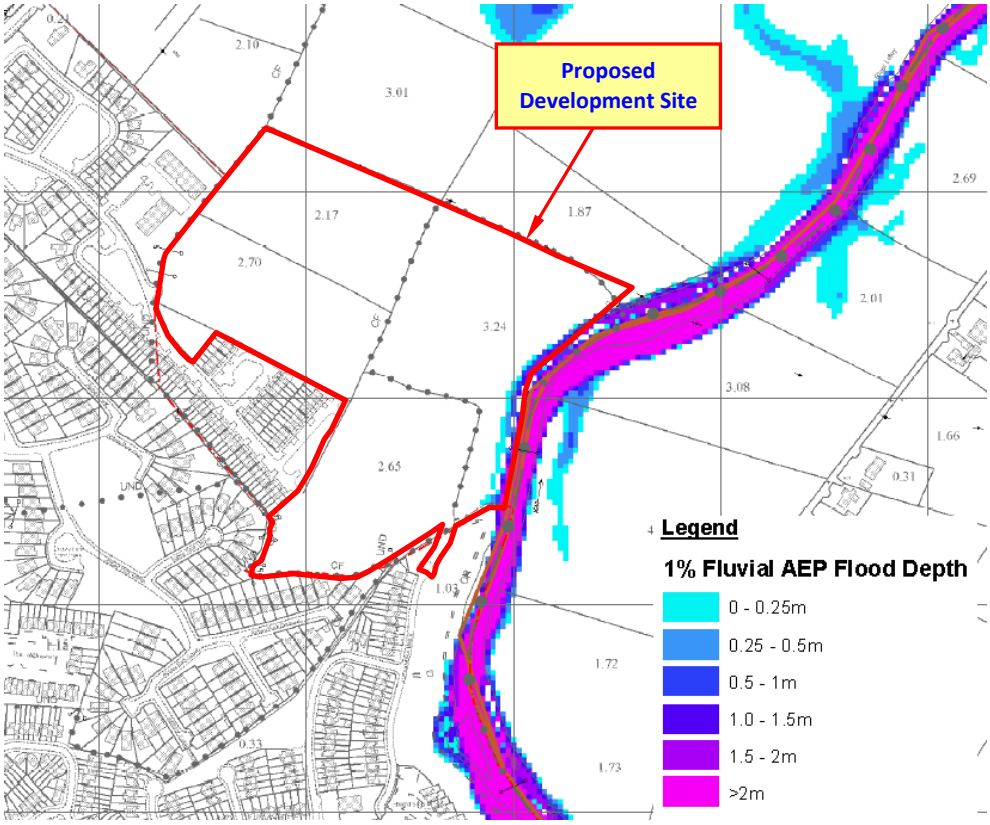


Figure 11 – Eastern CFRAMS 1% AEP Fluvial Flood Depth Map

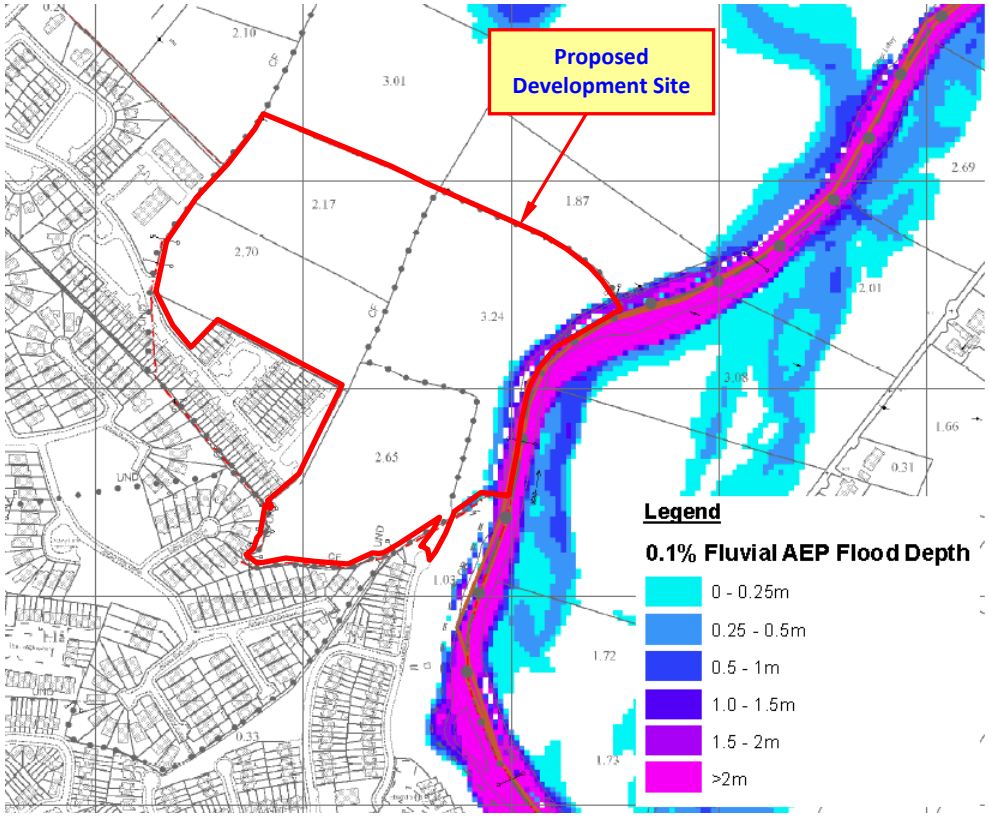


Figure 12 – Eastern CFRAMS 0.1% AEP Fluvial Flood Depth Map

Figure 11 and *Figure 12* above indicate predicted 1% AEP and 0.1% AEP fluvial flood depths of 0.25m-1.0m along the eastern boundary of the proposed development site.

The Eastern CFRAM flood maps are predictive flood maps, in that they provide predicted flood extent and depth information for a 'design' flood event that has an estimated probability of occurrence (e.g., the 1% AEP event), rather than information for floods that have occurred in the past.

4.7 Kildare County Development Plan

Reference to Map 9.1 (Drawing Number 200/16/1000) of the Kildare County Development Plan 2017-2023 indicates that a mapped fluvial 'Flood Zone B' is located close to the east site boundary. An extract from the above map is illustrated in *Figure 13* below:-

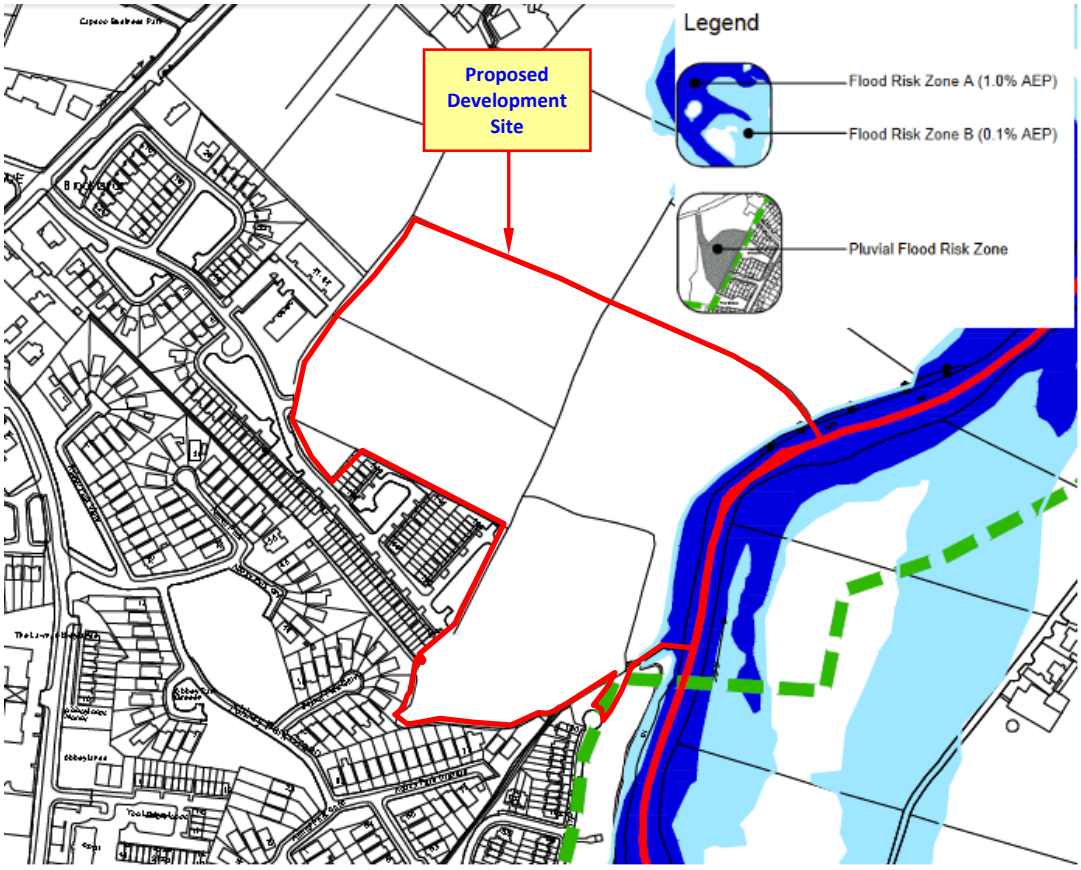


Figure 13 – Kildare County Development Plan Map

Figure 13 above indicates that the proposed development site would not be significantly impacted by a 1% AEP (1 in 100 year) or 0.1% AEP (1 in 1000 year) fluvial flood event.

5 Scoping Assessment

The purpose of the scoping stage is to identify possible flood risks and to implement the necessary level of detail and assessment to assess these possible risks, and to ensure these can be adequately addressed in the flood risk assessment. The scoping exercise should also identify that sufficient quantitative information is already available to complete a flood risk assessment appropriate to the scale and nature of the development proposed.

The above screening assessment indicates that an area of proposed development site may be at risk from fluvial flooding but that the area of the site is not at significant risk from pluvial or groundwater flooding.

In consideration of the information collated as part of the screening exercise, and the availability of other information and data specific to the area of the proposed development site, it is considered that sufficient quantitative information to complete an appropriate flood risk assessment for the proposed development site cannot be derived from the information collated as part of the screening exercise alone.

While the current flood extent maps for the area produced as part of the Eastern CFRAM study are based on the results of detailed hydraulic modelling undertaken along the River Liffey and do provide a reasonably accurate delineation of flood zones and prediction of flood depths in the general vicinity of the proposed development site, this mapping is based on a localised digital terrain model (DTM) of the general Clane area and can be subject to local DTM errors or variations. It is therefore necessary to undertake a more accurate site specific delineation of the predictive 1% AEP and 0.1% AEP fluvial flood extents at the location of the proposed development site.

The potential or possible flood risk to the proposed development site is assessed in the subsequent 'Assessing Flood Risk' stage of this study report.

6 Assessment of Flood Risk

Flood risk from a particular watercourse is normally assessed for a 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) flood event, in accordance with Kildare County Council development plans and with the DOEHLG guidelines *'The Planning System and Flood Risk Management Guidelines'*.

The following sections present an analysis and assessment of the estimated 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) extreme flood events in the River Liffey adjacent to the proposed development site.

6.1 Estimation of Extreme Flood Levels in the River Liffey

Extreme flood levels at the location of the proposed development site have been derived as part of the Eastern CFRAM Study. The most relevant node points in respect of the proposed development site are Node Point *09LIFF04162, 09LIFF04152* and *09LIFF04112* that are located just upstream, adjacent to the east site boundary and 185m downstream of the site respectively. Predicted 1% AEP (1 in 100 year) and 0.1% AEP (1 in 1000 year) flood levels at these node points are applicable for the purpose of assessing fluvial flood risk to the proposed development site.

Table 2 above lists the predicted extreme flood levels for these node points.

6.2 Climate Change

In general, it is a requirement of Kildare County Council that the required Design Flow to be used for flood extent delineation is the 1 in 100 year flood flow event plus 20% in order to allow for climate change'.

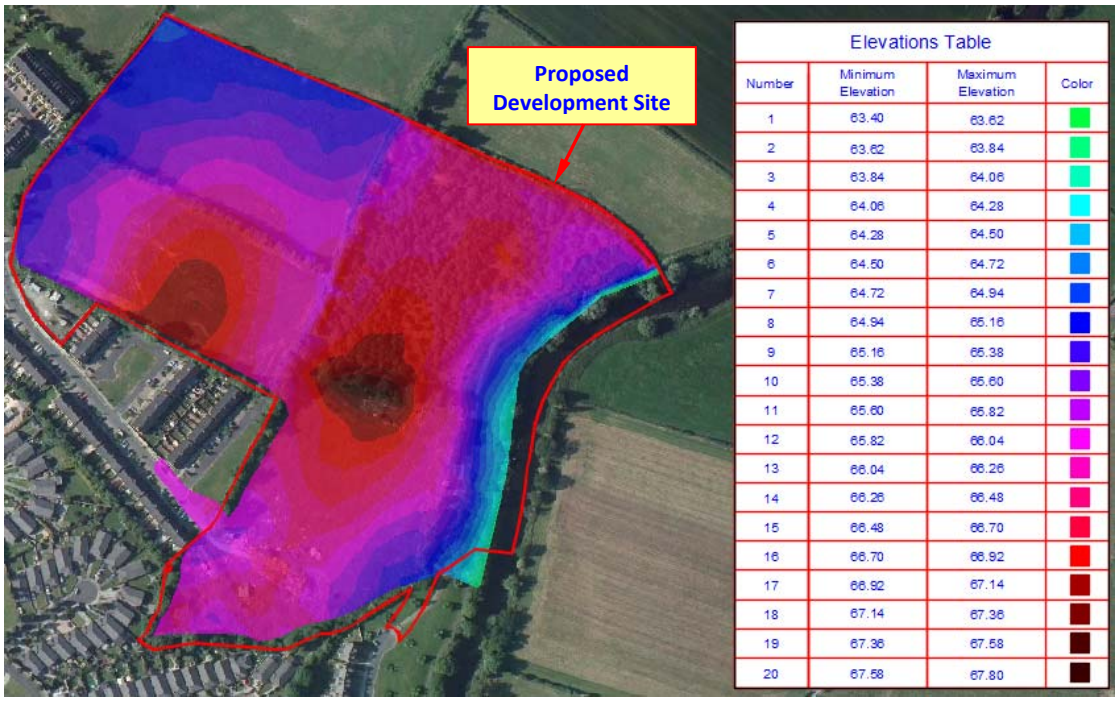
'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' DOEHLG 2009 Technical Appendix A, Section 1.6 recommends that, where mathematical models are not available climate change flood extents can be assessed by using the Flood Zone B outline as a surrogate for Flood Zone A with allowance for the possible impacts of climate change. Therefore, the predicted 0.1% AEP flood levels listed in *Table 2* above are considered to be representative of the 1% AEP plus climate change food levels.

6.3 Topographical Survey & Contour Mapping

In order to assist in the assessment of any potential flood inundation in the general location of the proposed development site, topographical survey information was used to develop a Digital Terrain Model (DTM) of the existing site area. Development of a DTM allows the predicted extreme flood levels listed in *Table 2* above to be analysed in more detail at the specific location of the proposed development site.

The DTM and contour mapping was developed utilising digital survey information of the proposed development site and the Autodesk Civil 3D 2015 software package. The DTM and contour mapping developed for the proposed development site is illustrated in *Figure 14* and *Figure 15* below.

Figure 14 – Contour Mapping



Elevations Table

Number	Minimum Elevation	Maximum Elevation	Color
1	63.40	63.62	
2	63.62	63.84	
3	63.84	64.06	
4	64.06	64.28	
5	64.28	64.50	
6	64.50	64.72	
7	64.72	64.94	
8	64.94	65.16	
9	65.16	65.38	
10	65.38	65.60	
11	65.60	65.82	
12	65.82	66.04	
13	66.04	66.26	
14	66.26	66.48	
15	66.48	66.70	
16	66.70	66.92	
17	66.92	67.14	
18	67.14	67.36	
19	67.36	67.58	
20	67.58	67.80	

Figure 15 – Topographical Survey Derived DTM

6.4 Flood Zone Mapping & Delineation

Utilising the DTM illustrated in *Figure 14* and *Figure 15* above, and the 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) extreme flood levels for the River Liffey for the reach adjacent to the proposed development site, the Site Specific 1% AEP and 0.1% AEP flood zones were delineated using the hydrology module of the Autodesk Civil 3D 2015 software package. The software enables a user defined flood level to be mapped and modelled onto a DTM over the full extent of the area being assessed.

Drawing Number IE1835-002-A, Appendix A illustrates the delineated 1 in 100 year flood extent (Flood Zone 'A') and 1 in 1000 year flood extent (Flood Zone 'B') over the full area of the proposed development site.

Drawing Number IE1835-003-A, Appendix A illustrates representative cross-sectional elevations through the site, illustrating existing and proposed ground levels and finished floor levels relative to predictive 1% AEP and 0.1% AEP flood levels in the River Liffey.

The above analysis and flood zone delineation undertaken as part of this Site Specific Flood Risk Assessment (SSFRA) indicates that no works are proposed within a delineated flood zone. The area of the proposed development site works is therefore not susceptible to flood inundation during an extreme fluvial event in the River Liffey.

However, in order to ensure sustainable development of this particular site the following is recommended:-

- *Proposed finished ground levels (road levels, etc) should be constructed to a minimum level of 0.15m above the maximum predicted 0.1% AEP flood level – i.e. 65.18m + 0.15m =* ***65.33m OD****.*
- *Proposed finished floor levels should be constructed to a minimum level of 0.30m above the maximum predicted 0.1% AEP flood level – i.e. 65.18m + 0.30m =* ***65.48m OD****.*
- *The proposed development site should incorporate an appropriately designed stormwater management system that should limited stormwater runoff from the site to existing pre-development runoff rates.*

In consideration of the assessment and analysis undertaken as part of this Site Specific Flood Risk Assessment, and the recommendations above, development of the site as proposed would not result in an adverse impact to the existing hydrological regime of the area and would not result in an increased flood risk elsewhere.

7 Proposed Development in the Context of the Guidelines

In the context of the *'Planning System and Flood Risk Management Guidelines, DOEHLG, 2009'* three flood zones are designated in consideration of flood risk to a particular development site.

Flood Zone 'A' – where the probability of flooding from rivers and watercourses is the highest (greater than 1% or 1 in 100 year for river and watercourse flooding and 0.5% or 1 on 200 for coastal or tidal flooding).

Flood Zone 'B' – where the probability of flooding from rivers and watercourses is moderate (between 0.1% or 1 in 1000 year for river and watercourse flooding and 0.5% or 1 on 200 for coastal or tidal flooding).

Flood Zone 'C' – where the probability of flooding from rivers and watercourses is low or negligible (less than 0.1% of 1 in 1000 year for both river and watercourse and coastal flooding). *Flood Zone 'C'* covers all areas that are not in *Zones 'A'* or '*B*'.

The *'Planning System and Flood Risk Management Guidelines'* list the planning implications for each flood zone, as summarised below:-

Zone A – High Probability of Flooding. Most types of development would not be considered in this zone. Development in this zone should be only be considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the *'Planning System and Flood Risk Management Guidelines'* justification test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space and outdoor sports and reaction would be considered appropriate in this zone.

Zone B – Moderate Probability of Flooding. Highly vulnerable development such as hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses, strategic transport and essential utilities infrastructure would generally be considered inappropriate in this zone, unless the requirements of the justification test can be met. Less vulnerable development such as retail, commercial and industrial uses and recreational facilities might be considered appropriate in this zone.

In general however, less vulnerable development should only be considered in this zone if adequate lands or sites are not available in *Zone 'C'* and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to the development can be adequately managed and that development in this zone will not adversely affect adjacent lands and properties.

Zone C – Low to Negligible Probability of Flooding. Development in this zone is appropriate from a flood risk perspective. Developments in this zone are generally not considered at risk of fluvial flooding and would not adversely affect adjacent lands and properties from a flood risk perspective.

In the context of the '*Planning System and Flood Risk Management Guidelines, DOEHLG, 2009*' this flood risk assessment has determined that the area of the proposed development site works is not at significant risk of fluvial, coastal or direct pluvial flooding and therefore falls within Flood Zone 'C'.

Development of the site as proposed is therefore not subject to the requirements of The Justification Test.

8 Summary Conclusions

In consideration of the findings of this site specific flood risk assessment and analysis the following conclusions and recommendations are made in respect of the proposed development site:-

- *A Site Specific Flood Risk (SSFRA) assessment, appropriate to the type and scale of development proposed, and in accordance with 'The Planning System and Flood Risk Management Guidelines – DoEHLG-2009' has been undertaken.*
- *The area of the proposed development site has been screened, scoped and assessed for flood risk in accordance with the above guidelines.*
- *The primary flood risk to the proposed development site can be attributed to potential fluvial flooding from the River Liffey.*
- *The proposed development site is not at risk from pluvial or groundwater flooding.*
- *Utilising the Eastern CFRAM study estimated extreme flood water levels and a detailed DTM, constructed using topographical survey data of the existing site, the 1 in 100 year and 1 in 100 year plus climate change flood extents were delineated.*
- *This analysis has determined that the area of the proposed site falls within Flood Zone 'C'*. This is in agreement with the predictive 1% AEP and 0.1% AEP fluvial flood extents illustrated on the OPW CFRAMS flood maps.
- *Development proposals for the site are therefore not subject to the requirements of the Justification Test.*
- *In summary, and in consideration of the findings and recommendations of this Site Specific Flood Risk Assessment, development of the site as proposed would not result in an adverse impact to the existing hydrological regime of the area and would not result in an increased flood risk elsewhere.*
- *The development as proposed is therefore considered to be appropriate from a flood risk perspective.*

9 Summary Recommendations

- *It is recommended that proposed finished ground levels (road levels, etc) should be constructed to a minimum level of 0.15m above the maximum predicted 0.1% AEP flood level upstream of the site – i.e. 65.18m + 0.15m =* ***65.33m OD****.*
- *It is recommended that proposed finished floor levels should be constructed to a minimum level of 0.30m above the maximum predicted 0.1% AEP flood level upstream of the site – i.e. 65.18m + 0.30m =* ***65.48m OD****.*

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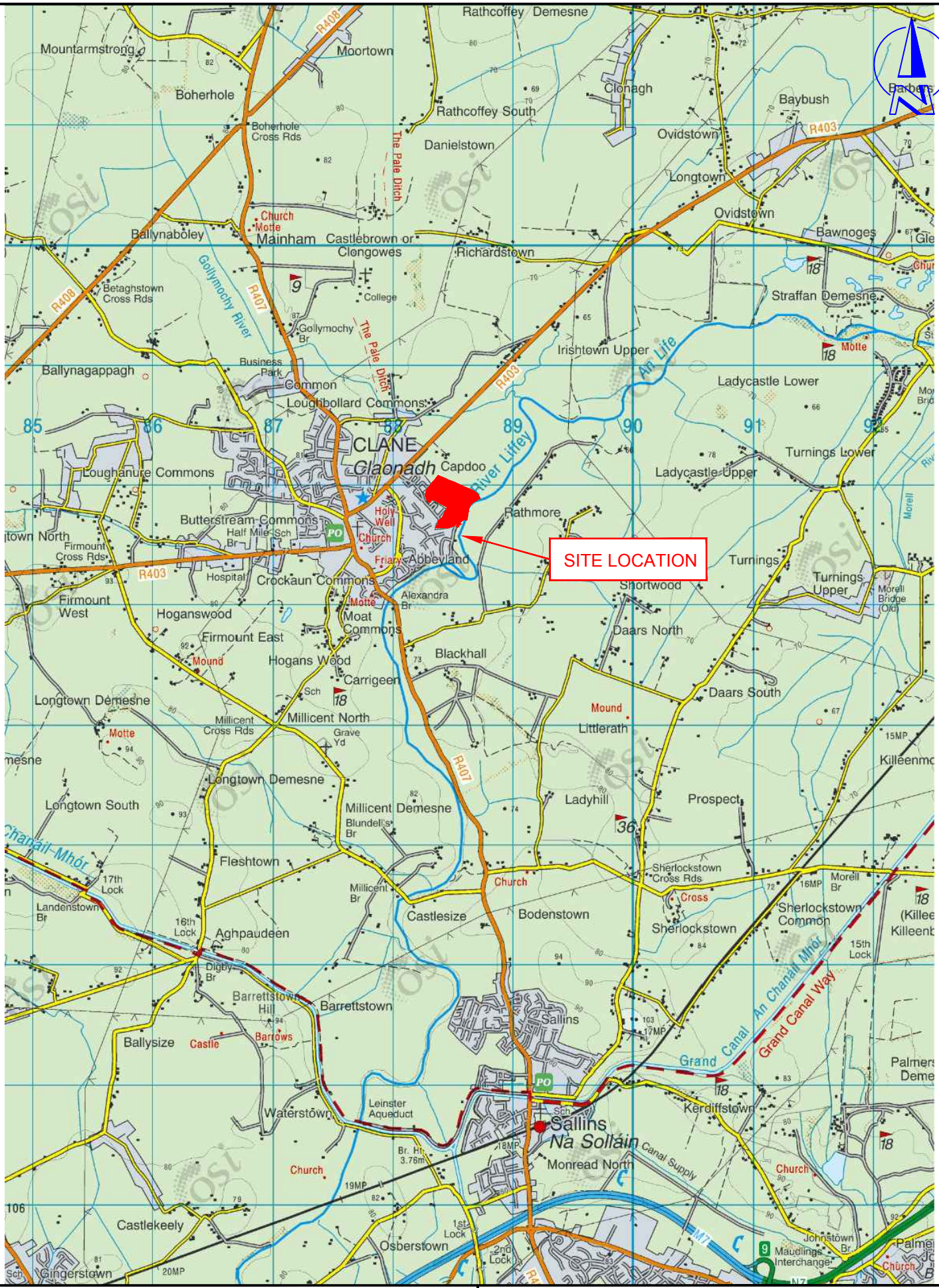
APPENDIX A

Drawing Number IE1835-001-A

Drawing Number IE1835-002-A

Drawing Number IE1835-003-A



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WATER-ENVIRONMENTAL-CIVIL

Project Title:	FLOOD RISK ASSESSMENT
Project Address:	Capdoo & Abbeylands, Dublin Road, Clane Co. Kildare
Client:	WEST STAR GROUP LTD.
Drg. Title:	SITE LOCATION MAP

Dwg.Scale:	Date:	Dwg.No:	Job No:	Revision:	Dwg.By:
NTS	14-03-19	IE1835-001	IE1835	A	LMc

LEGEND

- SITE BOUNDARY
- 100 YEAR FLOOD EXTENT (1% AEP) FLOOD ZONE 'A'
- 1000 YEAR FLOOD EXTENT (0.1% AEP) FLOOD ZONE 'B'
- FLOOD ZONE 'C'

rev.	date	amendment	drn	ckd
A	15.03.19	PLANNING	LMc	PMS

PROPOSED DEVELOPMENT AT
CAPDOO & ABBEYLANDS, DUBLIN ROAD,
CLANE, CO. KILDARE,

SITE SPECIFIC FLOOD
RISK ASSESSMENT

1 IN 100 YEAR (1% AEP) &
1 IN 1000 YEAR (0.1% AEP)
FLUVIAL FLOOD EXTENTS

IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL

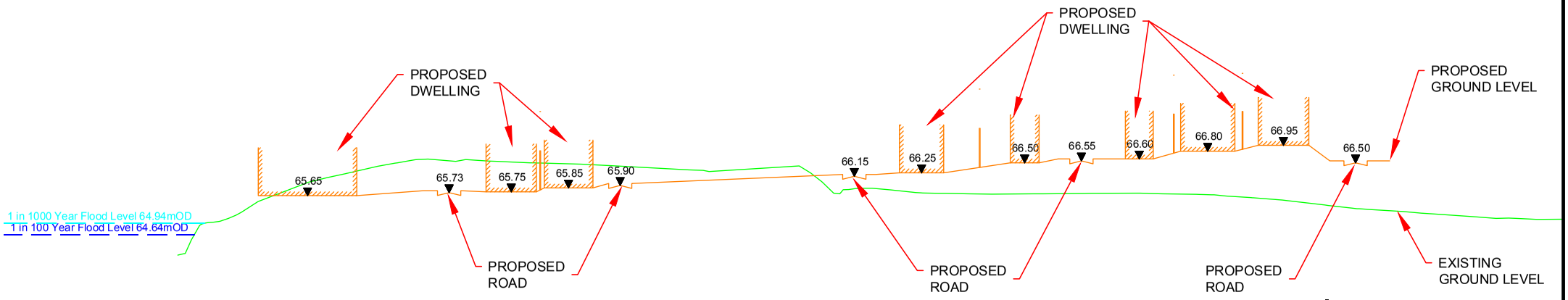
INNOVATION CENTRE
GREEN ROAD
CARLOW

TELEPHONE: 059 91 33084
FAX: 059 91 40499
EMAIL: info@iece.ie

file location: N:\IE1835\DRAWINGS		scale: 1:2000	A3
drawing status: PLANNING		datum: MALIN	
		drawn: LMC	
drawing no. IE1835-002	rev A	checked: NOM	
		approved: PMS	
		date: 14.03.2019	

LEGEND

SITE BOUNDARY



SECTION B-B

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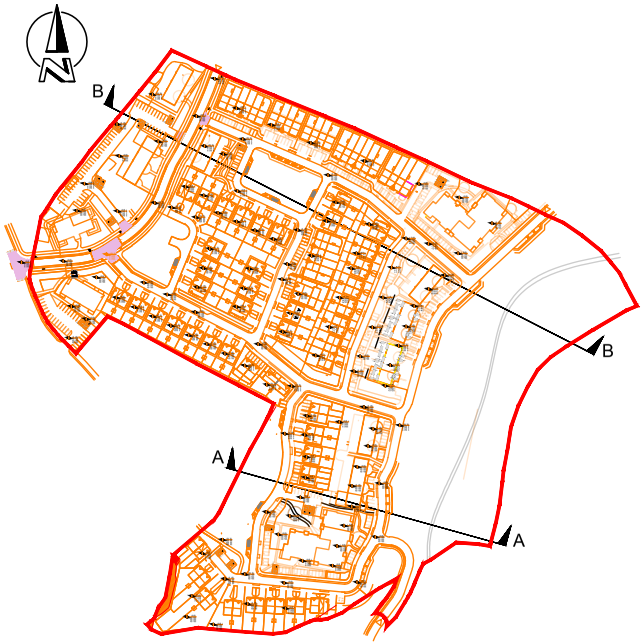

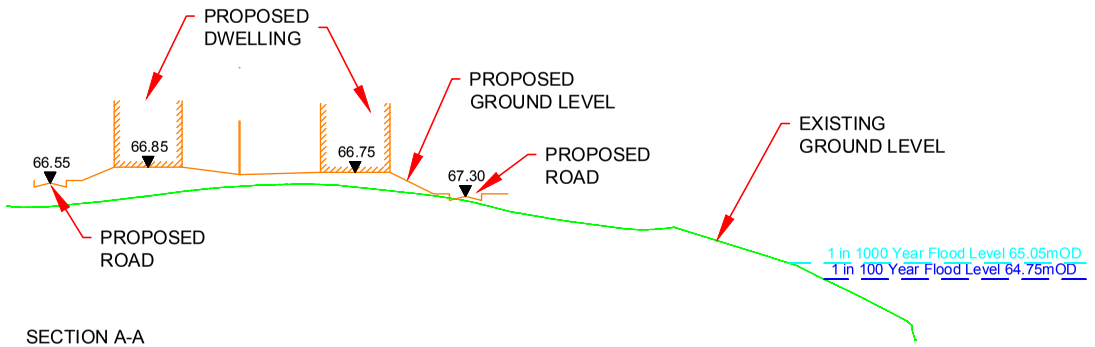

SECTION A-A

SCALE: H 1/1000 : V 1/100

rev.	date	amendment	drn	ckd
A	21.03.19	PLANNING	LMc	PMS

PROPOSED DEVELOPMENT AT
CAPDOO&ABBEYLANDS, DUBLIN ROAD,
CLANE,
CO. KILDARE.

SITE SPECIFIC FLOOD
RISK ASSESSMENT

PROPOSED & EXISTING
CROSS SECTIONS

IE CONSULTING
WATER-ENVIRONMENTAL-CIVIL

INNOVATION CENTRE
GREEN ROAD
CARLOW

TELEPHONE: 059 91 33084
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EMAIL: info@iece.ie

file location: N:\IE1835\DRAWINGS		scale: AS SHOWN @ A3	
drawing status: PLANNING		datum: MALIN	
		drawn: LMC	
drawing no. IE1835-003	rev A	checked: NOM	
		approved: PMS	
		date: 21.03.2019	

Appendix 7.2 Irish Water Webmap

21/10/2019 14:31:33

Legend

Sewer Gravity Mains (Irish Water owned)

- Combined
- Foul
- Overflow
- Unknown

Sewer Gravity Mains (Non-Irish Water owned)

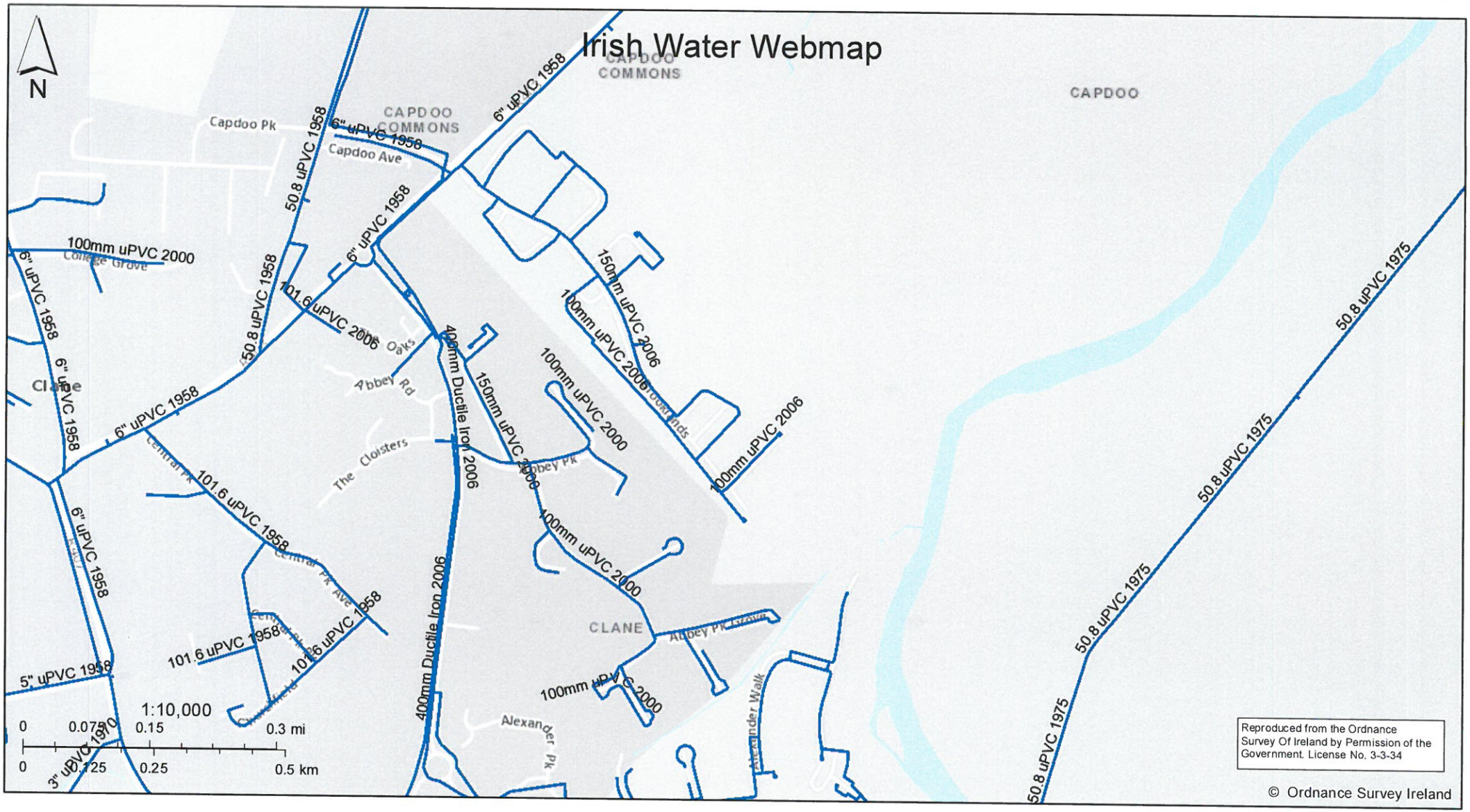
- Combined
- Foul
- Overflow
- Unknown

Sewer Pressurized Mains (Irish Water owned)

- Combined
- Foul
- Overflow
- Unknown

Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland. It should not be relied upon in the event of excavations or other works being carried out in the vicinity of the network. The onus is on the parties carrying out the works to ensure the exact location of the network is identified prior to mechanical works being carried out. Service pipes are not generally shown but their presence should be

UISCE EIREANN : IRISH WATER



21/10/2019 14:29:05

Legend

- Treatment Plant
- **Reservoir**
  - Potable
  - Raw Water
- Pump Stations
- **Water Mains(Irish Water Owned)**
  - Untreated
  - Potable Water
- **Water Mains(Non Irish Water Owned)**
  - Untreated
  - Potable Water
- **Water Lateral Lines**
  - Irish Water
  - Non IW
  - Water Abandoned Lines

Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland. It should not be relied upon in the event of excavations or other works being carried out in the vicinity of the network. The onus is on the parties carrying out the works to ensure the exact location of the network is identified prior to mechanical works being carried out. Service pipes are not generally shown but their presence should be

UISCE EIREANN : IRISH WATER

"Gas Networks Ireland (GNI), their affiliates and assigns, accept no responsibility for any information contained in this document concerning location and technical designation of the gas distribution and transmission network ("the Information"). Any representations and warranties express or implied, are excluded to the fullest extent permitted by law. No liability shall be accepted for any loss or damage including, without limitation, direct, indirect, special, incidental, punitive or consequential loss including loss of profits, arising out of or in connection with the use of the Information (including maps or mapping data). NOTE: DIAL BEFORE YOU DIG Phone 1850 427 747 or e-mail dig@gasnetworks.ie – The actual position of the gas/electricity distribution and transmission network must be verified on site before any mechanical excavating takes place. If any mechanical excavation is proposed, hard copy maps must be requested from GNI re gas. All work in the vicinity of the gas distribution and transmission network must be completed in accordance with the current edition of the Health & Safety Authority publication, 'Code of Practice For Avoiding Danger From Underground Services' which is available from the Health and Safety Authority (1890 28 93

BCA Consulting Eng C/o Connolly, Brian
The Studio
Woods Way
Clane
Co. Kildare

Uisce Éireann
Bosca OP 6000
Baile Átha Cliath 1
Éire

Irish Water
PO Box 6000
Dublin 1
Ireland

T: +353 1 89 25000
F: +353 1 89 25001
www.water.ie

07 October 2019

Dear Sir/Madam,

Re: Customer Reference No 1000851652 pre-connection enquiry - Subject to contract | Contract denied
Connection for Strategic Housing Development of 305 no. houses at Capdoo Commons, Clane, Co.Kildare

Irish Water has reviewed your pre-connection enquiry in relation to water and wastewater connections at Capdoo Commons, Clane, Co.Kildare (the Premises). Based upon the details you have provided with your pre-connection enquiry and on the capacity currently available as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place and the conditions listed below, your proposed connection to the Irish Water network can be facilitated.

Strategic Housing Development
Irish Water notes that the scale of this development dictates that it is subject to the Strategic Housing Development planning process. Therefore:

A. In advance of submitting your full application to An Bord Pleanala for assessment, you must have reviewed this development with Irish Water and received a Statement of Design Acceptance in relation to the layout of water and wastewater services.
B. You are advised that this correspondence does not constitute an offer in whole or in part to provide a connection to any Irish Water infrastructure and is provided subject to a connection agreement being signed and appropriate connection fee paid at a later date.

Wastewater: It is feasible for 230 units to connect prior to the Upper Liffey Valley Sewerage Scheme (Contract 2B) and associated upgrades in Clane being completed in 2022 (programme subject to statutory process and change). Upon completion of the Upper Liffey Valley Sewerage Scheme, the remaining 75 units can be accomodated.

A connection agreement can be applied for by completing the connection application form available at **www.water.ie/connections**. Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation

If you have any further questions, please contact Kevin McManmon from the design team on kmcmanmon@water.ie or email 018230374. For further information, visit **www.water.ie/connections**

Yours sincerely,

Maria O'Dwyer
Connections and Developer Services

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

www.water.ie

Westar Investments Ltd.
C/o Patrick Fadden
Abbeylands
Clane
Co. Kildare

10 October 2019

Re: Design Submission for Capdoo Commons, Clane, Kildare (the "Development") (the "Design Submission") / Connection Reference No: CDS19006765

Dear Patrick Fadden,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Irish Water has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before you can connect to our network you must sign a connection agreement with Irish Water. This can be applied for by completing the connection application form at www.water.ie/connections. Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU)(https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water's network(s) (the "**Self-Lay Works**"), as reflected in your Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Irish Water representative:
Name: Kevin McManmon
Phone: 018230374
Email: kmcmanmon@water.ie

Yours sincerely,

Maria O'Dwyer
Connections and Developer Services

Appendix A

Document Title & Revision

- S_2018_18002 Le MONDE Capdoo_Sewer Design_18002 300Q Fadden Capdoo Site Layout - services only8-10-19 18002 303-2 - WATER MAINS SERVICES SHEET 1
- S_2018_18002 Le MONDE Capdoo_Sewer Design_18002 300Q Fadden Capdoo Site Layout - services only8-10-19 18002 303-2 - WATER MAINS SERVICES sheet 2
- S_2018_18002 Le MONDE Capdoo_Sewer Design_18002 300Q Fadden Capdoo Site Layout - services only8-10-19 18002 303-1 - Foul SERVICES (1)
- S_2018_18002 Le MONDE Capdoo_Sewer Design_18002 300Q Fadden Capdoo Site Layout - services only8-10-19 18002 303-1 - Foul SERVICES (2)
- S_2018_18002 Le MONDE Capdoo_Sewer Design_18001 Foul Sections 8-10-19 18002-303-1-1 (1)
- S_2018_18002 Le MONDE Capdoo_Sewer Design_18001 Foul Sections 8-10-19 18002-303-1-2 (1)
- S_2018_18002 Le MONDE Capdoo_Sewer Design_18001 Foul Sections 8-10-19 18002-303-1-3 (1)

*For further information, visit **www.water.ie/connections***

Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Irish Water will not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

Appendix 8.1 Photolog

Photo 1: NMP1

Photo 2: NMP2

Photo 3: NMP3

Photo 4: Unattended Meter at NMP2

Appendix 8.2 Certificate of Calibration and Conformance

Campbell Associates Ltd
5b Chelmsford Road Industrial Estate
GREAT DUNMOW, Essex, GB-CM6 1HD
www.campbell-associates.co.uk
Phone 01371 871030 Facsimile 01371879106

Certificate of Calibration and Conformance

CALIBRATION

0789

Certificate No.: U29202

Test object:	**Sound Level Meter, BS EN IEC 61672-1:2003 Class 1 (Precision)**
Manufacturer:	**NTi Audio**
Type:	**XL2-TA**
Serial no:	**A2A-08898-E0**
Customer:	**Redkite Environmental Ltd**
Address:	**Hunter's Moon, Ballykeane Road, Redcross, Co. Wicklow. Ireland.**
Contact Person:	**Siobhan Maher**
Order No:	**P009/01**

Method :
Calibration has been performed as set out in CA Technical Procedures TP01 & 02 as appropriate. These are based on the procedures for periodic verification set out in BS EN IEC 61672-3:2006. Results and conformance statement are overleaf and detailed results are in the attached Test Report.

	Producer:	Type:	Serial No:	Certificate number
Microphone	NTi Audio	MC230	8694	29201
Calibrator*	Larson Davis	CAL200	11728	U29200
Preamplifier	NTi Audio	MA220	5062	Included

Additional items that also have been submitted for verification

Wind shield	None
Attenuator	None
Extension cable	None

These items have been taken into account wherever appropriate.

Environmental conditions:	Pressure:	Temperature:	Relative humidity:
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions:	101.73 ± 0.01kPa	21.5 ± 0.2°C	42.3 ± 2%RH

Date received :	30/07/2018
Date of calibration:	02/08/2018
Date of issue:	02/08/2018

Engineer

M. Panivel

Palanivel Marappan B.Eng (Hons), M.Sc

Supervisor

Michael Tickner

Certificate of Calibration and Conformance

UKAS Laboratory Number 0789

Certificate No.: U29202

Conformance

From markings on the sound level meter or by reference to the manufacturer's published literature it has been determined that the instrument submitted for verification was originally manufactured to BS EN IEC 61672-1:2002 and similarly that the associated sound calibrator conforms to BS EN IEC 60942.

Statement of conformance

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of BS EN IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available[1], from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with BS EN IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in BS EN IEC 61672-1:2002, and that the sound level meter submitted for testing conforms to the class 1 requirements of BS EN IEC 61672-1:2003.

[1] This evidence is held on file at the calibration laboratory

Measurement Results:

Indication at the calibration check frequency - IEC61672-3 Ed.1 #9	Passed
Self-generated noise - IEC 61672-3 Ed.1 #10	Passed
Acoustical signal tests of a frequency weighting - IEC 61672-3 Ed.1 #11	Passed
Frequency weightings: A Network - IEC 61672-3 Ed.1 #12.3	Passed
Frequency weightings: C Network - IEC 61672-3 Ed.1 #12.3	Passed
Frequency weightings: Z Network - IEC 61672-3 Ed.1 #12.3	Passed
Frequency and time weightings at 1 kHz IEC 61672-3 Ed.1 #13	Passed
Level linearity on the reference level range - IEC 61672-3 Ed.1 #14	Passed
Level linearity including the level range control - IEC 61672-3 Ed.1 #15	Passed
Toneburst response - IEC 61672-3 Ed.1 #16	Passed
Peak C sound level - IEC 61672-3 Ed.1 #17	Passed
Overload indication - IEC 61672-3 Ed.1 #18	Passed
Electrical signal tests of frequency weightings - IEC 61672-3 Ed.1 #12	Passed

Comment

Correct level with associated calibrator is 113.9dB(A).

Observations

No information on the uncertainty of measurement, required by 11.7 of BS EN IEC 61672-3:2006 of the adjustment data given in the instruction manual or obtained from the manufacturer or supplier of the sound level meter, or the manufacturer of the microphone, or the manufacture of the electrostatic actuator was published in the instruction manual or made available by the manufacturer or supplier. The uncertainty of measurement of the adjustment data has therefore been assumed to be numerically zero for the purposes of this periodic test. If these uncertainties are not actually zero, there is a possibility that the frequency response of the sound level meter may not conform to the requirements of BS EN IEC 61672-1:2003.

No adjustment data have been published in the instruction manual or made available by the manufacturer or supplier of the sound level meter to account for the average effects of reflections from the case of the sound level meter and diffraction of sound around the microphone as required by sub-clause 11.4 and 12.6 of BS EN IEC 61672-3:2006. The average effects of reflections from the case of the sound level meter and diffraction of sound around the microphone have therefore been assumed to be numerically zero for the purposes of this periodic test. If these adjustment data are not actually zero, there is a possibility that the frequency response of the sound level meter may not meet the requirements of BS EN IEC 61672-1:2003.

The details of the uncertainty for each measurement is available from the Calibration Laboratory on request and is based on the standard uncertainty multiplied by a coverage factor K=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements. Details on the sources of corrections and their associated uncertainties that relate to this verification are contained the detailed test report accompanying this certificate.

Campbell Associates Ltd
5b Chelmsford Road Industrial Estate
GREAT DUNMOW, CM6 1HD, England
www.campbell-associates.co.uk
info@campbell-associates.co.uk
Phone 01371 871030 Facsimile 01371879106

CALIBRATION

0789

Certificate number: U29200

Certificate of Calibration and Conformance

Test object:	**Sound Calibrator**
Manufacturer:	**Larson Davis**
Type:	**CAL200**
Serial no:	**11728**
Customer:	Redkite Environmental Ltd
Address:	Hunter's Moon, Ballykeane Road, Redcross, Co. Wicklow. Ireland.
Contact Person:	Siobhan Maher
Order No:	P009/01

Measurement Results:	Level	Level Stability	Frequency	Frequency Stability	Distortion
1:	114.04 dB	0.06 dB	1000.38 Hz	0.00 %	0.33 %
2:	114.04 dB	0.06 dB	1000.38 Hz	0.00 %	0.33 %
3:	114.04 dB	0.06 dB	1000.38 Hz	0.00 %	0.32 %
Result (Average):	**114.04 dB**	**0.06 dB**	**1000.38 Hz**	**0.00 %**	**0.33 %**
Expanded Uncertainty:	0.10 dB	0.02 dB	1.00 Hz	0.01 %	0.10 %
Degree of Freedom:	>100	>100	>100	>100	>100
Coverage Factor:	2.00	2.00	2.00	2.00	2.00

The stated level is relative to 20µPa. The level is traceable to National Standards.

The reported expanded uncertainty of measurements is based on a standard uncertainty multiplied by the coverage factor of k=2, providing a level of confidence of approximately 95%. Where the degrees of freedom are insufficient to maintain this confidence level, the coverage factor is increased to maintain this confidence level. The uncertainty has been determined in accordance with UKAS requirements.
Records: K:\C A\Calibration\Nor-1504\Nor-1018 CalCal\2018\LDL200_11728_M1.nmf

Environmental conditions:	Pressure:	Temperature:	Relative humidity:
Reference conditions:	101.325 kPa	23.0 °C	50 %RH
Measurement conditions:	101.746 ± 0.042 kPa	21.4 ± 0.1 °C	43.9 ± 1.2 %RH

Date received for calibration: 30/07/2018
Date of calibration: 02/08/2018
Date of issue: 02/08/2018
Engineer

Palanivel Marappan B.Eng(Hons), M.Sc

Supervisor

Michael Tickner

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceablity of measurement to recognised national standards, and to the units of measurement realised at an accredited national physical laboratory or other recognised standards laboratories. This certificate may not be reproduced other than in full without the prior written approval of the issuing laboratory.

Template UKAS_PE v2.10 DocR Cert-C0001

Certificate number: U29200

Preconditioning
The equipment was preconditioned for more than 4 hours in the specified calibration environment.

Measurements
The calibrator has been tested as described in the following annexes to BS EN IEC60942:2003 Sound Calibrators; B3.4 for sound pressure level, B3.5 for frequency, B3.6 for total distortion and A4.4 for short term stability of the pressure level.

Method
Calibration has been performed as set out in the current version of CA Technical procedure TP01

Instruments and program
A complete list of equipment, hardware and software that has been used in this calibration is available from the calibration laboratory on request.

Traceability
The measured values are traceable to an accredited national physical laboratory within the EU or EFTA.

Comment
94dB spot check = 94.04dB. Note this is not UKAS data.

Statement of conformance
As public evidence was available[1], from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in annex A of BS EN IEC 60942:2003, the sound calibrator tested is considered to conform to all the class 1 requirements of that BS EN IEC 60942:2003.

[1] This evidence is held on file at the calibration laboratory.

Notes:
The sound pressure level generated by the calibrator in its ½ inch configuration was measured five times and averaged by a WS2P working standard microphone for class 1 or 2 devices or a LS2P reference microphone for class 0 or LS devices as specified in the International Standard BS EN 61094-4. The results of three replications and the mean of the measurements obtained are given in the measurement results table of this certificate. The frequency and distortion were measured in a similar manner. The figures in **BOLD** are the final results; a small correction factor may need to be added to the sound pressure level quoted here if the device is used to calibrate a sound level meter that is fitted with a free field response microphone. See manufacturer's handbooks for full details of this and other corrections that may be applicable.

Sonitus House, 5b Chelmsford Road Industrial Estate, Great Dunmow, GB-CM6 1HD
Tel (+44) 01371 871030 Fax (+44) 01371 879106
email calibration@campbell-associates.co.uk

Calibration Report

Certificate No.:29201

Manufacturer:	**NTi Audio**
Type:	**MC230**
Serial no:	**8694**

Customer:	**Redkite Environmental Ltd**
Address:	**Hunter's Moon, Ballykeane Road, Redcross, Co. Wicklow. Ireland.**
Order No:	**P009/01**
Contact Person:	**Siobhan Maher**

Measurement Results:

	Sensitivity: (dB re 1V/Pa)	Capacitance: (pF)
1:	-26.51	17.8
2:	-26.51	17.7
3:	-26.52	17.7
Result (Average):	**-26.51**	**17.7**
Expanded Uncertainty:	0.10	2.00
Degree of Freedom:	>100	>100
Coverage Factor:	2.00	2.00

The following correction factors have been applied during the measurement:
Pressure:-0.005 dB/kPa Temperature:-0.010 dB/°C Relative humidity:0.000 dB/%RH

Reference Calibrator: WSC2 - GRAS42AA-18277 Volume correction: 0.000 dB
Records:K:\C A\Calibration\Nor-1504\Nor-1017 MicCal\2018\MC230_8694_M1.nmf
Measurement procedure: TP05
All results quoted are directly traceable to National Physical Laboratory, London

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA publication EA-4/02.

Comment:

Environmental conditions:

Pressure:	Temperature:	Relative humidity:
101.720 ± 0.041 kPa	21.1 ± 0.1 °C	47.1 ± 0.9 %RH

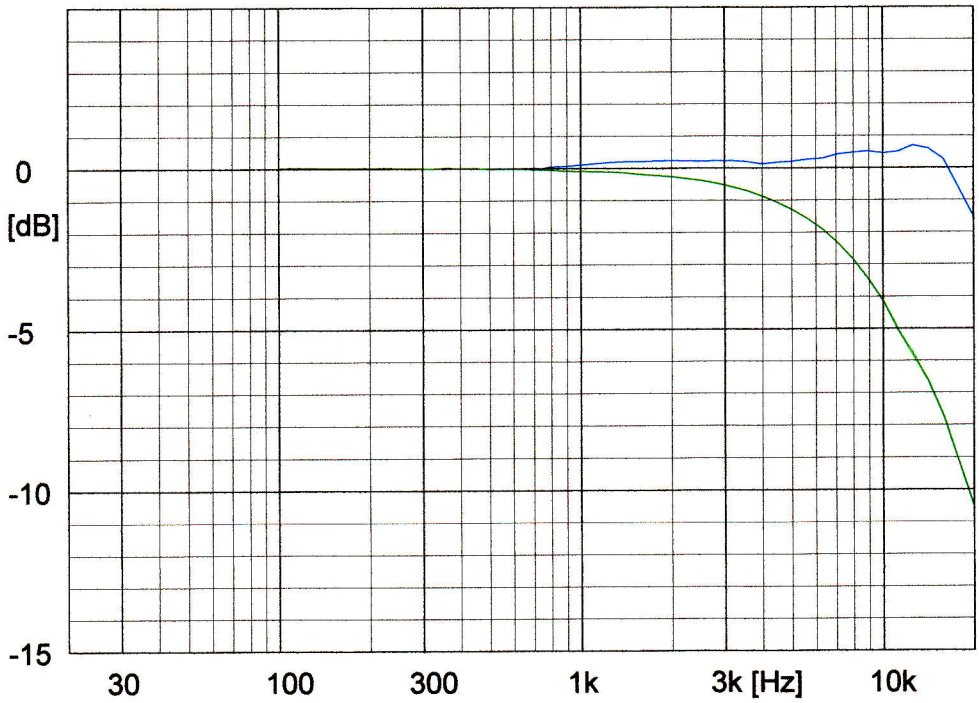
Date of calibration: 02/08/2018
Date of issue: 02/08/2018

Supervisor : Darren Batten TechIOA
Engineer :

Campbell Associates
www.campbell-associates.co.uk

Palanivel Marappan B.Eng (Hons), M.Sc
Software version: 6.0h

Microphone Calibration Certificate



NTi Audio
Type: MC230

Serial no: 8694

Sensitivity: 47.24 mV/Pa
-26.51 ±0.10 dB re. 1 V/Pa
Capacitance: 17.7 ±2.0 pF
Date: 02/08/2018

Signature: M-Hanivel

Measurement conditions:

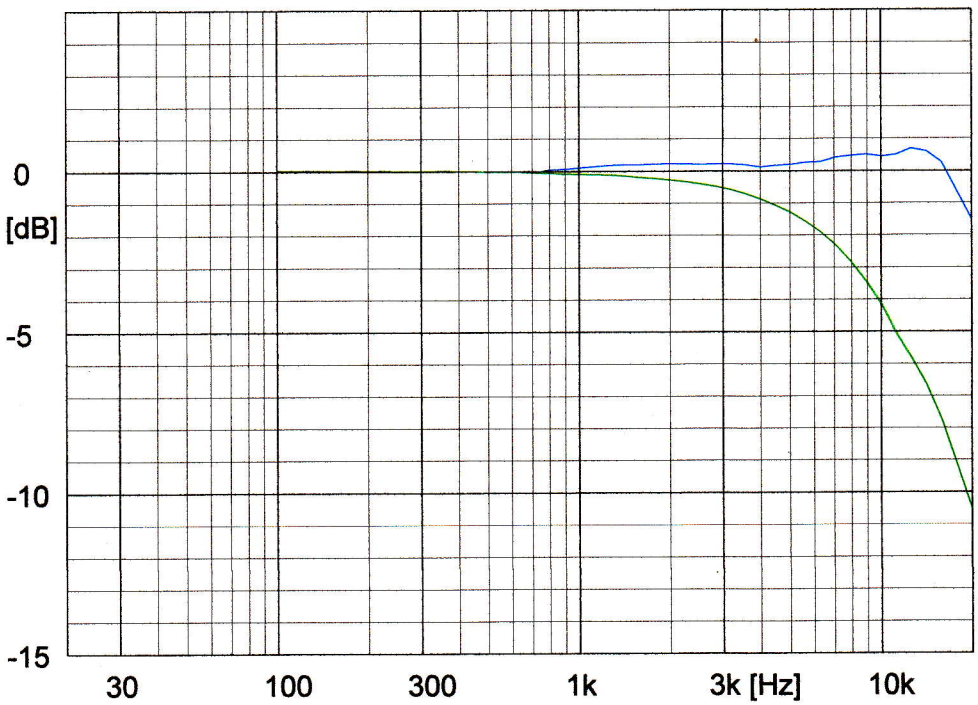
Polarisation voltage:	0.0 V
Pressure:	101.72 ±0.04 kPa
Temperature:	21.1 ±0.1 °C
Relative humidity:	47.1 ±0.9 %RH

Results are normalized to the reference conditions.

Free field response
Pressure (Actuator) response

Campbell Associates
www.campbell-associates.co.uk

Microphone Calibration Certificate



NTi Audio
Type: MC230

Serial no: 8694

Sensitivity: 47.24 mV/Pa
-26.51 ±0.10 dB re. 1 V/Pa
Capacitance: 17.7 ±2.0 pF
Date: 02/08/2018

Signature: M-Hanivel

Measurement conditions:

Polarisation voltage:	0.0 V
Pressure:	101.72 ±0.04 kPa
Temperature:	21.1 ±0.1 °C
Relative humidity:	47.1 ±0.9 %RH

Results are normalized to the reference conditions.

Free field response
Pressure (Actuator) response

Campbell Associates
www.campbell-associates.co.uk

Comment:

Certificate of Calibration

Issued to:	Certificate Number
Redkite Environmental Huntersmoon Ballykeane Road Redcross Co. Wicklow	AC190062

Test Date: 01/07/2019

Equipment Information

Item Calibrated:	Acoustic Calibrator	**Model:**	CR:515
Make:	Cirrus	**Serial Number:**	55191

Calibration Procedure

The above calibrator was verified in line with the requirements of BS EN 60942:2003. The calibrator was allowed to stablize for a suitable period, as described in the manufacturer's instruction manual, in laboratory conditions. The sound pressure level in the cavity (half-inch). The operating frequency and signal distortion were also measured.

Calibration Standards

Description	Serial Number
National Instruments PXI-4461	19C91D2
GRAS 42AA Pistonphone	227947
GRAS 46A0 Pressure Field Microphone	228216

The standards used in this calibration are traceable to NIST and/or other National Measurement Institutes (NMI's) that are signatories of the International Committee of Weights and Measures (CIPM) mutual recognition agreement (MRA).

Signed on behalf of Sonitus Systems:

SONITUS SYSTEMS

Calibration Report

Equipment Information

Model: CR:515
Serial Number: 55191

Ambient Conditions

Measurement conditions were within the tolerances defined in BS EN 60942.

Barometric Pressure:	1040 hPa
Temperature:	19.5 °C
Relative Humidity:	50 %

Results

Calibrator Setting	Measured Parameter	Measured Value	Tolerance +/-	Uncertainty +/-
94 dB, 1KHz	Sound pressure level (dB)	94.07	0.75	0.14 dB
	Frequency (Hz)	1000.11	20 Hz	0.25 Hz
	Distortion (%)	0.09	4.0	0.3

RESULT: PASS

As public evidence was available, from a testing organization responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2003, the sound calibrator tested is considered to conform to all the Class 1 requirements of IEC 60942:2003

The manufacturer's guidelines concerning free-field correction should be observed when using the calibrator.

Notes
1. All measurements were made with the half-inch configuration of the calibrator in place.
2. The measurement uncertainty is reported as a standard uncertainty multiplied by a coverage factor k=2 which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%.
3. The given uncertainty corresponds to measured values only and does not relate to the long term stability of the device under test.

Certificate of Calibration

Equipment Details

Instrument Manufacturer	Cirrus Research Plc
Instrument Type	CR:171B
Description	Sound Level Meter
Serial Number	G056143

Calibration Procedure

The instrument detailed above has been calibrated to the publish test and calibration data as detailed in the instrument hand book, using the techniques recommended in the latest revisions of the International Standards IEC 61672-1:2013, IEC 61672-1:2002, IEC 60651:1979, IEC 60804:2001, IEC 61260:1995, IEC 60942:2003, IEC 60942:1997, IEC 61252:1993, ANSI S1.4-1983, ANSI S1.11-1986 and ANSI S1.43-1997 where applicable.
Sound Level Meters: All Calibration procedures were carried out by substituting the microphone capsule with a suitable electrical signal, apart from the final acoustic calibration.

Calibration Traceability

The equipment detailed above was calibrated against the calibration laboratory standards held by Cirrus Research plc. These are traceable to International Standards {A.0.6}. The standards are:

Microphone Type	GRAS 40AP	Serial Number	173198	Calibration Ref.	0170
Calibrator Type	B&K 4231	Serial Number	2564324	Calibration Ref.	A1914
Calibrator Type	B&K 4231	Serial Number	2564325	Calibration Ref.	A1915
Calibrator Type	B&K 4231	Serial Number	2594796	Calibration Ref.	A1916

Calibrated by M.BERRY

Calibration Date 05 June 2018

Calibration Certificate Number 260720

This Calibration Certificate is valid for 24 months from the date above.

Cirrus Research plc, Acoustic House, Bridlington Road, Hunmanby, North Yorkshire, YO14 0PH
Telephone: +44 (0) 1723 891655 Fax: +44 (0) 1723 891742
Email: sales@cirrusresearch.co.uk

Brüel & Kjær

The Calibration Laboratory
Skodsborgvej 307, DK-2850 Nærum, Denmark

ilac-MRA DANAK CAL Reg.nr. 307

CERTIFICATE OF CALIBRATION

No: CDK1802543

CALIBRATION OF

Sound Level Meter:	Brüel & Kjær Type 2238	No: 2590900 Id: -
Microphone:	Brüel & Kjær Type 4188	No: 1773652

CUSTOMER

Enfonic Ltd
Charlestown Centre
Dublin
D11 KXC7
Ireland

CALIBRATION CONDITIONS

Preconditioning: 4 hours at 23°C ± 3°C

Environment conditions: Pressure: 101,3kPa ± 3kPa. Humidity: 25% - 70% RH. Temperature: 23°C ± 3°C.

SPECIFICATIONS

The Sound Level Meter Brüel & Kjær Type 2238 has been calibrated in accordance with the requirements as specified in IEC 60651 and 60804 type 1. The accreditation assures the traceability to the international units system SI.

PROCEDURE

The measurements have been performed with the assistance of Brüel & Kjær Sound Level Meter Calibration System 3630 with application software type 7763 (version 5.0 - DB: 5.00) by using procedure 2238-4188-BZ7125.

RESULTS

Calibration Mode: **Calibration as received.**

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ providing a level of confidence of approximately 95 %. The uncertainty evaluation has been carried out in accordance with EA-4/02 from elements originating from the standards, calibration method, effect of environmental conditions and any short time contribution from the device under calibration.

Date of calibration: 2018-04-04

Date of issue: 2018-04-04

M. Önder

Mikail Önder
Calibration Technician

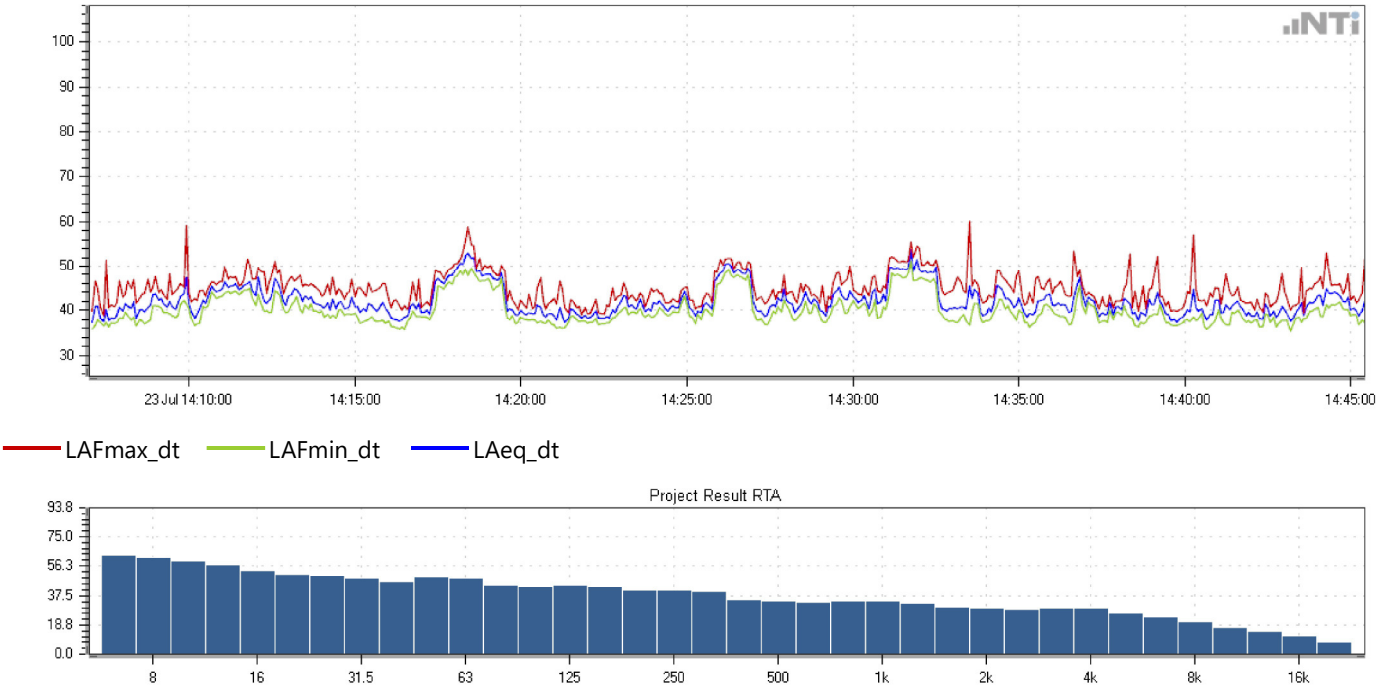
Erik Bruus
Approved Signatory

Appendix 8.2 Summary Sheets/Print-Outs from Noise Meters

NMP1 Daytime

Start: 2019-07-23 14:07:02

End: 2019-07-23 14:45:24



Configuration

Device Info: XL2, SNo. A2A-08898-E0, FW3.11 Type Approved

Mic Type: NTi Audio M2230, SNo. 5062, User calibrated 2019-07-23 14:04

Mic Sensitivity: 43.3 mV/Pa

Range: 0 - 100 dB

Ln based on: LAeq_dt

Results

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded		**00:38:22**	**60.1**	**35.4**	**43.7**		
Project Result		**00:38:22**	**60.1**	**35.4**	**43.7**	**47.9**	**38.6**

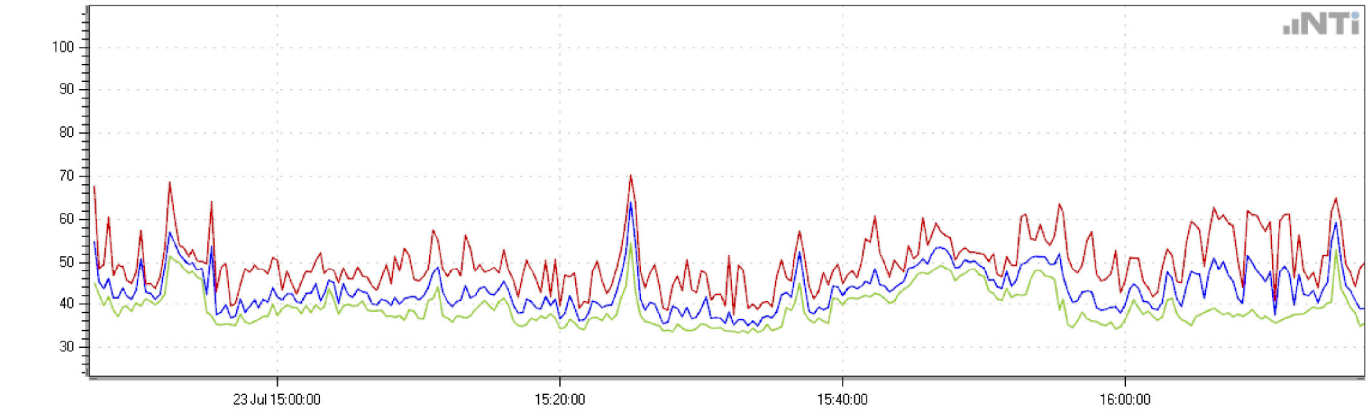
Audit Intervals

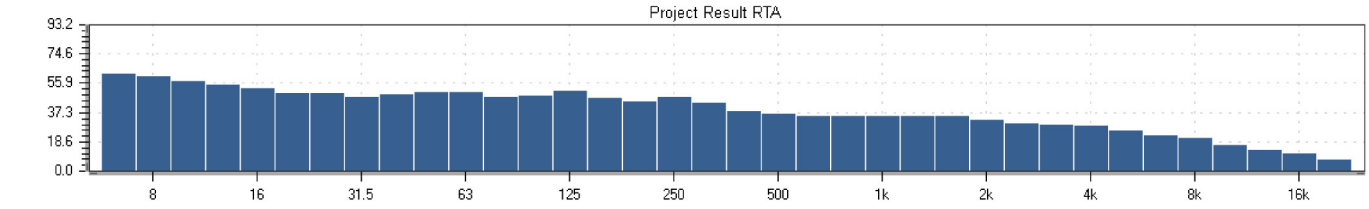
Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
15'	**2019-07-23 14:00:00**	**00:07:58**	**59.1**	**35.8**	**42.9**	**45.6**	**38.9**
15'	**2019-07-23 14:15:00**	**00:15:00**	**58.8**	**35.8**	**44.3**	**48.6**	**38.5**
15'	**2019-07-23 14:30:00**	**00:15:00**	**60.1**	**35.4**	**43.5**	**48.0**	**38.6**
15'	**2019-07-23 14:45:00**	**00:00:24**	**51.8**	**36.9**	**40.3**	**41.3**	**38.6**

NMP1 Daytime

Start: 2019-07-23 14:46:46

End: 2019-07-23 16:16:52





Configuration

Device Info:	XL2, SNo. A2A-08898-E0, FW3.11 Type Approved
Mic Type:	NTi Audio M2230, SNo. 5062, User calibrated 2019-07-23 14:04
Mic Sensitivity:	43.3 mV/Pa
Range:	0 - 100 dB
Ln based on:	LAeq_dt

Results

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded		**01:30:06**	**70.2**	**33.3**	**47.2**		
Project Result		**01:30:06**	**70.2**	**33.3**	**47.2**	**50.2**	**37.1**

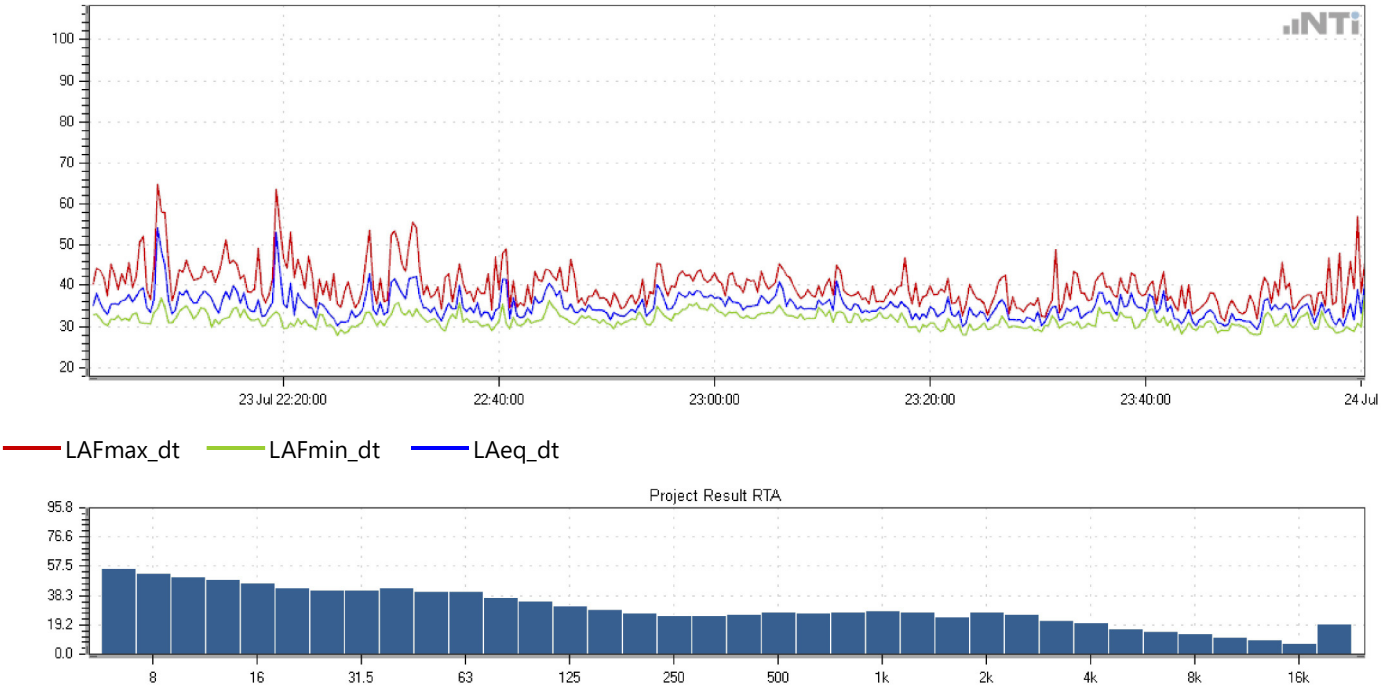
Audit Intervals

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
15'	**2019-07-23 14:45:00**	**00:13:14**	**68.6**	**35.1**	**47.9**	**51.8**	**37.3**
15'	**2019-07-23 15:00:00**	**00:15:00**	**57.5**	**35.9**	**42.8**	**45.3**	**39.4**
15'	**2019-07-23 15:15:00**	**00:15:00**	**70.2**	**33.6**	**48.8**	**45.4**	**36.0**
15'	**2019-07-23 15:30:00**	**00:15:00**	**60.8**	**33.3**	**43.6**	**46.4**	**35.5**
15'	**2019-07-23 15:45:00**	**00:15:00**	**63.6**	**34.3**	**48.7**	**52.3**	**38.3**
15'	**2019-07-23 16:00:00**	**00:15:00**	**64.9**	**35.0**	**48.0**	**52.2**	**38.5**
15'	**2019-07-23 16:15:00**	**00:01:52**	**59.4**	**34.9**	**45.4**	**47.9**	**37.6**

NMP1 Evening & Night time

Start: 2019-07-23 22:02:10

End: 2019-07-24 00:00:05



Configuration

Device Info: XL2, SNo. A2A-08898-E0, FW3.11 Type Approved

Mic Type: NTi Audio M2230, SNo. 5062, User calibrated 2019-07-23 21:58

Mic Sensitivity: 43.1 mV/Pa

Range: 0 - 100 dB

Ln based on: LAeq_dt

Results

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded		**01:57:55**	**64.8**	**27.9**	**37.2**		
Project Result		**01:57:55**	**64.8**	**27.9**	**37.2**	**38.5**	**31.2**

Audit Intervals

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
15'	**2019-07-23 22:00:00**	**00:12:50**	**64.8**	**29.8**	**41.4**	**40.5**	**32.8**
15'	**2019-07-23 22:15:00**	**00:15:00**	**63.6**	**27.9**	**39.5**	**39.4**	**31.1**
15'	**2019-07-23 22:30:00**	**00:15:00**	**55.6**	**28.9**	**37.1**	**40.5**	**31.8**
15'	**2019-07-23 22:45:00**	**00:15:00**	**46.5**	**29.4**	**35.9**	**38.5**	**32.4**
15'	**2019-07-23 23:00:00**	**00:15:00**	**45.5**	**31.0**	**36.0**	**38.0**	**33.4**
15'	**2019-07-23 23:15:00**	**00:15:00**	**46.9**	**28.0**	**33.7**	**36.1**	**30.6**
15'	**2019-07-23 23:30:00**	**00:15:00**	**48.9**	**28.2**	**34.7**	**37.6**	**30.8**
15'	**2019-07-23 23:45:00**	**00:15:00**	**57.0**	**28.0**	**33.5**	**35.7**	**30.0**
15'	**2019-07-24 00:00:00**	**00:00:05**	**45.7**	**37.8**	**40.4**	**41.1**	**40.3**

Cirrus Research plc

Measurement Summary Report

Name	NMP2 Daytime #1
Time	7/23/2019 2:30:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	43.3 dB
LAE	72.8 dB
LAFMax	59.2 dB

LAF1	50.8 dB
LAF5	46.7 dB
LAF10	45.4 dB
LAF50	41.6 dB
LAF90	39.2 dB
LAF95	38.7 dB
LAF99	37.9 dB

Calibration Information

7/23/2019 2:15:54 PM 0.44 dB

7/23/2019 4:06:26 PM 0.44 dB

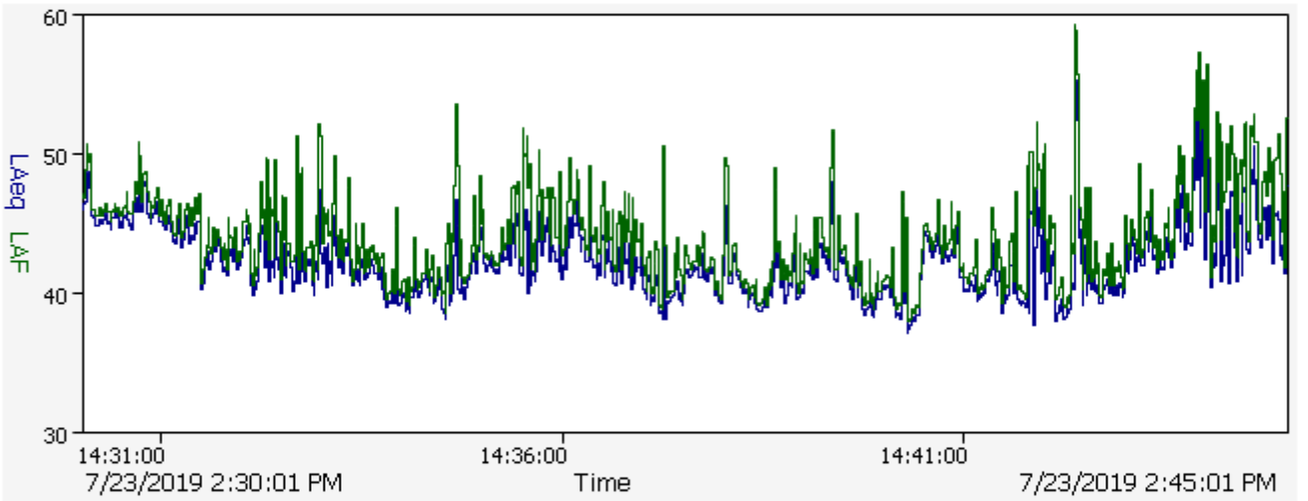
Person

Maher Siobhan

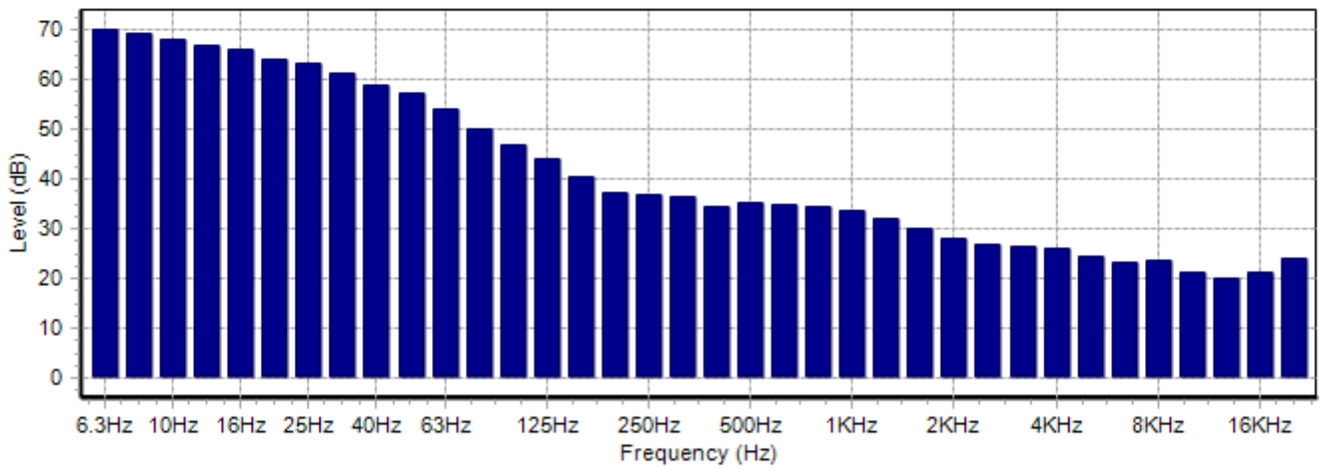
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Daytime #2
Time	7/23/2019 2:45:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	47.2 dB
LAE	76.8 dB
LAFMax	63.9 dB

LAF1	55.6 dB
LAF5	52.9 dB
LAF10	50.7 dB
LAF50	43.7 dB
LAF90	40.4 dB
LAF95	39.8 dB
LAF99	38.9 dB

Calibration Information

7/23/2019 2:15:54 PM 0.44 dB

7/23/2019 4:06:26 PM 0.44 dB

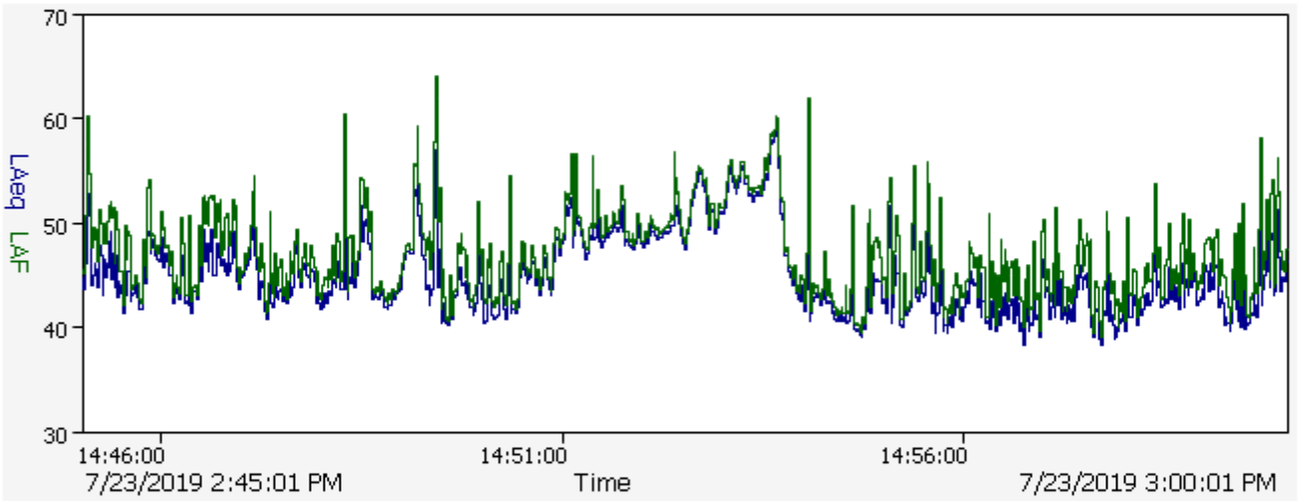
Person

Maher Siobhan

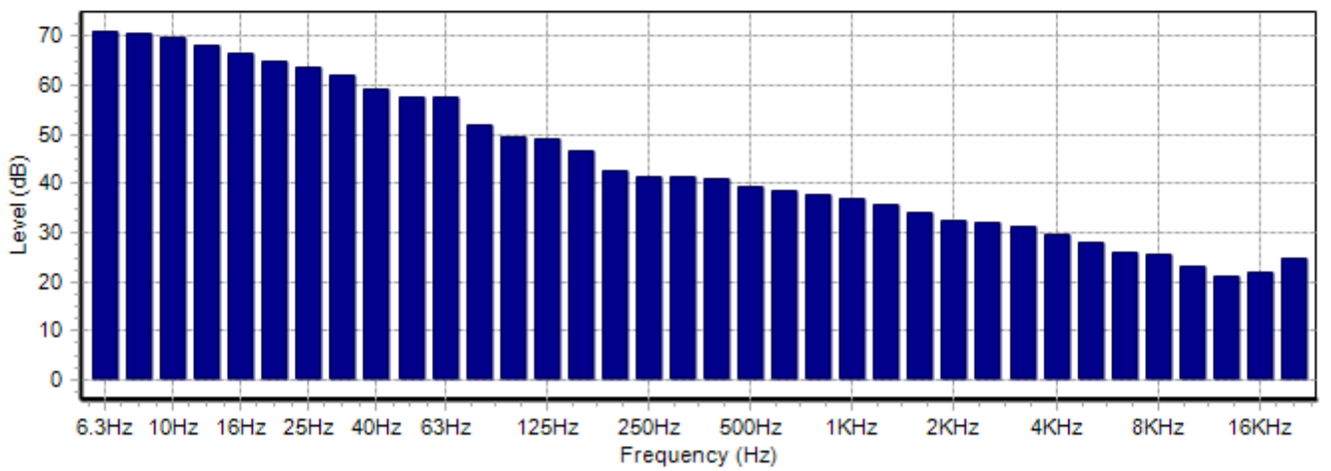
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Daytime #3
Time	7/23/2019 3:00:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	56.0 dB
LAE	85.5 dB
LAFMax	66.5 dB

LAF1	64.7 dB
LAF5	63.1 dB
LAF10	61.5 dB
LAF50	43.8 dB
LAF90	40.3 dB
LAF95	39.7 dB
LAF99	38.8 dB

Calibration Information

7/23/2019 2:15:54 PM 0.44 dB

7/23/2019 4:06:26 PM 0.44 dB

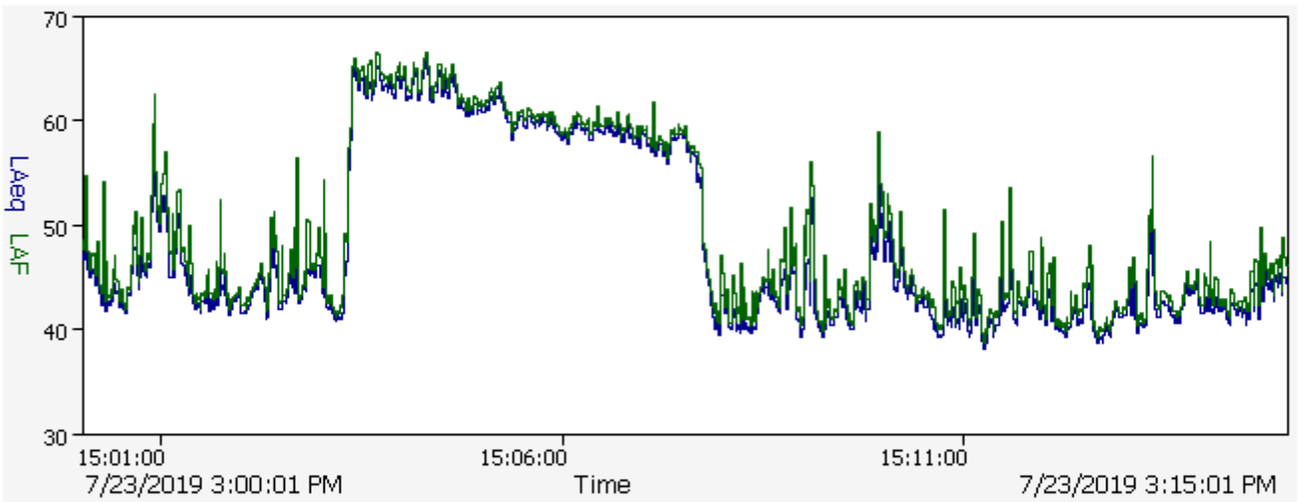
Person

Maher Siobhan

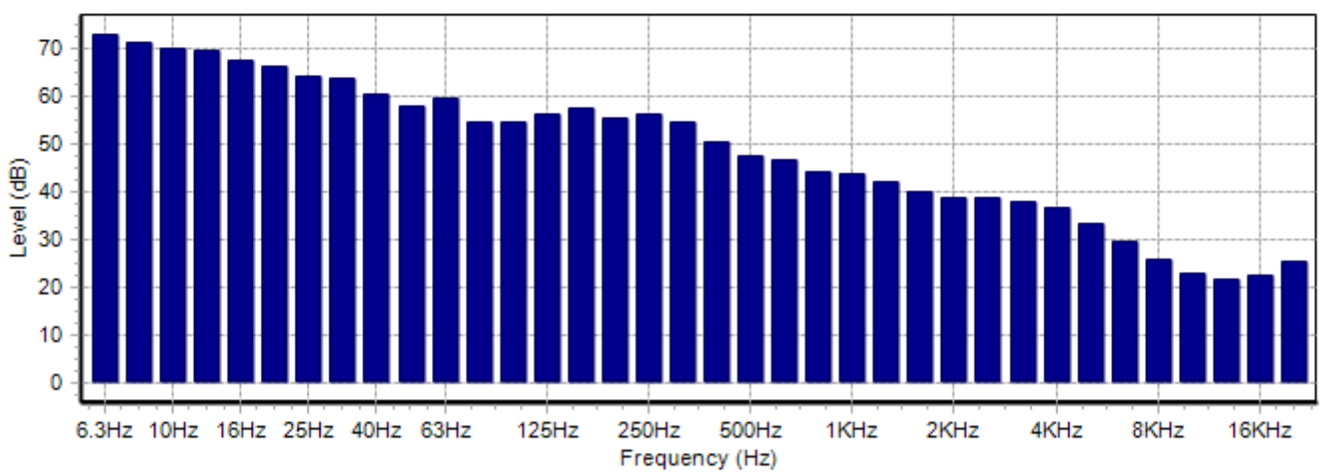
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Daytime #4
Time	7/23/2019 3:15:02 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	53.6 dB
LAE	83.1 dB
LAFMax	69.2 dB

LAF1	63.8 dB
LAF5	59.5 dB
LAF10	58.6 dB
LAF50	41.9 dB
LAF90	38.7 dB
LAF95	38.1 dB
LAF99	37.2 dB

Calibration Information

7/23/2019 2:15:54 PM 0.44 dB

7/23/2019 4:06:26 PM 0.44 dB

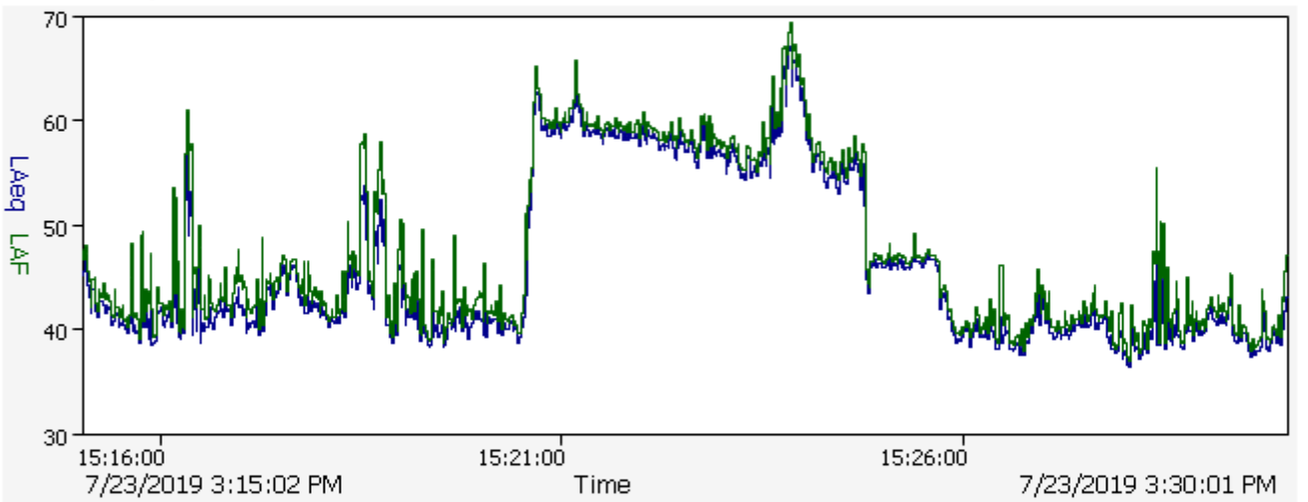
Person

Maher Siobhan

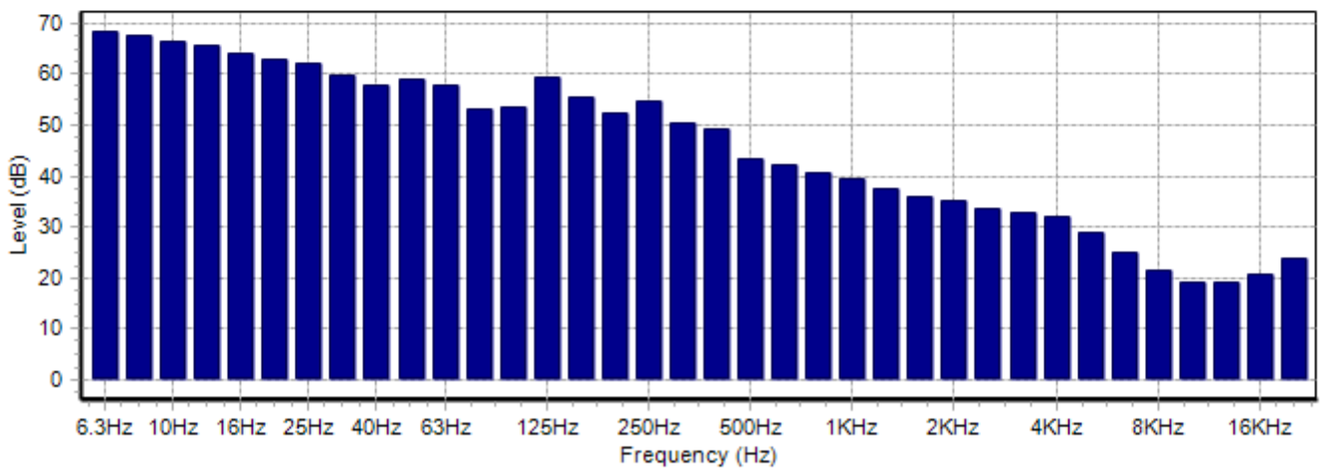
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Daytime #5
Time	7/23/2019 3:30:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	46.9 dB
LAE	76.4 dB
LAFMax	60.9 dB

LAF1	55.3 dB
LAF5	53.4 dB
LAF10	51.7 dB
LAF50	43.5 dB
LAF90	38.5 dB
LAF95	38.0 dB
LAF99	37.3 dB

Calibration Information

7/23/2019 2:15:54 PM 0.44 dB

7/23/2019 4:06:26 PM 0.44 dB

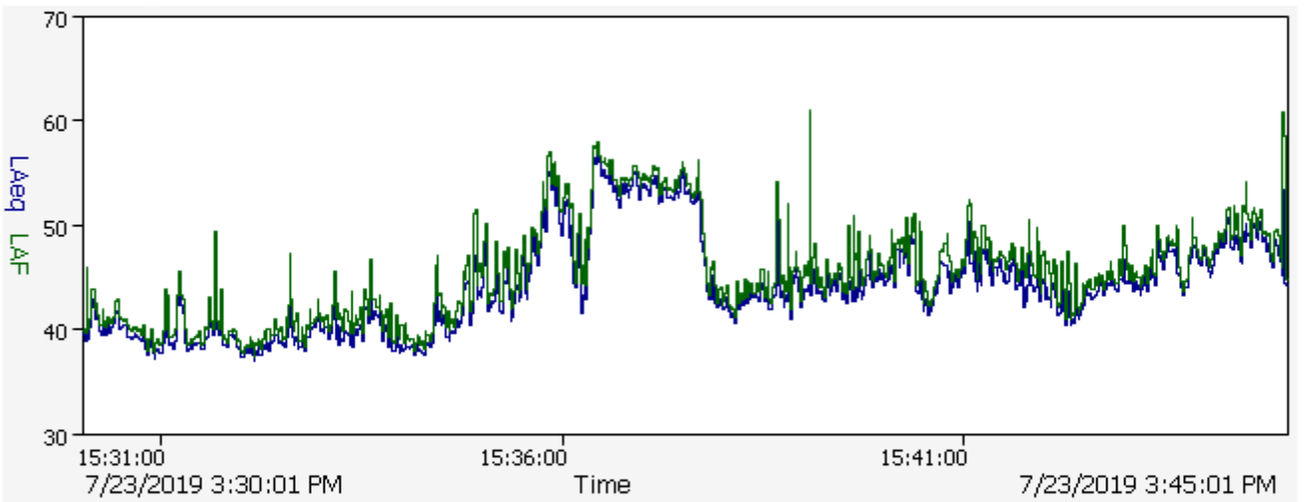
Person

Maher Siobhan

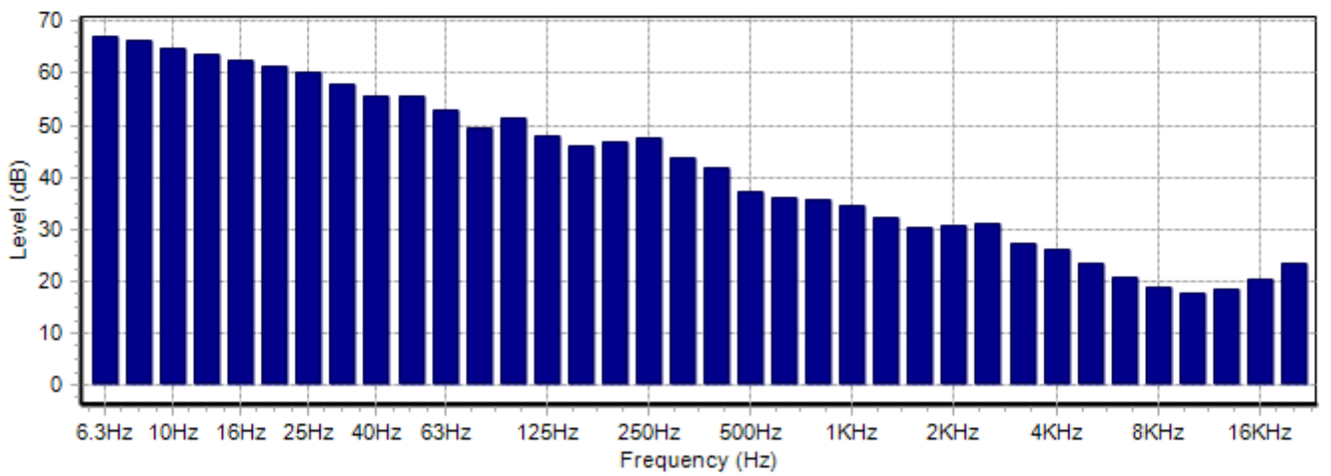
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Daytime #6
Time	7/23/2019 3:45:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	46.0 dB
LAE	75.6 dB
LAFMax	65.1 dB

LAF1	52.3 dB
LAF5	49.8 dB
LAF10	48.6 dB
LAF50	44.5 dB
LAF90	40.0 dB
LAF95	38.9 dB
LAF99	38.0 dB

Calibration Information

7/23/2019 2:15:54 PM 0.44 dB

7/23/2019 4:06:26 PM 0.44 dB

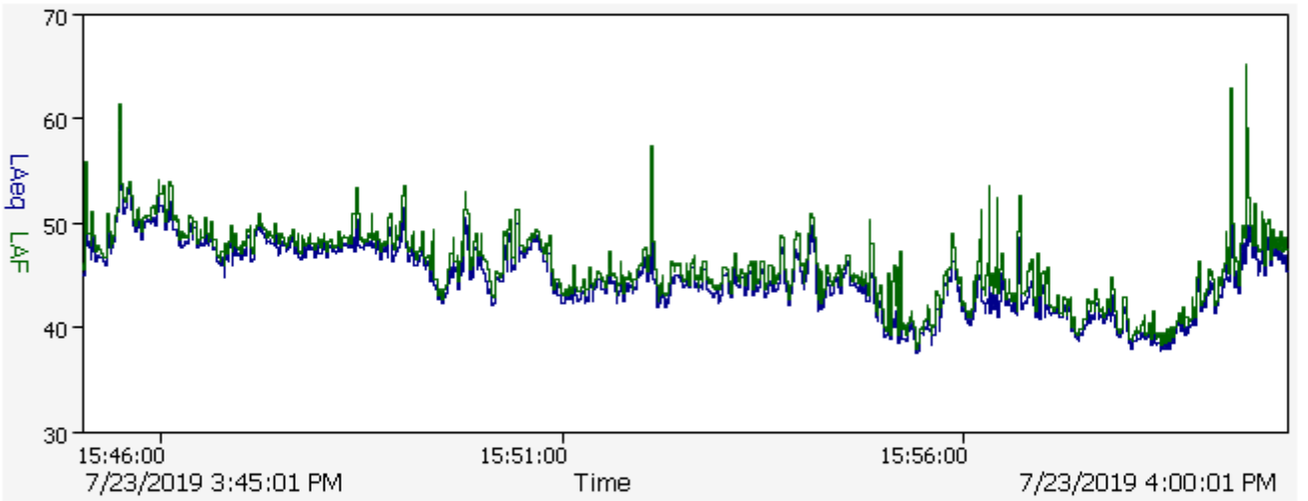
Person

Maher Siobhan

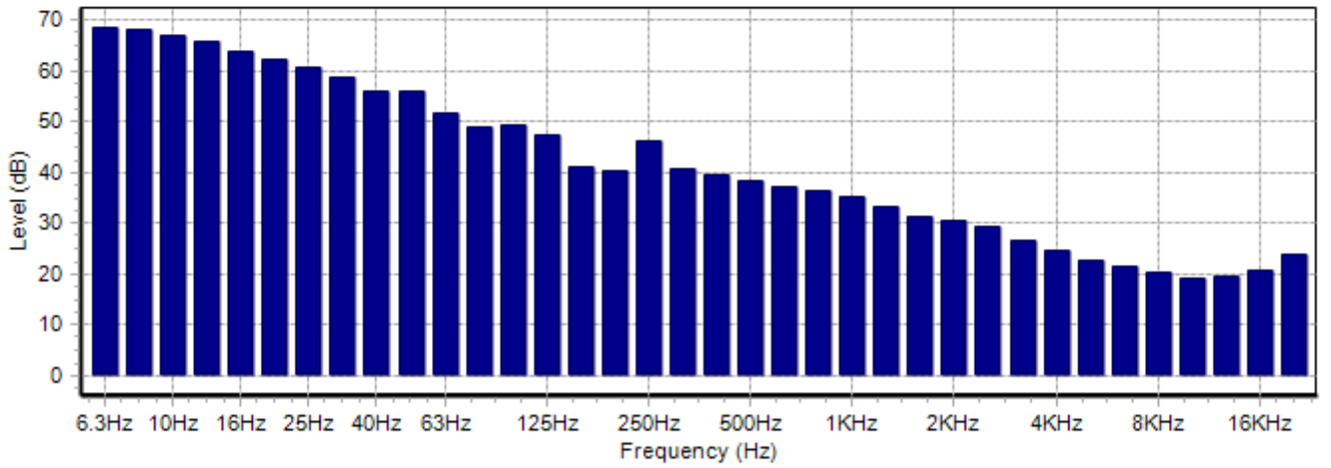
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Evening #1
Time	7/23/2019 10:15:02 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	37.5 dB
LAE	67.0 dB
LAFMax	52.1 dB

LAF1	43.6 dB
LAF5	41.0 dB
LAF10	39.8 dB
LAF50	36.4 dB
LAF90	33.4 dB
LAF95	32.6 dB
LAF99	30.6 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

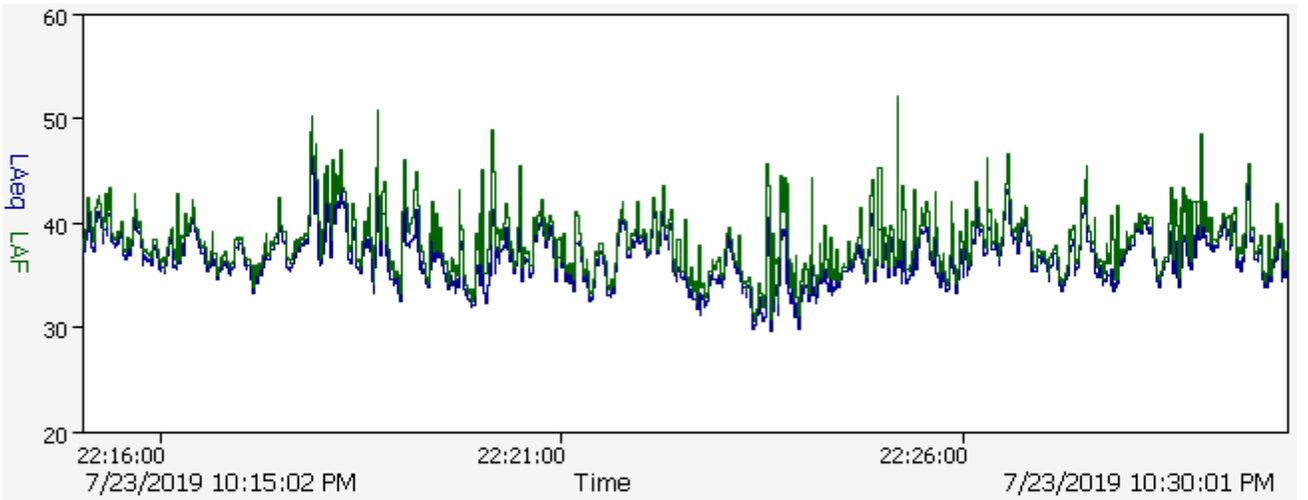
Person

Maher Siobhan

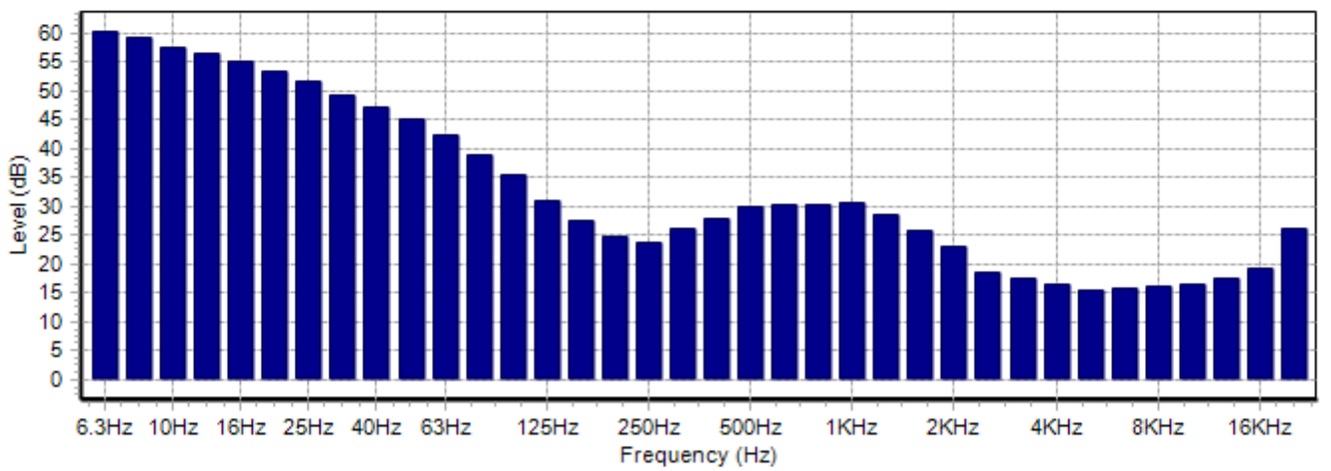
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Evening #2
Time	7/23/2019 10:30:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	37.3 dB
LAE	66.9 dB
LAFMax	48.8 dB

LAF1	42.8 dB
LAF5	40.6 dB
LAF10	39.5 dB
LAF50	36.4 dB
LAF90	34.0 dB
LAF95	33.0 dB
LAF99	31.4 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

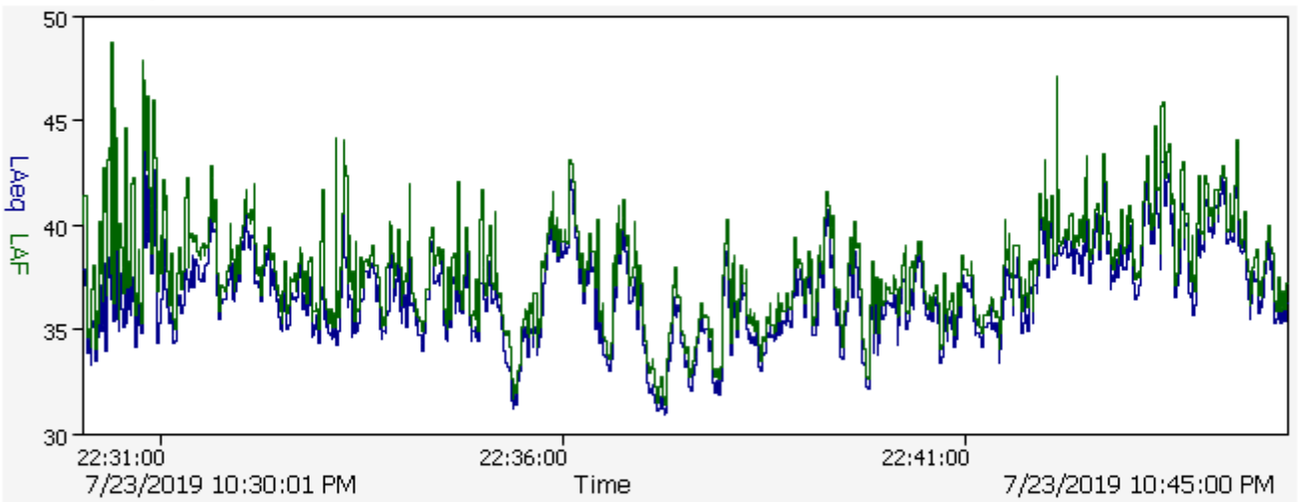
Person

Maher Siobhan

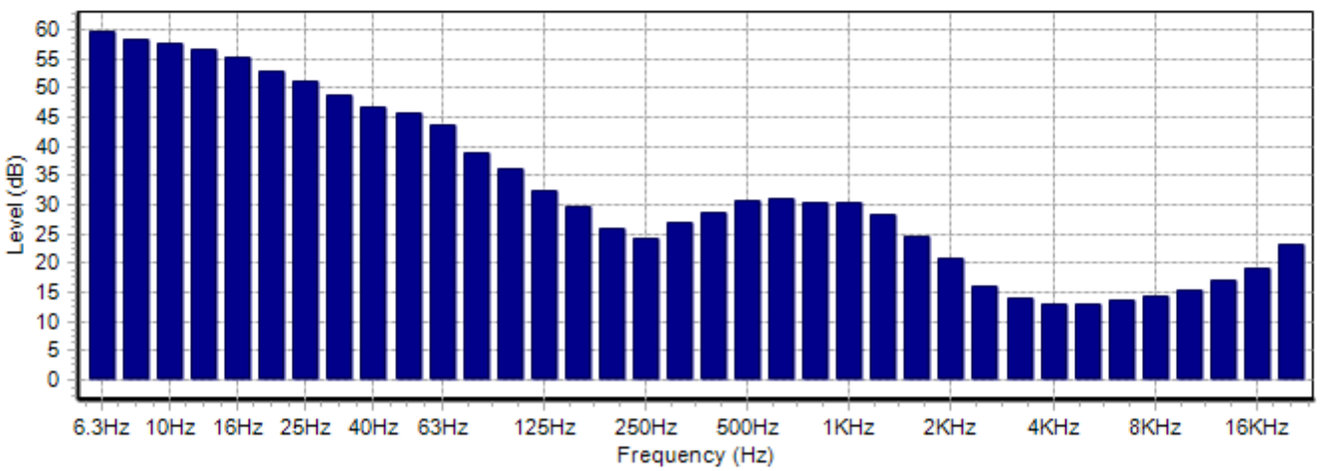
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Evening #3
Time	7/23/2019 10:45:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	37.3 dB
LAE	66.8 dB
LAFMax	50.2 dB

LAF1	42.6 dB
LAF5	40.3 dB
LAF10	39.3 dB
LAF50	36.5 dB
LAF90	34.2 dB
LAF95	33.4 dB
LAF99	32.2 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

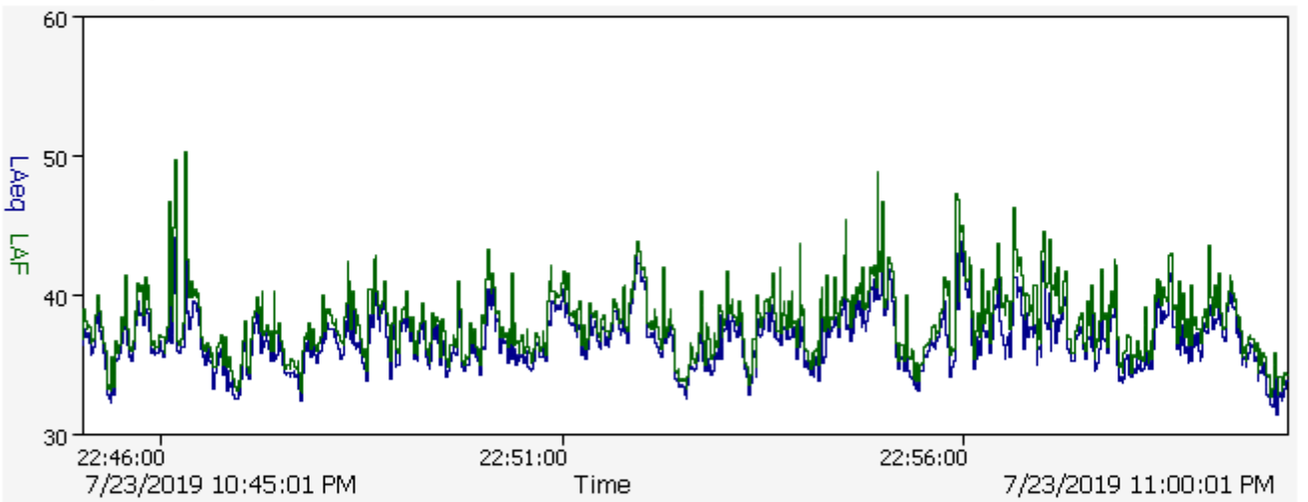
Person

Maher Siobhan

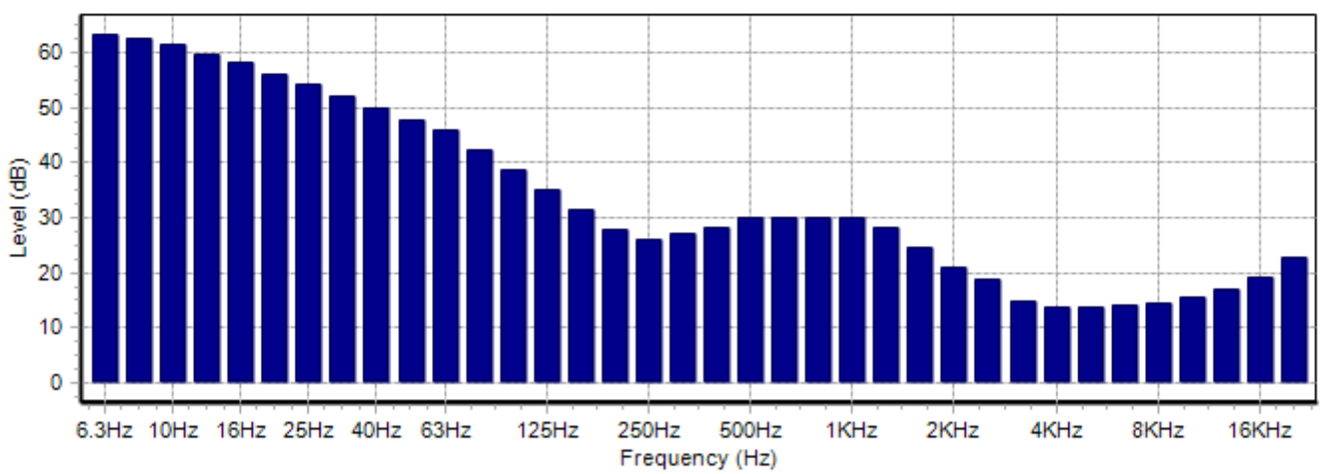
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Night #1
Time	7/23/2019 11:00:02 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	36.7 dB
LAE	66.2 dB
LAFMax	52.1 dB

LAF1	44.5 dB
LAF5	40.4 dB
LAF10	38.9 dB
LAF50	35.2 dB
LAF90	32.3 dB
LAF95	31.6 dB
LAF99	30.8 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

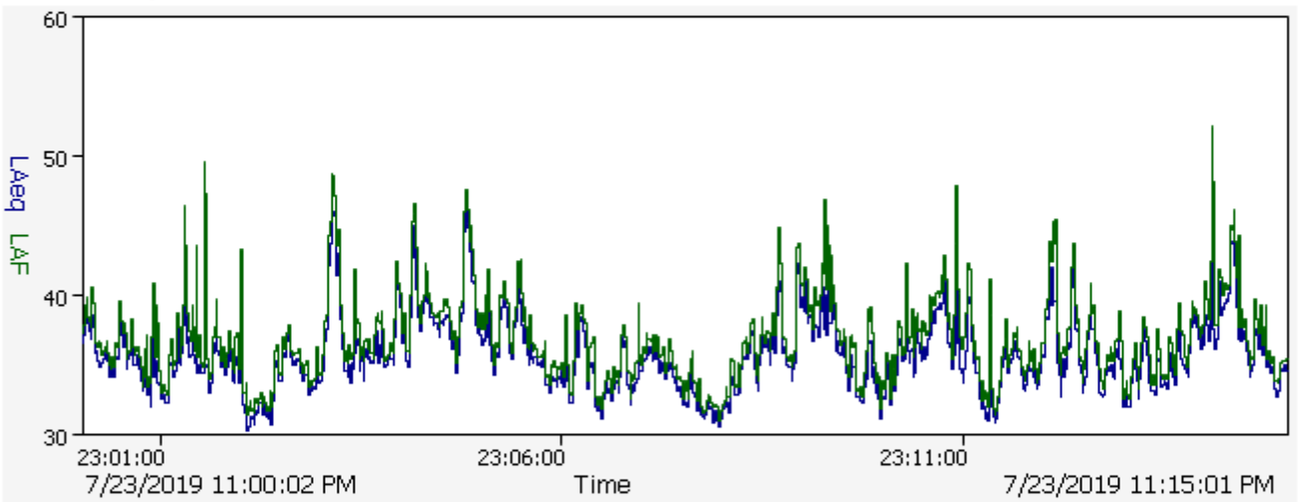
Person

Maher Siobhan

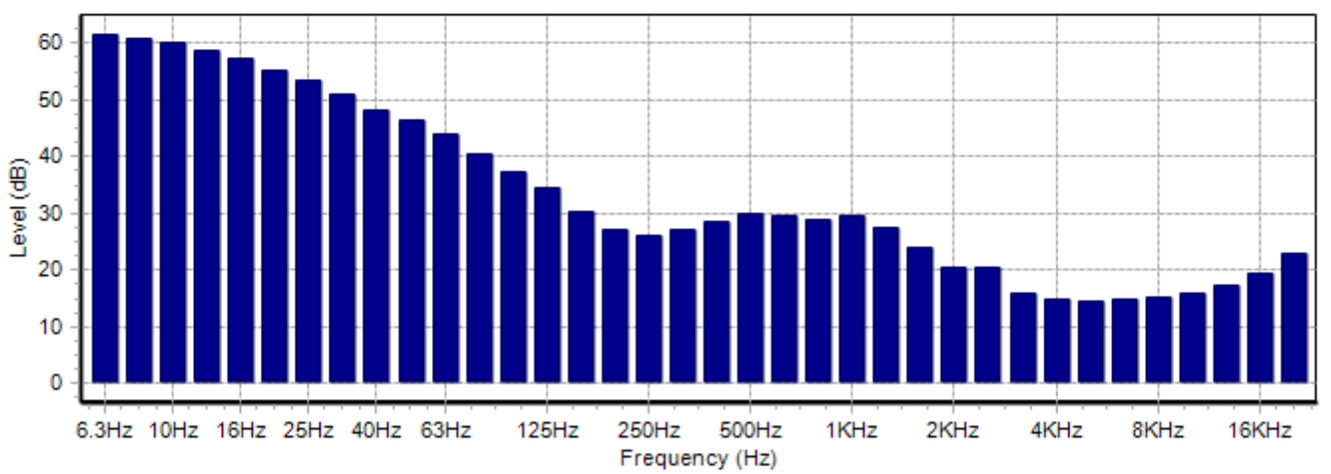
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Night #2
Time	7/23/2019 11:15:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	35.7 dB
LAE	65.2 dB
LAFMax	52.3 dB

LAF1	43.5 dB
LAF5	39.5 dB
LAF10	38.2 dB
LAF50	34.1 dB
LAF90	31.2 dB
LAF95	30.3 dB
LAF99	29.4 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

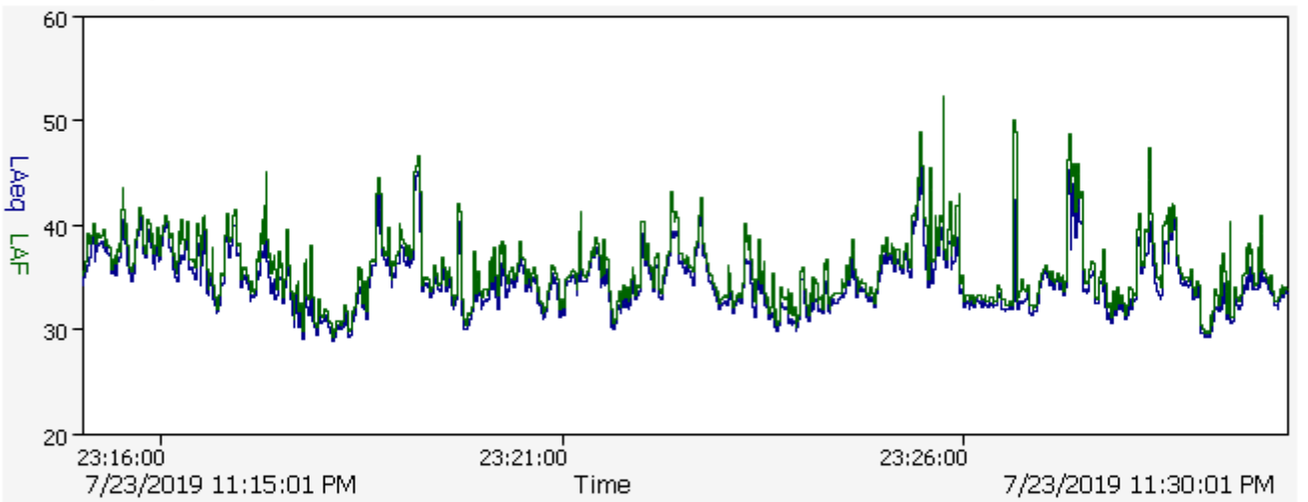
Person

Maher Siobhan

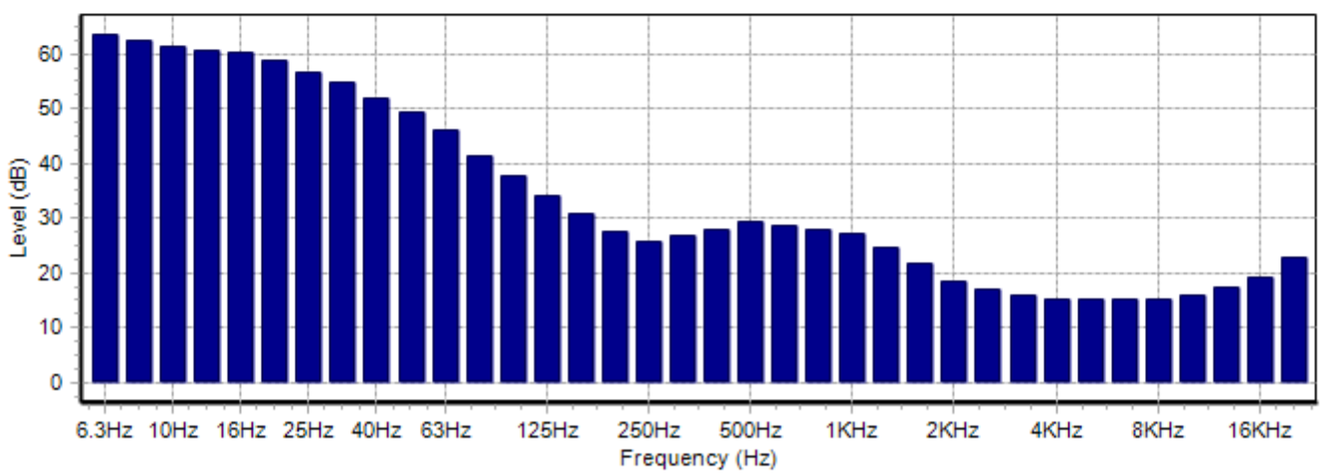
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Night #3
Time	7/23/2019 11:30:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	36.9 dB
LAE	66.4 dB
LAFMax	54.3 dB

LAF1	45.5 dB
LAF5	41.4 dB
LAF10	39.3 dB
LAF50	34.7 dB
LAF90	31.8 dB
LAF95	31.3 dB
LAF99	30.5 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

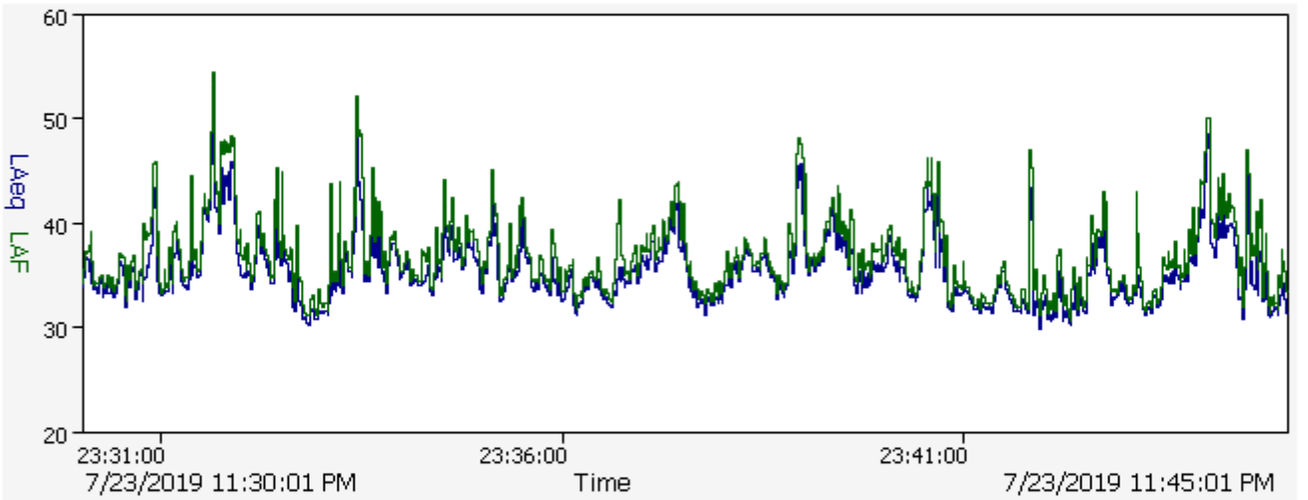
Person

Maher Siobhan

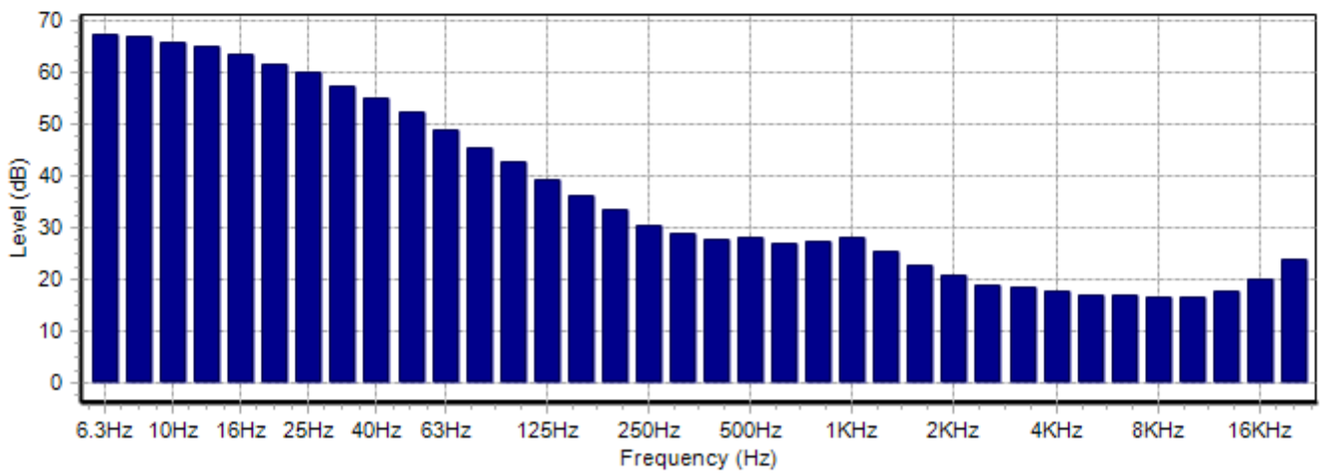
Place

Capdoo, Clane

Time History



Frequency Bands



Cirrus Research plc

Measurement Summary Report

Name	NMP2 Night #4
Time	7/23/2019 11:45:01 PM
Duration	00:15:00
Instrument	G056143, CR:171B

Summary

LAeq	36.2 dB
LAE	65.7 dB
LAFMax	52.9 dB

LAF1	43.9 dB
LAF5	40.3 dB
LAF10	38.8 dB
LAF50	34.3 dB
LAF90	31.3 dB
LAF95	30.6 dB
LAF99	29.6 dB

Calibration Information

7/23/2019 10:03:42 PM 0.40 dB

7/24/2019 12:03:58 AM 0.38 dB

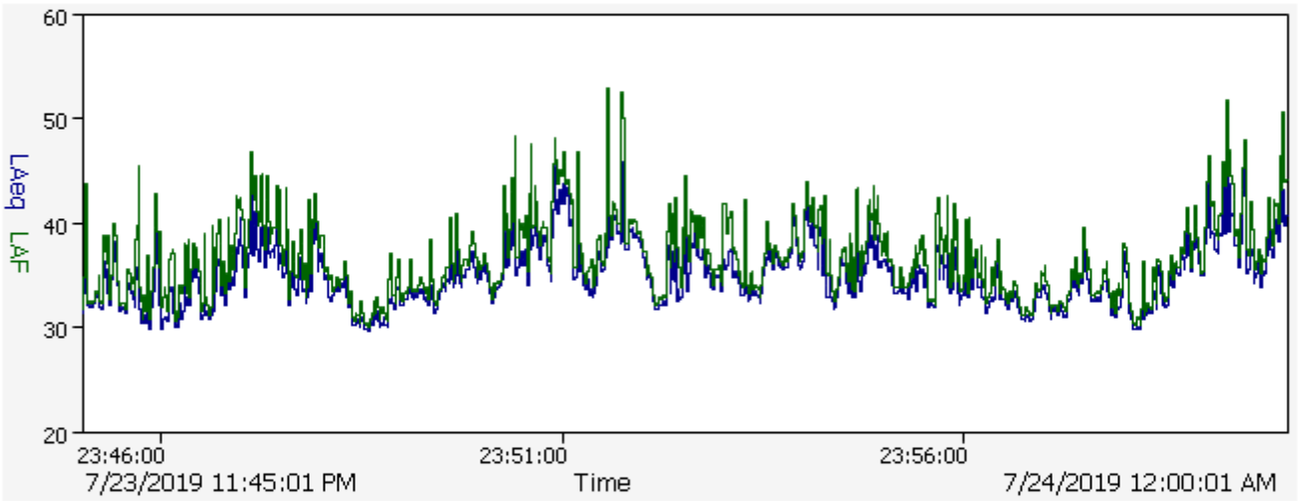
Person

Maher Siobhan

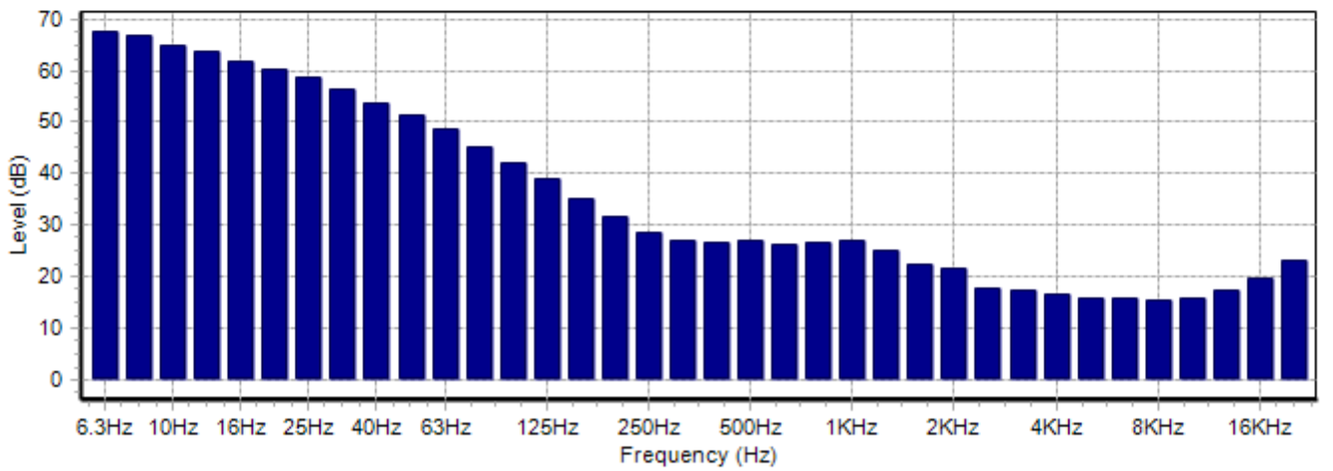
Place

Capdoo, Clane

Time History



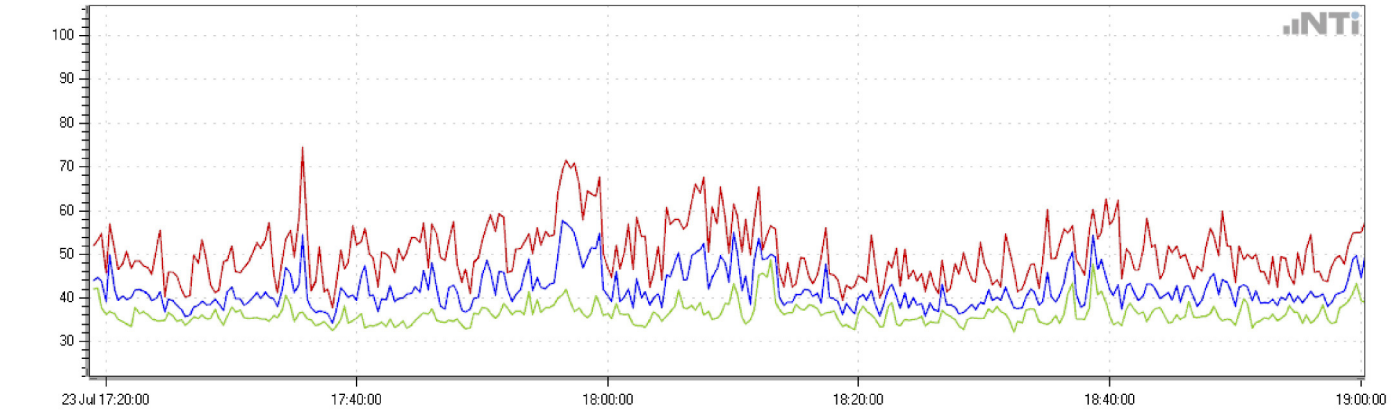
Frequency Bands

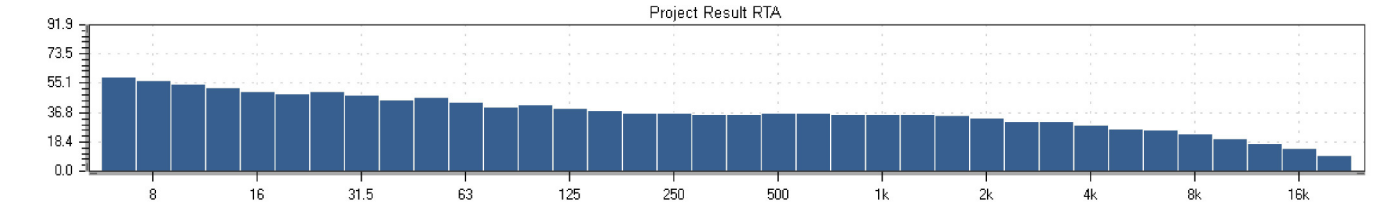


NMP3 Daytime

Start: 2019-07-23 17:18:48

End: 2019-07-23 19:00:01





Configuration

Device Info: XL2, SNo. A2A-08898-E0, FW3.11 Type Approved

Mic Type: NTi Audio M2230, SNo. 5062, User calibrated 2019-07-23 16:19

Mic Sensitivity: 43.1 mV/Pa

Range: 0 - 100 dB

Ln based on: LAeq_dt

Results

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded		**01:41:13**	**74.5**	**32.2**	**45.0**		
Project Result		**01:41:13**	**74.5**	**32.2**	**45.0**	**47.1**	**36.5**

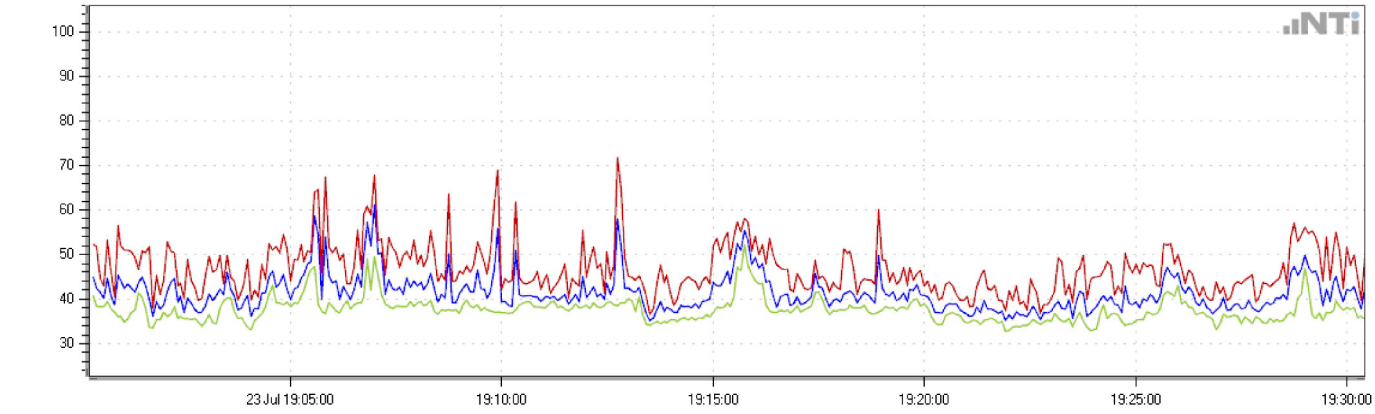
Audit Intervals

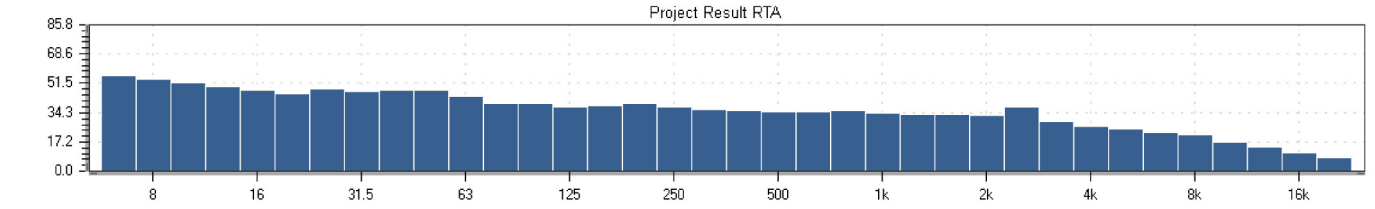
Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
15'	**2019-07-23 17:15:00**	**00:11:12**	**57.0**	**33.5**	**41.3**	**43.7**	**36.2**
15'	**2019-07-23 17:30:00**	**00:15:00**	**74.5**	**32.6**	**42.9**	**44.5**	**35.7**
15'	**2019-07-23 17:45:00**	**00:15:00**	**71.5**	**33.0**	**49.0**	**51.7**	**37.2**
15'	**2019-07-23 18:00:00**	**00:15:00**	**67.6**	**33.3**	**47.4**	**50.9**	**37.3**
15'	**2019-07-23 18:15:00**	**00:15:00**	**56.1**	**32.8**	**40.0**	**42.4**	**35.9**
15'	**2019-07-23 18:30:00**	**00:15:00**	**62.7**	**32.2**	**44.0**	**47.0**	**36.7**
15'	**2019-07-23 18:45:00**	**00:15:00**	**59.9**	**33.2**	**42.3**	**45.1**	**37.2**
15'	**2019-07-23 19:00:00**	**00:00:01**	**57.3**	**39.0**	**49.5**	**49.6**	**49.6**

NMP3 Evening

Start: 2019-07-23 19:00:16

End: 2019-07-23 19:30:25





Configuration

Device Info:	XL2, SNo. A2A-08898-E0, FW3.11 Type Approved
Mic Type:	NTi Audio M2230, SNo. 5062, User calibrated 2019-07-23 16:19
Mic Sensitivity:	43.1 mV/Pa
Range:	0 - 100 dB
Ln based on:	LAeq_dt

Results

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded		**00:30:09**	**71.9**	**32.6**	**44.9**		
Project Result		**00:30:09**	**71.9**	**32.6**	**44.9**	**46.0**	**36.7**

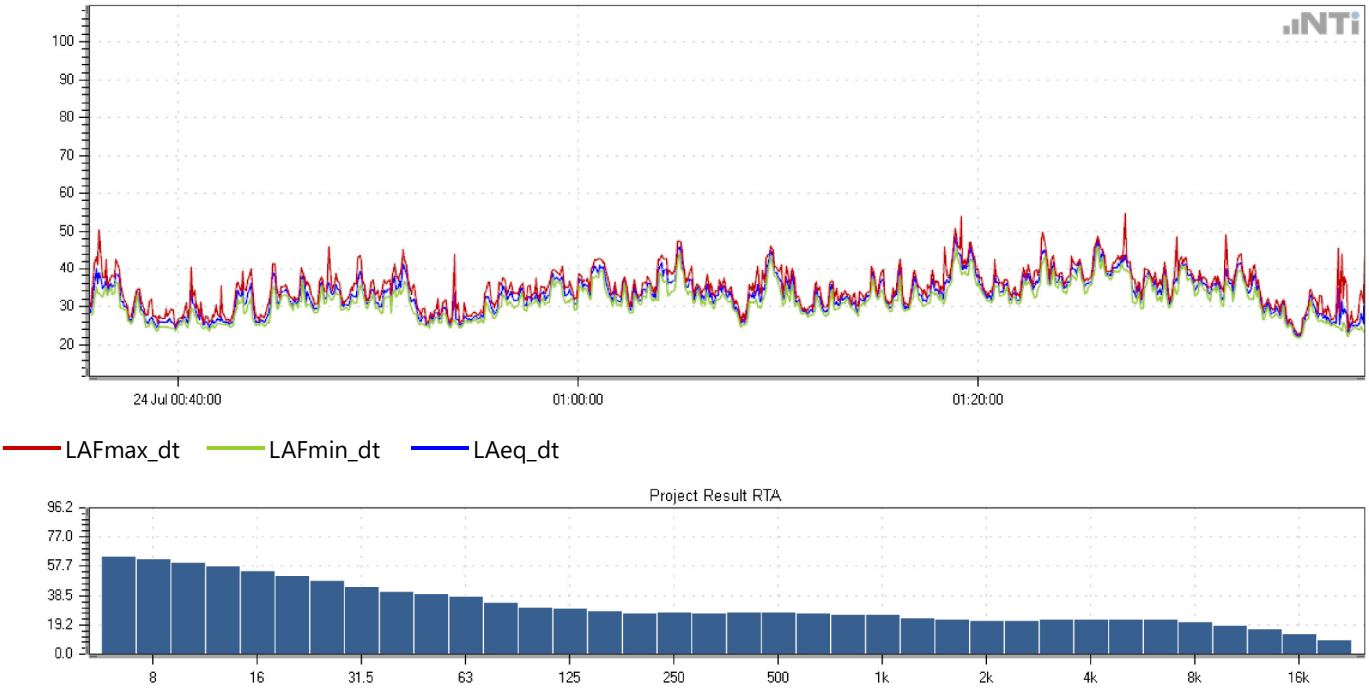
Audit Intervals

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
15'	**2019-07-23 19:00:00**	**00:14:44**	**71.9**	**33.0**	**46.3**	**46.2**	**37.3**
15'	**2019-07-23 19:15:00**	**00:15:00**	**60.2**	**32.6**	**42.8**	**45.7**	**36.3**
15'	**2019-07-23 19:30:00**	**00:00:25**	**49.9**	**35.5**	**41.2**	**44.1**	**37.5**

NMP3 Night time

Start: 2019-07-24 00:35:38

End: 2019-07-24 01:39:16



Configuration

Device Info: XL2, SNo. A2A-08898-E0, FW3.11 Type Approved

Mic Type: NTi Audio M2230, SNo. 5062, User calibrated 2019-07-24 00:03

Mic Sensitivity: 43.2 mV/Pa

Range: 0 - 100 dB

Ln based on: LAeq_dt

Results

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
Recorded		**01:03:38**	**54.8**	**21.6**	**36.0**		
Project Result		**01:03:38**	**54.8**	**21.6**	**36.0**	**39.5**	**26.2**

Audit Intervals

Type	Start Date and Time	Duration	LAFmax [dB]	LAFmin [dB]	LAeq [dB]	L 10.0 % [dB]	L 90.0 % [dB]
15'	**2019-07-24 00:30:00**	**00:09:22**	**50.4**	**23.5**	**31.9**	**35.9**	**25.3**
15'	**2019-07-24 00:45:00**	**00:15:00**	**46.0**	**24.2**	**33.2**	**36.4**	**26.8**
15'	**2019-07-24 01:00:00**	**00:15:00**	**47.5**	**24.6**	**36.1**	**39.5**	**29.2**
15'	**2019-07-24 01:15:00**	**00:15:00**	**54.8**	**28.7**	**39.0**	**42.4**	**31.7**
15'	**2019-07-24 01:30:00**	**00:09:16**	**49.1**	**21.6**	**34.5**	**38.7**	**24.7**

Appendix 10.1 Traffic Impact Assessment

18039-02-001

PROPOSED RESIDENTIAL DEVELOPMENT AT LANDS AT CAPDOO & ABBEYLANDS, CLANE, CO. KILDARE

Traffic Impact Assessment

for

Westar Investments Limited

October 2019

ROADPLAN CONSULTING

7, Ormonde Road
Kilkenny.
R95 N4FE

Tel: 056 7795800
info@roadplan.ie

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Appendix A - Drawings
Appendix B - Traffic Counts
Appendix C - Traffic Flow Sheets
Appendix D - TRICS Information
Appendix E - PICADY Results
Appendix F - ARCADY Results
Appendix G - TRANSYT Results

1 INTRODUCTION

1 Introduction

1.1 INTRODUCTION

Roadplan Consulting were commissioned by Westar Investments Limited to prepare a Traffic Impact Assessment for the proposed residential development at lands at Capdoo & Abbeylands, Clane, Co. Kildare.

In preparing this report, Roadplan Consulting has made reference to:

- The Kildare County Development Plan 2017 - 2023.
- The Institute of Highways and Transportation *Guidelines on the Preparation of Traffic Impact Assessments*.
- The *TII Transport Assessment Guidelines.*
- The *TII National Traffic Model*.

1.2 OBJECTIVES

The objective of this report is to examine the traffic implications of the proposed mixed development in terms of how it can integrate with existing traffic in the area. The report will determine and quantify the extent of additional trips generated by the development, and the impact of such trips on the operational performance of the local road network and junctions, in particular the existing R403 / Brooklands / Capdoo Park crossroads and the existing R403 / Alexandra Walk / The Avenue roundabout.

1.3 STUDY METHODOLOGY

The methodology adopted for this report is summarised as follows:

- A traffic count was undertaken by Irish Traffic Surveys during a 12-hour period (07:00 to 19:00). Count information was obtained at the existing R403 / Brooklands / Capdoo Park crossroads and the existing R403 / Alexandra Walk / The Avenue roundabout.
- Existing Traffic Assessment – A spreadsheet model was created which contains the base year DO-NOTHING traffic count data described above. The traffic count data was used to develop a PICADY model of the existing R403 / Brooklands / Capdoo Park crossroads and an ARCADY model of the existing R403 / Alexandra Walk / The Avenue roundabout.

  Traffic signal poles are installed at the R403 / Brooklands / Capdoo Park crossroads junction. However, the signals are currently not operational. The traffic count data was also used to develop a TRANSYT model of the R403 / Brooklands / Capdoo Park junction to assess the operational performance of the signals.
- Future Year Assessment – The estimated future year traffic volumes on the study area road network, as a result of the increase in background traffic and the additional development related traffic was used to assess the future operational performance of the junctions both at the year of opening of the development, 5 and 15 years after opening.
- Parking Requirements – Car parking provision for the proposed development was assessed against the parking standards as set out in the Kildare County Development Plan.

1.4 STRUCTURE OF REPORT

Following this introduction, the report is set out as follows:

- Chapter 2 provides details of the proposed development;
- Chapter 3 provides an overview of the existing traffic conditions and the local road network, identifying any existing issues related to traffic flow or road infrastructure;

- Chapters 4 and 5 outline the analysis as described in the Study Methodology above. The analysis examines trip generation, distribution and resulting junction operational performance with the development in place;
- Chapter 6 establishes the parking requirements for the development using the county development plan and the design standards for new apartments and sets out how these needs are provided for;
- Chapter 7 addresses road safety, pedestrian and public transport; and
- Chapter 8 presents the conclusions and a summary of the report.

2 PROPOSED DEVELOPMENT

2 Proposed Development

2.1 SITE LOCATION

The proposed residential development is located at lands at Capdoo & Abbeylands, Clane, Co. Kildare. The development is bounded by residential dwellings to the west and south, the river Liffey to the east and agricultural lands to the north and east as shown on Figure 2.1 'Site Location Map'.

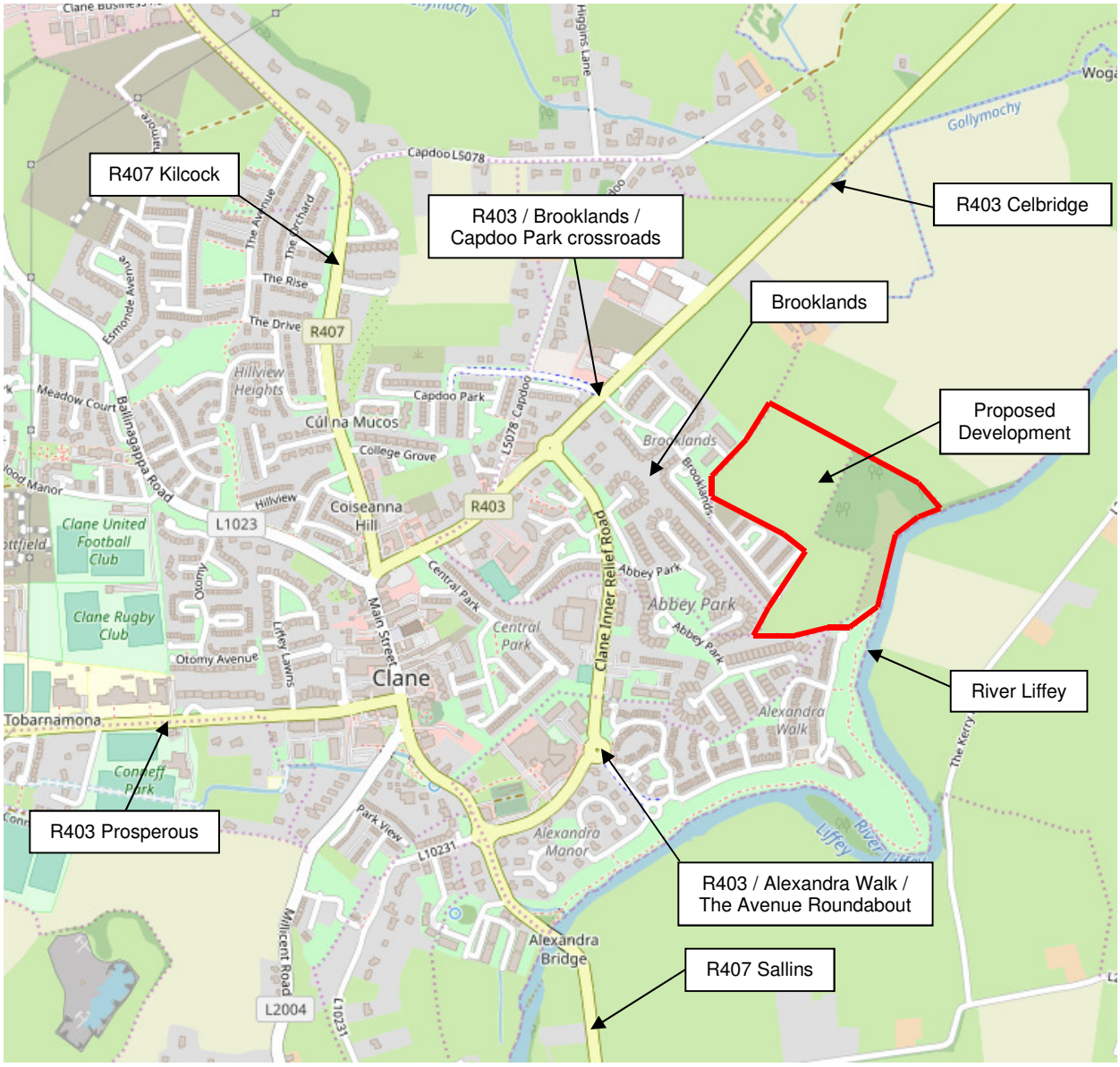


Figure 2.1: Site Location Map

2.2 EXISTING LAND USE

The existing site is currently undeveloped at present.

2.3 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed development consists of residential dwellings, apartments and a crèche as shown in table 2.1 and 2.2 *Development Schedule*.

Table 2.1 – Development Schedule

Item	Unit	Quantity
Residential Dwelling	No.	112
Duplex Dwelling	No.	34
Apartments	No.	159
Crèche	Sqm	340

Access to the proposed residential development will be via the existing R403 / Brooklands / Capdoo Park crossroads and the existing R403 / Alexandra Walk / The Avenue roundabout. A layout of the proposed development and its access points are shown on the Architect's drawing which is contained in Appendix A – Drawings.

3 EXISTING AND PROPOSED TRAFFIC CONDITIONS

3 Existing and Proposed Traffic Conditions

3.1 EXISTING TRAFFIC FLOWS

A traffic count was undertaken during a 12-hour period (07:00 to 19:00). The count data is provided in Appendix B – Traffic Counts. Count information was obtained at the following junctions:

- R403 / Brooklands / Capdoo Park crossroads
- R403 / Alexandra Walk / The Avenue roundabout

The traffic flows during the AM and PM peak hours were abstracted from the surveyed data and are shown in the following tables:

R403 / Brooklands / Capdoo Park Crossroads

AM Peak Existing (07:30 – 08:30)

From / To	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	285	10	**296**
Brooklands	31	0	58	1	**90**
R403 Clane	799	9	0	14	**822**
Capdoo Park	39	3	15	0	**57**
Totals	**869**	**13**	**358**	**25**	**1265**

Peak Existing (17:30 – 18:30)

From / To	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	24	797	42	**863**
Brooklands	6	0	32	3	**41**
R403 Clane	365	43	0	36	**444**
Capdoo Park	18	0	11	0	**29**
Totals	**389**	**67**	**840**	**81**	**1377**

R403 / Alexandra Walk / The Avenue Roundabout

AM Peak Existing (07:30 – 08:30)

From / To	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	29	313	1	**343**
Alexandra Walk	72	0	85	0	**157**
R403 (west)	362	21	0	4	**387**
The Avenue	10	0	6	0	**16**
Totals	**444**	**50**	**404**	**5**	**903**

Peak Existing (17:30 – 18:30)

From / To	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	49	580	9	**638**
Alexandra Walk	31	0	31	0	**62**
R403 (west)	440	70	3	10	**523**
The Avenue	3	0	3	0	**6**
Totals	**474**	**119**	**617**	**19**	**1229**

A summary of the count data for the peak hour flows is contained in Appendix C – Traffic Flow Sheets.

3.2 EXISTING ROAD NETWORK

Brooklands road is a cul-de-sac and provides access from the R403 to a number of residential developments. It is proposed to access the development via Brooklands road. The cross-section of Brooklands road is as follows:

- 6m wide carriageway.
- 2m wide footpaths with a 1m wide grass verge are located on either side of the carriageway.
- Street lighting is provided along Brooklands road.
- The speed limit on Brooklands road is 50kph.

Alexandra Walk road is a cul-de-sac and provides access from the R403 to a number of residential developments. It is proposed to access the development via Alexandra Walk. The cross-section of Alexandra Walk access road is as follows:

- 6m wide carriageway.
- 2m wide footpaths with a 1m wide grass verge are located on either side of the carriageway.
- Street lighting is provided along Alexandra Walk access road.
- The speed limit on Alexandra Walk access road is 50kph.

The R403 is a reginal road which travels in an east to west direction. To the east the R403 links Clane with Celbridge and to the M4, to the west the R403 links with other small and medium towns such as Prosperous and Allenwood. The R403 has the following characteristics at the location of the access onto Brooklands road

- 6.5m wide carriageway.
- 2m wide footpaths are located on the north and south sides of the carriageway. The footpaths provide pedestrian access to Clane and other surrounding residential developments.
- Street lighting is provided along the R403.
- The speed limit on the R403 is 50kph.

3.3 ROAD COLLISIONS

Information on road collisions was taken from the Road Safety Authority website and is provided hereunder in Figure 3.4.

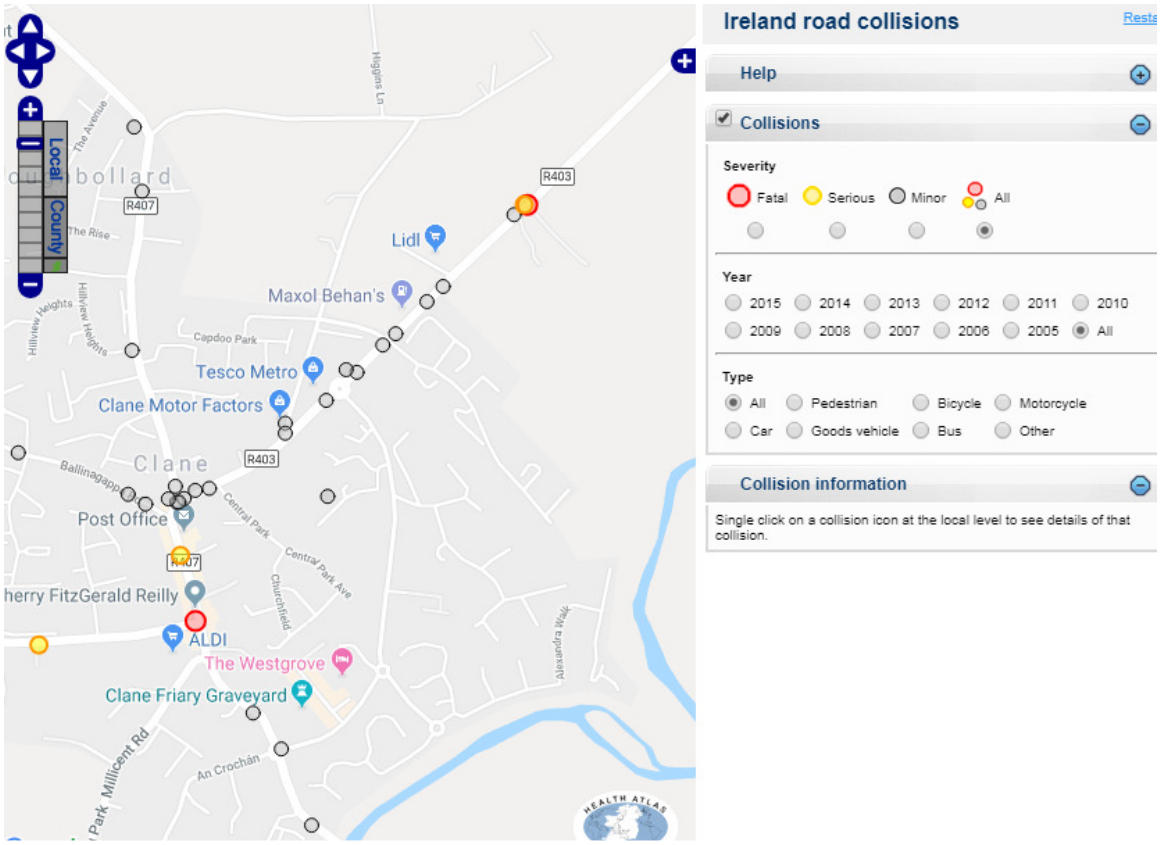


Fig 3.4: Road collisions

There have been two minor collisions at the R403 / Brooklands / Capdoo Park crossroads junction in the period of eleven years (from 2005 to 2015). There are no collisions recorded along Brooklands access road or at the existing R403 / Alexandra Walk / The Avenue roundabout.

3.4 PROPOSED ROAD NETWORK IMPROVEMENTS

The Kildare County Development Plan 2017-2023 has identified two locations along the R403 for road improvement works, *''County boundary at Backweston to Clane via Celbridge and Clane to Junction with R402 via Prosperous, Allenwood & Derrinturn''.* However, it is not expected that these improvements would have a significant bearing on the development proposal.

4 TRAFFIC GENERATION & TRIP DISTRIBUTION

4 Traffic Generation and Trip Distribution

4.1 DEVELOPMENT TRIP GENERATION

The TRICS database has been used to predict the trip generation to and from the proposed development for the AM and PM peak periods. Full details of the TRICS information used for the assessments are provided in Appendix D - TRICS information.

4.1.1 Houses / Duplex

The category of "Residential / Houses Privately Owned" has been interrogated as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per number of Units

	Trip rate to development	Trip rate from development
AM Peak	0.20	0.40
PM Peak	0.45	0.27

For the proposed 146 residential dwellings with access onto Brooklands road this would give the following trips to and from the proposed development:

Trip Generation – 146 Dwellings

	Trip rate to development	Trip rate from development
AM Peak	29	58
PM Peak	66	39

4.1.2 Apartments

The category of "Residential / Flats Privately Owned" has been interrogated as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per number of Units

	Trip rate to development	Trip rate from development
AM Peak	0.05	0.15
PM Peak	0.12	0.07

For the proposed 159 apartments with access onto Brooklands road this would give the following trips to and from the proposed development:

Trip Generation – 159 Apartments

	Trip rate to development	Trip rate from development
AM Peak	8	24
PM Peak	19	11

4.1.3 Crèche

The category of "Education / Nursery" has been interrogated as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per number of Units

	Trip rate to development	Trip rate from development
AM Peak	5.93	4.11
PM Peak	2.99	3.22

For the proposed Crèche of 340sqm with access onto Brooklands road this would give the following trips to and from the proposed development:

Trip Generation – 340sqm

	Trip rate to development	Trip rate from development
AM Peak	20	14
PM Peak	10	11

4.1.4 Total Development Trip Generation Summary

To summarise, the combined trips that are predicted to be generated by the proposed development are shown in the table below:

Trip Generation – Total Development

	Trip rate to development	Trip rate from development	Total
AM peak	57	96	153
PM peak	95	61	156

4.2 TRIP DISTRIBUTION

The access to the proposed development will be via the existing R403 / Brooklands / Capdoo Park crossroads and the existing R403 / Alexandra Walk / The Avenue roundabout. An origin / destination survey was carried out over a 3-day period from the 5th March 2019 to the 8th March 2019. The survey indicated that percentage of existing traffic arriving and departing to and from Clane are as follows:

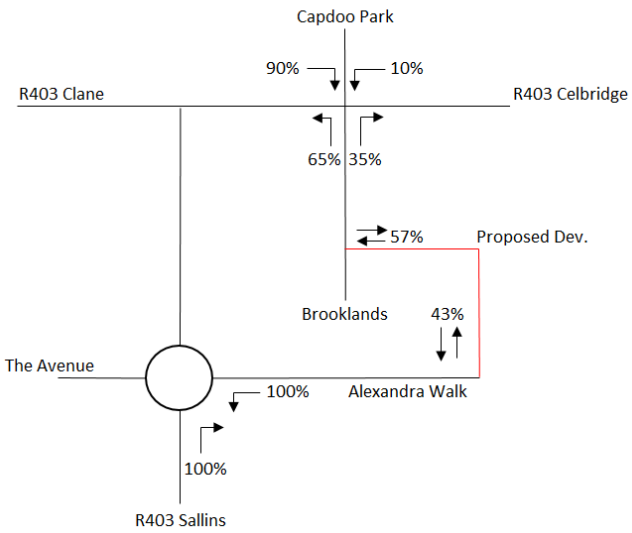
- 23% to / from the R407 Kilcock direction
- 34% to / from the R403 Celbridge direction
- 28% to / from the R407 Sallins direction
- 15% to / from the R403 Prosperous direction

Using the above data, it is assumed that the development traffic will distribute as follows:

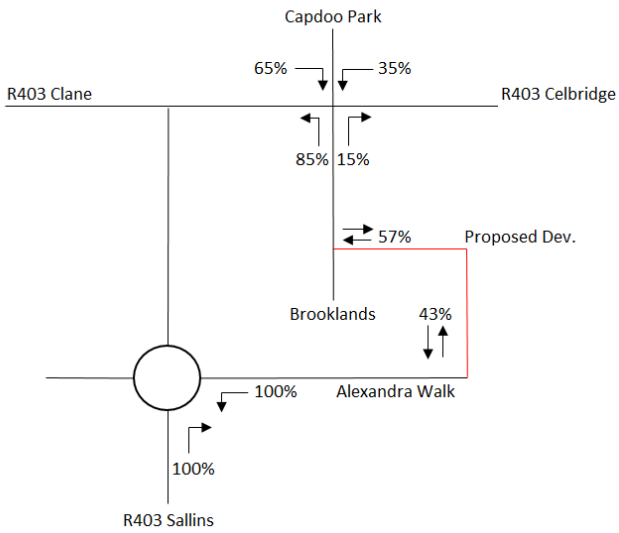
- 57% of the development traffic will arrive / depart via the R403 / Brooklands / Capdoo Park crossroads and
- 43% of the development traffic will arrive / depart via the R403 / Alexandra Walk / The Avenue roundabout.

The following diagrams show the existing and proposed traffic distribution percentage for the AM and PM peak at the existing R403 / Brooklands / Capdoo Park crossroads and the R403 / Alexandra Walk / The Avenue roundabout.

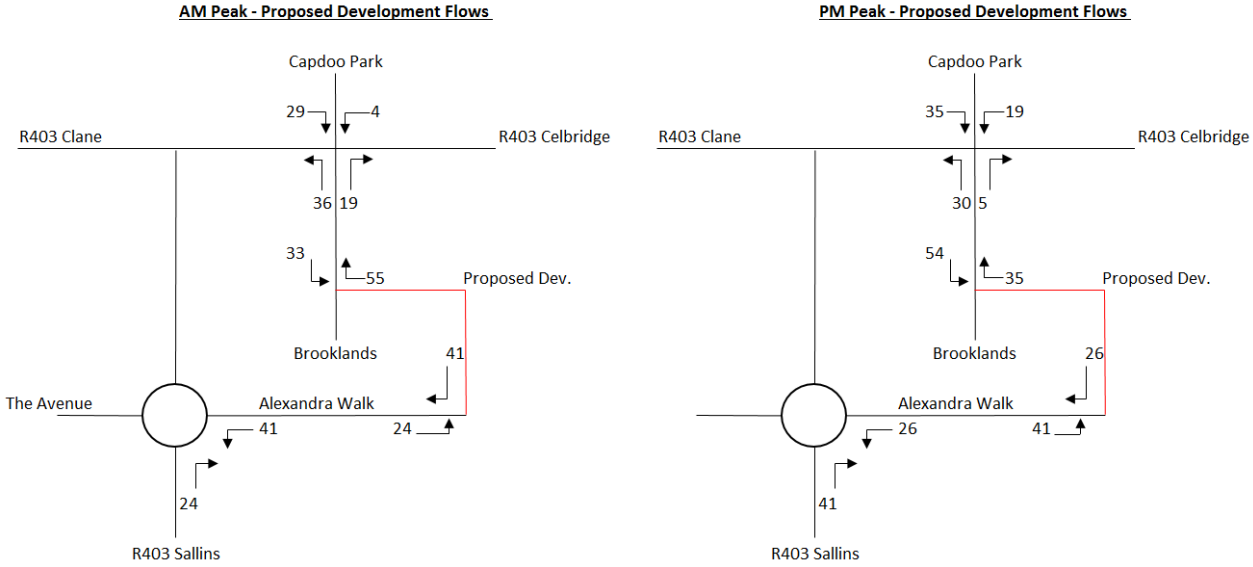
AM Peak - Existing & Proposed Trip Distribution (Percentage)



PM Peak - Existing & Proposed Trip Distribution (Percentage)



Using the proposed directional splits shown above and the trips generated by the proposed development outlined in 4.1, the following diagrams show the turning movements of predicted development traffic at the R403 / Brooklands / Capdoo Park crossroads and the existing R403 / Alexandra Walk / The Avenue roundabout during the AM and PM peak hours:

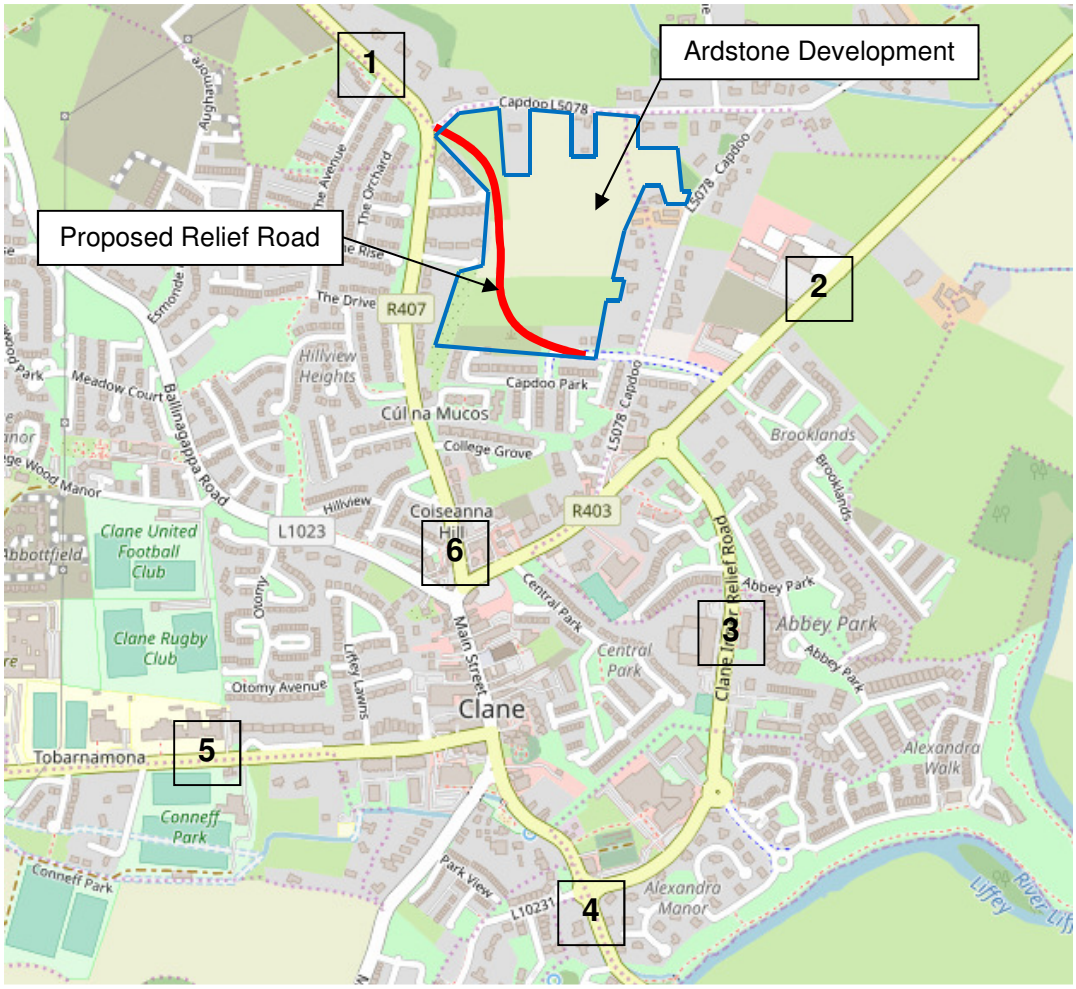


4.3 SENSITIVITY TESTING OF POSSIBLE FUTURE DEVELOPMENT

There are lands located to the north of the proposed development which are zoned residential and are in the ownership of Ardstone Homes. Access to this potential future development would be via the existing R403 / Brooklands / Capdoo Park crossroads. For this reason, a capacity assessment has been undertaken to determine the impact that the possible future residential development will have on the existing R403 / Brooklands / Capdoo Park crossroads in the design year 2037 with the proposed residential development also operational.

As part of the Ardstone residential development it is proposed to provide a relief road through the development which will provide a connection from the R407 / L5078 priority junction to the R403 / Brooklands / Capdoo Park crossroads. The proposed relief road will have an impact on the travel pattern of traffic using the network surrounding Clane town. The alignment of the relief road and the location of Ardstone development is shown on the site map below.

In order to assess the impact that the relief road will have on the surrounding network an origin / destination survey was carried out. The origin / destination survey was carried out over a 3-day period from the 5th March 2019 to the 8th March 2019. Data was collected from 6 number origin / destination points. The location of each origin / destination point is shown on the site map below and the survey results are contained in Appendix B – Traffic Surveys. In addition to the above a 12-hour baseline traffic count was carried out at each of the 6 locations.



The origin / destination percentage splits for the 6 sites are indicated on the table below.

Origin / Destination	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
Site 1	-	10%	9%	34%	7%	40%
Site 2	7%	-	25%	28%	23%	17%
Site 3	9%	55%	-	21%	4%	11%
Site 4	24%	42%	12%	-	10%	12%
Site 5	9%	52%	4%	22%	-	13%
Site 6	33%	26%	7%	22%	12%	-

With the relief road in place it is assumed that all vehicle trips travelling from site 1 to sites 2 and 3 will divert via the relief road and all vehicle trips travelling from sites 2 and 3 to site 1 will divert via the relief road. In addition, it is assumed that 40% of vehicles trips travelling to / from site 1 to site 4 will divert via the relief road.

Using the percentage splits shown in the table above it is assumed that 33% (10% + 9% + 14%) of the existing vehicle trips originating from site 1 will divert via the relief road and 26% (7% + 9% + 10%) of the existing vehicle trips originating from site 2, 3 and 4 will divert via the relief road.

Using the baseline traffic counts carried out at site 1 and the percentage splits shown above the predicted two-way flow of background traffic that will travel via the relief road during the AM and PM peak hours are indicated in the table below:

Proposed Relief Road - Diverted Trips

	Northbound	Southbound
AM Peak	89	88
PM Peak	97	95

The Ardstone development has been granted planning permission by An Bord Pleanala (ref no. ABP-304632-19). The development consists of 366 residential units (184 dwellings and 182 apartments).

The TRICS database has been used to predict trip generation to and from the proposed development for the AM and PM peak periods.

4.3.1 Residential Dwellings

Residential - Houses Privately Owned has been used as most appropriate category for this possible future development, and the trip rates for the AM and PM peak periods are shown below:

Residential (Houses Privately Owned) – Trip rates per House

	Arrivals to development	**Departures from development**
AM Peak	0.20	0.40
PM Peak	0.45	0.27

The predicted number of houses for the residential zoned land is 184. This results in the following trips to and from the proposed site:

Trip Generation – 184 No. Houses

	Trips to development	**Trips from development**
AM Peak	36	72
PM Peak	81	49

4.3.2 Apartments

The category of "Residential / Flats Privately Owned" has been interrogated as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per number of Units

	Trip rate to development	Trip rate from development
AM Peak	0.05	0.15
PM Peak	0.12	0.07

For the proposed 182 apartments with access onto Brooklands road this would give the following trips to and from the proposed development:

Trip Generation – 182 Apartments

	Trip rate to development	Trip rate from development
AM Peak	9	27
PM Peak	22	13

4.3.3 Total Development Trip Generation Summary

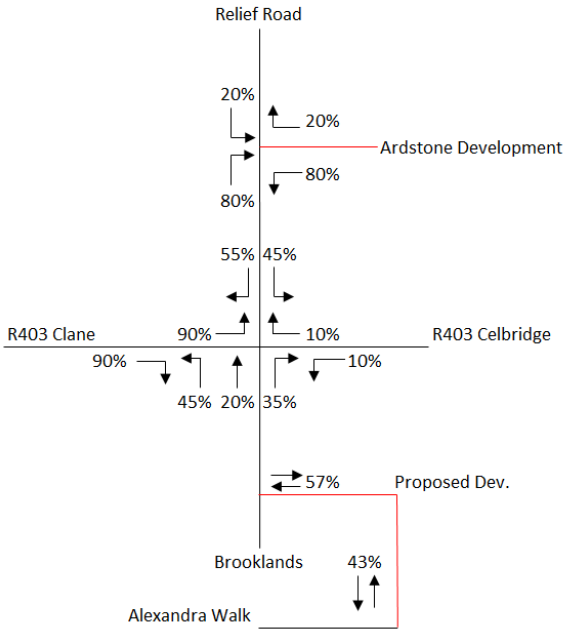
To summarise, the combined trips that are predicted to be generated by the proposed development are shown in the table below:

Trip Generation – Total Development

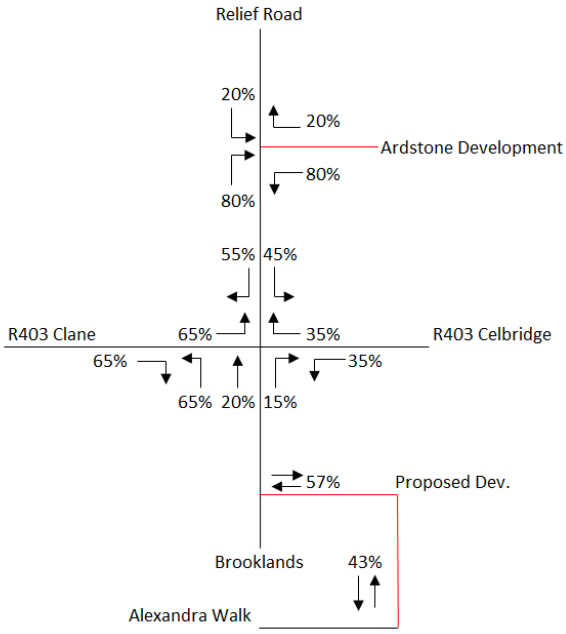
	Trip rate to development	Trip rate from development	Total
AM peak	46	101	147
PM peak	105	63	168

The construction of the proposed relief road as part of the Ardstone residential development will result in a re-distribution of the proposed residential flows associated with the Brooklands development. The following diagrams show the proposed traffic distribution percentage for the AM and PM peak at the existing R403 / Brooklands / Capdoo Park crossroads in 2037 when the proposed relief road and the Ardstone residential development is operational.

AM Peak - Proposed Trip Distribution (Percentage)

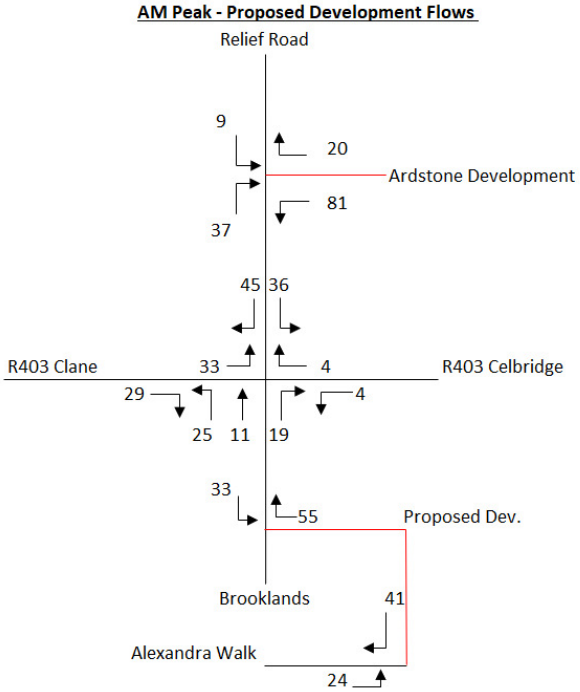


PM Peak - Proposed Trip Distribution (Percentage)

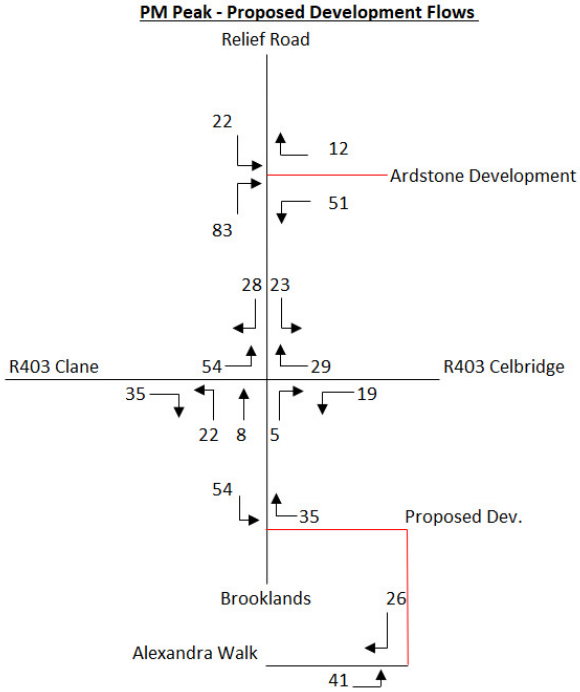


Using the proposed directional splits shown above and the trips generated by the proposed development outlined in 4.1 and the Ardstone Development outlined in 4.3, the following diagrams show the turning movements of predicted development traffic at the R403 / Brooklands / Capdoo Park crossroads during the AM and PM peak hours:

AM Peak - Proposed Development Flows



PM Peak - Proposed Development Flows



4.4 FUTURE YEAR TRAFFIC GROWTH

The TII issues a range of forecasts: low growth, medium growth and high growth. The implementation of policies relating to Smarter Travel and to public transport will act a deterrent to high growth in car-based travel. Low growth factors are however likely to be equally unrealistic at present in the Clane Area, so we have used medium growth factors in our assessment.

The zone in which the site is located is numbered 494 in the TII National Traffic Model. The growth factors are as follows:

Zone	2019 Existing	2022 development completion	2027 5 years after dev. completion	2037 15 years after dev. completion
494	1	5.88%	16.49%	27.18%

These percentages have been used to predict the increase in background traffic that will occur in future years. Full summary tables and predicted future traffic flows for 2022, 2027 and 2037 future years are included in Appendix C – Traffic Flow Sheets.

5 OPERATIONAL ASSESSMENTS

5 Operational Assessments

5.1 INTRODUCTION

Traffic generated by the proposed development will have some effect on the local road network surrounding the site. The following junction was assessed:

- R403 / Brooklands / Capdoo Park Crossroads
- R403 / Alexandra Walk / The Avenue Roundabout

5.2 R403 / BROOKLANDS / CAPDOO PARK CROSSROADS

Capacity assessments have been undertaken using the computer program PICADY for the AM and PM peak hours.

The following tables summarise the existing situation and the effects that the proposed development will have on this junction in 2022, 2027 and 2037 using the existing and predicted traffic flows shown in Appendix C – Traffic Flow Sheets. Full PICADY printouts are provided in Appendix E – PICADY Results.

The parameters shown in the tables are defined as follows:

Ratio of Flow to Capacity (RFC) is a factor indicating the flow on a junction arm relative to its capacity. An RFC of 1.0 means the junction has reached its ultimate capacity and an RFC of 0.85 means that the junction has reached its reserve capacity.

Avg. Queue is the average number of vehicles queued over the time period on the junction approach.

Queue delay is the average number of seconds delay to each vehicle in the time period.

Total Delay is the total number of vehicle hours of delay to all vehicles at the junction over the time period.

5.2.1 Existing Assessment (Base Flows)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing roundabout junction using the existing traffic flows.

AM Peak – Base Flows

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.03	0	9	0.29
Brooklands	0.25	0	13	
R403 Clane	0.02	0	7	
Capdoo Park	0.14	0	18	

PM Peak – Base Flows

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.08	0	7	0.29
Brooklands	0.18	0	14	
R403 Clane	0.10	0	8	
Capdoo Park	0.07	0	14	

The summary predictions shown in the tables above indicate that there are no queues and minimal delays at this junction at present during the AM and PM peak hours.

5.2.2 Design Year Assessments (2022 With Development)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2022 including the proposed development.

AM Peak – 2022 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.03	0	10	1.06
Brooklands	0.41	1	18	
R403 Clane	0.07	0	6	
Capdoo Park	0.15	0	21	

PM Peak – 2022 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.10	0	7	0.78
Brooklands	0.32	0	17	
R403 Clane	0.20	0	9	
Capdoo Park	0.08	0	16	

The summary predictions shown in the tables above indicate that there will be minimal queues and small delays in the AM and PM peak hour at the junction in 2022, planned year of opening.

5.2.3 Design Year Assessments (2027 With Development)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2027 including the proposed development.

AM Peak – 2027 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.03	0	10	1.29
Brooklands	0.44	1	20	
R403 Clane	0.07	0	6	
Capdoo Park	0.17	0	25	

PM Peak – 2027 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.11	0	7	0.91
Brooklands	0.36	1	20	
R403 Clane	0.22	0	9	
Capdoo Park	0.11	0	18	

The summary predictions shown in the tables above indicate that there will be minimal queues and small delays in the AM and PM peak hour at the junction in 2027, five years after development completion.

5.2.4 Design Year Assessments (2037 With Development)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2037 including the proposed development.

AM Peak – 2037 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.05	0	11	1.62
Brooklands	0.51	1	24	
R403 Clane	0.08	0	7	
Capdoo Park	0.20	0	32	

PM Peak – 2037 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.12	0	7	1.14
Brooklands	0.44	1	25	
R403 Clane	0.24	0	10	
Capdoo Park	0.12	0	21	

The summary predictions shown in the tables above indicate that there will be minimal queues and small delays in the AM and PM peak hour at the junction in 2037, fifteen years after development completion.

5.2.4 Design Year Assessments (2037 With Development + Sensitivity Flows)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2037 including the proposed development Ardstone residential development.

AM Peak – 2037 with Development + Sensitivity Flows

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.17	0	12	8.528
Brooklands	0.55	1	29	
R403 Clane	0.08	0	6	
Capdoo Park	0.99	6	155	

PM Peak – 2037 with Development + Sensitivity Flows

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 Celbridge	0.27	1	7	3.700
Brooklands	0.49	1	29	
R403 Clane	0.25	0	9	
Capdoo Park	0.72	2	61	

Sensitivity testing of the proposed development, the Ardstone residential development with the relief road open indicates that the during the AM peak hour the junction will be at its ultimate capacity with queues and delays. In the PM peak the junction will operated within capacity with some queues and delays.

It should be noted that the junction reaches its ultimate capacity for a 15-minute time period only (08:00 to 08:15) with the junction operating within capacity during the remainder of the AM peak period.

5.3 R403 / ALEXANDRA WALK / THE AVENUE ROUNDABOUT

Capacity assessments have been undertaken using the computer program ARCADY for the AM and PM peak hours.

The following tables summarise the existing situation and the effects that the proposed development will have on this junction in 2022, 2027 and 2037 using the existing and predicted traffic flows shown in Appendix C – Traffic Flow Sheets. Full ARCADY printouts are provided in Appendix F – ARCADY Results.

5.3.1 Existing Assessment (Base Flows)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing roundabout junction using the existing traffic flows.

AM Peak – Base Flows

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.20	0	0	0.73
Alexandra Walk	0.13	0	0	
R403 (west)	0.30	0	0	
The Avenue	0.03	0	0	

PM Peak – Base Flows

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.37	1	3	1.10
Alexandra Walk	0.07	0	3	
R403 (west)	0.37	1	4	
The Avenue	0.03	0	6	

The summary predictions shown in the tables above indicate that there are minimal queues and delays at this junction at present during the AM and PM peak hours.

5.3.2 Design Year Assessments (2022 With Development)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2022 including the proposed development.

AM Peak – 2022 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.22	0	2	0.85
Alexandra Walk	0.16	0	3	
R403 (west)	0.33	1	4	
The Avenue	0.03	0	6	

PM Peak – 2022 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.40	1	3	1.30
Alexandra Walk	0.09	0	3	
R403 (west)	0.42	1	4	
The Avenue	0.03	0	6	

The summary predictions shown in the tables above indicate that there will be minimal queues and delays in the AM and PM peak at the junction in 2022, planned year of opening.

5.3.3 Design Year Assessments (2027 With Development)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2027 including the proposed development.

AM Peak – 2027 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.24	0	2	0.97
Alexandra Walk	0.18	0	3	
R403 (west)	0.36	1	4	
The Avenue	0.03	0	6	

PM Peak – 2027 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.44	1	3	1.53
Alexandra Walk	0.10	0	3	
R403 (west)	0.46	1	4	
The Avenue	0.03	0	6	

The summary predictions shown in the tables above indicate that there will be minimal queues and delays in the AM and PM peak hour at the junction in 2027, five years after development completion.

5.3.4 Design Year Assessments (2037 With Development)

The following tables show the predicted RFC values (Ratio of Flow to Capacity), average queue lengths, average vehicle delay and total delays for the existing junction using the predicted traffic flows for 2037 including the proposed development.

AM Peak – 2037 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.26	0	3	1.11
Alexandra Walk	0.19	0	3	
R403 (west)	0.39	1	4	
The Avenue	0.04	0	6	

PM Peak – 2037 with development

Approach	Predicted RFC value	Avge Queue (vehicles)	Queue delay (secs./veh.)	Total Delay (veh.hrs.)
R403 (east)	0.48	1	4	1.81
Alexandra Walk	0.11	0	3	
R403 (west)	0.50	1	5	
The Avenue	0.05	0	7	

The summary predictions shown in the tables above indicate that there will be small queues and delays in the AM and PM peak hour at the junction in 2037, fifteen years after development completion.

5.4 R403 / BROOKLANDS / CAPDOO PARK SIGNALISED JUNCTION

Currently there are signal poles and signal heads located at the existing R403 / Brooklands / Capdoo Park crossroads junction. The traffic lights are currently not operational at present. However, a capacity assessment has been undertaken using the computer program TRANSYT for the AM and PM peak hours to determine the operational performance of the junction if it was upgraded to a signalised junction.

The following tables summarise the effects that the proposed development and the Ardstone development will have on this junction in 2037 using the existing and predicted traffic flows shown in Appendix C – Traffic Flow Sheets. Full TRANSYT printouts are provided in Appendix G – TRANSYT Results.

The parameters shown in the tables are defined as follows:

Max Degree of Saturation (%) is a ratio of demand to capacity on each approach to the junction, with a value of 100% meaning that demand and capacity are equal and no further traffic is able to progress through the junction. Values over 90% are typically regarded as suffering from traffic congestion, with queues of vehicles beginning to form.

Queue at end of Red is the number of vehicles queued on the approach arm at the end of red.

Average Delay is the average number of seconds delay to each vehicle in the time period.

Practical Reserve Capacity is the capacity available relative to a capacity of 90%. A positive PRC indicates that a junction has spare capacity and may be able to accept more traffic. A negative PRC indicates that the junction is over capacity and is suffering from traffic congestion.

R403 / Brooklands / Capdoo Park Signalised Junction

AM Peak			2019 Base Flows	2022 + Dev Flows	2027 + Dev Flows	2037 + Dev. Flows	2037 + Dev. Flows + Sen. Flows
R403/ Brooklands/ Capdoo Park Signalised Junction	R403 (east)	Max DoS %	30	32	34	32	68
		Mean Max Que (pcu's)	5	6	6	6	12
		Average delay (s)	20	20	19	14	26
		PRC %	196	181	165	178	32
	Brooklands	Max DoS %	31	34	39	71	125
		Mean Max Que (pcu's)	3	3	3	6	22
		Average delay (s)	43	44	47	69	287
		PRC %	190	166	130	26	-28
	R403 (west)	Max DoS %	106	107	114	119	114
		Mean Max Que (pcu's)	45	48	56	66	163
		Average delay (s)	74	75	93	102	421
		PRC %	-15	-16	-21	-25	-21
	Capdoo Park	Max DoS %	5	6	8	23	147
		Mean Max Que (pcu's)	1	1	1	1	40
		Average delay (s)	39	39	42	60	294
		PRC %	1612	1370	1082	295	-39

With traffic signals activated in 2019 the signalised junction will be at capacity with queues and delays during the AM peak hour.

In 2022, 2027 and 2037 with the development in place the signalised junction will be at capacity with queues and delays during the AM peak hour.

Sensitivity testing in 2037, indicates that with the proposed residential development open, the Ardstone residential development open and the relief road open the junction will be at capacity resulting with queues and delays during the AM peak hour.

R403 / Brooklands / Capdoo Park Signalised Junction

PM Peak			2019 Base Flows	2022 + Dev Flows	2027 + Dev Flows	2037 + Dev. Flows	2037 + Dev. Flows + Sen. Flows
R403/ Brooklands/ Capdoo Park Signalised Junction	R403 (east)	Max DoS %	119	126	139	155	179
		Mean Max Que (pcu's)	113	145	205	286	89
		Average delay (s)	352	447	605	791	85
		PRC %	-24	-29	-35	-42	-16
	Brooklands	Max DoS %	8	8	9	17	50
		Mean Max Que (pcu's)	1	1	1	2	4
		Average delay (s)	35	35	35	36	56
		PRC %	1019	990	881	436	79
	R403 (west)	Max DoS %	72	76	83	115	108
		Mean Max Que (pcu's)	14	15	18	62	31
		Average delay (s)	35	38	44	297	85
		PRC %	25	19	9	-22	-16
	Capdoo Park	Max DoS %	6	6	7	7	29
		Mean Max Que (pcu's)	2	2	2	2	3
		Average delay (s)	36	36	36	40	42
		PRC %	1403	1287	1187	1132	205

With traffic signals activated in 2019 the signalised junction will be at its capacity with queues and delays during the PM peak hour.

In 2022, 2027 and 2037 with the development in place the signalised junction will be at capacity with queues and delays during the PM peak hour.

Sensitivity testing in 2037, indicates that with the proposed residential development open, the Ardstone residential development open and the relief road open the junction will be at capacity resulting with queues and delays during the PM peak hour.

5.5 CONCLUSIONS

Junction analyses to assess the effects of traffic generated by the proposed development have been undertaken for the existing R403 / Brooklands / Capdoo Park crossroads and the existing R403 / Alexandra Walk / The Avenue roundabout. The analysis shows that:

- The existing R403 / Brooklands / Capdoo Park crossroads currently operates within capacity with minimal delays and queues during the AM and PM peak hours.

- The existing R403 / Brooklands / Capdoo Park crossroads will continue to operate within capacity with small queues and delays when the proposed development is completed in 2022, year of opening, 2027, five years after opening and in 2037, fifteen years after opening.

- Sensitivity testing of the proposed development, the Ardstone residential development with the relief road open indicates that the existing R403 / Brooklands / Capdoo Park crossroads will operate at its ultimate capacity with queues and delays during the AM peak period. In the PM peak period, the junction will operate within capacity with some queues and delays in 2037. In the AM peak period the junction reaches its ultimate capacity for a 15-minute time segment only (08:00 to 08:15) with the junction operating within capacity during the remainder of the AM peak period.

- The existing R403 / Alexandra Walk / The Avenue roundabout currently operates within capacity with minimal delays and queues during the AM and PM peak hours.

- The existing R403 / Alexandra Walk / The Avenue roundabout will continue to operate within capacity with small queues and delays when the proposed development is completed in 2022, year of opening, 2027, five years after opening and in 2037, fifteen years after opening.

- Upgrading of the existing R403 / Brooklands / Capdoo Park crossroads to a signalised junction will result in the junction being at capacity resulting in queues and delays at the junction during the AM and PM peak hours with the proposed residential development operational in 2022, 2027 and 2037.

- Sensitivity testing of the proposed development, the Ardstone residential development with the relief road open indicates that upgrading of the existing R403 / Brooklands / Capdoo Park crossroads to a signalised junction will result in the junction being at capacity resulting in queues and delays at the junction during the AM and PM peak hours in 2037.

6 PARKING

6 Parking

6.1 CAR PARKING PROVISION

A total of 523 parking spaces are to be provided within the proposed residential development and 30 parking spaces are to be provided within the proposed creche development as shown on the architect's drawing contained in Appendix A – Drawings

6.2 CAR PARKING REQUIREMENTS FROM DEVELOPMENT PLAN

The *'Kildare County Development Plan 2017-2023'* lists standard provision for car parking and the table below sets out those requirements in relation to the proposed development.

Car parking requirements from the Kildare County Development Plan 2017 – 2023

Parking Standards for Residential Development			
Land-use	Requirements	Quantity	Parking
Residential Dwellings	2 spaces per unit	146 Dwellings	292
Apartments	1.5 spaces per unit + 1 visitor space per 4 apartments	159 Apartments	278
Crèche	0.5 per staff member plus 1 per 4 children	25 children + 5 staff	9
		Total	**579**

The Kildare County Development Plan indicates that the number of parking spaces required is 579 parking spaces.

The number of parking spaces required for the 159 apartments was also assessed using the "Design Standards for New Apartments – Guidelines for Planning Authorities 2018".

the "Design Standards for New Apartments – Guidelines for Planning Authorities 2018" indicates that 1 car space per unit together with an element of visitor parking, such as 1 space for every 3-4 apartments should generally be required.

Therefore, using the above requirements, the table below sets out those requirements in relation to the proposed 159 apartments.

Car parking requirements from the Design Standards for New Apartments

Parking Standards for Residential Development			
Land-use	Requirements	Quantity	Parking
Apartments	1 space per unit + 1 visitor space per 4 apartments	159 Apartments	199
		Total	**199**

In summary, the Kildare County Development Plan indicates that 292 parking spaces are required for the residential dwellings and the Design Standards for New Apartments – Guidelines for Planning Authorities 2018 indicates that 199 parking spaces are required for the apartments giving a total of 491 parking spaces.

7 ROAD SAFETY, PEDESTRIANS AND INTERNAL LAYOUT

7 Road Safety, Pedestrians and Internal Layout

7.1 ROAD SAFETY

The Design Manual for Urban Roads and Streets indicates that for a 50km/h speed limit a sightline of 45m at a 2m set-back shall be achieved in both directions.

At the proposed residential access and at the proposed creche access onto Brooklands access road a 45m sightline at a 2m set-back can be achieved in both directions. The visibility splay to the north and south of the proposed accesses is measured from a 2m set-back to the nearside kerb of the road.

7.2 PEDESTRIANS

A 2m wide footpath will be provided internally to cater for pedestrian movement within the development. The proposed internal footpaths within the development will connect to the existing footpath located on Brooklands access road and the existing footpaths located on Alexandra Walk access road.

7.3 INTERNAL LAYOUT

Within the development the spine road is 6m wide.

Parking is provided for each residential dwelling. Parking for Apartments is located adjacent to each apartment bock. Parking bays are 2.5m wide x 5m long.

HGV access to the site will be via the proposed access onto Brooklands access road and via Alexandra Walk. The types of HGV's accessing the site would be emergency vehicles and a bin lorry. The internal layout can facilitate HGV movement within the site.

8 CONCLUSIONS AND SUMMARY

8 Conclusions

The main conclusions of this study are summarised as follows:

- The existing R403 / Brooklands / Capdoo Park crossroads currently operates within capacity with minimal delays and queues during the AM and PM peak hours.

- The existing R403 / Brooklands / Capdoo Park crossroads will operate within capacity with small queues and delays when the proposed development is completed in 2022, year of opening, 2027, five years after opening and in 2037, fifteen years after opening.

- Sensitivity testing of the proposed development, the Ardstone residential development with the relief road open indicates that the existing R403 / Brooklands / Capdoo Park crossroads will operate at its ultimate capacity with queues and delays during the AM peak period. In the PM peak period, the junction will operate within capacity with some queues and delays in 2037. In the AM peak period the junction reaches its ultimate capacity for a 15-minute time segment only (08:00 to 08:15) with the junction operating within capacity during the remainder of the AM peak period.

- The existing R403 / Alexandra Walk / The Avenue roundabout currently operates within capacity with minimal delays and queues during the AM and PM peak hours.

- The existing R403 / Alexandra Walk / The Avenue roundabout will operate within capacity with small queues and delays when the proposed development is completed in 2022, year of opening, 2027, five years after opening and in 2037, fifteen years after opening.

- Upgrading of the existing R403 / Brooklands / Capdoo Park crossroads to a signalised junction will result in the junction being at capacity resulting in queues and delays at the junction during the AM and PM peak hours with the proposed residential development operational in 2022, 2027 and 2037.

- Sensitivity testing of the proposed development and the Ardstone residential development with the relief road open indicates that upgrading of the existing R403 / Brooklands / Capdoo Park crossroads to a signalised junction will result in the junction being at capacity resulting in queues and delays at the junction during the AM and PM peak hours in 2037.

- The development provides adequate car parking spaces when assessed in accordance with the Kildare county development plan and the Design Standards for New Apartments – Guidelines for Planning Authorities 2018. Facilities for pedestrians are included in the internal layout.

- Sightlines at the proposed accesses onto Brooklands road are in compliance with the Design Manual for Urban Roads & Streets.

Summary

The existing R403 / Brooklands / Capdoo Park crossroads currently operates within capacity with a maximum RFC value of 0.25 in the AM peak. The proposed development will generate an additional 142 trips in the AM peak and 148 trips in the PM peak.

As a result of increased flows generated by the proposed development and an increase in the background flows the existing R403 / Brooklands / Capdoo Park crossroads will operate within capacity with a maximum RFC value of 0.51 in the AM peak, in 2037, fifteen years after the development has been completed.

The development of the Ardstone residential site will result in the construction of a relief road that will provide a connection from the existing R403 / Brooklands / Capdoo Park crossroads to the R407 / L5078 priority junction. As a result of increase flows generated by the Ardstone residential development and with the proposed residential development operational in 2037 the existing R403 / Brooklands / Capdoo Park crossroads will operate at its ultimate capacity with a maximum RFC value of 0.99 in the AM peak.

It should be noted that in the AM peak period the junction reaches its ultimate capacity for a 15-minute time segment only (08:00 to 08:15) with the junction operating within capacity during the remainder of the AM peak period.

Currently traffic signals are provided at the junction however they are not operational at present. Analysis was carried out on the signals in order to determine capacity of the junction if the traffic signals were operational.

The capacity analysis indicated that if the junction operated as a signalised junction it would result in queues and delays with and without the proposed development in place during the AM and PM peak hours.

In terms of road safety, the visibility splays at the existing access from Brooklands onto the R403 are in compliance with the Design Manual for Urban Roads and Streets. In addition, adequate pedestrian facilities are provided at the existing junction to cater for pedestrian movement.

APPENDICES

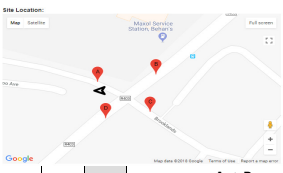
APPENDIX A – DRAWINGS

APPENDIX B – TRAFFIC COUNTS

Irish Traffic Surveys Ltd

Survey Name : ITS J192 Clane
Site : 1
Location :
Date : 24/04/2018

Site Location:



Irish Traffic Surveys

	A=>A							A=>B							A=>C							A=>D						
TIME	CAR	LGV	OGV1	OGV2	3V (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BU	TOT	PCU
07:00	0	0	0	0	0	0	0	3	2	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
07:15	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	7	1	0	0	0	8	0	0	0	0	1	0	1	0	3	1	0	0	0	4	0
H/TOT	0	0	0	0	0	0	0	17	4	0	0	0	21	0	0	0	0	1	0	1	0	4	1	0	0	0	5	0
08:00	0	0	0	0	0	0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
08:15	0	0	0	0	0	0	0	14	0	0	0	0	14	0	1	0	0	0	1	2	0	6	0	0	0	0	6	0
08:30	0	0	0	0	0	0	0	13	0	0	0	1	14	0	1	0	0	0	0	1	0	9	0	0	0	0	9	0
08:45	0	0	0	0	0	0	0	12	0	0	0	0	12	0	1	0	0	0	0	1	0	9	0	1	0	0	10	0
H/TOT	0	0	0	0	0	0	0	49	1	0	0	1	51	0	3	0	0	0	1	4	0	29	0	1	0	0	30	0
09:00	0	0	0	0	0	0	0	6	2	0	0	0	8	0	1	0	0	0	0	1	0	3	0	0	0	0	3	0
09:15	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0
09:30	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
09:45	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	1	0	3	0
H/TOT	0	0	0	0	0	0	0	13	2	0	0	0	15	0	1	0	0	0	0	1	0	9	1	0	1	0	11	0
10:00	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
10:15	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	1	2	0	0	0	3	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	6	1	0	0	0	7	0	1	0	0	0	0	1	0	2	2	0	0	0	4	0
11:00	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0
11:15	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	4	0
11:45	0	0	0	0	0	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
H/TOT	0	0	0	0	0	0	0	5	1	0	0	0	6	0	0	1	0	0	0	1	0	9	1	1	0	0	11	0
12:00	0	0	0	0	0	0	0	3	1	0	0	0	4	0	1	0	0	0	0	1	0	2	0	0	0	0	2	0
12:15	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
12:30	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
12:45	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
H/TOT	0	0	0	0	0	0	0	12	2	0	0	0	14	0	1	0	0	0	0	1	0	7	0	0	0	0	7	0
13:00	0	0	0	0	0	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0
13:15	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	3	1	0	0	0	4	0
13:30	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	0	1	0	1	0	0	0	0	1	0
13:45	0	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
H/TOT	0	0	0	0	0	0	0	9	3	0	0	0	12	0	1	0	1	0	0	2	0	9	2	0	0	0	11	0
14:00	0	0	0	0	0	0	0	2	1	0	0	0	3	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
14:30	0	0	0	0	0	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
14:45	0	0	0	0	0	0	0	2	2	0	0	0	4	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	7	5	0	0	0	12	0	1	0	0	0	1	2	0	3	0	0	0	0	3	0
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15:15	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
15:30	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0
15:45	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
H/TOT	0	0	0	0	0	0	0	12	0	0	0	0	12	0	1	0	0	0	0	1	0	9	1	0	0	0	10	0
16:00	0	0	0	0	0	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0
16:15	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
16:30	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
H/TOT	0	0	0	0	0	0	0	12	1	0	0	0	13	0	0	0	0	0	0	0	0	3	1	1	0	0	5	0
17:00	0	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	0	0	0	1	0	3	0	0	0	0	3	0
17:15	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
17:30	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
17:45	0	0	0	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
H/TOT	0	0	0	0	0	0	0	18	1	0	0	0	19	0	1	0	0	0	0	1	0	15	0	0	0	0	15	0
18:00	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
18:15	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
18:30	0	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
18:45	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
H/TOT	0	0	0	0	0	0	0	9	2	1	0	0	12	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0
PK TOT	0	0	0	0	0	0	0	169	23	1	0	1	194	0	10	1	1	1	2	15	0	106	9	3	1	0	119	0

B=>A							B=>B							B=>C							B=>D						
CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU
0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	6	2	1	0	47	0
2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	6	3	3	1	50	0
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2	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	61	6	1	3	0	71	0
7	1	0	0	0	8	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	178	20	6	9	4	217	0
2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	8	2	2	0	74	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	5	3	1	0	91	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	4	2	1	1	62	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	78	7	0	1	0	86	0
11	0	0	0	0	11	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	276	24	7	5	1	313	0
3	1	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	65	10	2	4	0	81	0
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8	5	0	0	0	13	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	278	47	13	9	1	348	0
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3	1	0	0	0	4	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	72	8	4	2	0	86	0
3	1	0	0	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	64	10	0	1	1	76	0
9	2	0	0	0	11	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	261	34	16	10	6	327	0
1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	56	2	5	1	0	64	0
2	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	75	18	3	0	1	97	0
1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	66	6	3	1	0	76	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	92	7	0	6	1	106	0
7	0	0	0	0	7	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	289	33	11	8	2	343	0
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0	2	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	80	16	7	3	0	106	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	82	9	5	6	1	103	0
9	3	0	0	0	12	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	311	43	17	13	2	386	0
3	1	0	0	0	4	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	79	9	3	2	0	93	0
2	1	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	84	10	1	1	1	97	0
5	0	0	0	0	5	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0	80	18	5	2	0	105	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	92	8	3	2	1	106	0
13	2	0	0	0	15	0	0	0	0	0	0	0	0	8	1	1	0	0	10	0	335	45	12	7	2	401	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	90	18	2	2	0	112	0
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3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	91	14	3	4	0	112	0
2	0	0	0	0	2	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0	82	14	2	2	0	100	0
11	0	0	0	0	11	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0	356	59	13	10	1	439	0
8	0	0	0	0	8	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	99	12	1	2	0	114	0
3	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	104	19	4	1	1	129	0
3	1	0	0	0	4	0	0	0	0	0	0	0	0	9	2	0	0	0	11	0	73	9	5	2	1	90	0
4	2	0	0	0	6	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0	108	17	5	0	0	130	0
18	3	0	0	0	21	0	0	0	0	0	0	0	0	24	2	0	0	0	26	0	384	57	15	5	2	463	0
3	2	0	0	0	5	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	109	14	3	2	0	128	0
7	0	0	0	0	7	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	144	16	6	2	2	170	0
4	1	0	0	0	5	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	146	18	2	1	0	167	0
5	0	0	0	0	5	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	140	30	4	1	0	175	0
19	3	0	0	0	22	0	0	0	0	0	0	0	0	14	2	0	0	0	16	0	539	78	15	6	2	640	0
6	1	0	0	0	7	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	160	23	1	0	1	185	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	0	123	16	2	0	0	141	0
10	0	1	0	0	11	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	168	30	2	2	1	203	0
11	0	0	0	0	11	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	178	23	2	1	0	204	0
27	1	1	0	0	29	0	0	0	0	0	0	0	0	24	3	0	0	0	27	0	629	92	7	3	2	733	0
9	2	0	0	0	11	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	191	17	3	2	1	214	0
8	1	0	0	0	9	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	155	19	1	1	0	176	0
3	1	0	0	0	4	0	0	0	0	0	0	0	0	6	1	0	0	0	7	0	127	10	0	0	0	137	0
6	0	0	0	0	6	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	124	14	0	1	3	142	0
26	4	0	0	0	30	0	0	0	0	0	0	0	0	17	2	0	0	0	19	0	597	60	4	4	4	669	0
165	24	1	0	0	190	0	0	0	0	0	0	0	0	125	14	1	0	0	140	0	4433	592	136	89	29	5279	0

C=>A							C=>B						C=>C						C=>D						
CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU
0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0
0	0	0	0	0	0	0	7	2	0	0	0	9	0	0	0	0	0	0	0	0	11	1	0	0	0	12	0
0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0
0	0	0	0	0	0	0	30	2	0	0	0	32	0	0	0	0	0	0	0	0	29	2	0	0	0	31	0
0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	13	2	0	0	0	15	0
1	0	0	0	0	1	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	16	3	0	1	1	21	0
3	0	0	0	0	3	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	16	5	0	1	0	22	0
0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	9	4	0	0	0	13	0
4	0	0	0	0	4	0	20	0	0	0	0	20	0	0	0	0	0	0	0	0	54	14	0	2	1	71	0
0	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0
1	0	0	0	0	1	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0
0	0	0	1	0	1	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0
1	0	0	1	0	2	0	15	3	0	0	0	18	0	0	0	0	0	0	0	0	17	0	1	0	0	18	0
1	0	0	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0
0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
1	1	0	0	0	2	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0
0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0
1	0	0	0	0	1	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0
1	0	0	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
1	0	0	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	3	2	0	0	0	5	0
3	0	0	0	0	3	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0	15	3	0	0	0	18	0
1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0
0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
2	0	0	0	0	2	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
3	1	0	0	0	4	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	13	1	0	0	0	14	0
0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	2	3	0	0	0	5	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	0	0	9	0
0	0	0	0	0	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	7	1	0	0	0	8	0
0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	1	0	0	6	0
0	0	0	0	0	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0	21	5	2	0	0	28	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	9	2	0	0	0	11	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	7	0	1	0	0	8	0
0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	1	1	0	0	8	0
0	0	0	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	31	3	2	0	0	36	0
0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	5	2	0	0	0	7	0
0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0
0	0	0	0	0	0	0	6	0	0	1	0	7	0	0	0	0	0	0	0	0	14	2	0	0	1	17	0
0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
0	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0
0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0
0	0	0	0	0	0	0	10	0	1	0	0	11	0	0	0	0	0	0	0	0	14	0	0	0	0	14	0
1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0
1	0	0	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0
1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9	0
4	1	0	0	0	5	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	27	3	0	0	0	30	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0
0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	6	1	1	0	0	8	0
0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0
0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	11	1	0	0	0	12	0
0	1	0	0	0	1	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	30	2	1	0	0	33	0
16	4	0	1	0	21	0	128	9	1	1	0	139	0	0	0	0	0	0	0	0	274	36	6	2	2	320	0

D=>A							D=>B							D=>C							D=>D						
CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	3V (BUS	TOT	PCU
2	0	0	0	0	2	0	142	27	1	1	1	172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	1	0	182	38	6	4	2	232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	192	26	4	4	2	228	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	189	28	5	4	1	227	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
5	0	0	0	0	5	0	705	119	16	13	6	859	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	160	20	6	2	0	188	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0
10	0	0	0	0	10	0	138	14	0	3	1	156	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
15	0	0	0	0	15	0	116	6	1	2	2	127	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0
4	0	0	0	0	4	0	119	22	4	0	0	145	0	13	2	0	0	0	15	0	0	0	0	0	0	0	0
31	0	0	0	0	31	0	533	62	11	7	3	616	0	19	3	2	0	0	24	0	0	0	0	0	0	0	0
6	0	0	0	0	6	0	118	12	3	2	0	135	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	113	12	1	2	0	128	0	4	0	0	1	0	5	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	105	12	6	1	1	125	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	79	10	8	1	0	98	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
10	1	0	0	0	11	0	415	46	18	6	1	486	0	15	1	1	1	0	18	0	0	0	0	0	0	0	0
3	0	0	0	0	3	0	84	18	3	3	1	109	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
1	1	0	0	0	2	0	63	14	1	1	0	79	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	79	7	0	3	2	91	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	87	9	7	2	0	105	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
4	3	0	0	0	7	0	313	48	11	9	3	384	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0
3	0	0	0	0	3	0	82	8	3	4	1	98	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0
1	0	1	0	0	2	0	63	6	3	1	2	75	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
6	1	0	0	0	7	0	58	7	1	1	1	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	4	0	94	14	1	3	0	112	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0
13	2	1	0	0	16	0	297	35	8	9	4	353	0	16	2	0	0	0	18	0	0	0	0	0	0	0	0
3	0	0	0	0	3	0	87	11	1	3	0	102	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	75	8	5	2	1	91	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0
5	0	0	0	0	5	0	66	10	3	0	1	80	0	7	1	1	0	0	9	0	0	0	0	0	0	0	0
4	0	0	1	0	5	0	64	12	1	1	0	78	0	5	1	0	0	0	6	0	0	1	0	0	0	1	0
12	0	0	1	0	13	0	292	41	10	6	2	351	0	21	4	1	0	0	26	0	0	1	0	0	0	1	0
3	0	0	0	0	3	0	93	6	1	1	2	103	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
3	1	0	0	0	4	0	80	9	6	0	1	96	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	79	11	3	3	1	97	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
3	2	0	0	0	5	0	93	15	1	1	0	110	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
11	3	0	0	0	14	0	345	41	11	5	4	406	0	19	2	0	0	0	21	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	66	8	3	1	0	78	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0
3	1	0	0	0	4	0	87	8	6	3	1	105	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0
5	1	0	0	0	6	0	70	6	3	1	1	81	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
4	1	0	0	0	5	0	74	9	2	0	0	85	0	11	2	1	0	0	14	0	0	0	0	0	0	0	0
12	3	0	0	0	15	0	297	31	14	5	2	349	0	21	4	1	0	0	26	0	1	0	0	0	0	1	0
3	0	0	0	0	3	0	69	7	1	2	2	81	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
1	1	0	0	0	2	0	62	4	1	2	0	69	0	5	0	0	1	0	6	0	0	0	0	0	0	0	0
3	0	0	0	0	3	0	78	12	1	0	0	91	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
6	0	0	0	0	6	0	65	8	1	2	1	77	0	14	0	0	0	0	14	0	0	0	0	0	0	0	0
13	1	0	0	0	14	0	274	31	4	6	3	318	0	29	2	0	1	0	32	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	69	10	2	0	0	81	0	6	0	1	0	0	7	0	0	0	0	0	0	0	0
3	0	0	0	0	3	0	84	12	2	1	2	101	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
2	1	0	0	1	4	0	78	9	0	1	5	93	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
4	0	0	0	0	4	0	73	12	2	1	2	90	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0
11	1	0	0	1	13	0	304	43	6	3	9	365	0	18	3	1	0	0	22	0	0	0	0	0	0	0	0
11	0	0	0	0	11	0	72	10	0	1	1	84	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0
7	0	0	0	0	7	0	74	12	2	0	0	88	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0
8	2	0	0	0	10	0	70	6	1	1	1	79	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0
10	1	0	0	0	11	0	78	6	1	0	0	85	0	10	2	0	0	0	12	0	0	0	0	0	0	0	0
36	3	0	0	0	39	0	294	34	4	2	2	336	0	42	4	0	0	0	46	0	0	0	0	0	0	0	0
7	0	0	0	0	7	0	79	8	1	0	0	88	0	11	1	0	0	0	12	0	0	0	0	0	0	0	0
8	0	0	0	0	8	0	102	8	0	2	1	113	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0
7	0	0	0	0	7	0	93	5	2	0	0	100	0	11	0	1	0	0	12	0	0	0	0	0	0	0	0
5	0	0	0	0	5	0	73	9	0	1	0	83	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
27	0	0	0	0	27	0	347	30	3	3	1	384	0	34	2	1	0	0	37	0	0	0	0	0	0	0	0
185	17	1	1	1	205	0	4416	561	116	74	40	5207	0	249	28	7	2	0	286	0	1	1	0	0	0	2	0

Irish Traffic Surveys Ltd

Survey Name : *ITS J285 Site G*
Site: Site G
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co. Kildare

Irish Traffic Surveys

	A => A								A => B								A => C								A => D							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	43	5	1	1	0	50	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	5	0	0	42	6	1	0	0	49	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	6	0	0	59	2	1	1	1	64	0	0	1	0	0	0	0	1
07:45	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	0	63	8	1	1	0	73	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	15	3	0	0	1	19	0	0	207	21	4	3	1	236	0	0	1	0	0	0	0	1
08:00	0	0	0	0	0	0	0	0	0	0	12	1	0	0	1	14	0	1	71	6	1	1	0	80	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	88	7	0	1	0	96	0	0	0	0	0	0	0	0
08:30	0	0	0	1	0	0	0	1	0	0	3	0	1	0	0	4	0	0	123	9	1	1	0	134	0	0	0	1	0	0	0	1
08:45	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	77	8	1	0	0	86	0	0	0	0	0	0	0	0
H/TOT	0	0	0	1	0	0	0	1	0	0	26	1	1	0	1	29	0	1	359	30	3	3	0	396	0	0	0	1	0	0	0	1
09:00	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0	0	49	4	2	1	1	57	0	0	1	1	0	0	0	2
09:15	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	0	0	71	8	2	0	0	81	0	0	0	0	0	0	0	0
09:30	0	0	1	1	0	0	0	2	0	0	3	0	0	0	0	3	0	0	59	4	1	1	0	65	0	0	1	0	0	0	0	1
09:45	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	56	7	0	2	0	65	0	0	1	0	0	0	0	1
H/TOT	0	0	2	1	0	0	0	3	0	0	17	0	0	0	0	17	0	0	235	23	5	4	1	268	0	0	3	1	0	0	0	4
10:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	49	4	4	0	0	57	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	47	7	3	3	0	60	0	0	0	0	0	0	0	0
10:30	0	0	1	0	0	0	0	1	0	0	3	1	0	0	0	4	0	0	53	6	3	1	0	63	0	0	1	0	0	0	0	1
10:45	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3	0	0	60	5	3	1	0	69	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	0	1	0	0	8	1	2	0	0	11	0	0	209	22	13	5	0	249	0	0	1	0	0	0	0	1
11:00	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	55	7	1	0	0	63	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	62	8	0	1	0	71	0	0	0	0	0	0	0	0
11:30	0	0	1	0	0	0	0	1	0	0	4	0	0	0	0	4	0	0	51	5	2	2	0	60	0	0	1	0	0	0	0	1
11:45	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	45	5	0	2	0	52	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	0	1	0	0	18	1	0	0	0	19	0	0	213	25	3	5	0	246	0	0	1	0	0	0	0	1
12:00	0	0	0	0	0	1	0	1	0	0	5	0	0	0	0	5	0	0	51	14	1	2	0	68	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	43	5	3	3	0	54	0	0	3	0	0	0	0	3
12:30	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	10	0	0	56	6	2	0	0	64	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	35	4	2	1	0	42	0	0	0	1	0	0	0	1
H/TOT	0	0	0	0	0	1	0	1	0	1	18	0	0	0	0	19	0	0	185	29	8	6	0	228	0	0	3	1	0	0	0	4
13:00	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	0	59	5	5	3	0	72	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	66	9	1	3	0	79	0	0	1	0	0	0	0	1
13:30	0	0	0	0	0	0	0	0	0	0	8	2	0	0	0	10	0	0	79	3	1	1	0	84	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0	0	57	8	1	1	0	67	0	0	1	0	0	0	0	1
H/TOT	0	0	0	0	0	0	0	0	0	0	16	4	0	0	0	20	0	0	261	25	8	8	0	302	0	0	2	0	0	0	0	2
14:00	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	1	64	10	1	0	0	76	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	72	12	2	2	0	88	0	0	1	0	0	0	0	1
14:30	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	0	0	60	6	1	1	0	68	0	0	2	0	0	0	0	2
14:45	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	64	14	3	0	1	82	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	23	2	0	0	0	25	0	1	260	42	7	3	1	314	0	0	3	0	0	0	0	3
15:00	0	0	1	0	0	0	0	1	0	0	8	0	0	0	1	9	0	0	63	5	4	2	1	75	0	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	1	0	90	19	6	2	1	119	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	82	10	3	1	0	96	0	0	0	1	0	0	0	1
15:45	0	0	0	0	0	0	0	0	1	0	8	0	0	0	0	9	0	0	74	8	1	1	0	84	0	0	2	0	0	0	0	2
H/TOT	0	0	1	0	0	0	0	1	1	0	29	0	0	0	1	31	1	0	309	42	14	6	2	374	0	0	2	1	0	0	0	3
16:00	0	0	1	0	0	0	0	1	0	0	15	1	0	0	0	16	0	0	67	18	4	1	0	90	0	0	0	0	0	0	0	0
16:15	0	0	1	0	0	0	0	1	0	0	13	1	0	0	0	14	0	0	83	13	0	0	0	96	0	0	2	0	0	0	0	2
16:30	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	17	0	0	105	22	1	1	0	129	0	0	3	0	0	0	0	3
16:45	0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	12	0	0	127	19	6	1	0	153	0	0	0	0	0	0	0	0
H/TOT	0	0	2	0	0	0	0	2	0	0	55	4	0	0	0	59	0	0	382	72	11	3	0	468	0	0	5	0	0	0	0	5
17:00	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	123	23	1	0	0	147	0	0	1	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	16	0	0	126	16	2	3	0	147	0	0	2	1	0	0	0	3
17:30	0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	12	1	0	140	21	2	0	0	164	0	0	1	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	8	0	0	134	16	2	2	0	154	0	0	2	0	0	0	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	41	5	0	0	0	46	1	0	523	76	7	5	0	612	0	0	6	1	0	0	0	7
18:00	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	0	2	116	12	0	0	1	131	0	0	2	0	0	0	0	2
18:15	0	0	0	0	0	0	0	0	0	0	16	2	0	0	0	18	0	0	117	12	1	0	1	131	0	0	4	0	0	0	0	4
18:30	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	0	100	9	0	2	0	111	0	0	1	0	0	0	0	1
18:45	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	15	0	0	86	6	3	0	0	95	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	50	3	0	0	0	53	0	2	419	39	4	2	2	468	0	0	7	0	0	0	0	7
12 TOT	0	0	7	2	0	1	0	10	1	1	316	24	3	0	3	348	2	4	3562	446	87	53	7	4161	0	0	34	5	0	0	0	39
	A => A								**A => B**								**A => C**								**A => D**							
	P/C	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**	**P/C**	**M/C**	**CAR**	**LGV**	**OGV1**	**OGV2**	**PSV**	**TOT**

Irish Traffic Surveys

B => A								B => B								B => C								B => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
1	0	6	2	0	0	0	9	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0
0	0	21	1	0	0	1	23	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
0	0	14	1	0	0	0	15	0	0	1	0	0	0	0	1	0	0	14	5	0	0	0	19	0	0	0	0	0	0	0	0
0	0	15	1	1	0	0	17	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16	0	0	0	0	0	0	0	0
1	0	56	5	1	0	1	64	0	0	1	0	0	0	0	1	0	0	43	7	0	0	0	50	0	0	0	0	0	0	0	0
0	0	21	0	0	0	1	22	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	20	0	0	0	0	0	0	0	0
0	0	15	3	0	0	0	18	0	0	0	0	0	0	0	0	0	0	29	1	0	0	0	30	0	0	0	0	0	0	0	0
0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	32	0	0	0	1	33	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	16	1	0	0	0	17	0	0	0	0	0	0	0	0
0	0	51	3	0	0	1	55	0	0	0	0	0	0	0	0	0	0	97	2	0	0	1	100	0	0	0	0	0	0	0	0
0	0	10	1	1	0	0	12	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	8	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	0	0	0	1	0	0	0	1
0	0	28	1	1	0	0	30	0	0	0	0	0	0	0	0	0	0	24	2	0	0	1	27	0	0	0	1	0	0	0	1
0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0
0	0	6	0	1	0	0	7	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	20	0	1	0	0	21	0	0	0	0	0	0	0	0	0	0	16	1	1	0	0	18	0	0	0	0	0	0	0	0
0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	1	0	0	0	0	1
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0
0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0	0
0	0	14	1	1	0	0	16	0	0	0	0	0	0	0	0	0	0	20	1	1	0	0	22	0	0	1	0	0	0	0	1
0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	17	1	0	0	0	18	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	21	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7	3	0	0	0	10	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8	1	0	0	1	10	0	0	0	0	0	0	0	0
0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
0	0	15	1	0	0	0	16	0	0	0	0	0	0	0	0	0	0	20	5	0	0	1	26	0	0	0	0	0	0	0	0
0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	13	1	0	0	1	15	0	0	0	0	0	0	0	0
0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
0	0	17	1	0	0	0	18	0	0	0	0	0	0	0	0	0	0	35	2	0	0	1	38	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	8	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0
0	0	18	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	21	3	0	0	2	26	0	0	0	0	0	0	0	0
0	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	7	2	0	0	0	9	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12	0	0	1	0	0	0	0	1
0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
0	0	30	3	0	0	0	33	0	0	0	0	0	0	0	0	0	0	33	2	0	0	0	35	0	0	1	0	0	0	0	1
0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0
0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0
0	0	36	2	0	0	0	38	0	0	0	0	0	0	0	0	0	0	35	1	0	0	0	36	0	0	0	0	0	0	0	0
0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
0	0	26	2	0	0	0	28	0	0	0	0	0	0	0	0	0	0	21	3	0	0	0	24	0	0	0	0	0	0	0	0
1	0	328	20	4	0	2	355	0	0	1	0	0	0	0	1	0	0	385	30	2	0	6	423	0	0	2	1	0	0	0	3
B => A								B => B								B => C								B => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

C => A								C => B								C => C								C => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	60	9	1	3	0	73	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	75	15	2	2	2	96	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	66	12	1	1	0	80	0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	83	9	1	1	0	94	0	0	8	2	0	0	0	10	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	2
0	0	284	45	5	7	2	343	0	0	14	3	1	0	0	18	0	0	0	0	0	0	1	1	0	0	2	1	0	0	0	3
0	0	69	6	1	1	1	78	0	0	5	0	0	0	0	5	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1
1	0	94	10	1	4	0	110	0	0	2	0	0	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1	0	83	9	1	2	0	96	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	98	16	2	3	1	120	0	0	11	0	0	0	0	11	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1
2	0	344	41	5	10	2	404	0	0	27	0	0	0	1	28	0	0	2	1	0	0	1	4	0	0	2	0	0	0	0	2
0	0	92	7	0	2	0	101	0	0	13	1	0	0	1	15	0	0	3	0	0	0	0	3	0	0	1	0	0	0	0	1
0	0	69	3	2	2	0	76	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
0	0	46	7	1	0	0	54	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	41	7	3	1	1	53	0	0	4	0	1	0	0	5	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	248	24	6	5	1	284	0	0	25	2	1	0	1	29	0	0	6	0	0	0	0	6	0	0	3	0	0	0	0	3
0	0	59	4	2	3	0	68	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	47	12	4	1	0	64	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	1	49	7	2	1	0	60	0	0	3	0	0	0	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	41	5	3	2	1	52	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	196	28	11	7	1	244	0	0	18	0	0	0	0	18	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	49	0	1	0	0	50	0	0	7	0	0	0	0	7	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	2
0	0	56	6	0	2	0	64	0	0	6	1	0	0	0	7	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1
0	0	51	7	3	3	0	64	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	50	11	0	0	1	62	0	0	4	0	1	0	0	5	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1
0	0	206	24	4	5	1	240	0	0	19	2	1	0	0	22	0	0	0	3	0	0	0	3	0	0	4	1	0	0	0	5
0	0	72	3	2	2	0	79	0	0	9	3	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	55	5	2	1	0	64	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	57	6	1	0	0	64	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	69	3	0	1	0	73	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
1	0	253	17	5	4	0	280	0	0	19	5	0	0	0	24	0	0	1	0	0	0	0	1	0	0	3	0	0	0	0	3
0	0	52	10	2	3	1	68	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	52	8	2	2	0	64	0	0	5	0	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
1	0	55	9	3	2	0	70	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	55	5	0	0	2	62	0	0	13	1	0	0	0	14	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
1	0	214	32	7	7	3	264	0	0	25	3	0	0	1	29	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	2
0	0	47	4	1	0	1	53	0	0	5	0	0	0	1	6	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	44	5	4	2	0	55	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	62	7	3	1	0	73	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
1	0	69	2	4	1	0	77	1	0	21	0	0	0	0	22	0	0	2	0	0	0	1	3	0	0	2	0	0	0	0	2
1	0	222	18	12	4	1	258	1	0	30	0	0	0	1	32	0	0	6	0	0	0	1	7	0	0	3	1	0	0	0	4
0	1	62	4	2	1	1	71	0	0	9	1	0	0	1	11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	64	5	0	0	0	69	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
0	0	60	8	2	2	0	72	0	0	7	1	0	0	0	8	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1
0	0	70	4	0	1	1	76	0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	256	21	4	4	2	288	0	0	28	4	0	0	1	33	0	0	0	0	0	0	1	1	0	0	5	0	0	0	0	5
0	0	80	11	1	2	0	94	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	79	7	0	2	0	88	0	0	8	0	0	0	0	8	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1
1	0	82	6	0	0	2	91	0	0	9	1	0	0	0	10	0	0	1	0	0	0	0	1	0	0	4	0	0	0	0	4
0	1	78	8	0	1	1	89	0	0	13	0	0	0	0	13	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2
1	1	319	32	1	5	3	362	0	0	41	1	0	0	0	42	0	0	4	0	0	0	0	4	0	0	7	0	0	0	0	7
0	0	80	6	0	1	0	87	0	0	16	0	0	0	0	16	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2
0	0	88	7	0	2	0	97	0	0	17	1	0	0	0	18	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	111	8	2	0	0	121	0	0	20	2	0	0	0	22	0	0	1	0	0	0	0	1	0	0	6	0	0	0	0	6
0	0	91	7	0	0	0	98	0	0	18	0	0	0	0	18	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	370	28	2	3	0	403	0	0	71	3	0	0	0	74	0	0	6	0	0	0	0	6	0	0	8	0	0	0	0	8
0	0	108	6	0	0	1	115	0	0	12	1	0	0	0	13	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	2	95	7	1	1	0	106	0	0	16	1	0	0	0	17	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	69	5	0	0	0	74	0	0	7	0	0	0	0	7	0	0	1	0	0	0	0	1	0	0	5	0	0	0	0	5
0	0	66	3	0	0	0	69	0	0	13	1	0	0	0	14	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1
0	2	338	21	1	1	1	364	0	0	48	3	0	0	0	51	0	0	1	1	0	0	0	2	0	0	10	0	0	0	0	10
6	5	3250	331	63	62	17	3734	1	0	365	26	3	0	5	400	0	0	29	5	0	0	4	38	0	0	48	4	0	0	0	52
C => A								C => B								C => C								C => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

D => A								D => B								D => C								D => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
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0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
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0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
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0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	39	4	1	0	0	44	0	0	1	1	0	0	0	2	0	0	46	3	0	0	0	49	0	0	0	0	0	0	0	0
D => A								D => B								D => C								D => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys Ltd

Survey Name : *ITS J285 Site A*
Site: Site A
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co Kildare

Video end on -18:40:38

	A => A								A => B								A => C							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	0	0	0	0	0	0	0	0	0	0	37	20	5	2	0	64	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	42	15	3	8	1	69	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	58	16	6	6	0	86	0	0	1	1	0	0	0	2
07:45	0	0	0	0	0	0	0	0	0	0	59	12	4	2	1	78	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	196	63	18	18	2	297	0	0	1	1	0	0	0	2
08:00	0	0	0	0	0	0	0	0	0	0	62	8	2	1	0	73	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	62	18	2	2	0	84	0	0	0	0	1	1	0	2
08:30	0	0	0	0	0	0	0	0	0	0	54	5	3	1	1	64	0	0	2	0	0	0	0	2
08:45	0	0	0	0	0	0	0	0	0	0	59	6	4	3	0	72	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	237	37	11	7	1	293	0	0	2	0	1	1	0	4
09:00	0	0	0	0	0	0	0	0	0	0	66	9	3	2	0	80	0	0	1	0	0	0	0	1
09:15	0	0	0	0	0	0	0	0	0	0	64	13	6	6	0	89	0	0	1	0	1	0	0	2
09:30	0	0	0	0	0	0	0	0	0	0	69	11	3	2	0	85	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	57	12	5	2	0	76	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	256	45	17	12	0	330	0	0	2	0	1	0	0	3
10:00	0	0	0	0	0	0	0	0	0	0	63	12	4	4	2	85	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	35	11	4	5	1	56	0	0	2	0	0	0	0	2
10:30	0	0	0	0	0	0	0	0	0	0	46	10	6	1	0	63	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	1	0	51	9	9	2	0	72	0	0	2	0	0	0	0	2
H/TOT	0	0	0	0	0	0	0	0	1	0	195	42	23	12	3	276	0	0	4	0	0	0	0	4
11:00	0	0	0	0	0	0	0	0	0	0	35	11	3	0	0	49	0	0	1	0	0	0	0	1
11:15	0	0	0	0	0	0	0	0	0	0	51	9	3	2	0	65	0	0	0	1	0	0	0	1
11:30	0	0	0	0	0	0	0	0	0	0	50	10	4	3	0	67	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	50	12	1	8	0	71	0	0	2	1	0	0	0	3
H/TOT	0	0	0	0	0	0	0	0	0	0	186	42	11	13	0	252	0	0	3	2	0	0	0	5
12:00	0	0	0	0	0	0	0	0	0	0	58	11	1	6	2	78	0	0	1	0	0	0	0	1
12:15	0	0	0	0	0	0	0	0	0	1	40	7	4	2	0	54	0	0	5	0	0	0	0	5
12:30	0	0	0	0	0	0	0	0	0	1	52	7	3	2	0	65	0	0	0	0	0	0	0	0
12:45	0	0	1	0	0	0	0	1	0	0	58	6	4	5	0	73	0	0	1	0	1	0	0	2
H/TOT	0	0	1	0	0	0	0	1	0	2	208	31	12	15	2	270	0	0	7	0	1	0	0	8
13:00	0	0	0	0	0	0	0	0	0	0	60	11	3	5	0	79	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	55	11	2	3	2	73	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	62	4	3	2	6	77	0	0	3	0	0	0	0	3
13:45	0	0	0	0	0	0	0	0	0	0	52	10	0	3	1	66	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	229	36	8	13	9	295	0	0	3	0	0	0	0	3
14:00	0	0	0	0	0	0	0	0	0	0	52	11	3	4	0	70	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	55	11	2	6	0	74	1	0	0	0	0	0	0	1
14:30	0	0	0	0	0	0	0	0	0	0	43	9	3	2	0	57	0	0	1	0	0	0	0	1
14:45	0	0	0	0	0	0	0	0	0	0	52	13	8	1	0	74	0	0	1	0	0	0	0	1
H/TOT	0	0	0	0	0	0	0	0	0	0	202	44	16	13	0	275	1	0	2	0	0	0	0	3
15:00	0	0	0	0	0	0	0	0	0	0	60	5	1	0	1	67	0	0	4	0	0	0	0	4
15:15	0	0	0	0	0	0	0	0	0	0	56	9	4	3	1	73	0	0	1	0	0	0	0	1
15:30	0	0	0	0	0	0	0	0	0	0	52	10	3	2	1	68	0	0	3	0	0	0	0	3
15:45	0	0	0	0	0	0	0	0	1	0	60	8	1	1	1	72	0	0	1	0	0	0	0	1
H/TOT	0	0	0	0	0	0	0	0	1	0	228	32	9	6	4	280	0	0	9	0	0	0	0	9
16:00	0	0	0	0	0	0	0	0	0	0	54	13	4	4	1	76	0	0	1	2	0	0	0	3
16:15	0	0	0	0	0	0	0	0	0	0	74	14	2	0	0	90	0	0	4	0	0	0	0	4
16:30	0	0	0	0	0	0	0	0	0	0	68	14	1	2	0	85	0	0	0	1	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	64	9	3	0	0	76	0	0	2	0	0	0	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	260	50	10	6	1	327	0	0	7	3	0	0	0	10
17:00	0	0	0	0	0	0	0	0	0	0	74	13	1	1	0	89	0	0	1	1	1	0	0	3
17:15	0	0	0	0	0	0	0	0	1	0	67	15	2	9	0	94	1	0	1	0	0	0	0	2
17:30	0	0	0	0	0	0	0	0	0	0	77	10	1	0	0	88	0	0	1	1	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	65	12	0	6	0	83	0	0	1	1	0	0	0	2
H/TOT	0	0	0	0	0	0	0	0	1	0	283	50	4	16	0	354	1	0	4	3	1	0	0	9
18:00	0	0	0	0	0	0	0	0	0	0	63	8	1	2	2	76	0	0	2	0	0	0	0	2
18:15	0	0	0	0	0	0	0	0	1	0	62	5	0	7	7	82	0	0	2	0	0	0	0	2
18:30	0	0	0	0	0	0	0	0	0	0	53	3	1	1	0	58	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	178	16	2	10	9	216	0	0	4	0	0	0	0	4
12 TOT	0	0	1	0	0	0	0	1	4	2	2658	488	141	141	31	3465	2	0	48	9	4	1	0	64
	A => A								A => B								A => C							
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

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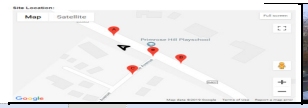

B => A								B => B								B => C							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	43	15	1	2	0	61	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
1	0	35	19	2	4	1	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	53	12	2	7	1	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	82	16	0	2	0	100	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
2	0	213	62	5	15	2	299	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
0	0	85	10	6	3	1	105	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	4
0	0	87	9	3	3	3	105	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	90	10	1	5	2	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	86	13	5	7	0	111	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	348	42	15	18	6	429	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	6
0	0	57	9	1	0	0	67	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
0	0	64	11	6	4	0	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	51	7	5	3	1	67	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	47	11	0	2	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	219	38	12	9	1	279	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0	0	36	13	2	2	0	53	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	47	12	2	9	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	37	3	5	3	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	43	11	3	5	0	63	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1	0	163	39	12	19	0	234	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
1	0	43	8	2	3	1	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	36	11	2	5	2	58	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3
0	0	42	9	3	5	2	61	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
0	0	70	13	3	1	0	87	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
3	0	191	41	10	14	5	264	0	0	0	0	0	0	0	0	1	0	7	0	0	0	0	8
0	0	63	8	2	3	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	56	9	4	3	0	72	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4
0	0	37	8	1	2	0	48	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	50	7	3	6	4	70	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0	0	206	32	10	14	4	266	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	9
0	0	51	7	10	5	1	74	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	48	7	2	3	2	62	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	51	12	1	3	0	67	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	71	6	2	1	0	80	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	221	32	15	12	3	283	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
0	0	47	12	3	6	0	68	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	35	8	6	5	0	54	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	62	6	8	6	0	82	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	40	4	3	2	0	49	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	184	30	20	19	0	253	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4
0	0	64	6	1	2	0	73	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	48	11	5	1	0	65	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0	0	59	14	4	5	1	83	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	59	9	6	6	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	230	40	16	14	1	301	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
0	0	60	13	5	7	1	86	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
0	0	54	11	1	2	0	68	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	5
0	0	60	12	3	0	1	76	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
0	0	60	10	4	2	0	76	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3
0	0	234	46	13	11	2	306	0	0	0	0	0	0	0	0	1	0	8	3	0	0	0	12
0	1	65	16	1	3	0	86	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	7
0	0	79	14	0	1	0	94	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	5
0	0	84	12	3	1	1	101	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5
0	0	76	14	1	1	1	93	0	0	0	0	0	0	0	0	1	0	3	1	0	0	0	5
0	1	304	56	5	6	2	374	0	0	0	0	0	0	0	0	3	0	13	6	0	0	0	22
0	0	84	13	1	1	3	102	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0	0	92	12	1	4	1	110	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6
0	0	41	10	0	1	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	217	35	2	6	4	264	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10
6	1	2730	493	135	157	30	3552	0	0	0	0	0	0	0	0	5	0	74	12	0	0	1	92
B => A								B => B								B => C							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

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C => A								C => B								C => C							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	1	0	1	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	2	0	0	0	0	5	0	0	3	2	0	0	0	5	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	9	0	1	2	0	15	0	0	5	2	0	0	0	7	0	0	0	0	0	0	0	0
0	0	2	0	1	0	0	3	0	0	8	1	0	0	1	10	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	1	0	6	0	0	0	0	7	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	7	0	1	0	0	8	1	0	21	1	0	0	1	24	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	1	0	0	3	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	2	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
0	0	3	1	1	0	0	5	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	3	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	1	1	5	3	0	0	0	10	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	1	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	6	0	0	1	0	7	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	2	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
0	0	5	2	0	0	0	7	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
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0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
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0	0	0	1	0	0	0	1	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
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0	0	1	4	0	0	0	5	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0
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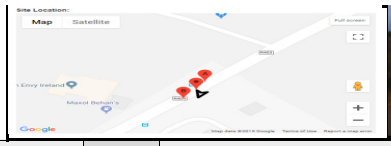
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	4	1	0	0	0	5	0	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0
0	0	3	1	0	0	0	4	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0
0	0	2	1	0	0	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	1	0	0	0	3	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	8	3	0	0	0	11	0	0	8	2	0	0	0	10	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	1	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0
3	0	58	11	3	3	0	78	3	1	86	12	0	0	1	103	0	0	0	0	0	0	0	0
C => A								C => B								C => C							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys Ltd

Survey Name : *ITS J285 Site B*
Site: Site B
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co.Kildare

Irish Traffic Surveys

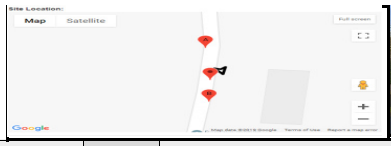


	A => B								B => A							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	0	0	48	7	3	2	0	60	0	2	163	32	6	2	2	207
07:15	0	0	38	6	3	1	0	48	0	0	162	30	5	4	1	202
07:30	0	0	52	4	2	0	3	61	0	2	182	31	3	2	2	222
07:45	0	0	58	11	1	2	0	72	0	0	171	25	2	4	1	203
H/TOT	0	0	196	28	9	5	3	241	0	4	678	118	16	12	6	834
08:00	0	0	64	5	4	4	0	77	1	0	171	20	4	0	1	197
08:15	0	1	66	9	4	4	1	85	1	1	174	15	1	2	0	194
08:30	0	0	58	4	0	3	0	65	1	0	145	20	2	2	2	172
08:45	0	0	66	8	2	2	0	78	0	0	135	14	0	3	2	154
H/TOT	0	1	254	26	10	13	1	305	3	1	625	69	7	7	5	717
09:00	0	0	61	9	0	2	0	72	0	0	127	16	1	1	0	145
09:15	0	0	90	7	1	1	2	101	0	0	119	8	1	4	1	133
09:30	0	0	72	4	1	2	0	79	0	0	89	7	2	0	1	99
09:45	0	0	62	9	2	3	1	77	0	0	86	12	4	2	0	104
H/TOT	0	0	285	29	4	8	3	329	0	0	421	43	8	7	2	481
10:00	0	0	65	6	6	2	0	79	0	0	71	11	2	3	0	87
10:15	0	0	53	13	6	2	1	75	0	0	91	15	2	4	4	116
10:30	0	0	71	11	5	2	1	90	0	0	75	16	4	1	1	97
10:45	0	0	83	11	2	2	0	98	0	1	70	11	3	4	0	89
H/TOT	0	0	272	41	19	8	2	342	0	1	307	53	11	12	5	389
11:00	0	0	60	10	1	1	0	72	0	0	73	9	4	1	0	87
11:15	1	0	58	9	1	3	2	74	0	2	74	11	2	1	0	90
11:30	0	0	71	10	3	4	2	90	0	1	94	6	4	5	1	111
11:45	0	0	72	9	3	1	1	86	0	0	70	16	2	2	0	90
H/TOT	1	0	261	38	8	9	5	322	0	3	311	42	12	9	1	378
12:00	0	0	60	10	3	3	0	76	0	0	93	5	2	4	1	105
12:15	0	0	76	10	4	1	1	92	0	0	80	7	2	3	2	94
12:30	1	1	94	10	3	1	0	110	1	0	73	8	2	1	1	86
12:45	0	0	73	8	2	3	2	88	0	0	93	8	2	3	0	106
H/TOT	1	1	303	38	12	8	3	366	1	0	339	28	8	11	4	391
13:00	0	0	78	13	3	4	4	102	0	0	88	6	4	2	0	100
13:15	0	1	98	15	0	2	1	117	0	0	77	15	2	1	1	96
13:30	0	0	95	6	3	2	1	107	0	0	79	5	5	2	6	97
13:45	0	0	83	9	1	2	1	96	1	0	74	8	2	3	2	90
H/TOT	0	1	354	43	7	10	7	422	1	0	318	34	13	8	9	383
14:00	1	0	62	10	3	3	0	79	0	0	77	16	1	3	0	97
14:15	0	1	95	11	3	3	2	115	0	0	77	6	1	4	1	89
14:30	0	0	97	8	1	2	0	108	0	0	64	15	1	3	1	84
14:45	0	0	73	11	4	2	1	91	0	0	89	11	3	1	0	104
H/TOT	1	1	327	40	11	10	3	393	0	0	307	48	6	11	2	374
15:00	0	0	117	14	6	3	1	141	1	0	79	4	4	0	0	88
15:15	1	0	118	25	11	4	1	160	0	1	75	6	3	1	2	88
15:30	0	0	117	18	4	0	0	139	0	1	72	9	4	0	0	86
15:45	0	0	112	17	5	1	2	137	0	0	98	11	2	2	2	115
H/TOT	1	0	464	74	26	8	4	577	1	2	324	30	13	3	4	377
16:00	0	0	129	30	2	1	0	162	0	0	71	11	2	1	0	85
16:15	0	0	143	23	4	1	0	171	0	0	89	14	1	2	0	106
16:30	0	0	170	29	2	1	1	203	1	0	96	8	1	1	4	111
16:45	1	1	183	31	6	0	0	222	0	0	73	10	1	1	1	86
H/TOT	1	1	625	113	14	3	1	758	1	0	329	43	5	5	5	388
17:00	0	2	177	25	4	1	1	210	0	0	104	12	1	1	0	118
17:15	0	0	196	33	1	1	0	231	1	0	89	7	0	2	1	100
17:30	1	1	203	18	1	2	1	227	1	0	104	9	1	0	0	115
17:45	1	0	180	28	2	1	1	213	0	0	77	6	0	0	0	83
H/TOT	2	3	756	104	8	5	3	881	2	0	374	34	2	3	1	416
18:00	0	1	175	18	0	1	4	199	0	0	66	11	0	0	0	77
18:15	0	0	176	23	2	0	0	201	0	0	84	4	0	1	4	93
18:30	0	0	171	11	0	1	2	185	0	1	85	6	0	0	1	93
18:45	0	1	130	8	4	0	1	144	1	0	66	8	0	1	0	76
H/TOT	0	2	652	60	6	2	7	729	1	1	301	29	0	2	5	339
12 TOT	7	10	4749	634	134	89	42	5665	10	12	4634	571	101	90	49	5467
	A => B								B => A							
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys Ltd

Survey Name : *ITS J285 Site C*
Site: Site C
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co. Kildare

Irish Traffic Surveys



	A => B								B => A							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	0	0	44	6	2	0	0	52	0	0	68	14	3	0	0	85
07:15	0	0	38	7	1	0	1	47	0	0	101	16	2	2	3	124
07:30	0	0	58	3	1	1	1	64	0	0	85	10	2	2	0	99
07:45	0	0	63	10	1	1	0	75	0	0	106	11	2	1	0	120
H/TOT	0	0	203	26	5	2	2	238	0	0	360	51	9	5	3	428
08:00	0	0	78	7	1	1	1	88	0	0	99	8	0	0	1	108
08:15	0	0	86	7	0	1	0	94	1	0	115	12	2	2	1	133
08:30	1	0	97	9	1	5	0	113	0	0	113	10	1	2	0	126
08:45	0	0	84	9	1	0	0	94	0	0	102	17	2	3	1	125
H/TOT	1	0	345	32	3	7	1	389	1	0	429	47	5	7	3	492
09:00	0	0	53	4	2	1	1	61	0	0	105	6	0	3	0	114
09:15	0	0	78	9	1	1	0	89	0	0	83	4	1	1	0	89
09:30	0	0	63	3	1	1	0	68	0	0	54	6	1	1	0	62
09:45	0	0	55	9	0	2	0	66	0	0	48	9	3	1	1	62
H/TOT	0	0	249	25	4	5	1	284	0	0	290	25	5	6	1	327
10:00	0	0	52	3	3	0	0	58	0	0	60	4	2	2	0	68
10:15	0	0	52	6	4	3	0	65	0	0	68	10	3	2	0	83
10:30	0	0	56	6	3	1	0	66	0	1	60	8	4	1	0	74
10:45	0	0	60	5	6	1	0	72	0	0	40	4	4	2	1	51
H/TOT	0	0	220	20	16	5	0	261	0	1	228	26	13	7	1	276
11:00	0	0	64	4	0	0	0	68	1	0	49	1	1	0	0	52
11:15	0	0	63	9	1	1	0	74	0	0	64	7	1	2	0	74
11:30	0	0	56	7	1	2	0	66	0	0	61	7	3	3	0	74
11:45	0	0	56	5	1	2	0	64	0	0	56	12	0	0	1	69
H/TOT	0	0	239	25	3	5	0	272	1	0	230	27	5	5	1	269
12:00	0	0	59	13	1	3	0	76	0	0	78	4	0	4	0	86
12:15	0	0	45	6	2	3	0	56	1	0	55	7	2	1	0	66
12:30	0	0	65	4	3	0	0	72	0	0	56	8	2	0	0	66
12:45	0	1	39	5	2	1	0	48	0	0	76	3	0	1	0	80
H/TOT	0	1	208	28	8	7	0	252	1	0	265	22	4	6	0	298
13:00	0	0	65	6	5	3	0	79	2	0	64	7	2	3	1	79
13:15	0	0	62	11	1	3	0	77	0	0	54	11	2	2	0	69
13:30	0	0	88	5	1	1	0	95	0	0	58	10	3	2	0	73
13:45	0	0	62	8	1	1	0	72	0	0	56	5	0	0	2	63
H/TOT	0	0	277	30	8	8	0	323	2	0	232	33	7	7	3	284
14:00	0	0	67	15	0	1	0	83	0	0	49	6	1	0	1	57
14:15	0	1	73	13	2	2	0	91	0	0	51	7	4	1	0	63
14:30	0	0	64	7	0	2	0	73	0	0	63	10	4	1	0	78
14:45	0	0	65	15	3	0	1	84	0	0	60	3	4	1	0	68
H/TOT	0	1	269	50	5	5	1	331	0	0	223	26	13	3	1	266
15:00	0	0	72	7	4	2	1	86	0	0	73	3	0	0	1	77
15:15	1	0	97	18	6	2	2	126	0	1	69	5	2	0	0	77
15:30	0	0	86	9	3	1	0	99	0	0	65	11	2	1	0	79
15:45	0	0	85	8	0	2	0	95	1	0	74	4	0	1	1	81
H/TOT	1	0	340	42	13	7	3	406	1	1	281	23	4	2	2	314
16:00	0	0	84	17	4	1	0	106	0	0	89	10	1	1	0	101
16:15	0	0	98	15	0	0	0	113	1	0	85	11	0	3	0	100
16:30	0	0	122	24	1	1	0	148	1	0	76	8	0	0	2	87
16:45	0	0	142	19	6	1	0	168	0	1	85	8	0	1	1	96
H/TOT	0	0	446	75	11	3	0	535	2	1	335	37	1	5	3	384
17:00	0	0	127	22	1	0	0	150	0	0	86	7	0	1	0	94
17:15	0	0	142	21	2	3	0	168	0	0	102	10	0	2	0	114
17:30	1	0	163	20	2	0	0	186	0	0	111	9	2	0	0	122
17:45	2	0	140	19	2	2	0	165	0	0	95	9	0	0	0	104
H/TOT	3	0	572	82	7	5	0	669	0	0	394	35	2	3	0	434
18:00	0	1	134	9	0	0	1	145	1	0	111	5	0	0	0	117
18:15	0	1	140	12	1	0	1	155	0	1	99	6	2	1	1	110
18:30	0	0	115	10	0	2	0	127	0	0	72	8	0	0	0	80
18:45	0	0	104	6	3	0	0	113	0	0	63	3	0	0	0	66
H/TOT	0	2	493	37	4	2	2	540	1	1	345	22	2	1	1	373
12 TOT	5	4	3861	472	87	61	10	4500	9	4	3612	374	70	57	19	4145
	A => B								B => A							
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys Ltd

Survey Name : *ITS J285 Site D*
Site: Site D
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co Kildare

Irish Traffic Surveys

	A => A								A => B								A => C								A => D							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	0	0	0	0	0	0	0	0	0	0	7	2	1	1	0	11	0	0	44	19	3	1	0	67	0	0	1	0	0	0	0	1
07:15	0	0	1	0	0	0	0	1	0	0	9	2	0	1	0	12	0	0	57	14	4	6	1	82	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	10	4	0	0	0	14	0	0	74	12	2	5	1	94	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	1	0	1	0	0	14	4	1	0	0	19	0	1	54	10	3	2	2	72	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	1	0	2	0	0	40	12	2	2	0	56	0	1	229	55	12	14	4	315	0	0	1	0	0	0	0	1
08:00	0	0	0	0	0	0	0	0	0	0	16	2	0	0	1	19	0	0	58	5	2	1	1	67	0	0	2	0	0	0	0	2
08:15	0	0	0	0	0	0	0	0	0	0	13	0	0	0	1	14	0	0	33	6	1	1	0	41	0	0	3	1	0	0	0	4
08:30	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	18	0	0	44	1	1	2	0	48	0	0	1	0	0	0	0	1
08:45	0	0	1	0	0	0	0	1	0	0	20	2	0	2	0	24	0	0	29	1	2	0	0	32	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	0	1	0	0	67	4	0	2	2	75	0	0	164	13	6	4	1	188	0	0	6	1	0	0	0	7
09:00	0	0	0	0	0	0	0	0	0	0	43	3	0	1	1	48	0	0	35	3	1	5	0	44	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	29	2	0	0	0	31	0	0	39	8	1	2	0	50	0	0	3	0	0	0	0	3
09:30	0	0	2	0	0	0	0	2	1	0	25	1	1	0	0	28	0	0	49	6	3	3	2	63	0	0	1	1	0	0	0	2
09:45	0	0	1	0	0	0	0	1	0	0	20	0	1	0	0	21	0	0	45	4	4	2	2	57	0	0	0	0	0	0	0	0
H/TOT	0	0	3	0	0	0	0	3	1	0	117	6	2	1	1	128	0	0	168	21	9	12	4	214	0	0	4	1	0	0	0	5
10:00	0	0	0	0	0	0	0	0	0	0	22	2	1	0	0	25	0	0	37	5	5	2	0	49	0	0	1	0	1	0	0	2
10:15	0	0	1	0	1	0	0	2	0	0	26	2	0	0	0	28	0	0	35	5	2	1	1	44	0	0	0	1	0	0	0	1
10:30	0	0	1	1	0	0	0	2	0	0	17	3	0	0	0	20	0	0	34	3	4	2	0	43	0	0	1	0	0	0	0	1
10:45	0	0	1	0	0	0	0	1	0	0	30	0	2	0	0	32	0	0	33	6	5	2	1	47	0	0	1	0	0	0	0	1
H/TOT	0	0	3	1	1	0	0	5	0	0	95	7	3	0	0	105	0	0	139	19	16	7	2	183	0	0	3	1	1	0	0	5
11:00	0	0	0	0	0	0	0	0	0	0	32	2	1	0	0	35	0	0	33	10	1	0	0	44	0	0	1	0	0	0	0	1
11:15	0	0	0	0	0	0	0	0	0	0	30	3	0	0	0	33	0	0	29	6	3	3	0	41	0	0	1	1	0	0	0	2
11:30	0	0	0	0	1	0	0	1	0	0	23	1	2	0	0	26	0	0	35	6	1	0	0	42	0	0	2	0	0	0	0	2
11:45	0	0	1	0	0	0	1	2	0	0	27	1	1	0	0	29	0	0	27	5	3	8	0	43	0	0	1	0	0	0	0	1
H/TOT	0	0	1	0	1	0	1	3	0	0	112	7	4	0	0	123	0	0	124	27	8	11	0	170	0	0	5	1	0	0	0	6
12:00	0	0	1	0	0	0	0	1	0	0	24	4	1	0	0	29	0	0	42	2	2	1	1	48	0	0	1	0	0	0	0	1
12:15	0	0	0	1	0	0	0	1	1	0	25	2	0	0	0	28	0	0	33	4	2	0	1	40	0	0	1	0	0	0	0	1
12:30	0	0	0	0	0	0	0	0	0	0	15	2	1	0	0	18	0	0	43	3	4	0	0	50	0	0	1	0	1	0	0	2
12:45	0	0	1	0	1	0	0	2	0	0	15	1	0	1	0	17	0	0	31	4	1	5	0	41	0	0	1	0	0	0	0	1
H/TOT	0	0	2	1	1	0	0	4	1	0	79	9	2	1	0	92	0	0	149	13	9	6	2	179	0	0	4	0	1	0	0	5
13:00	0	0	0	0	1	0	0	1	0	0	28	6	0	1	0	35	0	0	41	7	0	1	1	50	0	0	1	0	0	0	0	1
13:15	0	0	0	1	0	0	0	1	1	0	19	4	0	0	1	25	0	0	25	4	1	3	1	34	0	0	1	0	0	0	0	1
13:30	0	0	0	0	0	0	0	0	0	0	22	3	1	0	0	26	0	0	51	8	0	2	0	61	0	0	2	0	0	0	0	2
13:45	0	0	0	0	0	0	0	0	0	0	36	0	0	0	2	38	1	0	35	4	1	2	0	43	0	0	0	0	0	0	0	0
H/TOT	0	0	0	1	1	0	0	2	1	0	105	13	1	1	3	124	1	0	152	23	2	8	2	188	0	0	4	0	0	0	0	4
14:00	0	0	1	0	0	0	0	1	0	0	17	0	0	0	0	17	0	0	36	3	1	2	2	44	0	0	2	0	0	0	0	2
14:15	0	0	0	0	0	0	0	0	0	0	14	3	1	1	0	19	0	1	30	5	2	5	1	44	0	0	3	0	0	0	0	3
14:30	0	0	1	0	0	0	0	1	0	0	18	1	2	0	0	21	0	0	27	3	2	2	0	34	0	0	0	0	0	0	0	0
14:45	0	0	1	0	0	0	0	1	0	0	34	0	1	0	0	35	1	0	37	6	7	1	0	52	0	0	5	0	0	0	0	5
H/TOT	0	0	3	0	0	0	0	3	0	0	83	4	4	1	0	92	1	1	130	17	12	10	3	174	0	0	10	0	0	0	0	10
15:00	0	0	2	0	0	0	0	2	0	0	28	3	3	0	0	34	0	0	26	6	2	0	0	34	0	0	1	0	0	0	0	1
15:15	0	0	1	0	0	0	0	1	0	0	29	3	0	0	0	32	0	0	16	2	1	0	1	20	0	0	3	0	1	0	0	4
15:30	0	0	0	0	0	0	0	0	0	0	24	1	0	0	0	25	0	0	32	5	1	2	1	41	0	0	1	0	0	0	0	1
15:45	0	0	1	0	0	0	0	1	0	0	32	5	0	0	0	37	0	0	19	8	5	0	0	32	0	0	4	0	0	0	0	4
H/TOT	0	0	4	0	0	0	0	4	0	0	113	12	3	0	0	128	0	0	93	21	9	2	2	127	0	0	9	0	1	0	0	10
16:00	0	0	0	0	0	0	0	0	0	0	28	3	0	0	0	31	0	0	40	8	1	4	1	54	0	0	4	0	0	0	0	4
16:15	0	0	1	0	0	0	0	1	0	0	27	2	0	0	0	29	0	0	32	5	1	1	0	39	0	0	5	0	0	0	0	5
16:30	0	0	0	0	0	0	0	0	0	0	28	3	0	0	0	31	0	0	23	4	2	0	0	29	0	0	6	0	0	0	0	6
16:45	0	0	0	0	0	0	0	0	0	0	19	2	0	0	0	21	0	0	26	7	2	0	0	35	0	0	0	0	0	0	0	0
H/TOT	0	0	1	0	0	0	0	1	0	0	102	10	0	0	0	112	0	0	121	24	6	5	1	157	0	0	15	0	0	0	0	15
17:00	0	0	2	0	0	0	0	2	0	0	26	4	0	0	0	30	0	0	27	3	0	2	1	33	0	0	5	0	0	0	0	5
17:15	0	0	0	0	0	0	0	0	0	0	41	4	0	0	0	45	0	0	22	4	1	3	0	30	0	0	6	0	0	0	0	6
17:30	0	0	0	0	0	0	0	0	0	0	36	1	1	0	0	38	0	0	22	4	1	3	0	30	0	0	3	0	0	0	0	3
17:45	0	0	0	0	0	0	0	0	0	0	28	2	0	0	0	30	0	0	18	3	0	2	0	23	0	0	5	0	0	0	0	5
H/TOT	0	0	2	0	0	0	0	2	0	0	131	11	1	0	0	143	0	0	89	14	2	10	1	116	0	0	19	0	0	0	0	19
18:00	0	0	0	0	0	0	0	0	0	0	36	2	0	0	0	38	0	0	21	2	1	4	0	28	0	0	2	1	0	0	0	3
18:15	0	0	2	0	0	0	0	2	0	0	35	3	0	0	0	38	0	0	16	0	0	5	3	24	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	21	0	0	23	1	0	1	1	26	0	0	2	0	0	0	0	2
18:45	0	0	0	0	0	0	0	0	0	0	28	1	0	0	0	29	0	0	26	1	1	1	0	29	0	0	2	0	0	0	0	2
H/TOT	0	0	2	0	0	0	0	2	0	0	119	7	0	0	0	126	0	0	86	4	2	11	4	107	0	0	6	1	0	0	0	7
12 TOT	0	0	23	3	4	1	1	32	3	0	1163	102	22	8	6	1304	2	2	1644	251	93	100	26	2118	0	0	86	5	3	0	0	94
	A => A								A => B								A => C								A => D							
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

B => A								B => B								B => C								B => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	45	6	1	1	0	53	0	0	5	1	0	0	0	6
0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	46	6	2	0	0	54	0	0	5	1	0	0	0	6
0	0	11	3	0	0	0	14	0	0	0	0	0	0	0	0	0	0	52	4	1	1	1	59	0	0	11	1	0	0	0	12
0	0	15	3	0	0	0	18	0	0	1	0	0	0	0	1	0	0	51	6	0	1	1	59	0	0	18	2	0	0	0	20
0	0	32	7	0	0	0	39	0	0	1	0	0	0	0	1	0	0	194	22	4	3	2	225	0	0	39	5	0	0	0	44
0	0	13	0	1	0	0	14	0	0	0	0	0	0	0	0	0	1	46	4	0	1	0	52	0	0	32	0	0	0	0	32
0	0	44	1	0	0	0	45	0	0	0	0	0	0	0	0	0	0	48	2	1	1	1	53	0	0	18	4	0	0	0	22
0	0	54	1	0	0	0	55	0	0	0	0	0	0	0	0	0	0	61	6	0	1	1	69	0	0	34	0	1	0	1	36
0	0	18	1	0	0	0	19	0	0	0	0	0	0	0	0	0	0	47	7	1	0	0	55	0	0	20	3	0	0	0	23
0	0	129	3	1	0	0	133	0	0	0	0	0	0	0	0	0	1	202	19	2	3	2	229	0	0	104	7	1	0	1	113
0	0	10	0	0	0	1	11	0	0	0	0	0	0	0	0	0	0	32	3	2	1	0	38	0	0	10	1	0	0	0	11
0	0	15	1	0	0	0	16	0	0	0	0	0	0	0	0	0	0	47	10	1	1	0	59	0	0	6	0	0	0	0	6
0	0	15	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	38	3	1	1	1	44	0	0	11	1	0	0	0	12
0	0	18	1	0	0	0	19	0	0	0	0	0	0	0	0	0	0	41	4	0	2	0	47	0	0	7	1	0	0	0	8
0	0	58	2	0	0	1	61	0	0	0	0	0	0	0	0	0	0	158	20	4	5	1	188	0	0	34	3	0	0	0	37
1	0	15	0	2	0	0	18	0	0	0	0	0	0	0	0	0	0	34	4	1	0	0	39	0	0	8	1	1	0	0	10
0	0	9	0	1	0	0	10	0	0	0	0	0	0	0	0	0	0	42	8	1	3	0	54	0	0	3	1	0	0	0	4
0	0	18	1	1	0	0	20	0	0	0	0	0	0	0	0	0	0	39	4	2	1	0	46	0	0	5	0	0	0	0	5
0	0	21	1	0	0	0	22	0	0	1	0	0	0	0	1	0	0	37	3	3	1	0	44	0	0	11	0	0	0	0	11
1	0	63	2	4	0	0	70	0	0	1	0	0	0	0	1	0	0	152	19	7	5	0	183	0	0	27	2	1	0	0	30
0	0	21	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	30	6	0	0	0	36	0	0	4	1	0	0	0	5
0	0	26	1	0	0	0	27	0	0	0	0	0	0	0	0	0	0	33	7	1	1	0	42	0	0	14	0	0	0	0	14
0	0	25	3	0	0	0	28	0	0	0	0	0	0	0	0	0	0	29	2	2	2	0	35	0	0	9	0	0	0	0	9
0	0	29	3	0	1	0	33	0	0	0	0	0	0	0	0	0	0	33	3	1	1	0	38	0	0	5	0	0	0	0	5
0	0	101	7	0	1	0	109	0	0	0	0	0	0	0	0	0	0	125	18	4	4	0	151	0	0	32	1	0	0	0	33
0	0	19	2	0	0	0	21	0	0	0	0	0	0	0	0	0	0	30	5	0	2	0	37	0	0	9	6	0	0	0	15
0	0	16	0	1	0	0	17	0	0	0	0	0	0	0	0	0	0	28	4	1	3	0	36	0	0	6	3	0	0	0	9
0	0	21	2	1	0	0	24	0	0	0	0	0	0	0	0	0	0	38	5	2	0	0	45	0	0	7	1	0	0	0	8
0	0	17	0	1	0	0	18	0	0	0	0	0	0	0	0	0	0	27	2	1	1	0	31	0	0	5	1	0	0	0	6
0	0	73	4	3	0	0	80	0	0	0	0	0	0	0	0	0	0	123	16	4	6	0	149	0	0	27	11	0	0	0	38
1	0	23	1	0	0	0	25	0	0	0	0	0	0	0	0	0	0	39	6	5	3	0	53	0	0	13	1	0	0	0	14
0	0	30	3	0	0	0	33	0	0	0	0	0	0	0	0	0	0	35	9	1	3	0	48	0	0	15	1	0	0	1	17
0	0	18	0	0	0	0	18	0	0	1	0	0	0	0	1	0	0	31	2	1	1	0	35	0	0	10	1	0	0	0	11
0	0	18	1	1	0	0	20	0	0	0	0	0	0	0	0	0	0	40	5	1	1	0	47	0	0	10	2	0	0	0	12
1	0	89	5	1	0	0	96	0	0	1	0	0	0	0	1	0	0	145	22	8	8	0	183	0	0	48	5	0	0	1	54
0	0	24	1	0	0	0	25	0	0	1	0	0	0	0	1	0	1	44	11	0	1	0	57	0	0	13	3	0	0	0	16
0	0	28	1	0	0	1	30	0	0	0	0	0	0	0	0	0	0	36	3	2	2	0	43	0	0	19	8	0	0	0	27
0	0	22	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	31	8	1	0	0	40	0	0	7	1	0	0	0	8
0	0	25	1	1	0	0	27	0	0	0	0	0	0	0	0	0	0	26	7	3	0	2	38	0	0	11	6	0	0	0	17
0	0	99	3	1	0	1	104	0	0	1	0	0	0	0	1	0	1	137	29	6	3	2	178	0	0	50	18	0	0	0	68
0	0	15	2	1	0	2	20	0	0	0	0	0	0	0	0	0	0	41	3	3	2	1	50	0	0	12	1	0	0	0	13
1	0	25	9	2	0	0	37	0	0	0	0	0	0	0	0	0	0	50	8	4	2	0	64	1	0	17	4	0	0	0	22
0	0	22	0	2	0	0	24	0	0	0	0	0	0	0	0	0	0	47	6	1	1	1	56	0	0	16	4	0	0	0	20
0	0	27	0	2	0	0	29	0	0	0	0	0	0	0	0	0	0	48	5	0	2	0	55	0	0	14	2	0	0	0	16
1	0	89	11	7	0	2	110	0	0	0	0	0	0	0	0	0	0	186	22	8	7	2	225	1	0	59	11	0	0	0	71
0	0	26	1	1	0	0	28	0	0	1	0	0	0	0	1	0	0	33	8	3	2	0	46	0	0	14	7	0	0	0	21
0	0	27	2	0	0	0	29	0	0	0	0	0	0	0	0	0	0	52	9	0	0	0	61	0	0	29	3	0	0	0	32
0	0	27	3	0	0	0	30	0	0	0	0	0	0	0	0	0	0	50	13	0	1	0	64	0	0	41	8	1	0	0	50
0	0	36	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	68	7	5	1	0	81	0	0	45	9	0	0	0	54
0	0	116	6	1	0	0	123	0	0	1	0	0	0	0	1	0	0	203	37	8	4	0	252	0	0	129	27	1	0	0	157
0	0	32	0	1	0	0	33	0	0	0	0	0	0	0	0	0	0	49	3	1	0	0	53	0	0	46	16	0	0	0	62
0	0	36	5	1	0	0	42	0	0	0	0	0	0	0	0	1	0	50	4	1	3	0	59	0	0	44	10	0	0	0	54
0	0	37	2	0	0	0	39	0	0	1	0	0	0	0	1	0	0	48	8	2	0	0	58	1	0	56	6	0	0	0	63
0	0	47	3	1	0	0	51	0	0	0	0	0	0	0	0	0	0	41	3	1	2	0	47	0	0	57	10	0	0	0	67
0	0	152	10	3	0	0	165	0	0	1	0	0	0	0	1	1	0	188	18	5	5	0	217	1	0	203	42	0	0	0	246
0	0	23	2	0	0	0	25	0	0	2	1	0	0	0	3	0	1	47	4	0	0	1	53	0	0	54	4	0	0	0	58
0	0	23	1	0	0	0	24	0	0	1	0	0	0	0	1	0	0	47	3	0	0	1	51	0	0	45	9	1	0	0	55
0	0	29	1	0	0	0	30	0	0	1	0	0	0	0	1	0	0	48	3	0	2	0	53	0	0	35	5	0	0	0	40
0	0	17	1	0	0	0	18	0	0	1	0	0	0	0	1	0	0	49	2	1	0	0	52	0	0	22	3	1	0	0	26
0	0	92	5	0	0	0	97	0	0	5	1	0	0	0	6	0	1	191	12	1	2	2	209	0	0	156	21	2	0	0	179
3	0	1093	65	21	1	4	1187	0	0	11	1	0	0	0	12	1	3	2004	254	61	55	11	2389	2	0	908	153	5	0	2	1070

B => A								B => B								B => C								B => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

C => A								C => B								C => C								C => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
1	0	21	10	0	2	0	34	1	0	37	7	0	2	0	47	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	32	8	2	5	1	48	0	0	54	6	1	1	2	64	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3
0	0	43	6	3	6	0	58	0	0	36	3	1	1	0	41	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	1	41	4	0	2	1	49	0	0	46	3	0	1	1	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	137	28	5	15	2	189	1	0	173	19	2	5	3	203	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5
0	0	33	5	2	4	2	46	0	0	43	2	1	1	0	47	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	59	1	2	2	2	66	1	0	62	6	2	4	1	76	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
0	0	27	1	0	5	0	33	0	0	41	6	0	2	0	49	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
0	0	26	5	1	4	0	36	0	0	49	8	1	1	0	59	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4
0	0	145	12	5	15	4	181	1	0	195	22	4	8	1	231	0	0	0	0	0	0	0	0	0	0	6	4	0	0	0	10
0	0	24	7	0	2	0	33	0	0	29	2	0	1	0	32	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	22	4	2	0	2	30	0	0	32	1	2	2	0	37	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	5
0	0	35	7	4	3	0	49	0	0	30	5	0	0	1	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	33	5	1	2	0	41	0	0	24	3	4	1	0	32	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
0	0	114	23	7	7	2	153	0	0	115	11	6	4	1	137	0	0	0	0	0	0	0	0	0	0	4	3	1	0	0	8
1	1	25	2	2	1	0	32	0	0	30	2	2	3	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	21	5	2	6	0	34	0	0	22	5	1	1	0	29	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	21	4	4	3	1	33	0	1	32	8	2	1	0	44	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	41	7	3	5	0	56	0	0	31	1	0	2	1	35	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
1	1	108	18	11	15	1	155	0	1	115	16	5	7	1	145	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4
0	0	34	6	0	3	1	44	0	0	22	1	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	30	7	0	3	2	42	0	0	29	6	0	2	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	38	3	1	3	0	45	0	0	27	2	1	3	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	39	9	3	1	0	52	0	0	31	7	0	0	1	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	141	25	4	10	3	183	0	0	109	16	1	5	1	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	32	3	3	2	0	40	0	0	38	1	2	2	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	49	8	0	3	0	60	0	0	28	4	0	1	0	33	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	31	6	1	2	0	40	0	0	38	5	0	1	0	44	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
0	0	38	6	5	5	0	54	0	0	33	1	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	150	23	9	12	0	194	0	0	137	11	2	4	0	154	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0	0	42	2	6	4	0	54	0	0	25	4	3	2	1	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	32	4	2	2	2	42	0	0	33	4	0	1	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	42	5	2	2	0	51	0	0	39	3	4	2	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	46	4	1	2	1	55	0	0	30	2	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	162	15	11	10	3	202	0	0	127	13	7	5	1	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	49	6	2	3	1	61	0	0	22	3	1	0	1	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	40	7	4	3	1	55	0	0	28	1	1	1	0	31	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	41	2	4	4	0	51	0	0	29	7	1	1	0	38	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	33	8	1	1	0	43	0	0	34	0	3	1	1	39	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0	0	163	23	11	11	2	210	0	0	113	11	6	3	2	135	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4
0	0	40	7	1	2	0	50	0	1	31	2	0	0	1	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	26	7	2	3	1	40	0	0	36	3	0	0	0	39	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	48	5	2	6	1	62	0	0	32	10	0	1	1	44	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
0	0	41	3	1	6	0	51	0	0	37	2	1	1	1	42	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	3
1	0	155	22	6	17	2	203	0	1	136	17	1	2	3	160	0	0	0	0	0	0	0	0	0	0	3	0	2	0	1	6
0	0	40	7	6	3	0	56	0	0	43	5	1	1	0	50	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	43	9	3	1	0	56	0	0	49	4	0	2	0	55	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	1	60	9	3	1	0	74	0	0	54	4	0	0	2	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
0	0	58	9	3	1	0	71	0	1	50	10	0	1	1	63	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	1	201	34	15	6	0	257	0	1	196	23	1	4	3	228	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	5
1	1	50	12	0	2	0	66	0	0	55	1	0	2	0	58	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	57	10	0	1	0	68	0	0	48	2	0	1	0	51	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	48	6	1	0	1	56	0	0	69	5	2	0	0	76	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
0	0	57	3	1	0	0	61	0	0	53	4	0	0	0	57	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
1	1	212	31	2	3	1	251	0	0	225	12	2	3	0	242	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	6
0	0	49	1	0	3	0	53	0	0	57	4	1	0	1	63	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
0	0	52	5	0	0	0	57	0	1	53	5	0	2	0	61	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4
0	0	70	4	0	2	0	76	0	0	43	4	0	0	0	47	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
0	0	67	2	1	2	0	72	0	0	37	3	0	0	0	40	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
0	0	238	12	1	7	0	258	0	1	190	16	1	2	1	211	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	16
5	4	1926	266	87	128	20	2436	2	4	1831	187	38	52	17	2131	0	0	0	0	0	0	0	0	0	0	49	13	4	0	2	68
C => A								C => B								C => C								C => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

D => A								D => B								D => C								D => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	0	0	0	0	0	0	0	0	16	3	0	0	0	19	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	22	7	1	0	0	30	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	24	6	1	0	0	31	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	40	7	0	0	0	47	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	102	23	2	0	0	127	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	18	4	0	0	0	22	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	24	6	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	37	4	0	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	57	4	1	0	1	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	10	0	0	0	0	10	0	0	136	18	1	0	1	156	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	52	2	0	0	0	54	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	22	1	0	0	0	23	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	12	1	0	0	0	13	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	6	2	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	6	0	0	0	0	6	0	0	92	6	0	0	0	98	0	0	5	2	0	0	0	7	0	0	1	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	14	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	5	2	1	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	2	0	0	4	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	5	1	0	0	0	6	0	0	29	4	1	0	0	34	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	6	0	0	0	0	6	1	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	10	2	0	0	0	12	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	5	2	0	0	0	7	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	31	6	0	0	0	37	1	0	3	1	0	0	0	5	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	10	0	1	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	4	0	0	0	0	4	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	1	0	0	0	3	0	0	29	0	1	0	0	30	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1	0	0	7	0	0	0	0	7	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	11	1	0	0	0	12	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	11	3	0	0	1	15	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
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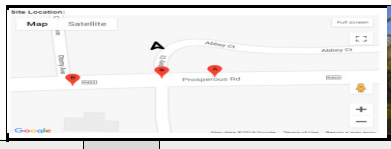
0	0	0	0	0	0	0	0	0	0	7	0	1	0	0	8	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	9	1	0	0	0	10	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	4	0	0	11	1	0	0	0	12	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	1	0	16	1	0	0	0	18	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	1	0	43	3	1	0	0	48	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	21	0	0	0	1	22	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	6	1	1	0	0	8	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0
0	0	4	1	0	0	0	5	0	0	15	0	2	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	12	1	0	0	0	13	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
0	0	13	1	0	0	0	14	0	0	54	2	3	0	1	60	0	0	7	0	1	0	0	8	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	14	0	0	0	0	14	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	14	1	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	0	27	1	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	9	0	0	0	0	9	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	1	0	64	2	0	0	0	67	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	1	0	12	0	0	0	0	13	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	19	1	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	0	0	23	3	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	3	1	0	0	0	4	0	0	14	2	0	0	0	16	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
0	0	10	1	0	0	0	11	1	0	68	6	0	0	0	75	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0
0	0	3	1	0	0	0	4	0	0	19	3	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	17	3	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	1	0	0	10	1	0	0	0	11	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	5	1	0	0	0	6	0	0	55	8	0	0	0	63	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	73	6	0	0	0	79	3	0	741	83	9	0	3	839	1	0	38	5	2	0	0	46	0	0	1	0	0	0	0	1
D => A								D => B								D => C								D => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys Ltd

Survey Name : *ITS J285 Site E*
Site: Site E
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co. Kildare

Irish Traffic Surveys



	A => B								B => A							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	1	0	14	3	1	1	0	20	0	1	55	14	1	4	1	76
07:15	0	0	14	2	0	3	0	19	0	0	47	10	3	2	2	64
07:30	0	0	32	6	0	0	1	39	0	1	65	7	1	3	1	78
07:45	0	1	49	5	1	3	0	59	0	0	70	9	2	0	2	83
H/TOT	1	1	109	16	2	7	1	137	0	2	237	40	7	9	6	301
08:00	0	0	65	3	2	3	0	73	0	1	71	6	2	0	0	80
08:15	0	0	117	5	1	2	2	127	0	0	92	5	0	0	4	101
08:30	4	0	97	2	0	3	0	106	1	0	92	5	0	0	3	101
08:45	1	0	91	3	2	1	0	98	0	0	80	3	0	1	2	86
H/TOT	5	0	370	13	5	9	2	404	1	1	335	19	2	1	9	368
09:00	0	0	67	4	0	1	0	72	0	0	94	6	1	4	1	106
09:15	0	1	43	6	1	1	2	54	0	1	58	4	2	0	1	66
09:30	0	0	44	7	1	2	2	56	1	0	71	2	1	1	1	77
09:45	0	0	56	4	1	2	0	63	0	0	76	5	2	2	0	85
H/TOT	0	1	210	21	3	6	4	245	1	1	299	17	6	7	3	334
10:00	0	0	49	2	6	1	0	58	0	0	67	2	3	2	0	74
10:15	1	0	39	3	4	1	0	48	1	0	66	2	0	2	1	72
10:30	0	0	54	2	2	1	2	61	0	0	64	4	3	0	0	71
10:45	0	0	55	6	1	0	0	62	0	0	69	5	3	2	0	79
H/TOT	1	0	197	13	13	3	2	229	1	0	266	13	9	6	1	296
11:00	0	0	55	5	6	1	0	67	0	0	61	5	5	0	0	71
11:15	0	0	50	3	1	1	2	57	0	0	65	8	1	1	1	76
11:30	0	0	67	4	1	3	0	75	0	0	54	8	2	3	0	67
11:45	0	0	52	7	3	0	0	62	0	0	70	7	2	1	1	81
H/TOT	0	0	224	19	11	5	2	261	0	0	250	28	10	5	2	295
12:00	0	0	59	7	2	1	0	69	2	0	38	5	3	3	0	51
12:15	0	0	58	4	3	2	1	68	1	0	60	9	0	1	1	72
12:30	0	1	49	10	1	1	0	62	0	0	48	3	0	1	0	52
12:45	0	0	54	3	2	2	0	61	0	0	47	7	1	3	0	58
H/TOT	0	1	220	24	8	6	1	260	3	0	193	24	4	8	1	233
13:00	0	0	61	2	0	2	1	66	0	0	54	5	3	0	1	63
13:15	0	0	78	7	2	1	1	89	0	0	59	7	2	1	1	70
13:30	0	0	76	6	2	1	2	87	1	0	55	2	0	1	2	61
13:45	0	0	74	5	1	3	0	83	3	0	102	3	1	4	1	114
H/TOT	0	0	289	20	5	7	4	325	4	0	270	17	6	6	5	308
14:00	0	1	65	2	0	1	1	70	0	1	50	4	1	0	0	56
14:15	0	0	68	4	0	1	2	75	0	0	43	6	1	3	1	54
14:30	0	0	64	5	2	1	2	74	0	0	39	7	0	1	0	47
14:45	0	0	89	2	1	2	0	94	4	0	108	5	2	0	2	121
H/TOT	0	1	286	13	3	5	5	313	4	1	240	22	4	4	3	278
15:00	0	0	49	8	2	0	1	60	0	0	54	2	0	0	0	56
15:15	0	0	81	5	1	4	3	94	0	0	77	6	0	1	1	85
15:30	0	0	91	10	0	0	1	102	0	0	54	6	2	1	1	64
15:45	1	0	80	9	3	2	4	99	0	0	89	7	3	0	0	99
H/TOT	1	0	301	32	6	6	9	355	0	0	274	21	5	2	2	304
16:00	0	0	62	5	1	0	1	69	1	0	71	7	1	1	0	81
16:15	1	0	69	15	4	0	0	89	0	0	50	7	2	1	1	61
16:30	0	0	79	12	3	0	1	95	0	0	50	8	0	1	2	61
16:45	0	0	92	17	0	0	0	109	0	0	47	4	0	1	0	52
H/TOT	1	0	302	49	8	0	2	362	1	0	218	26	3	4	3	255
17:00	2	2	93	11	1	0	1	110	2	0	68	7	0	0	1	78
17:15	0	0	78	11	1	1	0	91	0	0	77	6	0	1	0	84
17:30	0	1	96	11	0	2	0	110	0	0	50	4	1	0	0	55
17:45	0	0	104	16	0	1	1	122	0	0	59	4	0	1	0	64
H/TOT	2	3	371	49	2	4	2	433	2	0	254	21	1	2	1	281
18:00	0	0	114	6	0	0	0	120	0	0	82	7	1	0	1	91
18:15	0	0	83	5	0	1	1	90	0	0	69	5	0	0	0	74
18:30	0	0	86	5	2	2	1	96	0	0	47	5	0	0	0	52
18:45	0	0	87	4	0	1	1	93	0	0	53	3	0	0	0	56
H/TOT	0	0	370	20	2	4	3	399	0	0	251	20	1	0	1	273
12 TOT	11	7	3249	289	68	62	37	3723	17	5	3087	268	58	54	37	3526
	A => B								B => A							
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Site: Site F
Date: 05/03/2019(07:00-19:00)
Location: Clane, Co.Kildare

Irish Traffic Surveys

	A => A								A => B								A => C								A => D							
TIME	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
07:00	0	0	0	0	0	0	0	0	0	0	14	2	2	0	0	18	0	0	37	12	5	1	0	55	0	0	1	0	0	0	0	1
07:15	0	0	0	0	0	0	0	0	0	0	12	2	0	0	1	15	0	0	39	13	4	7	0	63	0	0	1	0	0	0	0	1
07:30	0	0	0	0	0	0	0	0	0	0	28	3	0	1	0	32	0	0	49	16	5	4	0	74	0	0	1	0	1	0	0	2
07:45	0	0	0	0	0	0	0	0	0	0	13	4	0	2	0	19	0	0	48	9	2	1	0	60	0	0	2	0	0	0	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	67	11	2	3	1	84	0	0	173	50	16	13	0	252	0	0	5	0	1	0	0	6
08:00	0	0	0	0	0	0	0	0	0	0	25	2	0	0	0	27	0	0	60	8	4	2	1	75	0	0	1	0	0	0	0	1
08:15	0	0	0	0	0	0	0	0	0	0	20	4	0	0	0	24	1	0	50	6	2	0	0	59	0	0	3	0	1	0	0	4
08:30	0	0	0	0	0	0	0	0	0	0	26	4	1	0	0	31	0	0	32	3	1	3	0	39	0	0	0	0	1	0	0	1
08:45	0	0	0	0	0	0	0	0	0	0	18	3	0	0	0	21	0	0	41	4	3	3	1	52	0	0	3	0	0	0	0	3
H/TOT	0	0	0	0	0	0	0	0	0	0	89	13	1	0	0	103	1	0	183	21	10	8	2	225	0	0	7	0	2	0	0	9
09:00	0	0	0	0	0	0	0	0	0	0	24	7	2	0	0	33	0	0	37	4	0	1	0	42	0	0	1	0	0	1	0	2
09:15	0	0	0	0	0	0	0	0	0	0	31	4	1	1	0	37	0	0	55	7	4	3	0	69	0	0	5	1	1	0	0	7
09:30	0	0	0	0	0	0	0	0	0	0	26	6	1	1	1	35	0	0	46	6	4	2	0	58	0	0	3	0	0	0	0	3
09:45	0	0	0	0	0	0	0	0	0	0	27	6	1	1	0	35	0	0	44	5	4	2	0	55	0	0	5	0	0	0	0	5
H/TOT	0	0	0	0	0	0	0	0	0	0	108	23	5	3	1	140	0	0	182	22	12	8	0	224	0	0	14	1	1	1	0	17
10:00	0	0	0	0	0	0	0	0	0	0	17	3	1	1	0	22	0	0	51	6	3	1	0	61	0	0	7	1	0	0	0	8
10:15	0	0	0	0	0	0	0	0	0	0	16	4	2	2	2	26	0	0	28	5	2	2	1	38	0	0	3	0	0	0	0	3
10:30	0	0	0	0	0	0	0	0	0	0	20	6	3	3	0	32	0	0	28	4	4	1	0	37	0	0	2	1	0	0	0	3
10:45	0	0	0	0	0	0	0	0	0	0	28	4	1	0	0	33	0	0	27	10	7	2	0	46	0	0	3	0	1	0	0	4
H/TOT	0	0	0	0	0	0	0	0	0	0	81	17	7	6	2	113	0	0	134	25	16	6	1	182	0	0	15	2	1	0	0	18
11:00	0	0	0	0	0	0	0	0	0	0	27	4	0	1	0	32	1	0	31	11	2	0	0	45	0	0	3	1	0	0	0	4
11:15	0	0	0	0	0	0	0	0	0	0	24	5	0	0	0	29	0	0	40	5	3	2	0	50	0	0	2	1	1	0	0	4
11:30	0	0	0	0	0	0	0	0	0	0	23	3	3	1	0	30	0	0	39	7	1	0	0	47	0	0	3	0	0	0	0	3
11:45	0	0	0	0	0	0	0	0	0	0	21	4	1	1	0	27	0	0	34	7	2	8	0	51	0	0	3	0	0	0	0	3
H/TOT	0	0	0	0	0	0	0	0	0	0	95	16	4	3	0	118	1	0	144	30	8	10	0	193	0	0	11	2	1	0	0	14
12:00	0	0	0	0	0	0	0	0	0	0	34	2	0	2	1	39	1	0	41	6	1	2	1	52	0	0	3	1	0	0	0	4
12:15	0	0	0	0	0	0	0	0	0	0	25	2	0	3	0	30	0	1	32	8	2	1	0	44	0	0	7	2	0	0	0	9
12:30	0	0	0	0	0	0	0	0	0	0	16	3	0	1	0	20	0	0	41	2	5	1	0	49	0	0	4	0	0	0	0	4
12:45	0	0	0	0	0	0	0	0	0	0	18	2	0	2	0	22	0	0	39	3	3	3	0	48	0	0	4	0	0	0	0	4
H/TOT	0	0	0	0	0	0	0	0	0	0	93	9	0	8	1	111	1	1	153	19	11	7	1	193	0	0	18	3	0	0	0	21
13:00	0	0	0	0	0	0	0	0	0	0	36	3	3	3	0	45	0	0	40	6	1	2	0	49	0	0	3	0	1	0	0	4
13:15	0	0	0	0	0	0	0	0	0	0	18	4	0	1	0	23	0	0	48	10	1	4	1	64	0	0	3	0	0	0	1	4
13:30	0	0	0	0	0	0	0	0	0	0	23	2	1	1	6	33	0	0	46	7	1	2	0	56	0	0	1	0	0	0	0	1
13:45	0	0	0	0	0	0	0	0	0	0	29	1	1	1	0	32	0	0	36	7	0	3	1	47	0	0	3	1	0	0	0	4
H/TOT	0	0	0	0	0	0	0	0	0	0	106	10	5	6	6	133	0	0	170	30	3	11	2	216	0	0	10	1	1	0	1	13
14:00	0	0	0	0	0	0	0	0	0	0	29	4	1	0	0	34	0	0	44	6	2	3	0	55	0	0	5	0	0	0	0	5
14:15	0	0	0	0	0	0	0	0	0	0	22	3	2	1	0	28	0	0	38	3	1	4	0	46	0	0	2	0	0	0	0	2
14:30	0	0	0	0	0	0	0	0	0	0	18	4	0	1	0	23	0	0	37	3	2	3	0	45	0	0	0	1	0	0	0	1
14:45	0	0	0	0	0	0	0	0	0	0	24	5	1	0	0	30	0	0	33	8	8	1	0	50	0	0	5	0	0	0	0	5
H/TOT	0	0	0	0	0	0	0	0	0	0	93	16	4	2	0	115	0	0	152	20	13	11	0	196	0	0	12	1	0	0	0	13
15:00	0	0	0	0	0	0	0	0	0	0	32	1	1	0	0	34	0	0	25	6	1	0	0	32	0	0	6	0	0	0	0	6
15:15	0	0	0	0	0	0	0	0	0	0	31	3	1	1	0	36	0	0	26	3	3	1	1	34	0	0	10	0	0	0	1	11
15:30	0	0	0	0	0	0	0	0	0	0	24	4	1	1	0	30	0	0	34	7	1	2	1	45	0	0	6	0	0	0	0	6
15:45	0	0	0	0	0	0	0	0	0	0	26	1	0	1	0	28	0	0	30	5	3	0	1	39	0	0	7	0	0	0	0	7
H/TOT	0	0	0	0	0	0	0	0	0	0	113	9	3	3	0	128	0	0	115	21	8	3	3	150	0	0	29	0	0	0	1	30
16:00	0	0	0	0	0	0	0	0	0	0	25	6	2	0	0	33	0	0	39	10	2	3	1	55	0	0	3	0	0	0	0	3
16:15	0	0	0	0	0	0	0	0	0	0	47	9	1	0	0	57	0	0	33	6	2	1	0	42	0	0	8	0	0	0	0	8
16:30	0	0	0	0	0	0	0	0	0	0	36	5	1	1	0	43	0	0	35	13	0	1	0	49	0	0	6	0	0	0	0	6
16:45	0	0	0	0	0	0	0	0	0	0	35	3	3	0	0	41	0	0	40	7	2	0	0	49	0	0	4	1	0	0	0	5
H/TOT	0	0	0	0	0	0	0	0	0	0	143	23	7	1	0	174	0	0	147	36	6	5	1	195	0	0	21	1	0	0	0	22
17:00	0	0	0	0	0	0	0	0	0	0	33	7	0	0	0	40	0	0	32	4	0	1	0	37	0	0	6	0	0	0	0	6
17:15	0	0	0	0	0	0	0	0	0	0	31	3	1	3	0	38	0	0	30	8	2	4	0	44	0	0	3	1	0	0	0	4
17:30	0	0	0	0	0	0	0	0	0	0	33	6	1	0	0	40	0	0	40	5	1	2	0	48	0	0	5	1	0	0	0	6
17:45	0	0	0	0	0	0	0	0	0	0	18	5	0	2	0	25	0	0	47	6	0	1	0	54	0	0	3	0	0	0	0	3
H/TOT	0	0	0	0	0	0	0	0	0	0	115	21	2	5	0	143	0	0	149	23	3	8	0	183	0	0	17	2	0	0	0	19
18:00	0	0	0	0	0	0	0	0	1	0	37	2	0	0	1	41	0	0	40	5	1	5	0	51	0	0	2	1	0	0	0	3
18:15	0	0	0	0	0	0	0	0	0	0	29	2	0	1	5	37	0	0	30	4	0	5	3	42	0	0	6	1	0	0	0	7
18:30	0	0	0	0	0	0	0	0	0	0	33	2	1	0	0	36	0	0	40	5	0	2	0	47	1	0	8	0	0	0	0	9
18:45	0	0	0	0	0	0	0	0	0	0	41	2	0	1	1	45	0	0	48	3	1	1	0	53	0	0	5	0	0	0	0	5
H/TOT	0	0	0	0	0	0	0	0	1	0	140	8	1	2	7	159	0	0	158	17	2	13	3	193	1	0	21	2	0	0	0	24
12 TOT	0	0	0	0	0	0	0	0	1	0	1243	176	41	42	18	1521	3	1	1860	314	108	103	13	2402	1	0	180	15	7	1	2	206
	A => A								A => B								A => C								A => D							
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

B => A								B => B								B => C								B => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	11	5	0	0	0	16	0	0	0	0	0	0	0	0	0	0	13	7	2	2	0	24	0	0	6	1	0	0	0	7
0	0	12	6	0	2	0	20	0	0	0	0	0	0	0	0	0	0	13	2	1	1	1	18	0	0	6	0	1	0	1	8
0	0	9	2	0	0	0	11	0	0	0	0	0	0	0	0	0	0	26	6	1	0	2	35	0	0	5	0	1	0	0	6
0	0	22	2	0	1	0	25	0	0	0	0	0	0	0	0	0	1	28	3	1	2	0	35	0	0	4	0	0	0	0	4
0	0	54	15	0	3	0	72	0	0	0	0	0	0	0	0	0	1	80	18	5	5	3	112	0	0	21	1	2	0	1	25
0	0	21	1	2	0	0	24	0	0	0	0	0	0	0	0	0	0	42	3	2	2	0	49	0	0	12	1	0	1	0	14
0	0	12	3	1	0	0	16	0	0	0	0	0	0	0	0	0	0	50	2	1	3	2	58	0	0	11	2	1	0	1	15
0	0	8	2	0	4	0	14	0	0	0	0	0	0	0	0	0	0	52	4	1	1	0	58	0	0	4	0	0	0	0	4
0	0	30	9	3	0	0	42	0	0	0	0	0	0	0	0	0	0	43	4	0	2	0	49	0	0	15	0	0	0	0	15
0	0	71	15	6	4	0	96	0	0	0	0	0	0	0	0	0	0	187	13	4	8	2	214	0	0	42	3	1	1	1	48
0	0	22	1	1	0	0	24	0	0	0	0	0	0	0	0	0	0	34	4	0	1	0	39	0	0	13	2	0	0	0	15
0	0	25	2	1	2	0	30	0	0	0	0	0	0	0	0	0	0	36	6	0	0	2	44	0	0	13	1	1	0	0	15
0	0	15	2	0	1	0	18	0	0	0	0	0	0	0	0	0	0	37	1	1	2	0	41	0	0	3	0	0	0	1	4
0	0	20	2	0	1	0	23	0	0	0	0	0	0	0	0	0	0	43	3	1	2	1	50	0	0	8	1	0	0	0	9
0	0	82	7	2	4	0	95	0	0	0	0	0	0	0	0	0	0	150	14	2	5	3	174	0	0	37	4	1	0	1	43
0	0	22	6	2	1	0	31	0	0	0	0	0	0	0	0	0	0	25	5	5	2	0	37	0	0	9	0	0	1	0	10
0	0	25	1	1	3	0	30	0	0	0	0	0	0	0	0	0	0	32	5	0	1	1	39	0	0	5	0	0	0	0	5
0	0	15	2	3	0	0	20	0	0	0	0	0	0	0	0	0	0	31	4	1	1	1	38	0	0	14	2	2	0	0	18
1	0	11	5	1	0	0	18	0	0	0	0	0	0	0	0	0	0	35	4	2	1	1	43	0	0	9	0	0	0	0	9
1	0	73	14	7	4	0	99	0	0	0	0	0	0	0	0	0	0	123	18	8	5	3	157	0	0	37	2	2	1	0	42
0	0	18	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	37	4	2	1	0	44	0	0	13	0	1	0	0	14
1	0	15	3	0	3	0	22	0	0	0	0	0	0	0	0	0	0	38	4	0	1	2	45	0	0	6	1	1	0	0	8
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0	0	30	6	1	0	0	37	0	0	0	0	0	0	0	0	0	0	40	2	2	1	1	46	0	0	8	2	0	0	0	10
1	0	82	13	1	4	2	103	0	0	0	0	0	0	0	0	0	0	153	16	7	5	3	184	0	0	40	4	4	0	0	48
0	0	29	3	0	1	0	33	0	0	0	0	0	0	0	0	0	0	33	1	3	1	1	39	0	0	9	1	0	0	0	10
0	0	23	3	2	0	0	28	0	0	0	0	0	0	0	0	0	0	36	8	1	0	1	46	0	0	14	0	0	0	0	14
0	0	19	5	1	0	0	25	0	0	0	0	0	0	0	0	0	1	46	5	1	1	0	54	0	0	13	1	0	0	0	14
0	0	26	1	1	1	4	33	0	0	0	0	0	0	0	0	1	0	42	1	0	2	1	47	0	0	14	3	0	0	0	17
0	0	97	12	4	2	4	119	0	0	0	0	0	0	0	0	1	1	157	15	5	4	3	186	0	0	50	5	0	0	0	55
0	0	20	5	1	1	1	28	0	0	0	0	0	0	0	0	1	0	34	5	0	3	1	44	0	0	19	2	0	0	0	21
0	0	18	3	1	1	0	23	0	0	0	0	0	0	0	0	0	1	51	8	0	0	1	61	0	0	11	1	0	0	0	12
0	0	17	4	1	0	0	22	0	0	0	0	0	0	0	0	0	0	51	5	3	2	1	62	0	0	7	1	0	0	0	8
0	0	25	4	1	1	0	31	0	0	0	0	0	0	0	0	0	0	48	4	0	1	1	54	0	0	10	0	0	0	1	11
0	0	80	16	4	3	1	104	0	0	0	0	0	0	0	0	1	1	184	22	3	6	4	221	0	0	47	4	0	0	1	52
0	0	17	2	0	0	0	19	0	0	0	0	0	0	0	0	0	1	39	5	0	1	1	47	0	0	11	0	0	0	0	11
0	0	15	1	3	0	0	19	0	0	0	0	0	0	0	0	0	0	52	3	0	0	2	57	0	0	7	0	0	0	0	7
0	0	20	3	5	2	0	30	0	0	0	0	0	0	0	0	0	0	63	5	4	2	0	74	0	0	13	3	0	0	0	16
0	0	11	2	0	1	0	14	0	0	0	0	0	0	0	0	0	0	40	5	1	0	0	46	0	0	12	1	0	0	0	13
0	0	63	8	8	3	0	82	0	0	0	0	0	0	0	0	0	1	194	18	5	3	3	224	0	0	43	4	0	0	0	47
0	0	27	3	0	0	0	30	0	0	0	0	0	0	0	0	0	0	48	5	2	1	1	57	0	0	19	0	0	0	0	19
0	0	21	2	1	0	0	24	0	0	0	0	0	0	0	0	0	0	48	6	0	3	2	59	0	0	21	2	2	0	0	25
0	0	19	5	1	0	0	25	0	0	0	0	0	0	0	0	0	0	54	7	0	1	0	62	0	0	10	0	0	0	0	10
0	0	25	4	5	0	0	34	0	0	0	0	0	0	0	0	0	0	55	8	3	1	2	69	0	0	20	3	0	0	0	23
0	0	92	14	7	0	0	113	0	0	0	0	0	0	0	0	0	0	205	26	5	6	5	247	0	0	70	5	2	0	0	77
0	0	29	5	0	0	0	34	0	0	0	0	0	0	0	0	0	0	48	9	0	0	0	57	0	0	22	2	0	0	0	24
0	0	29	3	1	1	0	34	0	0	0	0	0	0	0	0	0	0	64	10	4	1	0	79	0	0	26	0	0	0	0	26
0	0	24	4	1	0	0	29	0	0	0	0	0	0	0	0	0	0	61	14	1	0	1	77	0	0	20	4	0	0	0	24
0	0	10	1	1	0	0	12	0	0	0	0	0	0	0	0	0	1	53	13	1	0	0	68	0	0	18	1	0	0	0	19
0	0	92	13	3	1	0	109	0	0	0	0	0	0	0	0	0	1	226	46	6	1	1	281	0	0	86	7	0	0	0	93
0	0	14	0	0	0	0	14	0	0	0	0	0	0	0	0	0	1	54	9	0	1	2	67	0	1	21	1	0	0	0	23
0	0	23	1	0	0	0	24	0	0	0	0	0	0	0	0	0	0	44	8	1	0	0	53	0	0	29	4	0	0	0	33
0	0	19	3	2	1	0	25	0	0	0	0	0	0	0	0	0	1	57	9	0	2	1	70	0	0	35	5	0	0	0	40
0	0	25	4	0	0	0	29	0	0	0	0	0	0	0	0	1	0	59	10	0	1	0	71	0	0	31	1	0	0	0	32
0	0	81	8	2	1	0	92	0	0	0	0	0	0	0	0	1	2	214	36	1	4	3	261	0	1	116	11	0	0	0	128
0	0	14	2	0	0	3	19	0	0	0	0	0	0	0	0	0	0	51	3	0	0	0	54	0	0	29	4	0	0	0	33
0	0	23	1	1	2	1	28	0	0	0	0	0	0	0	0	0	0	51	5	0	2	2	60	0	0	38	5	0	0	0	43
0	0	28	1	0	0	1	30	0	0	0	0	0	0	0	0	0	0	60	5	2	0	1	68	0	0	26	1	0	0	0	27
0	1	23	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	58	4	0	1	1	64	0	0	23	0	0	0	0	23
0	1	88	4	1	2	5	101	0	0	0	0	0	0	0	0	0	0	220	17	2	3	4	246	0	0	116	10	0	0	0	126
2	1	955	139	45	31	12	1185	0	0	0	0	0	0	0	0	3	7	2093	259	53	55	37	2507	0	1	705	60	12	2	4	784
B => A								B => B								B => C								B => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

C => A								C => B								C => C								C => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	29	15	1	2	0	47	0	0	42	10	0	3	1	56	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
0	0	28	14	1	3	1	47	0	0	41	12	3	1	2	59	0	0	0	0	0	0	0	0	0	0	4	2	0	1	0	7
0	0	45	9	3	7	0	64	0	1	55	7	1	2	1	67	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	6
0	0	55	18	0	1	0	74	0	0	38	10	3	0	1	52	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9
0	0	157	56	5	13	1	232	0	1	176	39	7	6	5	234	0	0	0	0	0	0	0	0	0	0	23	3	0	1	0	27
0	0	58	7	5	3	2	75	0	1	38	7	1	0	0	47	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6
0	0	57	8	1	3	3	72	0	0	41	5	0	0	0	46	0	0	0	0	0	0	0	0	0	0	11	0	0	0	1	12
0	0	52	7	1	1	1	62	0	0	36	3	0	0	3	42	0	0	0	0	0	0	0	0	1	0	7	1	1	0	2	12
1	0	44	6	1	7	0	59	0	0	32	5	0	0	0	37	0	0	0	0	0	0	0	0	0	0	16	3	1	1	0	21
1	0	211	28	8	14	6	268	0	1	147	20	1	0	3	172	0	0	0	0	0	0	0	0	1	0	40	4	2	1	3	51
0	0	56	8	0	0	0	64	0	0	37	3	0	3	0	43	0	0	0	0	0	0	0	0	0	0	26	3	0	0	1	30
0	0	44	9	8	2	0	63	0	0	27	4	0	0	1	32	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11
0	0	35	5	4	2	1	47	0	0	32	2	1	1	0	36	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14
0	0	44	9	0	2	0	55	0	0	34	3	1	2	0	40	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9
0	0	179	31	12	6	1	229	0	0	130	12	2	6	1	151	0	0	0	0	0	0	0	0	0	0	60	3	0	0	1	64
0	0	32	8	1	0	0	41	0	0	29	2	3	1	0	35	0	0	0	0	0	0	0	0	0	1	16	1	0	0	0	18
0	0	35	7	2	6	0	50	0	0	35	3	0	2	1	41	0	0	0	0	0	0	0	0	0	0	12	1	1	1	0	15
0	0	23	3	3	3	0	32	0	0	29	3	1	0	1	34	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8
1	0	41	9	3	5	0	59	0	0	33	4	2	2	0	41	0	0	0	0	0	0	0	0	0	0	15	1	1	0	0	17
1	0	131	27	9	14	0	182	0	0	126	12	6	5	2	151	0	0	0	0	0	0	0	0	0	1	51	3	2	1	0	58
0	0	37	6	2	4	1	50	0	0	29	7	2	0	0	38	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13
1	0	36	8	2	2	2	51	0	0	36	5	0	0	1	42	0	0	0	0	0	0	0	0	1	0	11	0	1	0	0	13
0	0	42	8	2	3	0	55	0	0	22	3	1	3	0	29	0	0	1	0	0	0	0	1	0	0	14	0	1	0	0	15
0	0	50	7	2	1	0	60	0	0	34	5	2	1	2	44	0	0	0	0	0	0	0	0	0	0	18	1	0	0	0	19
1	0	165	29	8	10	3	216	0	0	121	20	5	4	3	153	0	0	1	0	0	0	0	1	1	0	56	1	2	0	0	60
0	0	54	5	4	3	0	66	0	0	43	1	3	2	0	49	0	0	0	0	0	0	0	0	0	0	11	3	1	0	0	15
0	0	49	7	1	2	0	59	0	0	28	6	0	1	1	36	0	0	0	0	0	0	0	0	0	0	16	2	0	0	0	18
0	0	45	4	1	2	0	52	0	0	32	3	1	1	0	37	0	0	0	0	0	0	0	0	0	0	12	2	0	0	0	14
0	0	38	7	4	6	0	55	0	0	34	3	2	0	0	39	0	0	0	0	0	0	0	0	0	0	8	3	1	0	0	12
0	0	186	23	10	13	0	232	0	0	137	13	6	4	1	161	0	0	0	0	0	0	0	0	0	0	47	10	2	0	0	59
0	0	52	4	7	5	0	68	0	0	26	4	2	0	1	33	0	0	0	0	0	0	0	0	0	0	24	1	0	0	0	25
0	0	42	2	2	1	2	49	0	0	35	8	0	0	0	43	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12
0	0	44	9	2	3	0	58	0	0	32	1	2	0	2	37	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	11
0	0	57	2	1	1	0	61	1	0	43	1	1	5	0	51	0	0	0	0	0	0	0	0	0	0	21	3	2	0	0	26
0	0	195	17	12	10	2	236	1	0	136	14	5	5	3	164	0	0	0	0	0	0	0	0	0	0	66	6	2	0	0	74
0	1	39	10	3	4	0	57	0	0	38	4	0	0	0	42	0	0	0	0	0	0	0	0	0	0	18	1	1	0	0	20
0	0	30	7	4	4	0	45	0	0	21	6	1	2	1	31	0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	12
0	0	43	4	2	4	0	53	0	0	33	5	0	1	0	39	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	13
0	0	41	2	3	1	1	48	0	0	31	5	0	0	0	36	0	0	0	0	0	0	0	0	0	0	23	1	0	0	1	25
0	1	153	23	12	13	1	203	0	0	123	20	1	3	1	148	0	0	0	0	0	0	0	0	0	0	63	5	1	0	1	70
0	0	54	9	1	2	0	66	0	0	33	3	3	0	0	39	0	0	0	0	0	0	0	0	0	0	25	1	0	0	0	26
0	0	39	7	3	2	0	51	0	0	27	4	0	1	1	33	0	0	0	0	0	0	0	0	1	0	16	3	1	0	0	21
0	0	52	9	3	4	1	69	0	0	31	3	2	1	1	38	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	13
0	0	48	3	1	7	0	59	0	0	41	2	1	0	0	44	0	0	0	0	0	0	0	0	0	0	32	1	0	0	0	33
0	0	193	28	8	15	1	245	0	0	132	12	6	2	2	154	0	0	0	0	0	0	0	0	1	0	85	6	1	0	0	93
0	0	52	5	5	6	1	69	0	0	38	6	2	0	0	46	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	27
1	0	49	10	1	1	0	62	0	0	28	7	0	1	1	37	0	0	0	0	0	0	0	0	0	0	22	3	1	0	0	26
0	0	54	13	3	0	0	70	0	0	36	3	1	1	2	43	0	0	0	0	0	0	0	0	1	1	37	3	1	0	0	43
0	0	53	12	4	2	0	71	1	0	17	2	0	0	0	20	0	0	0	0	0	0	0	0	1	0	29	3	0	0	0	33
1	0	208	40	13	9	1	272	1	0	119	18	3	2	3	146	0	0	0	0	0	0	0	0	2	1	115	9	2	0	0	129
0	1	58	12	1	3	0	75	0	0	37	5	0	0	1	43	0	0	0	0	0	0	0	0	0	0	33	3	0	0	0	36
0	0	66	11	0	1	0	78	1	0	32	4	0	1	0	38	0	0	0	0	0	0	0	0	0	0	39	5	1	0	0	45
0	0	57	8	2	0	1	68	0	0	39	5	0	0	0	44	0	0	0	0	0	0	0	0	0	0	33	6	0	0	0	39
0	0	55	7	1	0	0	63	0	0	21	1	0	0	0	22	0	0	0	0	0	0	0	0	0	0	36	3	0	0	0	39
0	1	236	38	4	4	1	284	1	0	129	15	0	1	1	147	0	0	0	0	0	0	0	0	0	0	141	17	1	0	0	159
0	0	47	3	1	1	0	52	0	0	32	3	0	0	1	36	0	0	0	0	0	0	0	0	0	0	28	5	0	0	0	33
0	0	60	3	0	2	0	65	0	0	33	2	1	1	0	37	0	0	0	0	0	0	0	0	0	0	44	2	0	0	0	46
0	0	52	3	0	1	0	56	0	0	35	4	0	0	0	39	0	0	0	0	0	0	0	0	0	0	25	1	0	0	0	26
0	0	52	3	1	3	0	59	0	0	34	2	0	0	0	36	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	25
0	0	211	12	2	7	0	232	0	0	134	11	1	1	1	148	0	0	0	0	0	0	0	0	0	0	122	8	0	0	0	130
4	2	2225	352	103	128	17	2831	3	2	1610	206	43	39	26	1929	0	0	1	0	0	0	0	1	5	2	869	75	15	3	5	974
C => A								C => B								C => C								C => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

Irish Traffic Surveys

D => A								D => B								D => C								D => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT
0	0	7	2	0	0	0	9	0	0	19	1	0	0	0	20	0	0	16	5	0	0	0	21	0	0	0	0	0	0	0	0
0	0	5	3	1	0	0	9	0	0	30	4	0	0	0	34	0	0	20	1	0	0	0	21	0	0	0	0	0	0	0	0
0	0	3	3	0	0	0	6	0	0	30	5	0	0	0	35	0	0	28	4	0	1	0	33	0	0	0	0	0	0	0	0
0	0	13	2	0	0	0	15	0	0	23	2	0	0	0	25	0	0	27	3	1	0	0	31	0	0	0	0	0	0	0	0
0	0	28	10	1	0	0	39	0	0	102	12	0	0	0	114	0	0	91	13	1	1	0	106	0	0	0	0	0	0	0	0
0	0	6	1	0	0	0	7	0	0	27	3	0	0	0	30	0	0	31	4	0	0	0	35	0	0	0	0	0	0	0	0
0	0	8	1	0	0	0	9	0	0	28	1	0	0	0	29	0	0	31	2	0	0	0	33	0	0	0	0	0	0	0	0
0	0	6	2	0	0	1	9	0	0	25	2	1	0	1	29	0	0	24	0	1	0	0	25	0	0	0	0	0	0	0	0
0	0	9	0	1	0	0	10	0	0	25	2	0	0	0	27	0	0	17	2	0	0	0	19	0	0	0	0	0	0	0	0
0	0	29	4	1	0	1	35	0	0	105	8	1	0	1	115	0	0	103	8	1	0	0	112	0	0	0	0	0	0	0	0
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0	0	6	1	0	0	0	7	0	0	7	1	0	0	0	8	0	0	15	0	0	0	0	15	0	0	0	0	0	0	0	0
0	0	39	3	0	0	0	42	0	0	76	2	0	0	2	80	0	1	65	8	0	0	1	75	0	0	0	0	0	0	0	0
0	0	5	0	0	0	0	5	0	0	9	0	0	0	0	9	0	0	7	4	0	0	0	11	0	0	0	0	0	0	0	0
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0	0	5	0	1	0	0	6	0	0	8	0	1	0	0	9	0	1	19	1	1	0	0	22	0	0	0	0	0	0	0	0
0	0	24	2	1	0	0	27	0	0	40	4	1	0	0	45	0	1	50	5	2	0	0	58	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	3	0	0	9	1	1	0	0	11	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
0	0	4	0	0	1	0	5	0	0	14	1	0	0	0	15	0	0	8	2	1	0	0	11	0	0	0	0	0	0	0	0
0	0	1	1	1	0	0	3	0	0	13	1	0	0	0	14	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0
0	0	6	2	0	0	0	8	0	0	5	1	0	0	0	6	0	0	13	1	1	0	0	15	0	0	0	0	0	0	0	0
0	0	14	3	1	1	0	19	0	0	41	4	1	0	0	46	0	0	39	3	2	0	0	44	0	0	0	0	0	0	0	0
0	0	7	1	0	0	0	8	0	0	11	0	0	0	0	11	0	0	18	0	0	0	0	18	0	0	0	0	0	0	0	0
0	0	4	1	0	0	0	5	0	0	12	1	0	0	0	13	0	0	14	2	0	0	0	16	0	0	0	0	0	0	0	0
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0	0	4	0	0	0	0	4	0	0	15	1	0	0	0	16	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0
0	0	22	2	0	0	0	24	0	0	44	3	0	0	0	47	0	0	53	4	0	0	0	57	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	2	1	0	21	0	0	0	0	22	0	0	23	0	1	0	0	24	0	0	0	0	0	0	0	0
0	0	4	2	0	0	0	6	0	0	7	2	3	0	0	12	0	0	12	1	0	0	0	13	0	0	0	0	0	0	0	0
0	0	5	0	0	0	0	5	0	0	9	1	0	0	0	10	0	0	26	3	0	0	1	30	0	0	0	0	0	0	0	0
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0	0	6	0	3	0	0	9	0	0	17	0	1	0	0	18	0	1	28	1	1	0	0	31	0	0	0	0	0	0	0	0
0	0	10	0	0	0	0	10	0	0	14	2	0	0	0	16	0	0	13	1	0	0	0	14	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	11	0	0	22	2	0	0	0	24	0	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0
0	0	33	2	3	0	0	38	0	0	68	4	1	1	0	74	0	1	68	2	1	0	1	73	0	0	0	0	0	0	0	0
0	0	8	0	0	0	1	9	0	0	17	0	0	0	1	18	0	0	12	2	0	0	0	14	0	0	0	0	0	0	0	0
0	0	7	0	0	0	0	7	0	0	18	1	0	0	0	19	0	0	14	1	0	0	0	15	0	0	0	0	0	0	0	0
0	0	4	1	0	0	1	6	0	0	14	4	0	0	0	18	0	0	14	0	0	0	0	14	0	0	0	0	0	0	0	0
0	0	6	1	0	0	0	7	0	0	16	0	0	0	0	16	0	0	16	3	1	0	0	20	0	0	0	0	0	0	0	0
0	0	25	2	0	0	2	29	0	0	65	5	0	0	1	71	0	0	56	6	1	0	0	63	0	0	0	0	0	0	0	0
0	0	4	1	0	0	0	5	0	0	14	1	0	0	0	15	0	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	11	0	0	13	3	0	0	1	17	1	0	14	0	0	0	0	15	0	0	0	0	0	0	0	0
0	0	9	1	1	0	0	11	0	0	20	1	0	0	0	21	0	0	11	0	2	0	0	13	0	0	0	0	0	0	0	0
0	0	14	1	1	0	0	16	0	0	22	4	0	0	0	26	1	0	25	1	1	0	0	28	0	0	0	0	0	0	0	0
0	0	38	3	2	0	0	43	0	0	69	9	0	0	1	79	2	0	62	1	3	0	0	68	0	0	0	0	0	0	0	0
0	0	5	2	0	0	0	7	0	0	24	0	0	0	0	24	0	0	14	2	0	0	0	16	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	6	0	0	24	1	1	0	0	26	0	0	15	3	0	0	0	18	0	0	0	0	0	0	0	0
0	0	9	0	0	0	0	9	0	0	19	2	0	0	0	21	0	0	13	1	0	0	0	14	0	0	0	0	0	0	0	0
0	0	14	0	0	0	0	14	0	0	24	1	0	0	1	26	0	0	16	1	0	0	0	17	0	0	0	0	0	0	0	0
0	0	34	2	0	0	0	36	0	0	91	4	1	0	1	97	0	0	58	7	0	0	0	65	0	0	0	0	0	0	0	0
0	0	10	2	0	0	0	12	0	0	15	4	0	0	0	19	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
0	0	10	0	0	0	0	10	0	0	15	0	0	0	0	15	0	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0
0	0	10	2	0	0	0	12	0	0	23	1	0	0	0	24	0	0	12	1	0	0	0	13	0	0	0	0	0	0	0	0
0	0	13	1	0	0	0	14	0	0	17	2	0	0	0	19	0	0	17	0	0	0	0	17	0	0	0	0	0	0	0	0
0	0	43	5	0	0	0	48	0	0	70	7	0	0	0	77	0	0	46	1	0	0	0	47	0	0	0	0	0	0	0	0
0	0	346	40	9	1	3	399	1	0	819	65	8	1	6	900	2	3	762	63	12	1	3	846	0	0	0	0	0	0	0	0
D => A								D => B								D => C								D => D							
P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV	TOT

BleuScan - Survey "Clane"

v2.0 22/03/2019

Average weekday matrice

Period: 05.03.2019 - 08.03.2019

Trafic extrapolated

Average weekday 07:00 - 19:00

Stations	1	2	3	4	5	6	SUM
1	221	274	220	813	160	945	2633
2	240	222	883	1008	811	609	3773
3	131	828	65	321	66	167	1578
4	704	1236	333	155	304	333	3065
5	133	811	66	345	169	203	1727
6	766	609	172	523	267	141	2478
SUM	2195	3980	1739	3165	1777	2398	
Big sum (trafic o-d)	4828	7753	3317	6230	3504	4876	
Counting	7160	11130	8650	9190	5850	7250	

*Difference between "Counting" and "trafic o-d" is local trafic (counted only at one station)

**Average weekday **

Stations	1	2	3	4	5	6	SUM
1	280	347	279	1029	203	1196	3334
2	304	281	1118	1276	1027	771	4777
3	166	1048	82	406	84	211	1997
4	891	1565	422	196	385	422	3881
5	168	1027	84	437	214	257	2187
6	970	771	218	662	338	179	3138
SUM	2779	5039	2203	4006	2251	3036	
Big sum (trafic o-d)	6113	9816	4200	7887	4438	6174	
Detection	9065	14091	10951	11635	7406	9179	

**The evaluation of different counting stations in Switzerland has shown that an average of 79% of trafic is counted between 07:00 and 19:00. So the result must be extrapolated by a factor of 1.266 to get an average weekday (00 - 24)

APPENDIX C – TRAFFIC FLOW SHEETS

R403 / Brooklands / Capdoo Park Crossroads - AM Peak Hour

AM Peak - Base Year Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	285	10	**296**
Brooklands	31	0	58	1	**90**
R403 Clane	799	9	0	14	**822**
Capdoo Park	39	3	15	0	**57**
Totals	**869**	**13**	**358**	**25**	**1265**

AM Peak - Development Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	3	0	0	**3**
Brooklands	18	0	34	0	**52**
R403 Clane	0	26	0	0	**26**
Capdoo Park	0	0	0	0	**0**
Totals	**18**	**29**	**34**	**0**	**81**

2022 AM Peak - Base Year Flows + 5.88%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	302	11	**313**
Brooklands	33	0	61	1	**95**
R403 Clane	846	10	0	15	**870**
Capdoo Park	41	3	16	0	**60**
Totals	**920**	**14**	**379**	**26**	**1339**

2022 AM Peak - With Development

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	4	302	11	**316**
Brooklands	51	0	95	1	**147**
R403 Clane	846	36	0	15	**896**
Capdoo Park	41	3	16	0	**60**
Totals	**938**	**43**	**413**	**26**	**1420**

2027 AM Peak - Base Year Flows + 16.49%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	332	12	**345**
Brooklands	36	0	68	1	**105**
R403 Clane	931	10	0	16	**958**
Capdoo Park	45	3	17	0	**66**
Totals	**1012**	**15**	**417**	**29**	**1474**

2027 AM Peak - With Development

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	4	332	12	**348**
Brooklands	54	0	102	1	**157**
R403 Clane	931	36	0	16	**984**
Capdoo Park	45	3	17	0	**66**
Totals	**1030**	**44**	**451**	**29**	**1555**

2037 AM Peak - Base Year Flows + 27.18%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	362	13	**376**
Brooklands	39	0	74	1	**114**
R403 Clane	1016	11	0	18	**1045**
Capdoo Park	50	4	19	0	**72**
Totals	**1105**	**17**	**455**	**32**	**1609**

2037 AM Peak - With Development

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	4	362	13	**379**
Brooklands	57	0	108	1	**166**
R403 Clane	1016	37	0	18	**1071**
Capdoo Park	50	4	19	0	**72**
Totals	**1123**	**46**	**489**	**32**	**1690**

R403 / Brooklands / Capdoo Park Crossroads - PM Peak Hour

PM Peak - Base Year Flows

0	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	24	797	42	**863**
Brooklands	6	0	32	3	**41**
R403 Clane	365	43	0	36	**444**
Capdoo Park	18	0	11	0	**29**
Totals	**389**	**67**	**840**	**81**	**1377**

PM Peak - Development Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	18	0	0	**18**
Brooklands	5	0	28	0	**33**
R403 Clane	0	34	0	0	**34**
Capdoo Park	0	0	0	0	**0**
Totals	**5**	**52**	**28**	**0**	**85**

2022 PM Peak - Base Year Flows + 5.88%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	25	844	44	**914**
Brooklands	6	0	34	3	**43**
R403 Clane	386	46	0	38	**470**
Capdoo Park	19	0	12	0	**31**
Totals	**412**	**71**	**889**	**86**	**1458**

2022 PM Peak - With Development

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	43	844	44	**932**
Brooklands	11	0	62	3	**76**
R403 Clane	386	80	0	38	**504**
Capdoo Park	19	0	12	0	**31**
Totals	**417**	**123**	**917**	**86**	**1543**

2027 PM Peak - Base Year Flows + 16.49%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	28	928	49	**1005**
Brooklands	7	0	37	3	**48**
R403 Clane	425	50	0	42	**517**
Capdoo Park	21	0	13	0	**34**
Totals	**453**	**78**	**979**	**94**	**1604**

2027 PM Peak - With Development

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	46	928	49	**1023**
Brooklands	12	0	65	3	**81**
R403 Clane	425	84	0	42	**551**
Capdoo Park	21	0	13	0	**34**
Totals	**458**	**130**	**1007**	**94**	**1689**

2037 PM Peak - Base Year Flows + 27.18%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	31	1014	53	**1098**
Brooklands	8	0	41	4	**52**
R403 Clane	464	55	0	46	**565**
Capdoo Park	23	0	14	0	**37**
Totals	**495**	**85**	**1068**	**103**	**1751**

2037 PM Peak - With Development

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	49	1014	53	**1116**
Brooklands	13	0	69	4	**85**
R403 Clane	464	89	0	46	**599**
Capdoo Park	23	0	14	0	**37**
Totals	**500**	**137**	**1096**	**103**	**1836**

R403 /Alexandrs Walk / The Avenue Roundabout - AM Peak Hour

AM Peak - Base Year Flows

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	29	313	1	**343**
Alexandra Walk	72	1	85	0	**158**
R403 (west)	362	21	3	4	**390**
The Avenue	10	0	6	0	**16**
Totals	**444**	**51**	**407**	**5**	**907**

AM Peak - Development Flows

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	0	0	0	**0**
Alexandra Walk	0	0	39	0	**39**
R403 (west)	0	22	0	0	**22**
The Avenue	0	0	0	0	**0**
Totals	**0**	**22**	**39**	**0**	**61**

2022 AM Peak - Base Year Flows + 5.88%

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	31	331	1	**363**
Alexandra Walk	76	1	90	0	**167**
R403 (west)	383	22	3	4	**413**
The Avenue	11	0	6	0	**17**
Totals	**470**	**54**	**431**	**5**	**960**

2022 AM Peak - With Development

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	31	331	1	**363**
Alexandra Walk	76	1	129	0	**206**
R403 (west)	383	44	3	4	**435**
The Avenue	11	0	6	0	**17**
Totals	**470**	**76**	**470**	**5**	**1021**

2027 AM Peak - Base Year Flows + 16.49%

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	34	365	1	**400**
Alexandra Walk	84	1	99	0	**184**
R403 (west)	422	24	3	5	**454**
The Avenue	12	0	7	0	**19**
Totals	**517**	**59**	**474**	**6**	**1057**

2027 AM Peak - With Development

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	34	365	1	**400**
Alexandra Walk	84	1	138	0	**223**
R403 (west)	422	46	3	5	**476**
The Avenue	12	0	7	0	**19**
Totals	**517**	**81**	**513**	**6**	**1118**

2037 AM Peak - Base Year Flows + 27.18%

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	37	398	1	**436**
Alexandra Walk	92	1	108	0	**201**
R403 (west)	460	27	4	5	**496**
The Avenue	13	0	8	0	**20**
Totals	**565**	**65**	**518**	**6**	**1154**

2037 AM Peak - With Development

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	37	398	1	**436**
Alexandra Walk	92	1	147	0	**240**
R403 (west)	460	49	4	5	**518**
The Avenue	13	0	8	0	**20**
Totals	**565**	**87**	**557**	**6**	**1215**

R403 /Alexandrs Walk / The Avenue Roundabout - PM Peak Hour

PM Peak - Base Year Flows

0	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	49	580	9	**638**
Alexandra Walk	31	0	31	0	**62**
R403 (west)	440	70	3	10	**523**
The Avenue	3	0	3	0	**6**
Totals	**474**	**119**	**617**	**19**	**1229**

PM Peak - Development Flows

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	0	0	0	**0**
Alexandra Walk	0	0	24	0	**24**
R403 (west)	0	39	0	0	**39**
The Avenue	0	0	0	0	**0**
Totals	**0**	**39**	**24**	**0**	**63**

2022 PM Peak - Base Year Flows + 5.88%

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	52	614	10	**676**
Alexandra Walk	33	0	33	0	**66**
R403 (west)	466	74	3	11	**554**
The Avenue	3	0	3	0	**6**
Totals	**502**	**126**	**653**	**20**	**1301**

2022 PM Peak - With Development

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	52	614	10	**676**
Alexandra Walk	33	0	57	0	**90**
R403 (west)	466	113	3	11	**593**
The Avenue	3	0	3	0	**6**
Totals	**502**	**165**	**677**	**20**	**1364**

2027 PM Peak - Base Year Flows + 16.49%

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	57	676	10	**743**
Alexandra Walk	36	0	36	0	**72**
R403 (west)	513	82	3	12	**609**
The Avenue	3	0	3	0	**7**
Totals	**552**	**139**	**719**	**22**	**1432**

2027 PM Peak - With Development

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	57	676	10	**743**
Alexandra Walk	36	0	60	0	**96**
R403 (west)	513	121	3	12	**648**
The Avenue	3	0	3	0	**7**
Totals	**552**	**178**	**743**	**22**	**1495**

2037 PM Peak - Base Year Flows + 27.18%

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	62	738	11	**811**
Alexandra Walk	39	0	39	0	**79**
R403 (west)	560	89	4	13	**665**
The Avenue	4	0	4	0	**8**
Totals	**603**	**151**	**785**	**24**	**1563**

2037 PM Peak - With Development

	R403 (east)	Alexandra Walk	R403 (west)	The Avenue	**Totals**
R403 (east)	0	62	738	11	**811**
Alexandra Walk	39	0	63	0	**103**
R403 (west)	560	128	4	13	**704**
The Avenue	4	0	4	0	**8**
Totals	**603**	**190**	**809**	**24**	**1626**

R403 / Brooklands / Capdoo Park Crossroads - AM Peak Hour with Relief Road Open

AM Peak - Base Year Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	285	10	**296**
Brooklands	31	0	58	1	**90**
R403 Clane	799	9	0	14	**822**
Capdoo Park	39	3	15	0	**57**
Totals	**869**	**13**	**358**	**25**	**1265**

Relief Road Open - Redistribution of Base Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	0	-70	27	**-43**
Brooklands	0	0	0	0	**0**
R403 Clane	-68	0	0	62	**-6**
Capdoo Park	26	0	62	0	**88**
Totals	**-42**	**0**	**-8**	**89**	**39**

AM Peak - Base Year Flows with Relief Road Open

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	215	37	**253**
Brooklands	31	0	58	1	**90**
R403 Clane	731	9	0	76	**816**
Capdoo Park	65	3	77	0	**145**
Totals	**827**	**13**	**350**	**114**	**1304**

Development Flows + Sensitivity Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	3	0	4	**7**
Brooklands	18	0	24	10	**52**
R403 Clane	0	26	0	32	**58**
Capdoo Park	36	0	44	0	**80**
Totals	**54**	**29**	**68**	**46**	**197**

2027 AM Peak - Base Year Flows + 16.49%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	250	43	**295**
Brooklands	36	0	68	1	**105**
R403 Clane	852	10	0	89	**951**
Capdoo Park	76	3	90	0	**169**
Totals	**963**	**15**	**408**	**133**	**1519**

2027 AM Peak - With Development + Sensitivity Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	4	250	47	**302**
Brooklands	54	0	92	11	**157**
R403 Clane	852	36	0	121	**1009**
Capdoo Park	112	3	134	0	**249**
Totals	**1017**	**44**	**476**	**179**	**1716**

2037 AM Peak - Base Year Flows + 27.18%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	1	273	47	**322**
Brooklands	39	0	74	1	**114**
R403 Clane	930	11	0	97	**1038**
Capdoo Park	83	4	98	0	**184**
Totals	**1052**	**17**	**445**	**145**	**1658**

2037 AM Peak - With Development + Sensitivity Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	4	273	51	**329**
Brooklands	57	0	98	11	**166**
R403 Clane	930	37	0	129	**1096**
Capdoo Park	119	4	142	0	**264**
Totals	**1106**	**46**	**513**	**191**	**1855**

R403 / Brooklands / Capdoo Park Crossroads - PM Peak Hour with Relief Road Open

AM Peak - Base Year Flows

0	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	24	797	42	**863**
Brooklands	6	0	32	3	**41**
R403 Clane	365	43	0	36	**444**
Capdoo Park	18	0	11	0	**29**
Totals	**389**	**67**	**840**	**81**	**1377**

Relief Road Open - Redistribution of Base Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	0	-75	29	**-46**
Brooklands	0	0	0	0	**0**
R403 Clane	-73	0	0	68	**-5**
Capdoo Park	28	0	67	0	**95**
Totals	**-45**	**0**	**-8**	**97**	**44**

AM Peak - Base Year Flows with Relief Road Open

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	24	722	71	**817**
Brooklands	6	0	32	3	**41**
R403 Clane	292	43	0	104	**439**
Capdoo Park	46	0	78	0	**124**
Totals	**344**	**67**	**832**	**178**	**1421**

Development Flows + Sensitivity Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	18	0	29	**47**
Brooklands	5	0	21	7	**33**
R403 Clane	0	34	0	53	**87**
Capdoo Park	23	0	27	0	**50**
Totals	**28**	**52**	**48**	**89**	**217**

2027 AM Peak - Base Year Flows + 16.49%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	28	841	83	**952**
Brooklands	7	0	37	3	**48**
R403 Clane	340	50	0	121	**511**
Capdoo Park	54	0	91	0	**144**
Totals	**401**	**78**	**969**	**207**	**1655**

2027 AM Peak - With Development + Sensitivity Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	46	841	112	**999**
Brooklands	12	0	58	10	**81**
R403 Clane	340	84	0	174	**598**
Capdoo Park	77	0	118	0	**194**
Totals	**429**	**130**	**1017**	**296**	**1872**

2037 AM Peak - Base Year Flows + 27.18%

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	31	918	90	**1039**
Brooklands	8	0	41	4	**52**
R403 Clane	371	55	0	132	**558**
Capdoo Park	59	0	99	0	**158**
Totals	**437**	**85**	**1058**	**226**	**1807**

2037 AM Peak - With Development + Sensitivity Flows

	R403 Celbridge	Brooklands	R403 Clane	Capdoo Park	**Totals**
R403 Celbridge	0	49	918	119	**1086**
Brooklands	13	0	62	11	**85**
R403 Clane	371	89	0	185	**645**
Capdoo Park	82	0	126	0	**208**
Totals	**465**	**137**	**1106**	**315**	**2024**

APPENDIX D – TRICS INFORMATION

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED

VEHICLES

Selected regions and areas:

08	**NORTH WEST**		
	GM	GREATER MANCHESTER	5 days
	LC	LANCASHIRE	2 days
11	**SCOTLAND**		
	FI	FIFE	1 days
12	**NORTHERN IRELAND**		
	NI	NORTHERN IRELAND	12 days

Main parameter selection:

Parameter: Number of households
Range: 20 to 147 (units:)

Date Range: 01/01/97 to 20/06/05

Selected survey days:

Monday	5 days
Tuesday	3 days
Wednesday	2 days
Thursday	5 days
Friday	5 days

Selected survey types:

Manual count	3 days
Directional ATC Count	17 days

LIST OF SITES relevant to selection parameters

1	**FI-03-A-01**	**BALMULLO HOUSING,NEAR CUPAR**	**FIFE**
	HILLVIEW ROAD		
	BALMULLO		
	Total Number of households:	118 ******	
2	**GM-03-A-01**	**BOLTON HOUSING**	**GREATER MANCHESTER**
	COLLINGWOOD WAY		
	WESTHOUGHTON		
	BOLTON		
	Total Number of households:	83 ******	
3	**LC-03-A-12**	**LANCASTER HOUSING**	**LANCASHIRE**
	PENNINE VIEW		
	GLASSON		
	LANCASTER		
	Total Number of households:	29 ******	
4	**LC-03-A-13**	**CHORLEY HOUSING**	**LANCASHIRE**
	DUNROBIN DRIVE		
	EUXTON		
	CHORLEY		
	Total Number of households:	37 ******	
5	**NI-03-A-05**	**PRIVATE HOUSING, ENNISKILLEN**	**NORTHERN IRELAND**
	CASTLECOOLE ROAD		
	ENNISKILLEN		
	Total Number of households:	132 ******	
6	**NI-03-A-06**	**PRIVATE HOUSING,MAGHERAFELT**	**NORTHERN IRELAND**
	STATION ROAD		
	MAGHERAFELT		
	Total Number of households:	106 ******	
7	**NI-03-A-07**	**PRIVATE HOUSING, COLERAINE**	**NORTHERN IRELAND**
	GREENHALL HIGHWAY		
	COLERAINE		
	Total Number of households:	112 ******	
8	**NI-03-A-09**	**BUNGALOWS, BALLYNAHINCH**	**NORTHERN IRELAND**
	KINEDALE PARK		
	BALLYNAHINCH		
	Total Number of households:	104 ******	

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	17	101	0.02	17	101	0.01	17	101	0.03
01:00 - 02:00	17	101	0.01	17	101	0.01	17	101	0.02
02:00 - 03:00	17	101	0.01	17	101	0.00	17	101	0.01
03:00 - 04:00	17	101	0.00	17	101	0.01	17	101	0.01
04:00 - 05:00	17	101	0.01	17	101	0.02	17	101	0.03
05:00 - 06:00	17	101	0.02	17	101	0.07	17	101	0.09
06:00 - 07:00	17	101	0.06	17	101	0.19	17	101	0.25
07:00 - 08:00	20	95	0.15	**20**	**95**	**0.49**	20	95	0.64
08:00 - 09:00	20	95	0.20	20	95	0.40	20	95	0.60
09:00 - 10:00	20	95	0.16	20	95	0.23	20	95	0.39
10:00 - 11:00	20	95	0.19	20	95	0.22	20	95	0.41
11:00 - 12:00	20	95	0.19	20	95	0.20	20	95	0.39
12:00 - 13:00	20	95	0.24	20	95	0.24	20	95	0.48
13:00 - 14:00	20	95	0.21	20	95	0.25	20	95	0.46
14:00 - 15:00	20	95	0.29	20	95	0.23	20	95	0.52
15:00 - 16:00	20	95	0.37	20	95	0.26	20	95	0.63
16:00 - 17:00	20	95	0.43	20	95	0.24	20	95	0.67
17:00 - 18:00	**20**	**95**	**0.45**	20	95	0.27	**20**	**95**	**0.72**
18:00 - 19:00	20	95	0.38	20	95	0.34	20	95	0.72
19:00 - 20:00	17	101	0.32	17	101	0.30	17	101	0.62
20:00 - 21:00	17	101	0.25	17	101	0.17	17	101	0.42
21:00 - 22:00	17	101	0.21	17	101	0.13	17	101	0.34
22:00 - 23:00	17	101	0.13	17	101	0.07	17	101	0.20
23:00 - 24:00	17	101	0.06	17	101	0.04	17	101	0.10
Daily Trip Rates:			4.35			4.38			8.75

Parameter summary

Trip rate parameter range selected:	20 - 147 (units:)
Survey date date range:	01/01/97 - 20/06/05
Number of weekdays (Monday-Friday):	20
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	9

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

06	**WEST MIDLANDS**		
	WM	WEST MIDLANDS	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	1 days
	WY	WEST YORKSHIRE	1 days
14	**REPUBLIC OF IRELAND**		
	IR	REPUBLIC OF IRELAND	1 days

Main parameter selection:

Parameter: Number of households
Range: 26 to 144 (units:)

Date Range: 01/01/97 to 13/11/03

Selected survey days:

Monday	1 days
Thursday	1 days
Friday	2 days

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

VEHICLES

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	0	0	0.00	0	0	0.00	0	0	0.00
01:00 - 02:00	0	0	0.00	0	0	0.00	0	0	0.00
02:00 - 03:00	0	0	0.00	0	0	0.00	0	0	0.00
03:00 - 04:00	0	0	0.00	0	0	0.00	0	0	0.00
04:00 - 05:00	0	0	0.00	0	0	0.00	0	0	0.00
05:00 - 06:00	0	0	0.00	0	0	0.00	0	0	0.00
06:00 - 07:00	0	0	0.00	0	0	0.00	0	0	0.00
07:00 - 08:00	4	82	0.02	**4**	**82**	**0.15**	4	82	0.17
08:00 - 09:00	4	82	0.05	4	82	0.15	4	82	0.20
09:00 - 10:00	4	82	0.06	4	82	0.11	4	82	0.17
0:00 - 11:00	4	82	0.05	4	82	0.10	4	82	0.15
11:00 - 12:00	4	82	0.04	4	82	0.04	4	82	0.08
12:00 - 13:00	4	82	0.05	4	82	0.06	4	82	0.11
13:00 - 14:00	4	82	0.06	4	82	0.06	4	82	0.12
14:00 - 15:00	4	82	0.08	4	82	0.09	4	82	0.17
15:00 - 16:00	4	82	0.08	4	82	0.07	4	82	0.15
16:00 - 17:00	4	82	0.10	4	82	0.05	4	82	0.15
17:00 - 18:00	4	82	0.12	4	82	0.07	4	82	0.19
18:00 - 19:00	**4**	**82**	**0.15**	4	82	0.05	4	82	0.20
19:00 - 20:00	1	26	0.12	1	26	0.12	**1**	**26**	**0.24**
20:00 - 21:00	1	26	0.12	1	26	0.12	1	26	0.24
21:00 - 22:00	0	0	0.00	0	0	0.00	0	0	0.00
22:00 - 23:00	0	0	0.00	0	0	0.00	0	0	0.00
23:00 - 24:00	0	0	0.00	0	0	0.00	0	0	0.00
Daily Trip Rates:			1.08			1.23			2.34

Parameter summary

Trip rate parameter range selected:	26 - 144 (units:)
Survey date date range:	01/01/97 - 13/11/03
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

MS Consultancy Sir William Lyons Road Coventry Licence No: 729101

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : D - NURSERY

Selected regions and areas:

02	**SOUTH EAST**		
	SC	SURREY	1 days
10	**WALES**		
	WR	WREXHAM	1 days
11	**SCOTLAND**		
	ER	EAST RENFREWSHIRE	6 days

Main parameter selection:

Parameter: Gross floor area
Range: 120 to 350 (units: sqm)

Date Range: 01/01/96 to 23/09/03

Selected survey days:

Tuesday	4 days
Wednesday	3 days
Thursday	1 days

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

MS Consultancy Sir William Lyons Road Coventry Licence No: 729101

LIST OF SITES relevant to selection parameters

1 **ER-04-D-04** **NURSERY, NEWTON MEARNS** **EAST RENFREWSHIRE**
STEWARTON ROAD
GREENLAW
NEWTON MEARNS
Total Gross floor area: 205 sqm

2 **ER-04-D-07** **NURSERY, NEILSTON** **EAST RENFREWSHIRE**
HIGH STREET

NEILSTON
Total Gross floor area: 341 sqm

3 **ER-04-D-08** **NURSERY, GIFFNOCK** **EAST RENFREWSHIRE**
WOODFARM ROAD

GIFFNOCK
Total Gross floor area: 350 sqm

4 **SC-04-D-03** **NURSERY, CHOBHAM** **SURREY**
CHERTSEY ROAD
LARKENSHAW
CHOBHAM
Total Gross floor area: 120 sqm

5 **WR-04-D-01** **NURSERY, NEAR WREXHAM** **WREXHAM**
LLAY ROAD
CEFN-Y-BEDD
NEAR WREXHAM
Total Gross floor area: 230 sqm

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.00	0	0	0.00	0	0	0.00
01:00 - 02:00	0	0	0.00	0	0	0.00	0	0	0.00
02:00 - 03:00	0	0	0.00	0	0	0.00	0	0	0.00
03:00 - 04:00	0	0	0.00	0	0	0.00	0	0	0.00
04:00 - 05:00	0	0	0.00	0	0	0.00	0	0	0.00
05:00 - 06:00	0	0	0.00	0	0	0.00	0	0	0.00
06:00 - 07:00	0	0	0.00	0	0	0.00	0	0	0.00
07:00 - 08:00	8	268	1.26	8	268	0.42	8	268	1.68
08:00 - 09:00	**8**	**268**	**5.93**	8	268	4.11	**8**	**268**	**10.04**
09:00 - 10:00	8	268	3.73	8	268	4.06	8	268	7.79
10:00 - 11:00	8	268	1.91	8	268	1.77	8	268	3.68
11:00 - 12:00	8	268	3.73	**8**	**268**	**4.39**	8	268	8.12
12:00 - 13:00	8	268	4.95	8	268	3.83	8	268	8.78
13:00 - 14:00	8	268	2.75	8	268	3.73	8	268	6.48
14:00 - 15:00	8	268	1.87	8	268	2.05	8	268	3.92
15:00 - 16:00	8	268	2.85	8	268	3.45	8	268	6.30
16:00 - 17:00	8	268	1.73	8	268	1.91	8	268	3.64
17:00 - 18:00	8	268	2.99	8	268	3.22	8	268	6.21
18:00 - 19:00	7	273	0.00	7	273	0.52	7	273	0.52
19:00 - 20:00	0	0	0.00	0	0	0.00	0	0	0.00
20:00 - 21:00	0	0	0.00	0	0	0.00	0	0	0.00
21:00 - 22:00	0	0	0.00	0	0	0.00	0	0	0.00
22:00 - 23:00	0	0	0.00	0	0	0.00	0	0	0.00
23:00 - 24:00	0	0	0.00	0	0	0.00	0	0	0.00
Daily Trip Rates:			33.71			33.48			67.16

Parameter summary

Trip rate parameter range selected:	120 - 350 (units: sqm)
Survey date date range:	01/01/96 - 23/09/03
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	1

APPENDIX E – PICADY RESULTS

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896

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

Filename: Existing Junction.j9
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\PICADY
Report generation date: 17/04/2019 09:09:54

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2019							
Stream B-ACD	0.3	13.19	0.25	B	0.2	13.61	0.18	B
Stream A-BCD	0.0	9.01	0.03	A	0.1	7.00	0.08	A
Stream D-AB	0.2	10.48	0.14	B	0.1	6.80	0.05	A
Stream D-BC	0.1	17.70	0.11	C	0.1	14.11	0.07	B
Stream C-ABD	0.0	6.48	0.02	A	0.1	8.06	0.10	A
	2022 no dev							
Stream B-ACD	0.4	14.15	0.28	B	0.2	14.42	0.20	B
Stream A-BCD	0.0	9.30	0.03	A	0.1	7.03	0.09	A
Stream D-AB	0.2	10.95	0.15	B	0.1	6.88	0.05	A
Stream D-BC	0.1	19.13	0.11	C	0.1	15.03	0.08	C
Stream C-ABD	0.0	6.53	0.02	A	0.1	8.33	0.12	A
	2022 with dev							
Stream B-ACD	0.7	17.84	0.41	C	0.5	17.10	0.32	C
Stream A-BCD	0.0	9.56	0.03	A	0.1	7.15	0.10	A
Stream D-AB	0.2	11.05	0.15	B	0.1	6.88	0.05	A
Stream D-BC	0.1	20.90	0.12	C	0.1	16.10	0.08	C
Stream C-ABD	0.1	6.40	0.07	A	0.3	8.65	0.20	A
	2027 no dev							
Stream B-ACD	0.4	15.32	0.30	C	0.3	16.03	0.22	C
Stream A-BCD	0.0	9.92	0.03	A	0.1	7.12	0.10	A
Stream D-AB	0.2	12.05	0.17	B	0.1	7.10	0.06	A
Stream D-BC	0.2	22.60	0.14	C	0.1	17.05	0.10	C
Stream C-ABD	0.0	6.64	0.02	A	0.2	8.75	0.13	A
	2027 with dev							
Stream B-ACD	0.8	19.96	0.44	C	0.5	19.58	0.36	C
Stream A-BCD	0.0	10.22	0.03	B	0.1	7.24	0.11	A
Stream D-AB	0.2	12.19	0.17	B	0.1	7.12	0.06	A
Stream D-BC	0.2	25.20	0.15	D	0.1	18.43	0.11	C
Stream C-ABD	0.1	6.44	0.07	A	0.3	9.06	0.22	A
	2037 no dev							
Stream B-ACD	0.5	17.69	0.35	C	0.4	19.58	0.28	C
Stream A-BCD	0.1	10.68	0.05	B	0.2	7.17	0.11	A
Stream D-AB	0.3	13.46	0.22	B	0.1	7.32	0.07	A
Stream D-BC	0.2	27.98	0.19	D	0.1	19.33	0.11	C
Stream C-ABD	0.0	6.71	0.03	A	0.2	9.20	0.15	A
	2037 with dev							
Stream B-ACD	1.0	24.21	0.51	C	0.7	24.90	0.44	C
Stream A-BCD	0.1	11.02	0.05	B	0.2	7.28	0.12	A
Stream D-AB	0.3	13.68	0.22	B	0.1	7.34	0.07	A
Stream D-BC	0.2	32.10	0.20	D	0.1	21.14	0.12	C
Stream C-ABD	0.1	6.48	0.08	A	0.4	9.49	0.24	A
	2037 Sensitivity							
Stream B-ACD	1.2	28.69	0.55	D	0.9	29.17	0.49	D
Stream A-BCD	0.2	12.26	0.17	B	0.6	7.34	0.27	A
Stream D-AB	0.9	25.37	0.48	D	0.3	10.25	0.21	B
Stream D-BC	6.2	154.89	1.00	F	2.2	61.24	0.72	F
Stream C-ABD	0.1	6.36	0.08	A	0.4	9.29	0.25	A

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

File summary

File Description

Title	
Location	
Site number	
Date	12/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ROADPLAN01\jbyrne
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	perTimeSegment	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2019	AM	DIRECT	07:30	08:30	60	15	✓
D2	2019	PM	DIRECT	17:30	18:30	60	15	✓
D3	2022 no dev	AM	DIRECT	07:30	08:30	60	15	✓
D4	2022 with dev	AM	DIRECT	07:30	08:30	60	15	✓
D5	2027 no dev	AM	DIRECT	07:30	08:30	60	15	✓
D6	2027 with dev	AM	DIRECT	07:30	08:30	60	15	✓
D7	2037 no dev	AM	DIRECT	07:30	08:30	60	15	✓
D8	2037 with dev	AM	DIRECT	07:30	08:30	60	15	✓
D9	2022 no dev	PM	DIRECT	17:30	18:30	60	15	✓
D10	2022 with dev	PM	DIRECT	17:30	18:30	60	15	✓
D11	2027 no dev	PM	DIRECT	17:30	18:30	60	15	✓
D12	2027 with dev	PM	DIRECT	17:30	18:30	60	15	✓
D13	2037 no dev	PM	DIRECT	17:30	18:30	60	15	✓
D14	2037 with dev	PM	DIRECT	17:30	18:30	60	15	✓
D15	2037 Sensitivity	AM	DIRECT	07:30	08:30	60	15	✓
D16	2037 Sensitivity	PM	DIRECT	17:30	18:30	60	15	✓

Analysis Set Details

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

2019, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major
D	untitled		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.50			115.0	✓	1.00
C	6.50			250.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.20			25	30
D	Two lanes		3.20	3.20	40	35

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	160.140	-	-	-	-	-	-	0.243	0.347	0.243	-	-	-
1	B-A	115.087	0.082	0.207	0.207	-	-	-	0.130	0.296	-	0.207	0.207	0.104
1	B-C	147.834	0.089	0.224	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	115.087	0.082	0.207	0.207	-	-	-	0.130	0.296	0.130	-	-	-
1	B-D, offside lane	115.087	0.082	0.207	0.207	-	-	-	0.130	0.296	0.130	-	-	-
1	C-B	179.685	0.272	0.272	0.389	-	-	-	-	-	-	-	-	-
1	D-A	164.726	-	-	-	-	-	-	0.250	-	0.099	-	-	-
1	D-B, nearside lane	129.485	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
1	D-B, offside lane	129.485	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
1	D-C	129.485	-	0.147	0.333	0.117	0.233	0.233	0.233	0.233	0.092	-	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2019	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

07:30 - 07:45

Demand (Veh/TS)

		To			
		A	B	C	D
From	A	0.00	0.00	49.00	3.00
	B	9.00	0.00	12.00	0.00
	C	228.00	3.00	0.00	0.00
	D	6.00	0.00	0.00	0.00

07:45 - 08:00

Demand (Veh/TS)

		To			
		A	B	C	D
From	A	0.00	1.00	71.00	2.00
	B	9.00	0.00	10.00	0.00
	C	227.00	2.00	0.00	2.00
	D	8.00	1.00	4.00	0.00

08:00 - 08:15

Demand (Veh/TS)

		To			
		A	B	C	D
From	A	0.00	0.00	74.00	2.00
	B	9.00	0.00	15.00	0.00
	C	188.00	2.00	0.00	2.00
	D	11.00	0.00	5.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To			
		A	B	C	D
From	A	0.00	0.00	91.00	3.00
	B	4.00	0.00	21.00	1.00
	C	156.00	2.00	0.00	10.00
	D	14.00	2.00	6.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.25	13.19	0.3	B	22.50	90.00
A-BCD	0.03	9.01	0.0	A	2.54	10.15
A-B					0.25	1.00
A-C					71.21	284.85
D-AB	0.14	10.48	0.2	B	10.16	40.63
D-BC	0.11	17.70	0.1	C	4.10	16.38
C-ABD	0.02	6.48	0.0	A	2.33	9.32
C-D					3.50	14.00
C-A					199.67	798.69

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	21.00	21.00	95.79	0.219	20.72	0.0	0.3	11.947	B
A-BCD	3.04	3.04	102.86	0.030	3.01	0.0	0.0	9.010	A
A-B	0.00	0.00			0.00				
A-C	48.96	48.96			48.96				
D-AB	6.00	6.00	105.51	0.057	5.94	0.0	0.1	9.032	A
D-BC	0.00	0.00	46.99	0.000	0.00	0.0	0.0	0.000	A
C-ABD	3.14	3.14	154.88	0.020	3.12	0.0	0.0	5.930	A
C-D	0.00	0.00			0.00				
C-A	227.86	227.86			227.86				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	19.00	19.00	87.30	0.218	19.00	0.3	0.3	13.191	B
A-BCD	2.03	2.03	102.98	0.020	2.04	0.0	0.0	8.918	A
A-B	1.00	1.00			1.00				
A-C	70.97	70.97			70.97				
D-AB	8.53	8.53	92.76	0.092	8.50	0.1	0.1	10.484	B
D-BC	4.47	4.47	55.13	0.081	4.38	0.0	0.1	17.702	C
C-ABD	2.07	2.07	147.30	0.014	2.08	0.0	0.0	6.196	A
C-D	2.00	2.00			2.00				
C-A	226.93	226.93			226.93				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	24.00	24.00	96.15	0.250	23.95	0.3	0.3	12.428	B
A-BCD	2.02	2.02	112.74	0.018	2.03	0.0	0.0	8.130	A
A-B	0.00	0.00			0.00				
A-C	73.98	73.98			73.98				
D-AB	11.00	11.00	113.37	0.097	10.99	0.1	0.1	8.964	A
D-BC	5.00	5.00	66.18	0.075	5.00	0.1	0.1	15.219	C
C-ABD	2.06	2.06	145.98	0.014	2.06	0.0	0.0	6.254	A
C-D	2.00	2.00			2.00				
C-A	187.94	187.94			187.94				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	26.00	26.00	105.72	0.246	26.00	0.3	0.3	11.241	B
A-BCD	3.06	3.06	119.85	0.026	3.05	0.0	0.0	7.704	A
A-B	0.00	0.00			0.00				
A-C	90.94	90.94			90.94				
D-AB	15.09	15.09	106.59	0.142	15.04	0.1	0.2	9.607	A
D-BC	6.91	6.91	64.63	0.107	6.88	0.1	0.1	15.003	C
C-ABD	2.05	2.05	140.82	0.015	2.05	0.0	0.0	6.484	A
C-D	10.00	10.00			10.00				
C-A	155.95	155.95			155.95				

2019, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2019	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	8.00	203.00	11.00
	B	3.00	0.00	10.00	1.00
	C	79.00	11.00	0.00	10.00
	D	5.00	0.00	2.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	8.00	204.00	11.00
	B	0.00	0.00	9.00	1.00
	C	85.00	12.00	0.00	11.00
	D	7.00	0.00	5.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	4.00	214.00	11.00
	B	2.00	0.00	5.00	0.00
	C	88.00	12.00	0.00	7.00
	D	4.00	0.00	3.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	4.00	176.00	9.00
	B	1.00	0.00	8.00	1.00
	C	113.00	8.00	0.00	8.00
	D	2.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.18	13.61	0.2	B	10.25	41.00
A-BCD	0.08	7.00	0.1	A	11.94	47.77
A-B					5.96	23.83
A-C					197.85	791.40
D-AB	0.05	6.80	0.1	A	4.50	18.00
D-BC	0.07	14.11	0.1	B	2.75	11.00
C-ABD	0.10	8.06	0.1	A	11.58	46.34
C-D					8.92	35.69
C-A					90.49	361.98

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	14.00	14.00	79.48	0.176	13.79	0.0	0.2	13.615	B
A-BCD	12.55	12.55	150.20	0.084	12.44	0.0	0.1	6.529	A
A-B	7.94	7.94			7.94				
A-C	201.51	201.51			201.51				
D-AB	5.00	5.00	142.59	0.035	4.96	0.0	0.0	6.537	A
D-BC	2.00	2.00	70.09	0.029	1.97	0.0	0.0	13.206	B
C-ABD	11.79	11.79	125.12	0.094	11.68	0.0	0.1	7.927	A
C-D	9.91	9.91			9.91				
C-A	78.30	78.30			78.30				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	10.00	10.00	89.61	0.112	10.08	0.2	0.1	11.291	B
A-BCD	12.60	12.60	148.51	0.085	12.60	0.1	0.1	6.624	A
A-B	7.94	7.94			7.94				
A-C	202.46	202.46			202.46				
D-AB	7.00	7.00	139.39	0.050	6.98	0.0	0.1	6.797	A
D-BC	5.00	5.00	68.68	0.073	4.95	0.0	0.1	14.113	B
C-ABD	13.02	13.02	126.30	0.103	13.01	0.1	0.1	7.943	A
C-D	10.88	10.88			10.88				
C-A	84.10	84.10			84.10				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	7.00	7.00	76.51	0.091	7.02	0.1	0.1	13.002	B
A-BCD	12.64	12.64	149.23	0.085	12.64	0.1	0.1	6.589	A
A-B	3.97	3.97			3.97				
A-C	212.39	212.39			212.39				
D-AB	4.00	4.00	140.01	0.029	4.02	0.1	0.0	6.621	A
D-BC	3.00	3.00	67.81	0.044	3.03	0.1	0.0	13.899	B
C-ABD	13.04	13.04	124.66	0.105	13.04	0.1	0.1	8.065	A
C-D	6.92	6.92			6.92				
C-A	87.04	87.04			87.04				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	10.00	10.00	89.48	0.112	9.98	0.1	0.1	11.305	B
A-BCD	9.98	9.98	138.56	0.072	10.00	0.1	0.1	7.004	A
A-B	3.98	3.98			3.98				
A-C	175.04	175.04			175.04				
D-AB	2.00	2.00	134.63	0.015	2.01	0.0	0.0	6.789	A
D-BC	1.00	1.00	68.24	0.015	1.03	0.0	0.0	13.399	B
C-ABD	8.49	8.49	133.79	0.063	8.54	0.1	0.1	7.190	A
C-D	7.97	7.97			7.97				
C-A	112.55	112.55			112.55				

2022 no dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2022 no dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	0.00	52.00	3.00
	B	10.00	0.00	13.00	0.00
	C	241.00	3.00	0.00	0.00
	D	6.00	0.00	0.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	1.00	75.00	2.00
	B	10.00	0.00	11.00	0.00
	C	240.00	2.00	0.00	2.00
	D	8.00	1.00	4.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	0.00	78.00	2.00
	B	10.00	0.00	16.00	0.00
	C	199.00	2.00	0.00	2.00
	D	12.00	0.00	5.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	96.00	3.00
	B	4.00	0.00	22.00	1.00
	C	165.00	2.00	0.00	11.00
	D	15.00	2.00	6.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.28	14.15	0.4	B	24.25	97.00
A-BCD	0.03	9.30	0.0	A	2.54	10.17
A-B					0.25	1.00
A-C					75.21	300.83
D-AB	0.15	10.95	0.2	B	10.66	42.63
D-BC	0.11	19.13	0.1	C	4.09	16.37
C-ABD	0.02	6.53	0.0	A	2.34	9.34
C-D					3.75	15.00
C-A					211.17	844.66

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	23.00	23.00	93.27	0.247	22.68	0.0	0.3	12.694	B
A-BCD	3.05	3.05	99.72	0.031	3.02	0.0	0.0	9.303	A
A-B	0.00	0.00			0.00				
A-C	51.95	51.95			51.95				
D-AB	6.00	6.00	102.13	0.059	5.94	0.0	0.1	9.350	A
D-BC	0.00	0.00	44.13	0.000	0.00	0.0	0.0	0.000	A
C-ABD	3.15	3.15	154.52	0.020	3.13	0.0	0.0	5.944	A
C-D	0.00	0.00			0.00				
C-A	240.85	240.85			240.85				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	21.00	21.00	84.65	0.248	20.99	0.3	0.3	14.151	B
A-BCD	2.03	2.03	99.83	0.020	2.04	0.0	0.0	9.204	A
A-B	1.00	1.00			1.00				
A-C	74.97	74.97			74.97				
D-AB	8.54	8.54	89.18	0.096	8.50	0.1	0.1	10.947	B
D-BC	4.46	4.46	51.32	0.087	4.37	0.0	0.1	19.132	C
C-ABD	2.07	2.07	146.57	0.014	2.08	0.0	0.0	6.228	A
C-D	2.00	2.00			2.00				
C-A	239.93	239.93			239.93				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	26.00	26.00	93.35	0.279	25.95	0.3	0.4	13.312	B
A-BCD	2.03	2.03	110.08	0.018	2.03	0.0	0.0	8.331	A
A-B	0.00	0.00			0.00				
A-C	77.97	77.97			77.97				
D-AB	12.00	12.00	110.44	0.109	11.98	0.1	0.1	9.314	A
D-BC	5.00	5.00	62.52	0.080	5.00	0.1	0.1	16.183	C
C-ABD	2.06	2.06	145.20	0.014	2.06	0.0	0.0	6.285	A
C-D	2.00	2.00			2.00				
C-A	198.94	198.94			198.94				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	27.00	27.00	104.34	0.259	27.03	0.4	0.4	11.587	B
A-BCD	3.07	3.07	117.51	0.026	3.06	0.0	0.0	7.862	A
A-B	0.00	0.00			0.00				
A-C	95.93	95.93			95.93				
D-AB	16.09	16.09	104.65	0.154	16.04	0.1	0.2	9.931	A
D-BC	6.91	6.91	61.65	0.112	6.88	0.1	0.1	15.817	C
C-ABD	2.06	2.06	139.78	0.015	2.06	0.0	0.0	6.534	A
C-D	11.00	11.00			11.00				
C-A	164.95	164.95			164.95				

2022 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022 with dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	1.00	52.00	3.00
	B	15.00	0.00	22.00	0.00
	C	241.00	10.00	0.00	0.00
	D	6.00	0.00	0.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	2.00	75.00	2.00
	B	15.00	0.00	20.00	0.00
	C	240.00	9.00	0.00	2.00
	D	8.00	1.00	4.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	1.00	78.00	2.00
	B	14.00	0.00	24.00	0.00
	C	199.00	8.00	0.00	2.00
	D	12.00	0.00	5.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	96.00	3.00
	B	8.00	0.00	30.00	1.00
	C	165.00	8.00	0.00	11.00
	D	15.00	2.00	6.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.41	17.84	0.7	C	37.25	149.00
A-BCD	0.03	9.56	0.0	A	2.55	10.18
A-B					1.00	4.00
A-C					75.21	300.82
D-AB	0.15	11.05	0.2	B	10.66	42.64
D-BC	0.12	20.90	0.1	C	4.09	16.36
C-ABD	0.07	6.40	0.1	A	9.85	39.42
C-D					3.73	14.93
C-A					210.16	840.65

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	37.00	37.00	93.16	0.397	36.36	0.0	0.6	15.679	C
A-BCD	3.05	3.05	97.10	0.031	3.02	0.0	0.0	9.563	A
A-B	1.00	1.00			1.00				
A-C	51.95	51.95			51.95				
D-AB	6.00	6.00	102.13	0.059	5.94	0.0	0.1	9.350	A
D-BC	0.00	0.00	41.58	0.000	0.00	0.0	0.0	0.000	A
C-ABD	11.45	11.45	168.44	0.068	11.37	0.0	0.1	5.727	A
C-D	0.00	0.00			0.00				
C-A	239.55	239.55			239.55				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	35.00	35.00	85.39	0.410	34.96	0.6	0.7	17.838	C
A-BCD	2.03	2.03	97.17	0.021	2.04	0.0	0.0	9.463	A
A-B	2.00	2.00			2.00				
A-C	74.97	74.97			74.97				
D-AB	8.54	8.54	88.44	0.097	8.50	0.1	0.1	11.047	B
D-BC	4.46	4.46	47.33	0.094	4.36	0.0	0.1	20.898	C
C-ABD	10.29	10.29	161.43	0.064	10.30	0.1	0.1	5.955	A
C-D	1.99	1.99			1.99				
C-A	238.72	238.72			238.72				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	38.00	38.00	92.76	0.410	37.99	0.7	0.7	16.398	C
A-BCD	2.03	2.03	107.79	0.019	2.03	0.0	0.0	8.510	A
A-B	1.00	1.00			1.00				
A-C	77.97	77.97			77.97				
D-AB	12.00	12.00	110.27	0.109	11.98	0.1	0.1	9.332	A
D-BC	5.00	5.00	58.49	0.085	5.00	0.1	0.1	17.405	C
C-ABD	8.86	8.86	155.68	0.057	8.88	0.1	0.1	6.127	A
C-D	1.99	1.99			1.99				
C-A	198.14	198.14			198.14				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	39.00	39.00	99.89	0.390	39.03	0.7	0.7	14.739	B
A-BCD	3.07	3.07	115.23	0.027	3.06	0.0	0.0	8.021	A
A-B	0.00	0.00			0.00				
A-C	95.93	95.93			95.93				
D-AB	16.10	16.10	104.02	0.155	16.04	0.1	0.2	10.002	B
D-BC	6.90	6.90	58.33	0.118	6.87	0.1	0.1	16.834	C
C-ABD	8.81	8.81	149.55	0.059	8.81	0.1	0.1	6.396	A
C-D	10.95	10.95			10.95				
C-A	164.24	164.24			164.24				

2027 no dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027 no dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	0.00	57.00	3.00
	B	10.00	0.00	14.00	0.00
	C	266.00	3.00	0.00	0.00
	D	7.00	0.00	0.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	1.00	83.00	2.00
	B	10.00	0.00	12.00	0.00
	C	264.00	2.00	0.00	2.00
	D	9.00	1.00	5.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	0.00	86.00	2.00
	B	10.00	0.00	17.00	0.00
	C	219.00	2.00	0.00	2.00
	D	13.00	0.00	6.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	106.00	3.00
	B	5.00	0.00	24.00	1.00
	C	182.00	2.00	0.00	12.00
	D	16.00	2.00	7.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.30	15.32	0.4	C	25.75	103.00
A-BCD	0.03	9.92	0.0	A	2.55	10.21
A-B					0.25	1.00
A-C					82.95	331.79
D-AB	0.17	12.05	0.2	B	11.67	46.68
D-BC	0.14	22.60	0.2	C	4.83	19.33
C-ABD	0.02	6.64	0.0	A	2.35	9.38
C-D					4.00	15.99
C-A					232.66	930.62

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	24.00	24.00	90.19	0.266	23.64	0.0	0.4	13.455	B
A-BCD	3.06	3.06	93.68	0.033	3.03	0.0	0.0	9.925	A
A-B	0.00	0.00			0.00				
A-C	56.94	56.94			56.94				
D-AB	7.00	7.00	95.64	0.073	6.92	0.0	0.1	10.137	B
D-BC	0.00	0.00	38.90	0.000	0.00	0.0	0.0	0.000	A
C-ABD	3.17	3.17	154.03	0.021	3.14	0.0	0.0	5.964	A
C-D	0.00	0.00			0.00				
C-A	265.83	265.83			265.83				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	22.00	22.00	80.76	0.272	21.99	0.4	0.4	15.323	C
A-BCD	2.04	2.04	94.04	0.022	2.05	0.0	0.0	9.784	A
A-B	1.00	1.00			1.00				
A-C	82.96	82.96			82.96				
D-AB	9.55	9.55	82.86	0.115	9.51	0.1	0.1	12.047	B
D-BC	5.45	5.45	45.01	0.121	5.31	0.0	0.1	22.601	C
C-ABD	2.08	2.08	145.08	0.014	2.09	0.0	0.0	6.291	A
C-D	2.00	2.00			2.00				
C-A	263.92	263.92			263.92				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	27.00	27.00	89.94	0.300	26.95	0.4	0.4	14.244	B
A-BCD	2.03	2.03	105.25	0.019	2.03	0.0	0.0	8.720	A
A-B	0.00	0.00			0.00				
A-C	85.97	85.97			85.97				
D-AB	13.00	13.00	104.60	0.124	12.98	0.1	0.1	10.000	B
D-BC	6.00	6.00	56.19	0.107	6.01	0.1	0.1	18.443	C
C-ABD	2.07	2.07	143.62	0.014	2.07	0.0	0.0	6.358	A
C-D	2.00	2.00			2.00				
C-A	218.93	218.93			218.93				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	30.00	30.00	99.49	0.302	29.99	0.4	0.4	12.892	B
A-BCD	3.08	3.08	113.35	0.027	3.07	0.0	0.0	8.159	A
A-B	0.00	0.00			0.00				
A-C	105.92	105.92			105.92				
D-AB	17.12	17.12	99.65	0.172	17.06	0.1	0.2	10.656	B
D-BC	7.88	7.88	56.39	0.140	7.85	0.1	0.2	17.909	C
C-ABD	2.07	2.07	137.65	0.015	2.07	0.0	0.0	6.636	A
C-D	12.00	12.00			12.00				
C-A	181.94	181.94			181.94				

2027 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.88	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2027 with dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	1.00	57.00	3.00
	B	15.00	0.00	23.00	0.00
	C	266.00	10.00	0.00	0.00
	D	7.00	0.00	0.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	2.00	83.00	2.00
	B	15.00	0.00	21.00	0.00
	C	264.00	9.00	0.00	2.00
	D	9.00	1.00	5.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	1.00	86.00	2.00
	B	14.00	0.00	25.00	0.00
	C	219.00	8.00	0.00	2.00
	D	13.00	0.00	6.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	106.00	3.00
	B	9.00	0.00	32.00	1.00
	C	182.00	8.00	0.00	12.00
	D	16.00	2.00	7.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.44	19.96	0.8	C	38.75	155.00
A-BCD	0.03	10.22	0.0	B	2.56	10.22
A-B					1.00	4.00
A-C					82.94	331.78
D-AB	0.17	12.19	0.2	B	11.67	46.69
D-BC	0.15	25.20	0.2	D	4.83	19.32
C-ABD	0.07	6.44	0.1	A	10.00	40.00
C-D					3.98	15.92
C-A					231.52	926.08

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	38.00	38.00	89.62	0.424	37.29	0.0	0.7	16.980	C
A-BCD	3.07	3.07	91.08	0.034	3.03	0.0	0.0	10.222	B
A-B	1.00	1.00			1.00				
A-C	56.94	56.94			56.94				
D-AB	7.00	7.00	95.64	0.073	6.92	0.0	0.1	10.137	B
D-BC	0.00	0.00	36.33	0.000	0.00	0.0	0.0	0.000	A
C-ABD	11.63	11.63	169.55	0.069	11.55	0.0	0.1	5.694	A
C-D	0.00	0.00			0.00				
C-A	264.37	264.37			264.37				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	36.00	36.00	80.96	0.445	35.93	0.7	0.8	19.961	C
A-BCD	2.04	2.04	91.40	0.022	2.05	0.0	0.0	10.076	B
A-B	2.00	2.00			2.00				
A-C	82.96	82.96			82.96				
D-AB	9.56	9.56	81.97	0.117	9.51	0.1	0.1	12.193	B
D-BC	5.44	5.44	40.87	0.133	5.29	0.0	0.1	25.198	D
C-ABD	10.46	10.46	161.66	0.065	10.46	0.1	0.1	5.952	A
C-D	1.99	1.99			1.99				
C-A	262.55	262.55			262.55				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	39.00	39.00	89.03	0.438	39.00	0.8	0.8	17.957	C
A-BCD	2.03	2.03	102.98	0.020	2.04	0.0	0.0	8.917	A
A-B	1.00	1.00			1.00				
A-C	85.97	85.97			85.97				
D-AB	13.00	13.00	104.35	0.125	12.98	0.1	0.1	10.033	B
D-BC	6.00	6.00	52.14	0.115	6.01	0.1	0.1	20.060	C
C-ABD	8.98	8.98	155.32	0.058	8.99	0.1	0.1	6.144	A
C-D	1.99	1.99			1.99				
C-A	218.03	218.03			218.03				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	42.00	42.00	95.32	0.441	42.00	0.8	0.8	16.809	C
A-BCD	3.08	3.08	111.08	0.028	3.07	0.0	0.0	8.331	A
A-B	0.00	0.00			0.00				
A-C	105.92	105.92			105.92				
D-AB	17.13	17.13	98.92	0.173	17.07	0.1	0.2	10.751	B
D-BC	7.87	7.87	52.95	0.149	7.84	0.1	0.2	19.268	C
C-ABD	8.92	8.92	148.63	0.060	8.92	0.1	0.1	6.444	A
C-D	11.94	11.94			11.94				
C-A	181.13	181.13			181.13				

2037 no dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2037 no dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	0.00	62.00	4.00
	B	11.00	0.00	15.00	0.00
	C	290.00	4.00	0.00	0.00
	D	8.00	0.00	0.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	1.00	90.00	3.00
	B	11.00	0.00	13.00	0.00
	C	289.00	3.00	0.00	3.00
	D	10.00	1.00	5.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	0.00	94.00	3.00
	B	11.00	0.00	19.00	0.00
	C	239.00	3.00	0.00	3.00
	D	14.00	0.00	6.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	116.00	4.00
	B	5.00	0.00	27.00	1.00
	C	198.00	3.00	0.00	13.00
	D	18.00	3.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.35	17.69	0.5	C	28.25	113.00
A-BCD	0.05	10.68	0.1	B	3.63	14.50
A-B					0.25	1.00
A-C					90.37	361.50
D-AB	0.22	13.46	0.3	B	13.08	52.30
D-BC	0.19	27.98	0.2	D	5.18	20.71
C-ABD	0.03	6.71	0.0	A	3.46	13.86
C-D					4.75	18.99
C-A					253.79	1015.16

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	26.00	26.00	85.02	0.306	25.57	0.0	0.4	15.036	C
A-BCD	4.14	4.14	88.28	0.047	4.09	0.0	0.1	10.684	B
A-B	0.00	0.00			0.00				
A-C	61.86	61.86			61.86				
D-AB	8.00	8.00	89.40	0.089	7.90	0.0	0.1	11.026	B
D-BC	0.00	0.00	33.35	0.000	0.00	0.0	0.0	0.000	A
C-ABD	4.32	4.32	155.81	0.028	4.29	0.0	0.0	5.940	A
C-D	0.00	0.00			0.00				
C-A	289.68	289.68			289.68				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	24.00	24.00	74.84	0.321	23.97	0.4	0.5	17.691	C
A-BCD	3.11	3.11	88.47	0.035	3.12	0.1	0.0	10.546	B
A-B	1.00	1.00			1.00				
A-C	89.89	89.89			89.89				
D-AB	10.56	10.56	76.19	0.139	10.51	0.1	0.2	13.457	B
D-BC	5.44	5.44	37.29	0.146	5.27	0.0	0.2	27.977	D
C-ABD	3.20	3.20	146.43	0.022	3.21	0.0	0.0	6.284	A
C-D	3.00	3.00			3.00				
C-A	288.80	288.80			288.80				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	30.00	30.00	85.36	0.351	29.93	0.5	0.5	16.177	C
A-BCD	3.09	3.09	100.80	0.031	3.09	0.0	0.0	9.213	A
A-B	0.00	0.00			0.00				
A-C	93.91	93.91			93.91				
D-AB	14.00	14.00	99.00	0.141	13.99	0.2	0.2	10.771	B
D-BC	6.00	6.00	48.78	0.123	6.02	0.2	0.1	21.636	C
C-ABD	3.17	3.17	144.09	0.022	3.17	0.0	0.0	6.384	A
C-D	3.00	3.00			3.00				
C-A	238.83	238.83			238.83				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	33.00	33.00	96.56	0.342	33.01	0.5	0.5	14.096	B
A-BCD	4.17	4.17	110.18	0.038	4.16	0.0	0.0	8.486	A
A-B	0.00	0.00			0.00				
A-C	115.83	115.83			115.83				
D-AB	19.73	19.73	90.11	0.219	19.63	0.2	0.3	12.385	B
D-BC	9.27	9.27	49.53	0.187	9.20	0.1	0.2	21.415	C
C-ABD	3.16	3.16	137.34	0.023	3.16	0.0	0.0	6.706	A
C-D	12.99	12.99			12.99				
C-A	197.85	197.85			197.85				

2037 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		3.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2037 with dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	1.00	62.00	4.00
	B	16.00	0.00	24.00	0.00
	C	290.00	11.00	0.00	0.00
	D	8.00	0.00	0.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	2.00	90.00	3.00
	B	16.00	0.00	22.00	0.00
	C	289.00	10.00	0.00	3.00
	D	10.00	1.00	5.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	1.00	94.00	3.00
	B	15.00	0.00	27.00	0.00
	C	239.00	9.00	0.00	3.00
	D	14.00	0.00	6.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	116.00	4.00
	B	9.00	0.00	35.00	1.00
	C	198.00	9.00	0.00	13.00
	D	18.00	3.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.51	24.21	1.0	C	41.25	165.01
A-BCD	0.05	11.02	0.1	B	3.63	14.54
A-B					1.00	3.99
A-C					90.37	361.47
D-AB	0.22	13.68	0.3	B	13.08	52.33
D-BC	0.20	32.10	0.2	D	5.17	20.68
C-ABD	0.08	6.48	0.1	A	11.47	45.90
C-D					4.72	18.88
C-A					252.31	1009.22

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	40.00	40.00	84.45	0.474	39.14	0.0	0.9	19.519	C
A-BCD	4.15	4.15	85.73	0.048	4.10	0.0	0.1	11.018	B
A-B	1.00	1.00			1.00				
A-C	61.85	61.85			61.85				
D-AB	8.00	8.00	89.40	0.089	7.90	0.0	0.1	11.026	B
D-BC	0.00	0.00	30.75	0.000	0.00	0.0	0.0	0.000	A
C-ABD	13.18	13.18	172.67	0.076	13.08	0.0	0.1	5.638	A
C-D	0.00	0.00			0.00				
C-A	287.82	287.82			287.82				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	38.00	38.00	74.91	0.507	37.88	0.9	1.0	24.206	C
A-BCD	3.12	3.12	85.89	0.036	3.13	0.1	0.0	10.875	B
A-B	2.00	2.00			2.00				
A-C	89.88	89.88			89.88				
D-AB	10.57	10.57	75.11	0.141	10.51	0.1	0.2	13.681	B
D-BC	5.43	5.43	33.10	0.164	5.24	0.0	0.2	32.105	D
C-ABD	12.02	12.02	164.57	0.073	12.02	0.1	0.1	5.903	A
C-D	2.98	2.98			2.98				
C-A	287.00	287.00			287.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	42.00	42.00	84.24	0.499	42.00	1.0	1.0	21.257	C
A-BCD	3.09	3.09	98.57	0.031	3.10	0.0	0.0	9.431	A
A-B	1.00	1.00			1.00				
A-C	93.91	93.91			93.91				
D-AB	14.00	14.00	98.68	0.142	13.99	0.2	0.2	10.815	B
D-BC	6.00	6.00	44.71	0.134	6.02	0.2	0.2	23.913	C
C-ABD	10.38	10.38	156.87	0.066	10.40	0.1	0.1	6.139	A
C-D	2.98	2.98			2.98				
C-A	237.63	237.63			237.63				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	45.00	45.00	91.76	0.490	45.01	1.0	1.0	19.180	C
A-BCD	4.17	4.17	107.95	0.039	4.17	0.0	0.0	8.669	A
A-B	0.00	0.00			0.00				
A-C	115.83	115.83			115.83				
D-AB	19.75	19.75	89.09	0.222	19.65	0.2	0.3	12.564	B
D-BC	9.25	9.25	46.19	0.201	9.18	0.2	0.2	23.334	C
C-ABD	10.31	10.31	149.27	0.069	10.31	0.1	0.1	6.476	A
C-D	12.92	12.92			12.92				
C-A	196.77	196.77			196.77				

2022 no dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D9	2022 no dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	8.00	215.00	12.00
	B	3.00	0.00	11.00	1.00
	C	84.00	12.00	0.00	11.00
	D	5.00	0.00	2.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	8.00	216.00	12.00
	B	0.00	0.00	10.00	1.00
	C	90.00	13.00	0.00	12.00
	D	7.00	0.00	5.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	4.00	227.00	12.00
	B	2.00	0.00	5.00	0.00
	C	93.00	13.00	0.00	7.00
	D	4.00	0.00	3.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	4.00	186.00	10.00
	B	1.00	0.00	8.00	1.00
	C	120.00	8.00	0.00	8.00
	D	2.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.20	14.42	0.2	B	10.75	43.00
A-BCD	0.09	7.03	0.1	A	13.37	53.49
A-B					5.95	23.79
A-C					209.18	836.72
D-AB	0.05	6.88	0.1	A	4.50	18.00
D-BC	0.08	15.03	0.1	C	2.75	11.00
C-ABD	0.12	8.33	0.1	A	12.59	50.35
C-D					9.40	37.59
C-A					95.77	383.06

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	15.00	15.00	76.92	0.195	14.76	0.0	0.2	14.425	B
A-BCD	13.99	13.99	151.49	0.092	13.88	0.0	0.1	6.537	A
A-B	7.93	7.93			7.93				
A-C	213.08	213.08			213.08				
D-AB	5.00	5.00	141.17	0.035	4.96	0.0	0.0	6.606	A
D-BC	2.00	2.00	66.20	0.030	1.97	0.0	0.0	14.007	B
C-ABD	13.07	13.07	123.09	0.106	12.94	0.0	0.1	8.164	A
C-D	10.88	10.88			10.88				
C-A	83.05	83.05			83.05				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	11.00	11.00	87.09	0.126	11.09	0.2	0.1	11.818	B
A-BCD	14.07	14.07	149.86	0.094	14.06	0.1	0.1	6.631	A
A-B	7.93	7.93			7.93				
A-C	214.01	214.01			214.01				
D-AB	7.00	7.00	137.88	0.051	6.98	0.0	0.1	6.875	A
D-BC	5.00	5.00	64.77	0.077	4.95	0.0	0.1	15.033	C
C-ABD	14.36	14.36	124.43	0.115	14.34	0.1	0.1	8.174	A
C-D	11.84	11.84			11.84				
C-A	88.80	88.80			88.80				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	7.00	7.00	72.65	0.096	7.04	0.1	0.1	13.777	B
A-BCD	14.12	14.12	150.92	0.094	14.12	0.1	0.1	6.582	A
A-B	3.96	3.96			3.96				
A-C	224.92	224.92			224.92				
D-AB	4.00	4.00	138.65	0.029	4.02	0.1	0.0	6.685	A
D-BC	3.00	3.00	64.08	0.047	3.03	0.1	0.0	14.748	B
C-ABD	14.38	14.38	122.45	0.117	14.38	0.1	0.1	8.328	A
C-D	6.90	6.90			6.90				
C-A	91.72	91.72			91.72				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	10.00	10.00	86.55	0.116	9.98	0.1	0.1	11.738	B
A-BCD	11.32	11.32	139.39	0.081	11.33	0.1	0.1	7.032	A
A-B	3.97	3.97			3.97				
A-C	184.71	184.71			184.71				
D-AB	2.00	2.00	132.82	0.015	2.01	0.0	0.0	6.882	A
D-BC	1.00	1.00	64.72	0.015	1.03	0.0	0.0	14.139	B
C-ABD	8.54	8.54	131.28	0.065	8.61	0.1	0.1	7.343	A
C-D	7.97	7.97			7.97				
C-A	119.49	119.49			119.49				

2022 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2022 with dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	13.00	215.00	12.00
	B	5.00	0.00	18.00	1.00
	C	84.00	21.00	0.00	11.00
	D	5.00	0.00	2.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	13.00	216.00	12.00
	B	1.00	0.00	17.00	1.00
	C	90.00	22.00	0.00	12.00
	D	7.00	0.00	5.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	8.00	227.00	12.00
	B	3.00	0.00	12.00	0.00
	C	93.00	21.00	0.00	7.00
	D	4.00	0.00	3.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	8.00	186.00	10.00
	B	2.00	0.00	15.00	1.00
	C	120.00	16.00	0.00	8.00
	D	2.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.32	17.10	0.5	C	19.00	76.00
A-BCD	0.10	7.15	0.1	A	13.50	54.01
A-B					10.40	41.62
A-C					209.09	836.37
D-AB	0.05	6.88	0.1	A	4.50	18.00
D-BC	0.08	16.10	0.1	C	2.75	11.00
C-ABD	0.20	8.65	0.3	A	23.31	93.22
C-D					9.19	36.75
C-A					93.76	375.03

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	24.00	24.00	75.75	0.317	23.55	0.0	0.5	17.101	C
A-BCD	14.14	14.14	149.44	0.095	14.02	0.0	0.1	6.643	A
A-B	12.88	12.88			12.88				
A-C	212.98	212.98			212.98				
D-AB	5.00	5.00	141.10	0.035	4.96	0.0	0.0	6.609	A
D-BC	2.00	2.00	62.18	0.032	1.97	0.0	0.0	14.938	B
C-ABD	24.36	24.36	129.51	0.188	24.10	0.0	0.3	8.524	A
C-D	10.61	10.61			10.61				
C-A	81.03	81.03			81.03				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	19.00	19.00	84.55	0.225	19.16	0.5	0.3	13.756	B
A-BCD	14.22	14.22	147.79	0.096	14.22	0.1	0.1	6.738	A
A-B	12.87	12.87			12.87				
A-C	213.91	213.91			213.91				
D-AB	7.00	7.00	137.70	0.051	6.98	0.0	0.1	6.885	A
D-BC	5.00	5.00	60.79	0.082	4.94	0.0	0.1	16.096	C
C-ABD	25.98	25.98	131.46	0.198	25.96	0.3	0.3	8.534	A
C-D	11.53	11.53			11.53				
C-A	86.48	86.48			86.48				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	15.00	15.00	75.91	0.198	15.04	0.3	0.3	14.827	B
A-BCD	14.25	14.25	149.04	0.096	14.25	0.1	0.1	6.680	A
A-B	7.92	7.92			7.92				
A-C	224.83	224.83			224.83				
D-AB	4.00	4.00	138.54	0.029	4.02	0.1	0.0	6.693	A
D-BC	3.00	3.00	60.35	0.050	3.03	0.1	0.1	15.711	C
C-ABD	24.67	24.67	128.77	0.192	24.67	0.3	0.3	8.654	A
C-D	6.74	6.74			6.74				
C-A	89.59	89.59			89.59				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	18.00	18.00	87.35	0.206	17.99	0.3	0.3	12.967	B
A-BCD	11.40	11.40	137.34	0.083	11.42	0.1	0.1	7.149	A
A-B	7.94	7.94			7.94				
A-C	184.65	184.65			184.65				
D-AB	2.00	2.00	132.78	0.015	2.01	0.0	0.0	6.885	A
D-BC	1.00	1.00	61.00	0.016	1.04	0.1	0.0	15.020	C
C-ABD	18.21	18.21	138.66	0.131	18.32	0.3	0.2	7.489	A
C-D	7.86	7.86			7.86				
C-A	117.93	117.93			117.93				

2027 no dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D11	2027 no dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	9.00	236.00	13.00
	B	3.00	0.00	12.00	1.00
	C	92.00	13.00	0.00	12.00
	D	6.00	0.00	2.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	9.00	238.00	13.00
	B	0.00	0.00	10.00	1.00
	C	99.00	14.00	0.00	13.00
	D	8.00	0.00	6.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	5.00	249.00	13.00
	B	2.00	0.00	6.00	0.00
	C	103.00	14.00	0.00	8.00
	D	5.00	0.00	3.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	5.00	205.00	10.00
	B	1.00	0.00	9.00	1.00
	C	132.00	9.00	0.00	9.00
	D	2.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.22	16.03	0.3	C	11.50	46.00
A-BCD	0.10	7.12	0.1	A	14.71	58.86
A-B					6.93	27.71
A-C					229.61	918.44
D-AB	0.06	7.10	0.1	A	5.25	21.00
D-BC	0.10	17.05	0.1	C	3.00	12.00
C-ABD	0.13	8.75	0.2	A	14.09	56.35
C-D					10.35	41.40
C-A					105.06	420.25

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	16.00	16.00	71.61	0.223	15.72	0.0	0.3	16.026	C
A-BCD	15.67	15.67	153.53	0.102	15.53	0.0	0.1	6.517	A
A-B	8.90	8.90			8.90				
A-C	233.43	233.43			233.43				
D-AB	6.00	6.00	138.94	0.043	5.96	0.0	0.0	6.766	A
D-BC	2.00	2.00	60.25	0.033	1.97	0.0	0.0	15.434	C
C-ABD	14.55	14.55	119.19	0.122	14.40	0.0	0.2	8.578	A
C-D	11.82	11.82			11.82				
C-A	90.63	90.63			90.63				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	11.00	11.00	81.20	0.135	11.12	0.3	0.2	12.825	B
A-BCD	15.79	15.79	151.90	0.104	15.79	0.1	0.1	6.613	A
A-B	8.90	8.90			8.90				
A-C	235.31	235.31			235.31				
D-AB	8.00	8.00	134.66	0.059	7.98	0.0	0.1	7.104	A
D-BC	6.00	6.00	58.65	0.102	5.92	0.0	0.1	17.046	C
C-ABD	15.96	15.96	120.68	0.132	15.94	0.2	0.2	8.594	A
C-D	12.77	12.77			12.77				
C-A	97.27	97.27			97.27				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	8.00	8.00	67.79	0.118	8.02	0.2	0.1	15.110	C
A-BCD	15.86	15.86	152.82	0.104	15.86	0.1	0.1	6.572	A
A-B	4.94	4.94			4.94				
A-C	246.20	246.20			246.20				
D-AB	5.00	5.00	135.83	0.037	5.02	0.1	0.0	6.880	A
D-BC	3.00	3.00	57.49	0.052	3.06	0.1	0.1	16.550	C
C-ABD	16.01	16.01	118.87	0.135	16.01	0.2	0.2	8.751	A
C-D	7.85	7.85			7.85				
C-A	101.13	101.13			101.13				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	11.00	11.00	82.13	0.134	10.98	0.1	0.2	12.635	B
A-BCD	11.54	11.54	138.11	0.084	11.57	0.1	0.1	7.117	A
A-B	4.96	4.96			4.96				
A-C	203.50	203.50			203.50				
D-AB	2.00	2.00	129.62	0.015	2.02	0.0	0.0	7.056	A
D-BC	1.00	1.00	58.44	0.017	1.04	0.1	0.0	15.689	C
C-ABD	9.83	9.83	128.21	0.077	9.91	0.2	0.1	7.620	A
C-D	8.95	8.95			8.95				
C-A	131.22	131.22			131.22				

2027 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D12	2027 with dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	14.00	236.00	13.00
	B	5.00	0.00	19.00	1.00
	C	92.00	22.00	0.00	12.00
	D	6.00	0.00	2.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	14.00	238.00	13.00
	B	1.00	0.00	17.00	1.00
	C	99.00	23.00	0.00	13.00
	D	8.00	0.00	6.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	9.00	249.00	13.00
	B	3.00	0.00	13.00	0.00
	C	103.00	22.00	0.00	8.00
	D	5.00	0.00	3.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	9.00	205.00	10.00
	B	2.00	0.00	16.00	1.00
	C	132.00	17.00	0.00	9.00
	D	2.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.36	19.58	0.5	C	19.75	79.00
A-BCD	0.11	7.24	0.1	A	14.88	59.53
A-B					11.37	45.50
A-C					229.49	917.97
D-AB	0.06	7.12	0.1	A	5.25	21.00
D-BC	0.11	18.43	0.1	C	3.00	12.00
C-ABD	0.22	9.06	0.3	A	25.52	102.07
C-D					10.07	40.29
C-A					102.41	409.64

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	25.00	25.00	69.95	0.357	24.46	0.0	0.5	19.575	C
A-BCD	15.86	15.86	151.65	0.105	15.72	0.0	0.1	6.616	A
A-B	13.84	13.84			13.84				
A-C	233.30	233.30			233.30				
D-AB	6.00	6.00	138.86	0.043	5.96	0.0	0.0	6.770	A
D-BC	2.00	2.00	56.23	0.036	1.96	0.0	0.0	16.573	C
C-ABD	26.55	26.55	126.90	0.209	26.24	0.0	0.3	8.923	A
C-D	11.47	11.47			11.47				
C-A	87.97	87.97			87.97				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	19.00	19.00	78.32	0.243	19.21	0.5	0.3	15.238	C
A-BCD	15.99	15.99	150.02	0.107	15.99	0.1	0.1	6.716	A
A-B	13.83	13.83			13.83				
A-C	235.17	235.17			235.17				
D-AB	8.00	8.00	134.39	0.060	7.98	0.0	0.1	7.119	A
D-BC	6.00	6.00	54.66	0.110	5.92	0.0	0.1	18.434	C
C-ABD	28.42	28.42	129.15	0.220	28.39	0.3	0.3	8.939	A
C-D	12.37	12.37			12.37				
C-A	94.21	94.21			94.21				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	16.00	16.00	69.94	0.229	16.02	0.3	0.3	16.731	C
A-BCD	16.04	16.04	151.10	0.106	16.04	0.1	0.1	6.664	A
A-B	8.89	8.89			8.89				
A-C	246.07	246.07			246.07				
D-AB	5.00	5.00	135.68	0.037	5.02	0.1	0.0	6.888	A
D-BC	3.00	3.00	53.75	0.056	3.06	0.1	0.1	17.775	C
C-ABD	27.08	27.08	126.57	0.214	27.08	0.3	0.3	9.059	A
C-D	7.63	7.63			7.63				
C-A	98.29	98.29			98.29				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	19.00	19.00	82.37	0.231	19.00	0.3	0.3	14.196	B
A-BCD	11.64	11.64	136.13	0.086	11.68	0.1	0.1	7.237	A
A-B	8.93	8.93			8.93				
A-C	203.43	203.43			203.43				
D-AB	2.00	2.00	129.57	0.015	2.02	0.0	0.0	7.059	A
D-BC	1.00	1.00	54.70	0.018	1.04	0.1	0.0	16.784	C
C-ABD	20.02	20.02	136.92	0.146	20.15	0.3	0.2	7.725	A
C-D	8.81	8.81			8.81				
C-A	129.18	129.18			129.18				

2037 no dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D13	2037 no dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	10.00	258.00	14.00
	B	4.00	0.00	13.00	1.00
	C	100.00	14.00	0.00	13.00
	D	6.00	0.00	3.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	10.00	259.00	14.00
	B	0.00	0.00	11.00	1.00
	C	108.00	15.00	0.00	14.00
	D	9.00	0.00	6.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	5.00	272.00	14.00
	B	3.00	0.00	6.00	0.00
	C	112.00	15.00	0.00	9.00
	D	5.00	0.00	4.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	5.00	224.00	11.00
	B	1.00	0.00	10.00	1.00
	C	144.00	10.00	0.00	10.00
	D	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.28	19.58	0.4	C	12.75	51.00
A-BCD	0.11	7.17	0.2	A	16.53	66.12
A-B					7.40	29.62
A-C					250.07	1000.26
D-AB	0.07	7.32	0.1	A	5.75	23.00
D-BC	0.11	19.33	0.1	C	3.50	14.00
C-ABD	0.15	9.20	0.2	A	15.78	63.13
C-D					11.28	45.13
C-A					113.94	455.74

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	18.00	18.00	63.20	0.285	17.61	0.0	0.4	19.584	C
A-BCD	17.52	17.52	156.23	0.112	17.36	0.0	0.2	6.477	A
A-B	9.87	9.87			9.87				
A-C	254.61	254.61			254.61				
D-AB	6.00	6.00	136.05	0.044	5.95	0.0	0.0	6.916	A
D-BC	3.00	3.00	54.03	0.056	2.94	0.0	0.1	17.599	C
C-ABD	16.23	16.23	115.58	0.140	16.04	0.0	0.2	9.030	A
C-D	12.74	12.74			12.74				
C-A	98.03	98.03			98.03				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	12.00	12.00	75.81	0.158	12.20	0.4	0.2	14.133	B
A-BCD	17.68	17.68	154.42	0.114	17.67	0.2	0.2	6.583	A
A-B	9.86	9.86			9.86				
A-C	255.46	255.46			255.46				
D-AB	9.00	9.00	131.90	0.068	8.97	0.0	0.1	7.319	A
D-BC	6.00	6.00	52.42	0.114	5.93	0.1	0.1	19.327	C
C-ABD	17.78	17.78	117.77	0.151	17.76	0.2	0.2	8.999	A
C-D	13.68	13.68			13.68				
C-A	105.54	105.54			105.54				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	9.00	9.00	55.62	0.162	9.00	0.2	0.2	19.397	C
A-BCD	17.78	17.78	155.53	0.114	17.77	0.2	0.2	6.538	A
A-B	4.93	4.93			4.93				
A-C	268.29	268.29			268.29				
D-AB	5.00	5.00	132.57	0.038	5.03	0.1	0.0	7.060	A
D-BC	4.00	4.00	51.10	0.078	4.04	0.1	0.1	19.138	C
C-ABD	17.89	17.89	115.80	0.154	17.88	0.2	0.2	9.196	A
C-D	8.79	8.79			8.79				
C-A	109.33	109.33			109.33				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	12.00	12.00	77.21	0.155	12.01	0.2	0.2	13.770	B
A-BCD	13.15	13.15	138.89	0.095	13.19	0.2	0.1	7.165	A
A-B	4.95	4.95			4.95				
A-C	221.90	221.90			221.90				
D-AB	3.00	3.00	126.38	0.024	3.02	0.0	0.0	7.295	A
D-BC	1.00	1.00	51.81	0.019	1.07	0.1	0.0	17.758	C
C-ABD	11.24	11.24	125.52	0.090	11.34	0.2	0.1	7.897	A
C-D	9.92	9.92			9.92				
C-A	142.84	142.84			142.84				

2037 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D14	2037 with dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	15.00	258.00	14.00
	B	6.00	0.00	20.00	1.00
	C	100.00	23.00	0.00	13.00
	D	6.00	0.00	3.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	15.00	259.00	14.00
	B	1.00	0.00	18.00	1.00
	C	108.00	24.00	0.00	14.00
	D	9.00	0.00	6.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	9.00	272.00	14.00
	B	4.00	0.00	13.00	0.00
	C	112.00	23.00	0.00	9.00
	D	5.00	0.00	4.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	9.00	224.00	11.00
	B	2.00	0.00	17.00	1.00
	C	144.00	18.00	0.00	10.00
	D	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.44	24.90	0.7	C	21.00	84.00
A-BCD	0.12	7.28	0.2	A	16.75	67.01
A-B					11.84	47.36
A-C					249.91	999.63
D-AB	0.07	7.34	0.1	A	5.75	23.00
D-BC	0.12	21.14	0.1	C	3.50	14.00
C-ABD	0.24	9.49	0.4	A	28.13	112.52
C-D					10.92	43.67
C-A					110.45	441.81

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	27.00	27.00	61.73	0.437	26.26	0.0	0.7	24.900	C
A-BCD	17.76	17.76	154.54	0.115	17.60	0.0	0.2	6.568	A
A-B	14.79	14.79			14.79				
A-C	254.44	254.44			254.44				
D-AB	6.00	6.00	135.90	0.044	5.95	0.0	0.0	6.924	A
D-BC	3.00	3.00	50.01	0.060	2.94	0.0	0.1	19.094	C
C-ABD	29.18	29.18	124.78	0.234	28.80	0.0	0.4	9.357	A
C-D	12.29	12.29			12.29				
C-A	94.53	94.53			94.53				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	20.00	20.00	72.35	0.276	20.35	0.7	0.4	17.360	C
A-BCD	17.94	17.94	152.74	0.117	17.94	0.2	0.2	6.681	A
A-B	14.78	14.78			14.78				
A-C	255.27	255.27			255.27				
D-AB	9.00	9.00	131.56	0.068	8.97	0.0	0.1	7.339	A
D-BC	6.00	6.00	48.41	0.124	5.92	0.1	0.1	21.144	C
C-ABD	31.31	31.31	127.86	0.245	31.28	0.4	0.4	9.330	A
C-D	13.16	13.16			13.16				
C-A	101.52	101.52			101.52				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	17.00	17.00	59.08	0.288	16.99	0.4	0.4	21.435	C
A-BCD	18.01	18.01	153.98	0.117	18.01	0.2	0.2	6.623	A
A-B	8.87	8.87			8.87				
A-C	268.12	268.12			268.12				
D-AB	5.00	5.00	132.33	0.038	5.03	0.1	0.0	7.073	A
D-BC	4.00	4.00	47.34	0.084	4.04	0.1	0.1	20.807	C
C-ABD	29.94	29.94	125.00	0.240	29.94	0.4	0.4	9.486	A
C-D	8.48	8.48			8.48				
C-A	105.58	105.58			105.58				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	20.00	20.00	76.93	0.260	20.04	0.4	0.4	15.810	C
A-BCD	13.29	13.29	137.06	0.097	13.33	0.2	0.1	7.280	A
A-B	8.91	8.91			8.91				
A-C	221.79	221.79			221.79				
D-AB	3.00	3.00	126.31	0.024	3.02	0.0	0.0	7.302	A
D-BC	1.00	1.00	48.05	0.021	1.07	0.1	0.0	19.185	C
C-ABD	22.08	22.08	135.70	0.163	22.25	0.4	0.2	7.955	A
C-D	9.73	9.73			9.73				
C-A	140.18	140.18			140.18				

2037 Sensitivity, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		15.90	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D15	2037 Sensitivity	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		A	B	C	D
From	A	0.00	1.00	43.00	14.00
	B	16.00	0.00	21.00	3.00
	C	271.00	11.00	0.00	28.00
	D	26.00	0.00	31.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		A	B	C	D
From	A	0.00	2.00	71.00	12.00
	B	16.00	0.00	19.00	3.00
	C	270.00	10.00	0.00	30.00
	D	28.00	1.00	36.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		A	B	C	D
From	A	0.00	1.00	75.00	12.00
	B	15.00	0.00	25.00	2.00
	C	221.00	9.00	0.00	31.00
	D	31.00	0.00	36.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		A	B	C	D
From	A	0.00	0.00	97.00	12.00
	B	9.00	0.00	33.00	3.00
	C	181.00	9.00	0.00	40.00
	D	34.00	3.00	38.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	0
	B	0	0	4	0
	C	4	11	0	0
	D	0	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.55	28.69	1.2	D	41.25	165.01
A-BCD	0.17	12.26	0.2	B	13.89	55.56
A-B					0.98	3.91
A-C					70.13	280.54
D-AB	0.48	25.37	0.9	D	30.70	122.78
D-BC	1.00	154.89	6.2	F	35.31	141.25
C-ABD	0.08	6.36	0.1	A	11.49	45.97
C-D					32.04	128.18
C-A					234.21	936.85

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	40.00	40.00	78.73	0.508	39.02	0.0	1.0	22.164	C
A-BCD	15.32	15.32	88.31	0.174	15.10	0.0	0.2	12.262	B
A-B	0.97	0.97			0.97				
A-C	41.71	41.71			41.71				
D-AB	26.00	26.00	73.51	0.354	25.47	0.0	0.5	18.540	C
D-BC	31.00	31.00	39.30	0.789	28.40	0.0	2.6	71.673	F
C-ABD	13.21	13.21	174.73	0.076	13.11	0.0	0.1	5.567	A
C-D	27.79	27.79			27.79				
C-A	269.00	269.00			269.00				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	38.00	38.00	68.97	0.551	37.82	1.0	1.2	28.688	D
A-BCD	13.61	13.61	91.55	0.149	13.63	0.2	0.2	11.550	B
A-B	1.96	1.96			1.96				
A-C	69.43	69.43			69.43				
D-AB	29.00	29.00	63.28	0.459	28.74	0.5	0.8	25.368	D
D-BC	36.00	36.00	36.13	0.996	32.42	2.6	6.2	154.887	F
C-ABD	12.03	12.03	166.72	0.072	12.03	0.1	0.1	5.818	A
C-D	29.80	29.80			29.80				
C-A	268.18	268.18			268.18				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	42.00	42.00	80.26	0.523	42.04	1.2	1.1	23.517	C
A-BCD	13.26	13.26	103.15	0.129	13.29	0.2	0.2	10.032	B
A-B	0.98	0.98			0.98				
A-C	73.76	73.76			73.76				
D-AB	31.00	31.00	80.42	0.385	31.14	0.8	0.7	18.635	C
D-BC	36.00	36.00	46.43	0.775	37.88	6.2	4.3	114.456	F
C-ABD	10.41	10.41	159.23	0.065	10.42	0.1	0.1	6.043	A
C-D	30.83	30.83			30.83				
C-A	219.77	219.77			219.77				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	45.00	45.00	89.25	0.504	45.08	1.1	1.0	20.334	C
A-BCD	13.36	13.36	112.70	0.119	13.38	0.2	0.2	9.064	A
A-B	0.00	0.00			0.00				
A-C	95.64	95.64			95.64				
D-AB	36.76	36.76	77.45	0.475	36.58	0.7	0.8	21.054	C
D-BC	38.24	38.24	50.31	0.761	38.86	4.3	3.7	83.088	F
C-ABD	10.33	10.33	151.98	0.068	10.33	0.1	0.1	6.355	A
C-D	39.76	39.76			39.76				
C-A	179.91	179.91			179.91				

2037 Sensitivity, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		6.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D16	2037 Sensitivity	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

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

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		A	B	C	D
From	A	0.00	15.00	237.00	32.00
	B	6.00	0.00	19.00	3.00
	C	80.00	23.00	0.00	48.00
	D	21.00	0.00	31.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		A	B	C	D
From	A	0.00	15.00	239.00	30.00
	B	1.00	0.00	16.00	3.00
	C	88.00	24.00	0.00	49.00
	D	24.00	0.00	34.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		A	B	C	D
From	A	0.00	9.00	252.00	30.00
	B	4.00	0.00	11.00	2.00
	C	92.00	23.00	0.00	44.00
	D	20.00	0.00	31.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		A	B	C	D
From	A	0.00	9.00	203.00	27.00
	B	2.00	0.00	15.00	2.00
	C	125.00	18.00	0.00	45.00
	D	16.00	0.00	28.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	2
	B	0	0	3	0
	C	2	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-ACD	0.49	29.17	0.9	D	21.00	84.00
A-BCD	0.27	7.34	0.6	A	46.63	186.51
A-B					11.17	44.66
A-C					216.71	866.83
D-AB	0.21	10.25	0.3	B	20.25	81.00
D-BC	0.72	61.24	2.2	F	31.00	124.00
C-ABD	0.25	9.29	0.4	A	29.02	116.08
C-D					44.13	176.53
C-A					91.60	366.39

Main Results for each time segment

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	28.00	28.00	57.15	0.490	27.10	0.0	0.9	29.173	D
A-BCD	50.91	50.91	188.25	0.270	50.34	0.0	0.6	6.518	A
A-B	13.87	13.87			13.87				
A-C	219.22	219.22			219.22				
D-AB	21.00	21.00	117.22	0.179	20.78	0.0	0.2	9.312	A
D-BC	31.00	31.00	48.34	0.641	29.44	0.0	1.6	44.682	E
C-ABD	30.19	30.19	127.38	0.237	29.79	0.0	0.4	9.203	A
C-D	45.30	45.30			45.30				
C-A	75.51	75.51			75.51				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	20.00	20.00	64.25	0.311	20.44	0.9	0.5	20.678	C
A-BCD	47.54	47.54	183.32	0.259	47.54	0.6	0.6	6.651	A
A-B	13.96	13.96			13.96				
A-C	222.50	222.50			222.50				
D-AB	24.00	24.00	111.65	0.215	23.95	0.2	0.3	10.255	B
D-BC	34.00	34.00	47.37	0.718	33.40	1.6	2.2	61.238	F
C-ABD	32.37	32.37	130.93	0.247	32.34	0.4	0.4	9.141	A
C-D	46.01	46.01			46.01				
C-A	82.62	82.62			82.62				

18:00 - 18:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	17.00	17.00	50.56	0.336	16.97	0.5	0.5	26.849	D
A-BCD	47.85	47.85	185.40	0.258	47.86	0.6	0.6	6.564	A
A-B	8.38	8.38			8.38				
A-C	234.76	234.76			234.76				
D-AB	20.00	20.00	112.42	0.178	20.05	0.3	0.2	9.748	A
D-BC	31.00	31.00	46.33	0.669	31.03	2.2	2.1	59.453	F
C-ABD	30.95	30.95	127.98	0.242	30.95	0.4	0.4	9.295	A
C-D	41.43	41.43			41.43				
C-A	86.62	86.62			86.62				

18:15 - 18:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	19.00	19.00	72.56	0.262	19.13	0.5	0.4	16.846	C
A-BCD	40.20	40.20	163.33	0.246	40.26	0.6	0.5	7.336	A
A-B	8.44	8.44			8.44				
A-C	190.36	190.36			190.36				
D-AB	16.00	16.00	107.92	0.148	16.04	0.2	0.2	9.800	A
D-BC	28.00	28.00	47.18	0.593	28.52	2.1	1.6	49.618	E
C-ABD	22.56	22.56	137.79	0.164	22.74	0.4	0.3	7.845	A
C-D	43.79	43.79			43.79				
C-A	121.65	121.65			121.65				

APPENDIX F – ARCADY RESULTS

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

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

Filename: Roundabout Junction.j9
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\ARCADY
Report generation date: 15/04/2019 10:31:44

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2019							
Arm 1	0.3	2.32	0.20	A	0.6	2.95	0.37	A
Arm 2	0.1	2.73	0.13	A	0.1	2.82	0.07	A
Arm 3	0.4	3.33	0.30	A	0.6	3.57	0.37	A
Arm 4	0.0	5.53	0.03	A	0.0	5.65	0.03	A
	2022 no dev							
Arm 1	0.3	2.35	0.22	A	0.6	3.07	0.39	A
Arm 2	0.2	2.79	0.14	A	0.1	2.89	0.07	A
Arm 3	0.5	3.42	0.31	A	0.6	3.68	0.39	A
Arm 4	0.0	5.64	0.03	A	0.0	5.78	0.03	A
	2022 with dev							
Arm 1	0.3	2.38	0.22	A	0.7	3.14	0.40	A
Arm 2	0.2	2.86	0.16	A	0.1	2.95	0.09	A
Arm 3	0.5	3.49	0.33	A	0.7	3.83	0.42	A
Arm 4	0.0	5.72	0.03	A	0.0	5.94	0.03	A
	2027 no dev							
Arm 1	0.3	2.42	0.24	A	0.8	3.29	0.43	A
Arm 2	0.2	2.90	0.15	A	0.1	3.02	0.08	A
Arm 3	0.5	3.59	0.35	A	0.8	3.96	0.44	A
Arm 4	0.0	5.87	0.03	A	0.0	6.07	0.03	A
	2027 with dev							
Arm 1	0.3	2.44	0.24	A	0.8	3.37	0.44	A
Arm 2	0.2	2.98	0.18	A	0.1	3.08	0.10	A
Arm 3	0.6	3.68	0.36	A	0.8	4.14	0.46	A
Arm 4	0.0	5.96	0.03	A	0.0	6.25	0.03	A
	2037 no dev							
Arm 1	0.3	2.50	0.26	A	0.9	3.55	0.47	A
Arm 2	0.2	3.01	0.17	A	0.1	3.17	0.09	A
Arm 3	0.6	3.81	0.38	A	0.9	4.27	0.48	A
Arm 4	0.0	6.18	0.04	A	0.0	6.36	0.05	A
	2037 with dev							
Arm 1	0.4	2.52	0.26	A	0.9	3.65	0.48	A
Arm 2	0.2	3.10	0.19	A	0.1	3.24	0.11	A
Arm 3	0.6	3.90	0.39	A	1.0	4.47	0.50	A
Arm 4	0.0	6.28	0.04	A	0.1	6.57	0.05	A

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

File summary

File Description

Title	
Location	
Site number	
Date	12/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ROADPLAN01\jbyrne
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	perTimeSegment	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2019	AM	DIRECT	07:30	08:30	60	15	✓
D2	2019	PM	DIRECT	17:30	18:30	60	15	✓
D3	2022 no dev	AM	DIRECT	07:30	08:30	60	15	✓
D4	2022 with dev	AM	DIRECT	07:30	08:30	60	15	✓
D5	2027 no dev	AM	DIRECT	07:30	08:30	60	15	✓
D6	2027 with dev	AM	DIRECT	07:30	08:30	60	15	✓
D7	2037 no dev	AM	DIRECT	07:30	08:30	60	15	✓
D8	2037 with dev	AM	DIRECT	07:30	08:30	60	15	✓
D9	2022 no dev	PM	DIRECT	17:30	18:30	60	15	✓
D10	2022 with dev	PM	DIRECT	17:30	18:30	60	15	✓
D11	2027 no dev	PM	DIRECT	17:30	18:30	60	15	✓
D12	2027 with dev	PM	DIRECT	17:30	18:30	60	15	✓
D13	2037 no dev	PM	DIRECT	17:30	18:30	60	15	✓
D14	2037 with dev	PM	DIRECT	17:30	18:30	60	15	✓

Analysis Set Details

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

2019, AM

Data Errors and Warnings

No errors or warnings

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	2.88	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	
4	untitled	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.10	8.00	18.0	33.0	42.0	23.0	
2	3.50	7.50	17.0	24.0	42.0	25.0	
3	3.50	7.50	14.0	17.0	42.0	37.0	
4	3.50	3.50	0.0	6.5	42.0	43.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.714	506.164
2	0.664	449.146
3	0.615	409.470
4	0.435	226.239

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2019	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

07:30 - 07:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	6.00	64.00	1.00
	2	15.00	1.00	19.00	0.00
	3	80.00	3.00	0.00	1.00
	4	2.00	0.00	3.00	0.00

07:45 - 08:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	6.00	73.00	0.00
	2	17.00	0.00	16.00	0.00
	3	94.00	10.00	1.00	2.00
	4	2.00	0.00	2.00	0.00

08:00 - 08:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	14.00	80.00	0.00
	2	22.00	0.00	20.00	0.00
	3	78.00	5.00	1.00	1.00
	4	3.00	0.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	3.00	96.00	0.00
	2	18.00	0.00	30.00	0.00
	3	110.00	3.00	1.00	0.00
	4	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.20	2.32	0.3	A	85.75	343.00
2	0.13	2.73	0.1	A	39.50	158.00
3	0.30	3.33	0.4	A	97.50	390.00
4	0.03	5.53	0.0	A	4.00	16.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	71.00	71.00	6.97	486.18	0.146	70.83	96.68	0.0	0.2	2.165	A
2	35.00	35.00	67.83	397.75	0.088	34.90	9.97	0.0	0.1	2.480	A
3	84.00	84.00	16.95	386.36	0.217	83.72	85.78	0.0	0.3	2.971	A
4	5.00	5.00	98.68	181.91	0.027	4.97	1.99	0.0	0.0	5.086	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	79.00	79.00	12.98	480.91	0.164	78.97	112.92	0.2	0.2	2.238	A
2	33.00	33.00	75.98	390.79	0.084	33.00	15.98	0.1	0.1	2.516	A
3	107.00	107.00	17.00	382.66	0.280	106.89	91.98	0.3	0.4	3.261	A
4	4.00	4.00	121.89	171.00	0.023	4.00	2.00	0.0	0.0	5.388	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	94.00	94.00	6.03	485.72	0.194	93.96	103.05	0.2	0.2	2.297	A
2	42.00	42.00	80.99	387.28	0.108	41.97	19.00	0.1	0.1	2.606	A
3	85.00	85.00	21.98	379.86	0.224	85.10	100.98	0.4	0.3	3.055	A
4	3.00	3.00	106.08	178.24	0.017	3.01	1.00	0.0	0.0	5.135	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99.00	99.00	5.00	487.13	0.203	98.98	130.87	0.2	0.3	2.318	A
2	48.00	48.00	97.95	377.54	0.127	47.98	6.03	0.1	0.1	2.730	A
3	114.00	114.00	18.01	383.69	0.297	113.87	127.92	0.3	0.4	3.333	A
4	4.00	4.00	131.87	166.73	0.024	3.99	0.00	0.0	0.0	5.529	A

2019, PM

Data Errors and Warnings

No errors or warnings

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	3.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2019	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

17:30 - 17:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	12.00	164.00	1.00
	2	7.00	0.00	10.00	0.00
	3	121.00	22.00	1.00	6.00
	4	1.00	0.00	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	8.00	154.00	2.00
	2	11.00	0.00	12.00	0.00
	3	98.00	18.00	2.00	0.00
	4	0.00	0.00	0.00	0.00

18:00 - 18:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	11.00	131.00	2.00
	2	10.00	0.00	7.00	0.00
	3	115.00	13.00	0.00	2.00
	4	2.00	0.00	3.00	0.00

18:15 - 18:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	18.00	131.00	4.00
	2	3.00	0.00	2.00	0.00
	3	106.00	17.00	0.00	2.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.37	2.95	0.6	A	159.50	638.00
2	0.07	2.82	0.1	A	15.50	62.00
3	0.37	3.57	0.6	A	130.75	523.00
4	0.03	5.65	0.0	A	1.50	6.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	177.00	177.00	22.91	480.89	0.368	176.42	128.49	0.0	0.6	2.951	A
2	17.00	17.00	165.46	337.17	0.050	16.95	33.87	0.0	0.1	2.810	A
3	150.00	150.00	7.97	401.33	0.374	149.41	174.43	0.0	0.6	3.566	A
4	1.00	1.00	150.41	160.23	0.006	0.99	6.97	0.0	0.0	5.651	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	164.00	164.00	20.02	482.80	0.340	164.06	109.12	0.6	0.5	2.825	A
2	23.00	23.00	158.05	342.22	0.067	22.98	26.04	0.1	0.1	2.818	A
3	118.00	118.00	12.98	398.18	0.296	118.17	168.04	0.6	0.4	3.215	A
4	0.00	0.00	129.13	169.59	0.000	0.01	2.02	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	144.00	144.00	16.01	485.89	0.296	144.09	126.92	0.5	0.4	2.633	A
2	17.00	17.00	136.09	357.09	0.048	17.02	24.01	0.1	0.1	2.648	A
3	130.00	130.00	12.01	398.57	0.326	129.94	141.11	0.4	0.5	3.350	A
4	5.00	5.00	137.95	165.68	0.030	4.97	3.99	0.0	0.0	5.600	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	153.00	153.00	17.00	485.70	0.315	152.96	109.07	0.4	0.5	2.704	A
2	5.00	5.00	135.00	357.81	0.014	5.04	34.96	0.1	0.0	2.550	A
3	125.00	125.00	7.01	401.75	0.311	125.03	133.03	0.5	0.5	3.254	A
4	0.00	0.00	126.05	170.90	0.000	0.03	5.99	0.0	0.0	0.000	A

2022 no dev, AM

Data Errors and Warnings

No errors or warnings

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	2.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2022 no dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		1	2	3	4
From	1	0.00	6.00	68.00	1.00
	2	16.00	1.00	20.00	0.00
	3	85.00	3.00	0.00	1.00
	4	2.00	0.00	3.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0.00	6.00	77.00	0.00
	2	18.00	0.00	17.00	0.00
	3	100.00	11.00	1.00	2.00
	4	2.00	0.00	2.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0.00	15.00	85.00	0.00
	2	23.00	0.00	21.00	0.00
	3	83.00	5.00	1.00	1.00
	4	3.00	0.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		1	2	3	4
From	1	0.00	3.00	102.00	0.00
	2	19.00	0.00	32.00	0.00
	3	116.00	3.00	1.00	0.00
	4	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.22	2.35	0.3	A	90.75	363.00
2	0.14	2.79	0.2	A	41.75	167.00
3	0.31	3.42	0.5	A	103.25	413.00
4	0.03	5.64	0.0	A	4.00	16.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	75.00	75.00	6.97	486.19	0.154	74.82	102.66	0.0	0.2	2.186	A
2	37.00	37.00	71.82	395.01	0.094	36.90	9.97	0.0	0.1	2.513	A
3	89.00	89.00	17.95	385.79	0.231	88.70	90.76	0.0	0.3	3.027	A
4	5.00	5.00	104.66	179.23	0.028	4.97	1.99	0.0	0.0	5.165	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83.00	83.00	13.97	480.17	0.173	82.97	119.91	0.2	0.2	2.265	A
2	35.00	35.00	79.98	388.11	0.090	35.00	16.97	0.1	0.1	2.550	A
3	114.00	114.00	18.00	382.10	0.298	113.88	96.98	0.3	0.4	3.353	A
4	4.00	4.00	129.88	167.39	0.024	4.00	2.00	0.0	0.0	5.510	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	100.00	100.00	6.04	485.72	0.206	99.95	109.06	0.2	0.3	2.332	A
2	44.00	44.00	85.99	383.93	0.115	43.97	20.00	0.1	0.1	2.647	A
3	90.00	90.00	22.98	379.49	0.237	90.11	106.97	0.4	0.3	3.110	A
4	3.00	3.00	112.09	175.54	0.017	3.01	1.00	0.0	0.0	5.215	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	105.00	105.00	5.00	487.14	0.216	104.98	137.86	0.3	0.3	2.354	A
2	51.00	51.00	103.95	373.51	0.137	50.97	6.04	0.1	0.2	2.790	A
3	120.00	120.00	19.01	383.22	0.313	119.86	135.91	0.3	0.5	3.415	A
4	4.00	4.00	138.86	163.60	0.024	3.99	0.00	0.0	0.0	5.638	A

2022 with dev, AM

Data Errors and Warnings

No errors or warnings

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	3.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022 with dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		1	2	3	4
From	1	0.00	6.00	68.00	1.00
	2	16.00	1.00	30.00	0.00
	3	85.00	9.00	0.00	1.00
	4	2.00	0.00	3.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0.00	6.00	77.00	0.00
	2	18.00	0.00	27.00	0.00
	3	100.00	17.00	1.00	2.00
	4	2.00	0.00	2.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0.00	15.00	85.00	0.00
	2	23.00	0.00	31.00	0.00
	3	83.00	10.00	1.00	1.00
	4	3.00	0.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		1	2	3	4
From	1	0.00	3.00	102.00	0.00
	2	19.00	0.00	41.00	0.00
	3	116.00	8.00	1.00	0.00
	4	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.22	2.38	0.3	A	90.75	363.00
2	0.16	2.86	0.2	A	51.50	206.00
3	0.33	3.49	0.5	A	108.75	435.00
4	0.03	5.72	0.0	A	4.00	16.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	75.00	75.00	12.95	481.63	0.156	74.82	102.65	0.0	0.2	2.211	A
2	47.00	47.00	71.81	396.09	0.119	46.87	15.95	0.0	0.1	2.577	A
3	95.00	95.00	17.95	384.19	0.247	94.67	100.73	0.0	0.3	3.106	A
4	5.00	5.00	110.63	176.37	0.028	4.97	1.99	0.0	0.0	5.251	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83.00	83.00	19.97	475.60	0.175	82.97	119.90	0.2	0.2	2.292	A
2	45.00	45.00	79.97	389.43	0.116	45.00	22.97	0.1	0.1	2.614	A
3	120.00	120.00	18.00	381.03	0.315	119.87	106.98	0.3	0.5	3.444	A
4	4.00	4.00	135.87	164.52	0.024	4.00	2.00	0.0	0.0	5.608	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	100.00	100.00	11.04	481.90	0.208	99.95	109.06	0.2	0.3	2.356	A
2	54.00	54.00	85.99	385.02	0.140	53.97	25.01	0.1	0.2	2.718	A
3	95.00	95.00	22.98	378.35	0.251	95.12	116.97	0.5	0.3	3.180	A
4	3.00	3.00	117.10	173.15	0.017	3.01	1.00	0.0	0.0	5.291	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	105.00	105.00	10.00	483.33	0.217	104.98	137.85	0.3	0.3	2.378	A
2	60.00	60.00	103.95	374.13	0.160	59.97	11.04	0.2	0.2	2.864	A
3	125.00	125.00	19.01	382.29	0.327	124.85	144.91	0.3	0.5	3.494	A
4	4.00	4.00	143.86	161.21	0.025	3.99	0.00	0.0	0.0	5.724	A

2027 no dev, AM

Data Errors and Warnings

No errors or warnings

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	3.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2027 no dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		1	2	3	4
From	1	0.00	7.00	75.00	1.00
	2	17.00	1.00	22.00	0.00
	3	93.00	3.00	0.00	1.00
	4	2.00	0.00	3.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0.00	7.00	85.00	0.00
	2	20.00	0.00	19.00	0.00
	3	110.00	12.00	1.00	2.00
	4	2.00	0.00	2.00	0.00

08:00 - 08:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	16.00	93.00	0.00
	2	26.00	0.00	23.00	0.00
	3	91.00	6.00	1.00	1.00
	4	3.00	0.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	3.00	112.00	0.00
	2	21.00	0.00	35.00	0.00
	3	128.00	3.00	1.00	0.00
	4	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.24	2.42	0.3	A	99.75	399.00
2	0.15	2.90	0.2	A	46.00	184.00
3	0.35	3.59	0.5	A	113.25	453.00
4	0.03	5.87	0.0	A	4.00	16.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83.00	83.00	6.97	486.15	0.171	82.79	111.62	0.0	0.2	2.230	A
2	40.00	40.00	78.79	390.39	0.102	39.89	10.97	0.0	0.1	2.568	A
3	97.00	97.00	18.95	385.24	0.252	96.66	99.73	0.0	0.3	3.116	A
4	5.00	5.00	113.62	175.21	0.029	4.97	1.99	0.0	0.0	5.286	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	92.00	92.00	14.97	479.40	0.192	91.97	131.88	0.2	0.2	2.322	A
2	39.00	39.00	87.97	382.74	0.102	39.00	18.97	0.1	0.1	2.619	A
3	125.00	125.00	20.00	381.06	0.328	124.85	106.97	0.3	0.5	3.511	A
4	4.00	4.00	142.85	161.54	0.025	4.00	2.00	0.0	0.0	5.712	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	109.00	109.00	7.04	484.97	0.225	108.95	120.07	0.2	0.3	2.393	A
2	49.00	49.00	93.99	378.45	0.129	48.97	22.00	0.1	0.1	2.731	A
3	99.00	99.00	25.98	377.76	0.262	99.13	116.97	0.5	0.4	3.230	A
4	3.00	3.00	124.10	170.13	0.018	3.01	1.00	0.0	0.0	5.385	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	115.00	115.00	5.00	487.16	0.236	114.98	151.83	0.3	0.3	2.417	A
2	56.00	56.00	113.94	366.73	0.153	55.97	6.04	0.1	0.2	2.895	A
3	132.00	132.00	21.01	382.24	0.345	131.83	148.90	0.4	0.5	3.592	A
4	4.00	4.00	152.84	157.33	0.025	3.99	0.00	0.0	0.0	5.868	A

2027 with dev, AM

Data Errors and Warnings

No errors or warnings

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	3.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2027 with dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		1	2	3	4
From	1	0.00	7.00	75.00	1.00
	2	17.00	1.00	32.00	0.00
	3	93.00	9.00	0.00	1.00
	4	2.00	0.00	3.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0.00	7.00	85.00	0.00
	2	20.00	0.00	29.00	0.00
	3	110.00	18.00	1.00	2.00
	4	2.00	0.00	2.00	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
		1	2	3	4
From	1	0.00	16.00	93.00	0.00
	2	26.00	0.00	33.00	0.00
	3	91.00	11.00	1.00	1.00
	4	3.00	0.00	0.00	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
		1	2	3	4
From	1	0.00	3.00	112.00	0.00
	2	21.00	0.00	44.00	0.00
	3	128.00	8.00	1.00	0.00
	4	3.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.24	2.44	0.3	A	99.75	399.00
2	0.18	2.98	0.2	A	55.75	223.00
3	0.36	3.68	0.6	A	118.75	475.00
4	0.03	5.96	0.0	A	4.00	16.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83.00	83.00	12.95	481.60	0.172	82.79	111.61	0.0	0.2	2.255	A
2	50.00	50.00	78.79	391.37	0.128	49.85	16.95	0.0	0.1	2.633	A
3	103.00	103.00	18.94	383.76	0.268	102.63	109.70	0.0	0.4	3.197	A
4	5.00	5.00	119.59	172.35	0.029	4.97	1.99	0.0	0.0	5.377	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	92.00	92.00	20.96	474.83	0.194	91.97	131.88	0.2	0.2	2.350	A
2	49.00	49.00	87.97	383.93	0.128	49.00	24.96	0.1	0.1	2.686	A
3	131.00	131.00	20.00	380.08	0.345	130.84	116.97	0.4	0.5	3.609	A
4	4.00	4.00	148.84	158.67	0.025	4.00	2.00	0.0	0.0	5.818	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	109.00	109.00	12.04	481.15	0.227	108.95	120.08	0.2	0.3	2.417	A
2	59.00	59.00	93.99	379.46	0.155	58.96	27.01	0.1	0.2	2.807	A
3	104.00	104.00	25.98	376.72	0.276	104.14	126.97	0.5	0.4	3.305	A
4	3.00	3.00	129.11	167.73	0.018	3.01	1.00	0.0	0.0	5.463	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	115.00	115.00	10.00	483.34	0.238	114.98	151.82	0.3	0.3	2.442	A
2	65.00	65.00	113.94	367.30	0.177	64.97	11.04	0.2	0.2	2.976	A
3	137.00	137.00	21.01	381.38	0.359	136.83	157.90	0.4	0.6	3.678	A
4	4.00	4.00	157.83	154.94	0.026	3.99	0.00	0.0	0.0	5.961	A

2037 no dev, AM

Data Errors and Warnings

No errors or warnings

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	3.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2037 no dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		1	2	3	4
From	1	0.00	8.00	81.00	1.00
	2	19.00	1.00	24.00	0.00
	3	102.00	4.00	0.00	1.00
	4	3.00	0.00	4.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0.00	8.00	93.00	0.00
	2	22.00	0.00	20.00	0.00
	3	120.00	13.00	1.00	3.00
	4	3.00	0.00	3.00	0.00

08:00 - 08:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	18.00	102.00	0.00
	2	28.00	0.00	25.00	0.00
	3	99.00	6.00	1.00	1.00
	4	4.00	0.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	4.00	122.00	0.00
	2	23.00	0.00	38.00	0.00
	3	140.00	4.00	1.00	0.00
	4	4.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.26	2.50	0.3	A	109.25	437.00
2	0.17	3.01	0.2	A	50.00	200.00
3	0.38	3.81	0.6	A	124.00	496.00
4	0.04	6.18	0.0	A	5.50	22.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	90.00	90.00	8.96	484.67	0.186	89.77	123.56	0.0	0.2	2.278	A
2	44.00	44.00	85.77	385.62	0.114	43.87	12.96	0.0	0.1	2.633	A
3	107.00	107.00	20.94	383.84	0.279	106.62	108.70	0.0	0.4	3.242	A
4	7.00	7.00	125.56	169.83	0.041	6.96	1.99	0.0	0.0	5.524	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	101.00	101.00	16.96	477.93	0.211	100.96	144.86	0.2	0.3	2.387	A
2	42.00	42.00	96.96	376.59	0.112	42.00	20.96	0.1	0.1	2.691	A
3	137.00	137.00	21.99	380.10	0.360	136.83	116.97	0.4	0.6	3.698	A
4	6.00	6.00	155.83	155.69	0.039	6.00	2.99	0.0	0.0	6.011	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	120.00	120.00	7.05	484.94	0.247	119.94	131.10	0.3	0.3	2.465	A
2	53.00	53.00	102.99	372.42	0.142	52.96	24.00	0.1	0.2	2.816	A
3	107.00	107.00	27.98	376.82	0.284	107.16	127.97	0.6	0.4	3.338	A
4	4.00	4.00	134.13	165.63	0.024	4.02	1.01	0.0	0.0	5.568	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	126.00	126.00	6.00	486.37	0.259	125.98	166.79	0.3	0.3	2.496	A
2	61.00	61.00	123.93	359.95	0.169	60.96	8.04	0.2	0.2	3.009	A
3	145.00	145.00	23.01	381.05	0.381	144.79	161.89	0.4	0.6	3.805	A
4	5.00	5.00	167.80	150.60	0.033	4.99	0.00	0.0	0.0	6.180	A

2037 with dev, AM

Data Errors and Warnings

No errors or warnings

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	3.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2037 with dev	AM	DIRECT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

		To			
		1	2	3	4
From	1	0.00	8.00	81.00	1.00
	2	19.00	1.00	34.00	0.00
	3	102.00	10.00	0.00	1.00
	4	3.00	0.00	4.00	0.00

Demand (Veh/TS)

07:45 - 08:00

		To			
		1	2	3	4
From	1	0.00	8.00	93.00	0.00
	2	22.00	0.00	30.00	0.00
	3	120.00	19.00	1.00	3.00
	4	3.00	0.00	3.00	0.00

08:00 - 08:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	18.00	102.00	0.00
	2	28.00	0.00	35.00	0.00
	3	99.00	11.00	1.00	1.00
	4	4.00	0.00	0.00	0.00

08:15 - 08:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	4.00	122.00	0.00
	2	23.00	0.00	47.00	0.00
	3	140.00	9.00	1.00	0.00
	4	4.00	0.00	1.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	3	10	67	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.26	2.52	0.4	A	109.25	437.00
2	0.19	3.10	0.2	A	59.75	239.00
3	0.39	3.90	0.6	A	129.50	518.00
4	0.04	6.28	0.0	A	5.50	22.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	90.00	90.00	14.94	480.11	0.187	89.77	123.55	0.0	0.2	2.304	A
2	54.00	54.00	85.77	386.54	0.140	53.84	18.94	0.0	0.2	2.703	A
3	113.00	113.00	20.94	382.51	0.295	112.58	118.67	0.0	0.4	3.330	A
4	7.00	7.00	131.53	166.97	0.042	6.96	1.99	0.0	0.0	5.623	A

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	101.00	101.00	22.96	473.36	0.213	100.96	144.86	0.2	0.3	2.416	A
2	52.00	52.00	96.96	377.71	0.138	52.00	26.96	0.2	0.2	2.762	A
3	143.00	143.00	21.99	379.19	0.377	142.82	126.97	0.4	0.6	3.802	A
4	6.00	6.00	161.82	152.82	0.039	6.00	2.99	0.0	0.0	6.129	A

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	120.00	120.00	12.06	481.13	0.249	119.94	131.10	0.3	0.3	2.491	A
2	63.00	63.00	102.99	373.35	0.169	62.96	29.01	0.2	0.2	2.899	A
3	112.00	112.00	27.98	375.85	0.298	112.17	137.97	0.6	0.4	3.414	A
4	4.00	4.00	139.14	163.23	0.025	4.02	1.01	0.0	0.0	5.654	A

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	126.00	126.00	11.00	482.56	0.261	125.98	166.78	0.3	0.4	2.523	A
2	70.00	70.00	123.93	360.47	0.194	69.96	13.04	0.2	0.2	3.097	A
3	150.00	150.00	23.01	380.27	0.394	149.78	170.88	0.4	0.6	3.902	A
4	5.00	5.00	172.79	148.21	0.034	4.99	0.00	0.0	0.0	6.283	A

2022 no dev, PM

Data Errors and Warnings

No errors or warnings

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	3.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D9	2022 no dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

17:30 - 17:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	13.00	174.00	1.00
	2	7.00	0.00	11.00	0.00
	3	128.00	23.00	1.00	6.00
	4	1.00	0.00	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	8.00	163.00	2.00
	2	12.00	0.00	13.00	0.00
	3	104.00	19.00	2.00	0.00
	4	0.00	0.00	0.00	0.00

18:00 - 18:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	12.00	139.00	2.00
	2	11.00	0.00	7.00	0.00
	3	122.00	14.00	0.00	2.00
	4	2.00	0.00	3.00	0.00

18:15 - 18:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	19.00	139.00	4.00
	2	3.00	0.00	2.00	0.00
	3	112.00	18.00	0.00	2.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.39	3.07	0.6	A	169.00	676.00
2	0.07	2.89	0.1	A	16.50	66.00
3	0.39	3.68	0.6	A	138.25	553.00
4	0.03	5.78	0.0	A	1.50	6.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	188.00	188.00	23.90	480.20	0.392	187.36	135.45	0.0	0.6	3.067	A
2	18.00	18.00	175.40	330.44	0.054	17.94	35.86	0.0	0.1	2.879	A
3	158.00	158.00	7.97	401.32	0.394	157.36	185.37	0.0	0.6	3.680	A
4	1.00	1.00	158.36	156.74	0.006	0.99	6.97	0.0	0.0	5.778	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	173.00	173.00	21.02	482.07	0.359	173.08	116.13	0.6	0.6	2.915	A
2	25.00	25.00	167.06	336.12	0.074	24.98	27.04	0.1	0.1	2.892	A
3	125.00	125.00	13.98	397.57	0.314	125.18	178.05	0.6	0.5	3.305	A
4	0.00	0.00	137.14	166.08	0.000	0.01	2.02	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	153.00	153.00	17.00	485.20	0.315	153.10	134.91	0.6	0.5	2.712	A
2	18.00	18.00	144.10	351.67	0.051	18.03	26.01	0.1	0.1	2.699	A
3	138.00	138.00	13.01	397.96	0.347	137.93	149.12	0.5	0.5	3.461	A
4	5.00	5.00	146.95	161.73	0.031	4.97	3.99	0.0	0.0	5.739	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	162.00	162.00	18.01	484.98	0.334	161.96	115.09	0.5	0.5	2.785	A
2	5.00	5.00	143.00	352.40	0.014	5.04	36.96	0.1	0.0	2.592	A
3	132.00	132.00	7.02	401.75	0.329	132.04	141.03	0.5	0.5	3.339	A
4	0.00	0.00	133.06	167.82	0.000	0.03	5.99	0.0	0.0	0.000	A

2022 with dev, PM

Data Errors and Warnings

No errors or warnings

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	3.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2022 with dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:30 - 17:45

		To			
		1	2	3	4
From	1	0.00	13.00	174.00	1.00
	2	7.00	0.00	17.00	0.00
	3	128.00	33.00	1.00	6.00
	4	1.00	0.00	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

		To			
		1	2	3	4
From	1	0.00	8.00	163.00	2.00
	2	12.00	0.00	19.00	0.00
	3	104.00	29.00	2.00	0.00
	4	0.00	0.00	0.00	0.00

18:00 - 18:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	12.00	139.00	2.00
	2	11.00	0.00	13.00	0.00
	3	122.00	24.00	0.00	2.00
	4	2.00	0.00	3.00	0.00

18:15 - 18:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	19.00	139.00	4.00
	2	3.00	0.00	8.00	0.00
	3	112.00	27.00	0.00	2.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.40	3.14	0.7	A	169.00	676.00
2	0.09	2.95	0.1	A	22.50	90.00
3	0.42	3.83	0.7	A	148.00	592.00
4	0.03	5.94	0.0	A	1.50	6.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	188.00	188.00	33.86	473.22	0.397	187.34	135.43	0.0	0.7	3.142	A
2	24.00	24.00	175.39	330.45	0.073	23.92	45.81	0.0	0.1	2.936	A
3	168.00	168.00	7.97	401.51	0.418	167.29	191.33	0.0	0.7	3.831	A
4	1.00	1.00	168.29	152.42	0.007	0.99	6.97	0.0	0.0	5.943	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	173.00	173.00	31.03	475.05	0.364	173.08	116.14	0.7	0.6	2.980	A
2	31.00	31.00	167.06	336.12	0.092	30.98	37.05	0.1	0.1	2.949	A
3	135.00	135.00	13.98	397.81	0.339	135.20	184.05	0.7	0.5	3.431	A
4	0.00	0.00	147.16	161.72	0.000	0.01	2.02	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	153.00	153.00	27.00	478.19	0.320	153.10	134.91	0.6	0.5	2.771	A
2	24.00	24.00	144.10	351.67	0.068	24.03	36.01	0.1	0.1	2.748	A
3	148.00	148.00	13.01	398.19	0.372	147.93	155.12	0.5	0.6	3.596	A
4	5.00	5.00	156.94	157.38	0.032	4.97	3.99	0.0	0.0	5.903	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	162.00	162.00	27.01	478.66	0.338	161.96	115.09	0.5	0.5	2.841	A
2	11.00	11.00	143.01	352.40	0.031	11.04	45.97	0.1	0.0	2.636	A
3	141.00	141.00	7.02	401.96	0.351	141.05	147.03	0.6	0.5	3.451	A
4	0.00	0.00	142.07	163.90	0.000	0.03	5.99	0.0	0.0	0.000	A

2027 no dev, PM

Data Errors and Warnings

No errors or warnings

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	3.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D11	2027 no dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

17:30 - 17:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	14.00	191.00	1.00
	2	8.00	0.00	12.00	0.00
	3	141.00	26.00	1.00	7.00
	4	1.00	0.00	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	9.00	179.00	2.00
	2	13.00	0.00	14.00	0.00
	3	114.00	21.00	2.00	0.00
	4	0.00	0.00	0.00	0.00

18:00 - 18:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	13.00	153.00	2.00
	2	12.00	0.00	8.00	0.00
	3	134.00	15.00	0.00	2.00
	4	2.00	0.00	3.00	0.00

18:15 - 18:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	21.00	153.00	5.00
	2	3.00	0.00	2.00	0.00
	3	123.00	20.00	0.00	2.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.43	3.29	0.8	A	185.75	743.00
2	0.08	3.02	0.1	A	18.00	72.00
3	0.44	3.96	0.8	A	152.00	608.00
4	0.03	6.07	0.0	A	1.50	6.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	206.00	206.00	26.88	478.10	0.431	205.25	149.35	0.0	0.8	3.291	A
2	20.00	20.00	192.30	319.01	0.063	19.93	39.83	0.0	0.1	3.009	A
3	175.00	175.00	8.97	400.73	0.437	174.23	203.26	0.0	0.8	3.960	A
4	1.00	1.00	175.24	149.34	0.007	0.99	7.97	0.0	0.0	6.066	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	190.00	190.00	23.03	480.66	0.395	190.10	127.17	0.8	0.7	3.100	A
2	27.00	27.00	183.07	325.28	0.083	26.98	30.05	0.1	0.1	3.016	A
3	137.00	137.00	14.98	396.96	0.345	137.24	195.07	0.8	0.5	3.470	A
4	0.00	0.00	150.19	160.36	0.000	0.01	2.03	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	168.00	168.00	18.01	484.47	0.347	168.12	147.89	0.7	0.5	2.847	A
2	20.00	20.00	158.12	342.18	0.058	20.03	28.01	0.1	0.1	2.793	A
3	151.00	151.00	14.01	397.34	0.380	150.92	164.14	0.5	0.6	3.652	A
4	5.00	5.00	160.94	155.59	0.032	4.97	3.99	0.0	0.0	5.973	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	179.00	179.00	20.00	483.61	0.370	178.95	126.10	0.5	0.6	2.953	A
2	5.00	5.00	158.00	342.26	0.015	5.05	40.95	0.1	0.0	2.670	A
3	145.00	145.00	8.02	401.14	0.361	145.04	155.02	0.6	0.6	3.514	A
4	0.00	0.00	146.07	162.11	0.000	0.03	6.99	0.0	0.0	0.000	A

2027 with dev, PM

Data Errors and Warnings

No errors or warnings

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	3.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D12	2027 with dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

17:30 - 17:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	14.00	191.00	1.00
	2	8.00	0.00	18.00	0.00
	3	141.00	36.00	1.00	7.00
	4	1.00	0.00	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	9.00	179.00	2.00
	2	13.00	0.00	20.00	0.00
	3	114.00	31.00	2.00	0.00
	4	0.00	0.00	0.00	0.00

18:00 - 18:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	13.00	153.00	2.00
	2	12.00	0.00	14.00	0.00
	3	134.00	25.00	0.00	2.00
	4	2.00	0.00	3.00	0.00

18:15 - 18:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	21.00	153.00	5.00
	2	3.00	0.00	8.00	0.00
	3	123.00	29.00	0.00	2.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.44	3.37	0.8	A	185.75	743.00
2	0.10	3.08	0.1	A	24.00	96.00
3	0.46	4.14	0.8	A	161.75	647.00
4	0.03	6.25	0.0	A	1.50	6.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	206.00	206.00	36.83	471.12	0.437	205.23	149.32	0.0	0.8	3.375	A
2	26.00	26.00	192.28	319.02	0.082	25.91	49.78	0.0	0.1	3.070	A
3	185.00	185.00	8.97	400.90	0.461	184.15	209.22	0.0	0.8	4.137	A
4	1.00	1.00	185.16	145.02	0.007	0.99	7.96	0.0	0.0	6.248	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	190.00	190.00	33.04	473.64	0.401	190.10	127.18	0.8	0.7	3.177	A
2	33.00	33.00	183.07	325.27	0.101	32.98	40.06	0.1	0.1	3.078	A
3	147.00	147.00	14.98	397.18	0.370	147.26	201.07	0.8	0.6	3.606	A
4	0.00	0.00	160.21	155.99	0.000	0.01	2.03	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	168.00	168.00	28.01	477.46	0.352	168.13	147.89	0.7	0.5	2.912	A
2	26.00	26.00	158.13	342.17	0.076	26.03	38.01	0.1	0.1	2.848	A
3	161.00	161.00	14.01	397.55	0.405	160.92	170.15	0.6	0.7	3.803	A
4	5.00	5.00	170.93	151.24	0.033	4.97	3.99	0.0	0.0	6.151	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	179.00	179.00	29.01	477.28	0.375	178.95	126.10	0.5	0.6	3.016	A
2	11.00	11.00	158.00	342.26	0.032	11.05	49.96	0.1	0.0	2.719	A
3	154.00	154.00	8.02	401.33	0.384	154.05	161.03	0.7	0.6	3.642	A
4	0.00	0.00	155.08	158.19	0.000	0.03	6.99	0.0	0.0	0.000	A

2037 no dev, PM

Data Errors and Warnings

No errors or warnings

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	3.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D13	2037 no dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

17:30 - 17:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	15.00	209.00	1.00
	2	9.00	0.00	13.00	0.00
	3	154.00	28.00	1.00	8.00
	4	1.00	0.00	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	10.00	196.00	3.00
	2	14.00	0.00	15.00	0.00
	3	125.00	23.00	3.00	0.00
	4	0.00	0.00	0.00	0.00

Demand (Veh/TS)

18:00 - 18:15

		To			
		1	2	3	4
From	1	0.00	14.00	167.00	3.00
	2	13.00	0.00	9.00	0.00
	3	146.00	17.00	0.00	3.00
	4	3.00	0.00	4.00	0.00

Demand (Veh/TS)

18:15 - 18:30

		To			
		1	2	3	4
From	1	0.00	23.00	167.00	5.00
	2	4.00	0.00	3.00	0.00
	3	135.00	22.00	0.00	3.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.47	3.55	0.9	A	203.25	813.00
2	0.09	3.17	0.1	A	20.00	80.00
3	0.48	4.27	0.9	A	167.00	668.00
4	0.05	6.36	0.0	A	2.00	8.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	225.00	225.00	28.86	476.69	0.472	224.11	163.23	0.0	0.9	3.552	A
2	22.00	22.00	210.17	306.91	0.072	21.92	42.81	0.0	0.1	3.158	A
3	191.00	191.00	9.96	400.12	0.477	190.10	222.13	0.0	0.9	4.268	A
4	1.00	1.00	191.10	142.38	0.007	0.99	8.96	0.0	0.0	6.365	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	209.00	209.00	26.03	478.59	0.437	209.11	139.20	0.9	0.8	3.342	A
2	29.00	29.00	202.08	312.44	0.093	28.98	33.06	0.1	0.1	3.174	A
3	151.00	151.00	16.98	395.76	0.382	151.28	214.08	0.9	0.6	3.684	A
4	0.00	0.00	165.23	153.76	0.000	0.01	3.03	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	184.00	184.00	21.01	482.41	0.381	184.16	161.87	0.8	0.6	3.021	A
2	22.00	22.00	174.15	331.35	0.066	22.03	31.01	0.1	0.1	2.911	A
3	166.00	166.00	16.01	396.15	0.419	165.91	180.18	0.6	0.7	3.907	A
4	7.00	7.00	175.93	149.01	0.047	6.95	5.99	0.0	0.0	6.334	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	195.00	195.00	22.01	482.18	0.404	194.94	139.12	0.6	0.7	3.133	A
2	7.00	7.00	172.00	332.78	0.021	7.05	44.95	0.1	0.0	2.762	A
3	160.00	160.00	9.02	400.54	0.399	160.05	170.03	0.7	0.7	3.742	A
4	0.00	0.00	161.08	155.53	0.000	0.05	7.99	0.0	0.0	0.000	A

2037 with dev, PM

Data Errors and Warnings

No errors or warnings

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	3.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D14	2037 with dev	PM	DIRECT	17:30	18:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT	✓	100.000
2		DIRECT	✓	100.000
3		DIRECT	✓	100.000
4		DIRECT	✓	100.000

Origin-Destination Data

17:30 - 17:45

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	15.00	209.00	1.00
	2	9.00	0.00	19.00	0.00
	3	154.00	38.00	1.00	8.00
	4	1.00	0.00	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	10.00	196.00	3.00
	2	14.00	0.00	21.00	0.00
	3	125.00	33.00	3.00	0.00
	4	0.00	0.00	0.00	0.00

18:00 - 18:15

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	14.00	167.00	3.00
	2	13.00	0.00	15.00	0.00
	3	146.00	27.00	0.00	3.00
	4	3.00	0.00	4.00	0.00

18:15 - 18:30

Demand (Veh/TS)

		To			
		1	2	3	4
From	1	0.00	23.00	167.00	5.00
	2	4.00	0.00	9.00	0.00
	3	135.00	31.00	0.00	3.00
	4	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	2	0
	2	0	0	0	0
	3	1	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 LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1	0.48	3.65	0.9	A	203.25	813.00
2	0.11	3.24	0.1	A	26.00	104.00
3	0.50	4.47	1.0	A	176.75	707.00
4	0.05	6.57	0.1	A	2.00	8.00

Main Results for each time segment

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	225.00	225.00	38.81	469.72	0.479	224.09	163.20	0.0	0.9	3.650	A
2	28.00	28.00	210.14	306.92	0.091	27.90	52.75	0.0	0.1	3.225	A
3	201.00	201.00	9.96	400.28	0.502	200.00	228.08	0.0	1.0	4.471	A
4	1.00	1.00	201.01	138.06	0.007	0.99	8.96	0.0	0.0	6.565	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	209.00	209.00	36.04	471.58	0.443	209.11	139.22	0.9	0.8	3.429	A
2	35.00	35.00	202.08	312.43	0.112	34.97	43.07	0.1	0.1	3.243	A
3	161.00	161.00	16.97	395.96	0.407	161.31	220.08	1.0	0.7	3.840	A
4	0.00	0.00	175.25	149.40	0.000	0.01	3.03	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	184.00	184.00	31.00	475.39	0.387	184.17	161.86	0.8	0.6	3.093	A
2	28.00	28.00	174.16	331.35	0.085	28.03	41.01	0.1	0.1	2.966	A
3	176.00	176.00	16.01	396.34	0.444	175.90	186.18	0.7	0.8	4.081	A
4	7.00	7.00	185.92	144.66	0.048	6.95	5.99	0.0	0.1	6.534	A

18:15 - 18:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	195.00	195.00	31.02	475.86	0.410	194.94	139.12	0.6	0.7	3.203	A
2	13.00	13.00	172.01	332.78	0.039	13.05	53.95	0.1	0.0	2.816	A
3	169.00	169.00	9.02	400.72	0.422	169.06	176.04	0.8	0.7	3.887	A
4	0.00	0.00	170.09	151.60	0.000	0.05	7.99	0.1	0.0	0.000	A

APPENDIX F – TRANSYT RESULTS

TRANSYT 15

Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 16:35:08

A5 - 2019 am
D5 - 2019 am*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

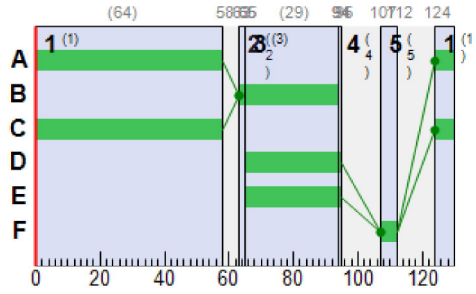
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	58	64	1	7
	2	✓	2	B	63	65	2	1	1
	3	✓	3	B,E,D	65	94	29	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

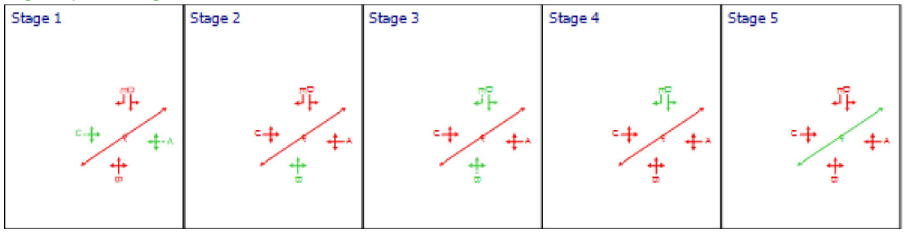
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	58	64
2	1		1	C	124	58	64
5	1		1	D	65	95	30
7	1		1	B	63	94	31
9	1		1	E	65	95	30

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	46	94	313			21.67	9.45	54.36	26.75	2.43	29.18
	2	1	106	-15	855			94.88	59.12	339.93	319.98	14.21	334.19
	3	1	0	Unrestricted	875			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	377			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	15	504	44			39.22	1.94	24.78	6.81	0.43	7.23
	6	1	0	Unrestricted	25			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	34	161	92			42.75	3.37	16.27	15.52	0.95	16.47

	8	1	0	Unrestricted	16			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	15	513	15			40.62	1.47	21.01	2.40	0.15	2.55
	10	1	5	1822	59			0.03	0.00	0.01	0.01	0.00	0.01
07:30-07:45	1	1	30	196	228	1501	64	20.19	4.88	28.06	18.16	1.66	19.82
	2	1	106	-15	964	1816	64	73.76	44.07	253.38	280.46	15.07	295.53
	3	1	0	Unrestricted	957	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	264	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	5	1612	24	1914	30	38.45	0.67	8.54	3.64	0.23	3.87
	6	1	0	Unrestricted	12	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	31	190	84	1100	31	42.45	2.52	12.14	14.06	0.86	14.93
	8	1	0	Unrestricted	11	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	0	723	30	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	1	7269	24	1965	130	0.01	0.00	0.00	0.00	0.00	0.00
07:45-08:00	1	1	37	141	312	1674	64	21.24	6.96	40.00	26.13	2.38	28.51
	2	1	105	-15	964	1828	64	131.30	59.12	339.93	499.27	19.08	518.35
	3	1	0	Unrestricted	967	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	356	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	9	927	40	1914	30	38.90	1.13	14.39	6.14	0.39	6.52
	6	1	0	Unrestricted	16	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	30	204	76	1044	31	42.36	2.28	10.99	12.70	0.78	13.48
	8	1	0	Unrestricted	20	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	9	878	16	729	30	39.72	1.46	20.90	2.51	0.15	2.66
	10	1	3	3058	56	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
08:00-08:15	1	1	38	139	320	1703	64	21.32	7.22	41.54	26.91	2.45	29.36
	2	1	89	1	804	1799	64	124.16	48.90	281.19	393.77	15.44	409.20
	3	1	0	Unrestricted	864	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	392	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	10	834	44	1914	30	39.04	1.24	15.84	6.78	0.43	7.20
	6	1	0	Unrestricted	16	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	34	161	96	1131	31	43.48	2.94	14.19	16.46	1.00	17.47
	8	1	0	Unrestricted	12	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	12	665	20	713	30	40.38	1.47	20.94	3.19	0.19	3.38
	10	1	3	2663	64	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
08:15-08:30	1	1	46	94	392	1689	64	23.16	9.45	54.36	35.81	3.21	39.02
	2	1	76	18	688	1809	64	39.22	21.41	123.08	106.43	7.26	113.69
	3	1	0	Unrestricted	712	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	496	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	15	504	68	1914	30	39.80	1.94	24.78	10.67	0.67	11.34
	6	1	0	Unrestricted	56	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	32	181	112	1421	31	42.63	3.37	16.27	18.83	1.16	19.99
	8	1	0	Unrestricted	20	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	15	513	24	686	30	41.43	1.47	21.01	3.92	0.23	4.16
	10	1	5	1822	92	1965	130	0.04	0.00	0.01	0.02	0.00	0.02

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
5	15/04/2019 16:34:53	15/04/2019 16:34:59	07:30	130	389.63	26.16	106.16	2/1	1	8	2/1	10/1	2/1	
5	15/04/2019 16:34:53	15/04/2019 16:34:59	07:30	130	334.15	22.28	106.16	2/1	1	8	2/1	10/1	2/1	
5	15/04/2019 16:34:53	15/04/2019 16:34:59	07:45	130	569.53	38.50	105.50	2/1	1	8	2/1	10/1	2/1	
5	15/04/2019 16:34:53	15/04/2019 16:34:59	08:00	130	466.62	31.49	89.39	2/1	0	0	2/1	10/1	2/1	✓
5	15/04/2019 16:34:53	15/04/2019 16:34:59	08:15	130	188.22	12.37	76.07	2/1	0	0	2/1	10/1	2/1	✓

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	106	-15	2670		35.27	371.47	18.16	389.63
07:30-07:45	106	-15	2568	869	31.23	316.32	17.83	334.15
07:45-08:00	105	-15	2822	869	49.12	546.75	22.77	569.53
08:00-08:15	89	0	2632	869	43.07	447.11	19.51	466.62
08:15-08:30	76	0	2660	869	16.74	175.69	12.53	188.22

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
		R403																	

1	1	Clebridge		1	A	313			0.00	46	94	33.66	21.67	61.83	9.45	100	100	0.00	29.18
2	1	R403 Clane		1	C	855 <			0.00	106	-15	106.91	94.88	137.17	59.12 +	100	100	0.00	334.19
3	1					875			20.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					377			26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	44			29.00	15	504	44.62	39.22	77.34	1.94	100	100	0.00	7.23
6	1					25			130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	92			0.00	34	161	57.07	42.75	82.53	3.37	100	100	0.00	16.47
8	1					16			130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	15			31.00	15	513	45.42	40.62	77.30	1.47	100	100	0.00	2.55
10	1	Capdoo Park Main				59			130.00	5	1822	8.49	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	526.02	43.70	26.16	371.47	18.16	0.00	389.63
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	526.02	43.70	26.16	371.47	18.16	0.00	389.63

Time segment: 07:30-07:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	1	R403 Clebridge		1	A	228	1501	64	0.00	30	196	32.19	20.19	58.23	4.88	100	100	0.00	19.82
2	1	R403 Clane		1	C	964 <	1816	64	0.00	106	-15	85.76	73.76	132.38	44.07 +	100	100	0.00	295.53
3	1					957	Unrestricted	130	19.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					264	Unrestricted	130	26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	24	1914	30	29.00	5	1612	43.85	38.45	76.18	0.67	100	100	0.00	3.87
6	1					12	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	84	1100	31	0.00	31	190	56.76	42.45	82.09	2.52	100	100	0.00	14.93
8	1					11	Unrestricted	130	130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	0	723	30	31.00	0	Unrestricted	0.00	0.00	0.00	0.00	100	100	0.00	0.00
10	1	Capdoo Park Main				24	1965	130	130.00	1	7269	8.46	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	509.11	39.25	12.97	22.28	316.32	17.83	0.00	334.15
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	509.11	39.25	12.97	22.28	316.32	17.83	0.00	334.15

Time segment: 07:45-08:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	1	R403 Clebridge		1	A	312	1674	64	0.00	37	141	33.23	21.24	60.72	6.96	100	100	0.00	28.51
2	1	R403 Clane		1	C	964 <	1828	64	0.00	105	-15	141.41	131.30	166.50	59.12 +	100	100	0.00	518.35
3	1					967	Unrestricted	130	18.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					356	Unrestricted	130	24.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	40	1914	30	28.00	9	927	44.30	38.90	77.03	1.13	100	100	0.00	6.52
6	1					16	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	76	1044	31	0.00	30	204	56.70	42.36	82.08	2.28	100	100	0.00	13.48
8	1					20	Unrestricted	130	126.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	16	729	30	28.00	9	878	44.52	39.72	76.96	1.46	100	100	0.00	2.66
10	1	Capdoo Park Main				56	1965	130	130.00	3	3058	8.48	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	554.37	56.48	9.82	38.50	546.75	22.77	0.00	569.53
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	554.37	56.48	9.82	38.50	546.75	22.77	0.00	569.53

Time segment: 08:00-08:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	320	1703	64	0.00	38	139	33.31	21.32	61.08	7.22	100	100	0.00	29.36
2	1	R403 Clane		1	C	804 <	1799	64	0.00	89	1	143.56	124.16	153.13	48.90 +	100	100	0.00	409.20
3	1					864	Unrestricted	130	18.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					392	Unrestricted	130	20.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	44	1914	30	28.00	10	834	44.44	39.04	77.11	1.24	100	100	0.00	7.20
6	1					16	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	96	1131	31	0.00	34	161	57.76	43.48	83.29	2.94	100	100	0.00	17.47
8	1					12	Unrestricted	130	130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	20	713	30	27.00	12	665	45.17	40.38	77.23	1.47	100	100	0.00	3.38
10	1	Capdoo Park Main				64	1965	130	0.00	3	2663	8.48	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	519.86	50.47	10.30	31.49	447.11	19.51	0.00	466.62
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	519.86	50.47	10.30	31.49	447.11	19.51	0.00	466.62

Time segment: 08:15-08:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	392	1689	64	0.00	46	94	35.15	23.16	65.41	9.45	100	100	0.00	39.02
2	1	R403 Clane		1	C	688 <	1809	64	0.00	76	18	45.41	39.22	84.14	21.41 +	100	100	0.00	113.69
3	1					712	Unrestricted	130	20.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					496	Unrestricted	130	16.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	68	1914	30	0.00	15	504	45.20	39.80	78.08	1.94	100	100	0.00	11.34
6	1					56	Unrestricted	130	71.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	112	1421	31	0.00	32	181	56.96	42.63	82.51	3.37	100	100	0.00	19.99
8	1					20	Unrestricted	130	121.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	24	686	30	26.00	15	513	46.22	41.43	77.59	1.47	100	100	0.00	4.16
10	1	Capdoo Park Main				92	1965	130	0.00	5	1822	8.50	0.04	0.00	0.00	100	100	0.00	0.02

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	520.75	28.62	18.20	12.37	175.69	12.53	0.00	188.22
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	520.75	28.62	18.20	12.37	175.69	12.53	0.00	188.22

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 16:36:21

A6 - 2019 pm
D6 - 2019 pm*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

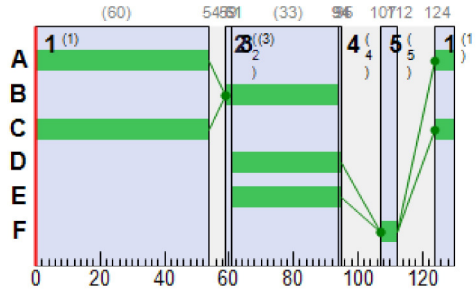
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	54	60	1	7
	2	✓	2	B	59	61	2	1	1
	3	✓	3	B,E,D	61	94	33	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

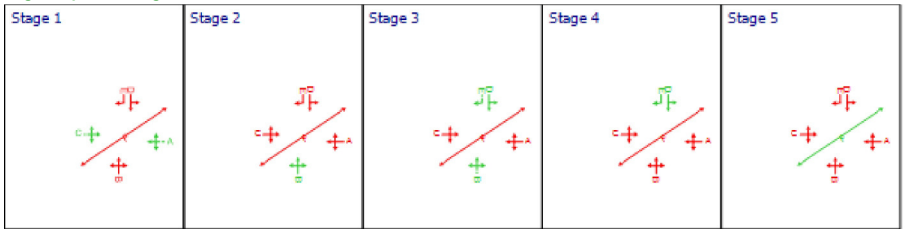
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	54	60
2	1		1	C	124	54	60
5	1		1	D	61	95	34
7	1		1	B	59	94	35
9	1		1	E	61	95	34

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	119	-24	880			292.04	129.30	743.50	1013.71	22.40	1036.10
	2	1	75	20	452			34.77	16.61	95.50	61.99	4.72	66.71
	3	1	0	Unrestricted	397			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	765			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	6	1349	20			35.40	0.86	10.93	2.79	0.18	2.98
	6	1	0	Unrestricted	77			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	15	499	42			35.50	1.52	7.34	5.88	0.39	6.27

	8	1	0	Unrestricted	66			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	10	794	11			36.22	1.46	20.91	1.57	0.10	1.67
	10	1	3	3301	31			0.02	0.00	0.00	0.00	0.00	0.00
17:30-17:45	1	1	117	-23	912	1663	60	104.46	46.86	269.46	375.78	15.49	391.27
	2	1	68	33	412	1300	60	32.52	12.11	69.64	52.85	4.13	56.98
	3	1	0	Unrestricted	360	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	760	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	5	1832	24	1914	34	35.37	0.64	8.19	3.35	0.22	3.57
	6	1	0	Unrestricted	85	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	15	499	56	1345	35	36.09	1.52	7.34	7.97	0.52	8.49
	8	1	0	Unrestricted	75	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	4	2111	8	730	34	35.66	1.46	20.85	1.13	0.07	1.20
	10	1	2	5427	32	1965	130	0.02	0.00	0.00	0.00	0.00	0.00
17:45-18:00	1	1	115	-22	904	1674	60	231.80	78.60	451.95	826.54	22.05	848.59
	2	1	72	24	436	1283	60	35.20	13.49	77.55	60.53	4.57	65.10
	3	1	0	Unrestricted	372	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	776	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	6	1349	32	1914	34	35.59	0.86	10.93	4.49	0.29	4.79
	6	1	0	Unrestricted	86	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	8	997	40	1761	35	35.13	1.07	5.16	5.54	0.37	5.91
	8	1	0	Unrestricted	80	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	10	794	20	738	34	36.81	1.46	20.91	2.90	0.19	3.09
	10	1	3	3301	52	1965	130	0.02	0.00	0.00	0.01	0.00	0.01
18:00-18:15	1	1	119	-24	940	1682	60	351.84	112.44	646.51	1304.55	26.65	1331.19
	2	1	72	25	432	1276	60	35.36	13.28	76.37	60.26	4.54	64.79
	3	1	0	Unrestricted	380	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	771	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	3	2799	16	1914	34	35.19	0.42	5.40	2.22	0.14	2.37
	6	1	0	Unrestricted	65	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	8	1019	28	1257	35	35.05	0.74	3.58	3.87	0.25	4.13
	8	1	0	Unrestricted	61	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	6	1403	12	744	34	35.93	1.46	20.86	1.70	0.11	1.81
	10	1	1	6216	28	1965	130	0.01	0.00	0.00	0.00	0.00	0.00
18:15-18:30	1	1	99	-9	764	1651	60	513.67	129.30	743.50	1547.96	25.40	1573.36
	2	1	75	20	528	1500	60	35.68	16.61	95.50	74.31	5.64	79.95
	3	1	0	Unrestricted	476	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	752	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	2	5697	8	1914	34	35.13	0.21	2.70	1.11	0.07	1.18
	6	1	0	Unrestricted	72	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	10	785	44	1563	35	35.36	1.18	5.68	6.14	0.40	6.54
	8	1	0	Unrestricted	48	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	2	4358	4	736	34	35.26	0.11	1.51	0.56	0.04	0.59
	10	1	1	14638	12	1965	130	0.01	0.00	0.00	0.00	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
6	15/04/2019 16:36:02	15/04/2019 16:36:07	17:30	130	1113.73	76.47	119.07	1/1	1	8	1/1	10/1	1/1	
6	15/04/2019 16:36:02	15/04/2019 16:36:07	17:30	130	461.51	31.06	116.85	1/1	1	8	1/1	10/1	1/1	
6	15/04/2019 16:36:02	15/04/2019 16:36:07	17:45	130	927.48	63.38	115.07	1/1	1	8	1/1	10/1	1/1	
6	15/04/2019 16:36:02	15/04/2019 16:36:07	18:00	130	1404.29	96.66	119.07	1/1	1	8	1/1	10/1	1/1	
6	15/04/2019 16:36:02	15/04/2019 16:36:07	18:15	130	1661.63	114.79	98.65	1/1	1	8	1/1	10/1	1/1	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	119	-24	2741		100.45	1085.94	27.79	1113.73
17:30-17:45	117	-23	2724	873	41.04	441.08	20.44	461.51
17:45-18:00	115	-22	2798	873	81.56	900.01	27.47	927.48
18:00-18:15	119	-24	2733	873	127.30	1372.60	31.69	1404.29
18:15-18:30	99	-9	2708	873	152.61	1630.07	31.56	1661.63

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
		R403																	

1	1	Clebridge		1	A	880 <			0.00	119	-24	304.28	292.04	227.94	129.30 +	100	100	0.00	1036.10
2	1	R403 Clane		1	C	452			0.00	75	20	46.63	34.77	83.32	16.61	100	100	0.00	66.71
3	1					397			40.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					765			27.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	20			34.00	6	1349	40.80	35.40	72.84	0.86	100	100	0.00	2.98
6	1					77			67.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	42			34.00	15	499	49.81	35.50	73.49	1.52	100	100	0.00	6.27
8	1					66			75.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	11			34.00	10	794	41.02	36.22	73.62	1.46	100	100	0.00	1.67
10	1	Capdoo Park Main				31			130.00	3	3301	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	536.19	94.39	76.47	1085.94	27.79	0.00	1113.73
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	536.19	94.39	76.47	1085.94	27.79	0.00	1113.73

Time segment: 17:30-17:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	912 <	1663	60	0.00	117	-23	116.46	104.46	158.29	46.86 +	100	100	0.00	391.27
2	1	R403 Clane		1	C	412	1300	60	0.00	68	33	44.52	32.52	79.97	12.11	100	100	0.00	56.98
3	1					360	Unrestricted	130	33.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					760	Unrestricted	130	24.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	24	1914	34	33.00	5	1832	40.77	35.37	73.07	0.64	100	100	0.00	3.57
6	1					85	Unrestricted	130	59.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	56	1345	35	32.00	15	499	50.40	36.09	74.36	1.52	100	100	0.00	8.49
8	1					75	Unrestricted	130	61.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	8	730	34	33.00	4	2111	40.46	35.66	73.38	1.46	100	100	0.00	1.20
10	1	Capdoo Park Main				32	1965	130	130.00	2	5427	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	529.94	48.73	10.88	31.06	441.08	20.44	0.00	461.51
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	529.94	48.73	10.88	31.06	441.08	20.44	0.00	461.51

Time segment: 17:45-18:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	904 <	1674	60	0.00	115	-22	243.19	231.80	223.87	78.60 +	100	100	0.00	848.59
2	1	R403 Clane		1	C	436	1283	60	0.00	72	24	47.00	35.20	83.69	13.49	100	100	0.00	65.10
3	1					372	Unrestricted	130	35.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					776	Unrestricted	130	23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	32	1914	34	33.00	6	1349	40.99	35.59	73.11	0.86	100	100	0.00	4.79
6	1					86	Unrestricted	130	59.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	40	1761	35	33.00	8	997	49.44	35.13	73.19	1.07	100	100	0.00	5.91
8	1					80	Unrestricted	130	60.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	20	738	34	32.00	10	794	41.61	36.81	73.85	1.46	100	100	0.00	3.09
10	1	Capdoo Park Main				52	1965	130	130.00	3	3301	8.48	0.02	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	541.92	81.27	6.67	63.38	900.01	27.47	0.00	927.48
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	541.92	81.27	6.67	63.38	900.01	27.47	0.00	927.48

Time segment: 18:00-18:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	**1**	R403 Clebridge		1	A	940 <	1682	60	0.00	119	-24	363.53	351.84	269.19	112.44 +	100	100	0.00	1331.19
2	**1**	R403 Clane		1	C	432	1276	60	0.00	72	25	47.26	35.36	83.75	13.28	100	100	0.00	64.79
3	**1**					380	Unrestricted	130	37.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	**1**					771	Unrestricted	130	27.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	**1**	Capdoo Park Straight Right		1	D	16	1914	34	34.00	3	2799	40.59	35.19	72.25	0.42	100	100	0.00	2.37
6	**1**					65	Unrestricted	130	67.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	**1**	Brooklands		1	B	28	1257	35	34.00	8	1019	49.36	35.05	72.51	0.74	100	100	0.00	4.13
8	**1**					61	Unrestricted	130	70.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	**1**	Capdoo Park Flare		1	E	12	744	34	33.00	6	1403	40.73	35.93	73.52	1.46	100	100	0.00	1.81
10	**1**	Capdoo Park Main				28	1965	130	130.00	1	6216	8.47	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	529.60	114.22	4.64	96.66	1372.60	31.69	0.00	1404.29
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	529.60	114.22	4.64	96.66	1372.60	31.69	0.00	1404.29

Time segment: 18:15-18:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	**1**	R403 Clebridge		1	A	764 <	1651	60	0.00	99	-9	527.86	513.67	265.18	129.30 +	100	100	0.00	1573.36
2	**1**	R403 Clane		1	C	528	1500	60	0.00	75	20	47.44	35.68	85.26	16.61	100	100	0.00	79.95
3	**1**					476	Unrestricted	130	40.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	**1**					752	Unrestricted	130	26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	**1**	Capdoo Park Straight Right		1	D	8	1914	34	34.00	2	5697	40.53	35.13	72.21	0.21	100	100	0.00	1.18
6	**1**					72	Unrestricted	130	62.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	**1**	Brooklands		1	B	44	1563	35	33.00	10	785	49.67	35.36	73.30	1.18	100	100	0.00	6.54
8	**1**					48	Unrestricted	130	75.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	**1**	Capdoo Park Flare		1	E	4	736	34	34.00	2	4358	40.06	35.26	73.22	0.11	100	100	0.00	0.59
10	**1**	Capdoo Park Main				12	1965	130	130.00	1	14638	8.46	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	543.31	133.34	4.07	114.79	1630.07	31.56	0.00	1661.63
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	543.31	133.34	4.07	114.79	1630.07	31.56	0.00	1661.63

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 16:37:07

A7 - 2022 with dev am
D7 - 2022 with dev am*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

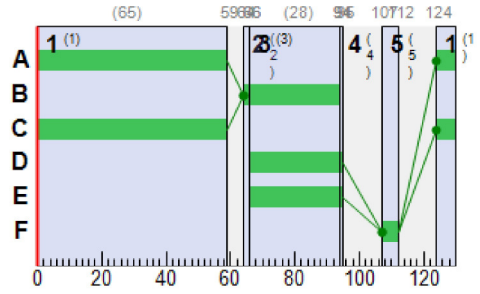
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	59	65	1	7
	2	✓	2	B	64	66	2	1	1
	3	✓	3	B,E,D	66	94	28	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

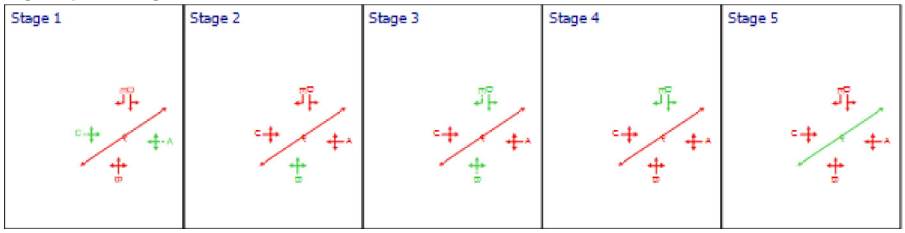
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	59	65
2	1		1	C	124	59	65
5	1		1	D	66	95	29
7	1		1	B	64	94	30
9	1		1	E	66	95	29

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	48	86	332			21.46	10.05	57.77	28.12	2.58	30.70
	2	1	107	-16	906			104.93	65.12	374.42	375.11	15.54	390.64
	3	1	0	Unrestricted	921			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	400			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	17	418	46			40.31	2.07	26.44	7.31	0.45	7.77
	6	1	0	Unrestricted	27			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	38	138	98			44.33	3.67	17.68	17.09	1.03	18.13

	8	1	0	Unrestricted	17			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	17	442	16			41.82	1.47	21.07	2.64	0.16	2.80
	10	1	5	1723	62			0.04	0.00	0.01	0.01	0.00	0.01
07:30-07:45	1	1	32	181	242	1491	65	19.90	5.18	29.81	19.00	1.76	20.76
	2	1	107	-16	1021	1875	65	75.42	47.02	270.34	303.75	16.05	319.80
	3	1	0	Unrestricted	1003	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	280	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	6	1370	25	1770	29	39.37	0.70	8.99	3.88	0.24	4.12
	6	1	0	Unrestricted	13	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	34	166	89	1102	30	43.97	2.73	13.16	15.44	0.94	16.37
	8	1	0	Unrestricted	12	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	0	720	29	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	1	6974	25	1965	130	0.01	0.00	0.00	0.00	0.00	0.00
07:45-08:00	1	1	39	130	331	1668	65	21.00	7.39	42.48	27.42	2.52	29.94
	2	1	107	-16	1022	1887	65	140.11	65.12	374.42	564.82	20.75	585.57
	3	1	0	Unrestricted	1013	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	378	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	10	775	42	1770	29	39.94	1.20	15.28	6.62	0.41	7.03
	6	1	0	Unrestricted	17	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	32	177	81	1046	30	43.90	2.49	11.99	14.03	0.85	14.88
	8	1	0	Unrestricted	20	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	10	788	17	727	29	40.73	1.46	20.91	2.73	0.17	2.90
	10	1	3	2897	59	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
08:00-08:15	1	1	39	128	340	1699	65	21.09	7.68	44.18	28.28	2.60	30.88
	2	1	90	0	852	1856	65	146.97	57.23	329.07	493.91	17.58	511.49
	3	1	0	Unrestricted	914	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	416	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	11	699	46	1770	29	40.08	1.31	16.74	7.27	0.45	7.72
	6	1	0	Unrestricted	18	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	38	138	102	1132	30	45.20	3.17	15.30	18.18	1.09	19.27
	8	1	0	Unrestricted	13	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	13	601	21	709	29	41.45	1.47	20.97	3.43	0.21	3.64
	10	1	3	2540	67	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
08:15-08:30	1	1	48	86	416	1692	65	23.02	10.05	57.77	37.78	3.42	41.20
	2	1	77	17	730	1865	65	47.90	22.83	131.25	137.94	7.76	145.70
	3	1	0	Unrestricted	754	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	527	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	17	418	71	1770	29	41.01	2.07	26.44	11.48	0.71	12.19
	6	1	0	Unrestricted	60	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	35	156	119	1419	30	44.16	3.67	17.68	20.73	1.26	21.99
	8	1	0	Unrestricted	21	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	17	442	26	679	29	42.83	1.47	21.07	4.39	0.26	4.65
	10	1	5	1723	97	1965	130	0.05	0.00	0.01	0.02	0.00	0.02

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
7	15/04/2019 16:37:00	15/04/2019 16:37:06	07:30	130	450.04	30.30	107.23	2/1	1	8	2/1	10/1	2/1	
7	15/04/2019 16:37:00	15/04/2019 16:37:06	07:30	130	361.06	24.09	107.23	2/1	1	8	2/1	10/1	2/1	
7	15/04/2019 16:37:00	15/04/2019 16:37:06	07:45	130	640.32	43.35	106.71	2/1	1	8	2/1	10/1	2/1	
7	15/04/2019 16:37:00	15/04/2019 16:37:06	08:00	130	573.02	38.81	90.43	2/1	1	8	2/1	10/1	2/1	
7	15/04/2019 16:37:00	15/04/2019 16:37:06	08:15	130	225.75	14.95	77.10	2/1	0	0	2/1	10/1	2/1	✓

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	107	-16	2825		38.61	430.28	19.76	450.04
07:30-07:45	107	-16	2710	868	32.00	342.07	18.99	361.06
07:45-08:00	107	-16	2981	868	52.36	615.62	24.70	640.32
08:00-08:15	90	0	2789	868	50.09	551.09	21.93	573.02
08:15-08:30	77	0	2821	868	19.08	212.34	13.41	225.75

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
		R403																	

1	1	Clebridge		1	A	332			0.00	48	86	33.45	21.46	61.89	10.05	100	100	0.00	30.70
2	1	R403 Clane		1	C	906 <			0.00	107	-16	115.09	104.93	142.34	65.12 +	100	100	0.00	390.64
3	1					921			19.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					400			25.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	46			28.00	17	418	45.71	40.31	78.51	2.07	100	100	0.00	7.77
6	1					27			130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	98			0.00	38	138	58.65	44.33	84.28	3.67	100	100	0.00	18.13
8	1					17			130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	16			30.00	17	442	46.61	41.82	78.28	1.47	100	100	0.00	2.80
10	1	Capdoo Park Main				62			130.00	5	1723	8.49	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	556.07	48.37	30.30	430.28	19.76	0.00	450.04
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	556.07	48.37	30.30	430.28	19.76	0.00	450.04

Time segment: 07:30-07:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	242	1491	65	0.00	32	181	31.90	19.90	58.14	5.18	100	100	0.00	20.76
2	1	R403 Clane		1	C	1021 <	1875	65	0.00	107	-16	87.42	75.42	134.41	47.02 +	100	100	0.00	319.80
3	1					1003	Unrestricted	130	18.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					280	Unrestricted	130	25.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	25	1770	29	28.00	6	1370	44.77	39.37	77.00	0.70	100	100	0.00	4.12
6	1					13	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	89	1102	30	0.00	34	166	58.28	43.97	83.80	2.73	100	100	0.00	16.37
8	1					12	Unrestricted	130	130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	0	720	29	30.00	0	Unrestricted	0.00	0.00	0.00	0.00	100	100	0.00	0.00
10	1	Capdoo Park Main				25	1965	130	130.00	1	6974	8.46	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	536.33	41.97	12.78	24.09	342.07	18.99	0.00	361.06
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	536.33	41.97	12.78	24.09	342.07	18.99	0.00	361.06

Time segment: 07:45-08:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	331	1668	65	0.00	39	130	33.00	21.00	60.76	7.39	100	100	0.00	29.94
2	1	R403 Clane		1	C	1022 <	1887	65	0.00	107	-16	150.58	140.11	172.80	65.12 +	100	100	0.00	585.57
3	1					1013	Unrestricted	130	17.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					378	Unrestricted	130	23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	42	1770	29	27.00	10	775	45.34	39.94	77.94	1.20	100	100	0.00	7.03
6	1					17	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	81	1046	30	0.00	32	177	58.26	43.90	83.50	2.49	100	100	0.00	14.88
8	1					20	Unrestricted	130	126.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	17	727	29	27.00	10	788	45.53	40.73	77.85	1.46	100	100	0.00	2.90
10	1	Capdoo Park Main				59	1965	130	130.00	3	2897	8.48	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	584.52	62.40	9.37	43.35	615.62	24.70	0.00	640.32
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	584.52	62.40	9.37	43.35	615.62	24.70	0.00	640.32

Time segment: 08:00-08:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	340	1699	65	0.00	39	128	33.08	21.09	61.06	7.68	100	100	0.00	30.88
2	1	R403 Clane		1	C	852 <	1856	65	0.00	90	0	165.17	146.97	164.57	57.23 +	100	100	0.00	511.49
3	1					914	Unrestricted	130	17.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					416	Unrestricted	130	19.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	46	1770	29	27.00	11	699	45.48	40.08	77.98	1.31	100	100	0.00	7.72
6	1					18	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	102	1132	30	0.00	38	138	59.47	45.20	85.19	3.17	100	100	0.00	19.27
8	1					13	Unrestricted	130	130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	21	709	29	26.00	13	601	46.25	41.45	78.16	1.47	100	100	0.00	3.64
10	1	Capdoo Park Main				67	1965	130	0.00	3	2540	8.49	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	551.05	58.64	9.40	38.81	551.09	21.93	0.00	573.02
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	551.05	58.64	9.40	38.81	551.09	21.93	0.00	573.02

Time segment: 08:15-08:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	416	1692	65	0.00	48	86	35.02	23.02	65.64	10.05	100	100	0.00	41.20
2	1	R403 Clane		1	C	730 <	1865	65	0.00	77	17	45.65	47.90	84.83	22.83 +	100	100	0.00	145.70
3	1					754	Unrestricted	130	19.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					527	Unrestricted	130	15.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	71	1770	29	0.00	17	418	46.41	41.01	79.72	2.07	100	100	0.00	12.19
6	1					60	Unrestricted	130	69.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	119	1419	30	0.00	35	156	58.49	44.16	84.38	3.67	100	100	0.00	21.99
8	1					21	Unrestricted	130	122.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	26	679	29	24.00	17	442	47.62	42.83	78.65	1.47	100	100	0.00	4.65
10	1	Capdoo Park Main				97	1965	130	0.00	5	1723	8.50	0.05	0.00	0.00	100	100	0.00	0.02

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	552.39	30.48	18.13	14.95	212.34	13.41	0.00	225.75
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	552.39	30.48	18.13	14.95	212.34	13.41	0.00	225.75

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 16:37:53

A8 - 2022 with dev pm
D8 - 2022 with dev pm*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

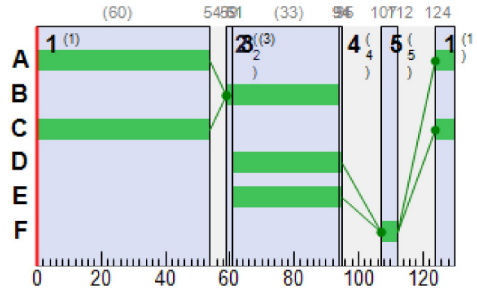
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	54	60	1	7
	2	✓	2	B	59	61	2	1	1
	3	✓	3	B,E,D	61	94	33	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

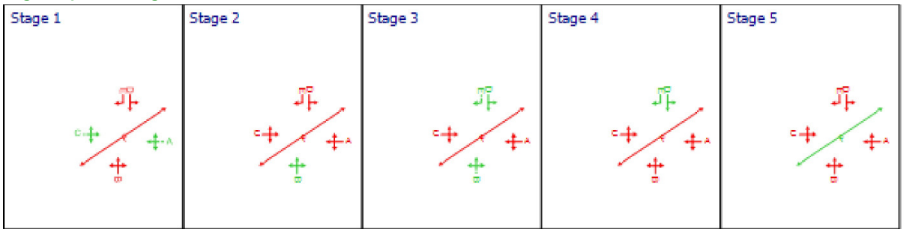
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	54	60
2	1		1	C	124	54	60
5	1		1	D	61	95	34
7	1		1	B	59	94	35
9	1		1	E	61	95	34

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	126	-29	932			373.44	173.85	999.63	1372.85	25.08	1397.92
	2	1	78	15	479			36.69	18.10	104.05	69.25	5.17	74.42
	3	1	0	Unrestricted	420			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	771			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	7	1264	21			35.43	0.91	11.61	2.93	0.19	3.13
	6	1	0	Unrestricted	80			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	15	482	44			35.55	1.59	7.68	6.14	0.40	6.54

	8	1	0	Unrestricted	69			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	11	711	12			36.40	1.47	20.93	1.72	0.11	1.83
	10	1	3	3058	33			0.02	0.00	0.00	0.00	0.00	0.00
17:30-17:45	1	1	123	-27	965	1667	60	120.62	52.78	303.47	459.12	17.04	476.16
	2	1	71	27	436	1311	60	33.98	13.16	75.67	58.44	4.50	62.94
	3	1	0	Unrestricted	380	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	765	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	5	1755	25	1914	34	35.40	0.67	8.53	3.49	0.23	3.72
	6	1	0	Unrestricted	87	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	15	482	58	1355	35	36.16	1.59	7.68	8.27	0.54	8.81
	8	1	0	Unrestricted	78	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	5	1861	9	728	34	35.77	1.46	20.85	1.27	0.08	1.35
	10	1	2	5101	34	1965	130	0.02	0.00	0.00	0.00	0.00	0.00
17:45-18:00	1	1	122	-26	957	1677	60	288.47	97.19	558.86	1088.93	25.02	1113.96
	2	1	76	19	461	1296	60	37.15	14.67	84.36	67.55	5.00	72.56
	3	1	0	Unrestricted	394	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	781	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	7	1264	34	1914	34	35.63	0.91	11.61	4.78	0.31	5.09
	6	1	0	Unrestricted	89	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	9	945	42	1761	35	35.20	1.12	5.42	5.83	0.39	6.22
	8	1	0	Unrestricted	82	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	11	711	22	736	34	37.08	1.47	20.93	3.22	0.20	3.42
	10	1	3	3058	56	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
18:00-18:15	1	1	126	-29	996	1686	60	446.68	144.23	829.34	1754.85	29.91	1784.76
	2	1	76	19	458	1290	60	37.51	14.63	84.14	67.77	4.99	72.76
	3	1	0	Unrestricted	402	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	774	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	3	2628	17	1914	34	35.20	0.45	5.74	2.36	0.15	2.51
	6	1	0	Unrestricted	67	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	8	990	29	1268	35	35.07	0.77	3.71	4.01	0.26	4.28
	8	1	0	Unrestricted	65	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	6	1287	13	744	34	36.02	1.46	20.87	1.85	0.12	1.97
	10	1	2	5795	30	1965	130	0.01	0.00	0.00	0.00	0.00	0.00
18:15-18:30	1	1	105	-14	810	1648	60	684.97	173.85	999.63	2188.49	28.33	2216.82
	2	1	78	15	559	1518	60	37.75	18.10	104.05	83.25	6.18	89.42
	3	1	0	Unrestricted	503	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	762	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	2	5697	8	1914	34	35.13	0.21	2.70	1.11	0.07	1.18
	6	1	0	Unrestricted	75	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	11	751	46	1570	35	35.42	1.23	5.94	6.43	0.42	6.85
	8	1	0	Unrestricted	50	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	2	4348	4	734	34	35.27	0.11	1.51	0.56	0.04	0.59
	10	1	1	14638	12	1965	130	0.01	0.00	0.00	0.00	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
8	15/04/2019 16:37:46	15/04/2019 16:37:51	17:30	130	1483.85	102.32	125.91	1/1	1	8	1/1	10/1	1/1	
8	15/04/2019 16:37:46	15/04/2019 16:37:51	17:30	130	552.99	37.37	123.37	1/1	1	8	1/1	10/1	1/1	
8	15/04/2019 16:37:46	15/04/2019 16:37:51	17:45	130	1201.25	82.42	121.59	1/1	1	8	1/1	10/1	1/1	
8	15/04/2019 16:37:46	15/04/2019 16:37:51	18:00	130	1866.28	128.93	125.91	1/1	1	8	1/1	10/1	1/1	
8	15/04/2019 16:37:46	15/04/2019 16:37:51	18:15	130	2314.87	160.55	104.77	1/1	1	8	1/1	10/1	1/1	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	126	-29	2859		128.84	1452.90	30.95	1483.85
17:30-17:45	123	-27	2837	873	47.41	530.60	22.39	552.99
17:45-18:00	122	-26	2918	873	101.68	1170.32	30.93	1201.25
18:00-18:15	126	-29	2851	873	162.80	1830.85	35.43	1866.28
18:15-18:30	105	-14	2829	873	204.30	2279.83	35.04	2314.87

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
		R403																	

1	1	Clebridge		1	A	932 <			0.00	126	-29	384.88	373.44	254.12	173.85 +	100	100	0.00	1397.92
2	1	R403 Clane		1	C	479 <			0.00	78	15	48.48	36.69	86.12	18.10 +	100	100	0.00	74.42
3	1					420			40.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					771			26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	21			34.00	7	1264	40.83	35.43	72.85	0.91	100	100	0.00	3.13
6	1					80			67.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	44			34.00	15	482	49.86	35.55	73.59	1.59	100	100	0.00	6.54
8	1					69			73.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	12			34.00	11	711	41.20	36.40	73.68	1.47	100	100	0.00	1.83
10	1	Capdoo Park Main				33			130.00	3	3058	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	554.75	120.64	102.32	1452.90	30.95	0.00	1483.85
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	554.75	120.64	102.32	1452.90	30.95	0.00	1483.85

Time segment: 17:30-17:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	965 <	1667	60	0.00	123	-27	132.62	120.62	173.75	52.78 +	100	100	0.00	476.16
2	1	R403 Clane		1	C	436	1311	60	0.00	71	27	45.98	33.98	82.25	13.16	100	100	0.00	62.94
3	1					380	Unrestricted	130	32.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					765	Unrestricted	130	24.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	25	1914	34	33.00	5	1755	40.80	35.40	73.07	0.67	100	100	0.00	3.72
6	1					87	Unrestricted	130	59.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	58	1355	35	31.00	15	482	50.47	36.16	74.64	1.59	100	100	0.00	8.81
8	1					78	Unrestricted	130	60.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	9	728	34	33.00	5	1861	40.57	35.77	73.42	1.46	100	100	0.00	1.35
10	1	Capdoo Park Main				34	1965	130	130.00	2	5101	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	547.17	55.61	9.84	37.37	530.60	22.39	0.00	552.99
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	547.17	55.61	9.84	37.37	530.60	22.39	0.00	552.99

Time segment: 17:45-18:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	957 <	1677	60	0.00	122	-26	300.18	288.47	253.56	97.19 +	100	100	0.00	1113.96
2	1	R403 Clane		1	C	461	1296	60	0.00	76	19	48.88	37.15	86.58	14.67	100	100	0.00	72.56
3	1					394	Unrestricted	130	33.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					781	Unrestricted	130	22.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	34	1914	34	33.00	7	1264	41.03	35.63	73.13	0.91	100	100	0.00	5.09
6	1					89	Unrestricted	130	59.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	42	1761	35	33.00	9	945	49.51	35.20	73.20	1.12	100	100	0.00	6.22
8	1					82	Unrestricted	130	60.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	22	736	34	31.00	11	711	41.88	37.08	73.94	1.47	100	100	0.00	3.42
10	1	Capdoo Park Main				56	1965	130	130.00	3	3058	8.48	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	560.29	100.98	5.55	82.42	1170.32	30.93	0.00	1201.25
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	560.29	100.98	5.55	82.42	1170.32	30.93	0.00	1201.25

Time segment: 18:00-18:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	**1**	R403 Clebridge		1	A	996 <	1686	60	0.00	126	-29	458.53	446.68	301.54	144.23 +	100	100	0.00	1784.76
2	**1**	R403 Clane		1	C	458	1290	60	0.00	76	19	49.31	37.51	86.88	14.63	100	100	0.00	72.76
3	**1**					402	Unrestricted	130	36.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	**1**					774	Unrestricted	130	26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	**1**	Capdoo Park Straight Right		1	D	17	1914	34	34.00	3	2628	40.60	35.20	72.26	0.45	100	100	0.00	2.51
6	**1**					67	Unrestricted	130	67.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	**1**	Brooklands		1	B	29	1268	35	34.00	8	990	49.38	35.07	72.52	0.77	100	100	0.00	4.28
8	**1**					65	Unrestricted	130	69.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	**1**	Capdoo Park Flare		1	E	13	744	34	33.00	6	1287	40.82	36.02	73.56	1.46	100	100	0.00	1.97
10	**1**	Capdoo Park Main				30	1965	130	130.00	2	5795	8.47	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	547.48	147.12	3.72	128.93	1830.85	35.43	0.00	1866.28
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	547.48	147.12	3.72	128.93	1830.85	35.43	0.00	1866.28

Time segment: 18:15-18:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	**1**	R403 Clebridge		1	A	810 <	1648	60	0.00	105	-14	694.91	684.97	292.23	173.85 +	100	100	0.00	2216.82
2	**1**	R403 Clane		1	C	559 <	1518	60	0.00	78	15	49.43	37.75	88.13	18.10 +	100	100	0.00	89.42
3	**1**					503	Unrestricted	130	40.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	**1**					762	Unrestricted	130	25.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	**1**	Capdoo Park Straight Right		1	D	8	1914	34	34.00	2	5697	40.53	35.13	72.21	0.21	100	100	0.00	1.18
6	**1**					75	Unrestricted	130	61.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	**1**	Brooklands		1	B	46	1570	35	33.00	11	751	49.73	35.42	73.31	1.23	100	100	0.00	6.85
8	**1**					50	Unrestricted	130	73.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	**1**	Capdoo Park Flare		1	E	4	734	34	34.00	2	4348	40.07	35.27	73.22	0.11	100	100	0.00	0.59
10	**1**	Capdoo Park Main				12	1965	130	130.00	1	14638	8.46	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	564.07	178.84	3.15	160.55	2279.83	35.04	0.00	2314.87
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	564.07	178.84	3.15	160.55	2279.83	35.04	0.00	2314.87

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 15

Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 16:38:37

A9 - 2027 with dev am
D9 - 2027 with dev am*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

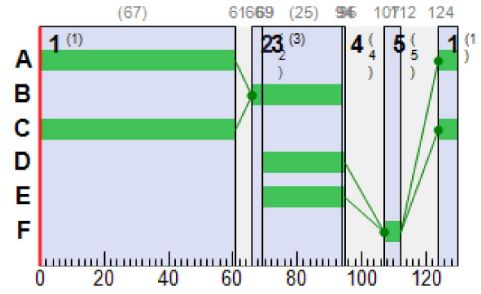
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	61	67	1	7
	2	✓	2	B	66	69	3	1	1
	3	✓	3	B,E,D	69	94	25	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

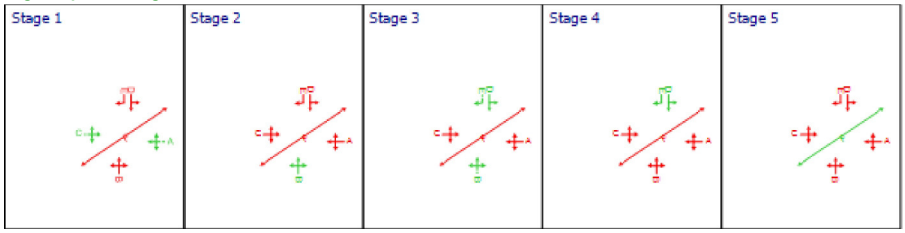
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	61	67
2	1		1	C	124	61	67
5	1		1	D	69	95	26
7	1		1	B	66	94	28
9	1		1	E	69	95	26

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	52	74	365			20.88	11.06	63.62	30.08	2.82	32.91
	2	1	114	-21	996			199.09	101.98	586.39	782.16	22.55	804.71
	3	1	0	Unrestricted	981			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	439			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	21	319	51			43.13	2.38	30.38	8.72	0.52	9.24
	6	1	0	Unrestricted	29			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	44	105	107			47.28	4.16	20.04	20.00	1.17	21.17

	8	1	0	Unrestricted	18			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	19	369	17			44.92	1.48	21.15	3.01	0.17	3.19
	10	1	5	1568	68			0.04	0.00	0.01	0.01	0.00	0.01
07:30-07:45	1	1	34	165	266	1497	67	19.13	5.63	32.36	20.08	1.91	21.99
	2	1	114	-21	1123	1876	67	93.17	55.74	320.49	412.70	18.61	431.32
	3	1	0	Unrestricted	1039	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	308	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	8	1082	28	1770	26	41.92	0.81	10.38	4.63	0.28	4.91
	6	1	0	Unrestricted	14	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	39	130	98	1121	28	46.73	3.09	14.90	18.06	1.06	19.13
	8	1	0	Unrestricted	12	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	0	724	26	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	1	6216	28	1965	130	0.01	0.00	0.00	0.00	0.00	0.00
07:45-08:00	1	1	42	115	364	1666	67	20.38	8.14	46.78	29.26	2.76	32.02
	2	1	114	-21	1123	1885	67	206.76	91.14	524.06	915.85	26.37	942.23
	3	1	0	Unrestricted	1048	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	415	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	13	604	47	1770	26	42.65	1.38	17.64	7.91	0.47	8.38
	6	1	0	Unrestricted	18	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	38	140	89	1063	28	46.62	2.81	13.55	16.37	0.96	17.33
	8	1	0	Unrestricted	23	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	12	659	18	731	26	43.56	1.47	20.95	3.09	0.18	3.27
	10	1	3	2621	65	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
08:00-08:15	1	1	42	112	374	1686	67	20.50	8.36	48.08	30.25	2.85	33.10
	2	1	96	-7	936	1856	67	294.14	101.98	586.39	1085.97	26.07	1112.05
	3	1	0	Unrestricted	1006	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	457	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	14	549	51	1770	26	42.81	1.51	19.33	8.61	0.52	9.13
	6	1	0	Unrestricted	19	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	44	105	112	1144	28	48.38	3.62	17.45	21.37	1.24	22.62
	8	1	0	Unrestricted	14	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	16	478	23	711	26	44.61	1.47	21.04	4.05	0.23	4.28
	10	1	4	2290	74	1965	130	0.04	0.00	0.01	0.01	0.00	0.01
08:15-08:30	1	1	52	74	457	1686	67	22.61	11.06	63.62	40.75	3.77	44.52
	2	1	82	9	802	1862	67	225.74	69.65	400.48	714.11	19.14	733.25
	3	1	0	Unrestricted	830	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	577	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	21	319	79	1770	26	44.06	2.38	30.38	13.73	0.82	14.54
	6	1	0	Unrestricted	64	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	41	118	130	1413	28	47.18	4.16	20.04	24.19	1.43	25.62
	8	1	0	Unrestricted	24	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	19	369	27	678	26	46.10	1.48	21.15	4.91	0.28	5.19
	10	1	5	1568	106	1965	130	0.05	0.00	0.01	0.02	0.00	0.02

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
9	15/04/2019 16:38:30	15/04/2019 16:38:36	07:30	130	871.23	59.44	114.47	2/1	1	8	2/1	10/1	2/1	
9	15/04/2019 16:38:30	15/04/2019 16:38:36	07:30	130	477.34	32.08	114.47	2/1	1	8	2/1	10/1	2/1	
9	15/04/2019 16:38:30	15/04/2019 16:38:36	07:45	130	1003.24	68.49	113.89	2/1	1	8	2/1	10/1	2/1	
9	15/04/2019 16:38:30	15/04/2019 16:38:36	08:00	130	1181.18	81.00	96.43	2/1	1	8	2/1	10/1	2/1	
9	15/04/2019 16:38:30	15/04/2019 16:38:36	08:15	130	823.15	56.18	82.33	2/1	0	0	2/1	10/1	2/1	✓

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	114	-21	3072		69.65	843.99	27.24	871.23
07:30-07:45	114	-21	2916	864	39.60	455.48	21.87	477.34
07:45-08:00	114	-21	3210	864	76.80	972.49	30.76	1003.24
08:00-08:15	96	-7	3066	864	95.11	1150.27	30.92	1181.18
08:15-08:30	82	0	3096	864	65.32	797.72	25.43	823.15

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
		R403																	

1	1	Clebridge		1	A	365			0.00	52	74	32.88	20.88	61.67	11.06	100	100	0.00	32.91
2	1	R403 Clane		1	C	996 <			0.00	114	-21	212.51	199.09	193.29	101.98 +	100	100	0.00	804.71
3	1					981			16.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					439			23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	51			25.00	21	319	48.53	43.13	81.19	2.38	100	100	0.00	9.24
6	1					29			130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	107			0.00	44	105	61.60	47.28	87.31	4.16	100	100	0.00	21.17
8	1					18			130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	17			27.00	19	369	49.71	44.92	81.04	1.48	100	100	0.00	3.19
10	1	Capdoo Park Main				68			130.00	5	1568	8.49	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	601.06	79.86	59.44	843.99	27.24	0.00	871.23
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	601.06	79.86	59.44	843.99	27.24	0.00	871.23

Time segment: 07:30-07:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	266	1497	67	0.00	34	165	31.13	19.13	57.38	5.63	100	100	0.00	21.99
2	1	R403 Clane		1	C	1123 <	1876	67	0.00	114	-21	105.17	93.17	151.31	55.74 +	100	100	0.00	431.32
3	1					1039	Unrestricted	130	16.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					308	Unrestricted	130	23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	28	1770	26	25.00	8	1082	47.32	41.92	79.40	0.81	100	100	0.00	4.91
6	1					14	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	98	1121	28	0.00	39	130	61.04	46.73	86.37	3.09	100	100	0.00	19.13
8	1					12	Unrestricted	130	130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	0	724	26	27.00	0	Unrestricted	0.00	0.00	0.00	0.00	100	100	0.00	0.00
10	1	Capdoo Park Main				28	1965	130	130.00	1	6216	8.47	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	569.98	51.07	11.16	32.08	455.48	21.87	0.00	477.34
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	569.98	51.07	11.16	32.08	455.48	21.87	0.00	477.34

Time segment: 07:45-08:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	364	1666	67	0.00	42	115	32.38	20.38	60.55	8.14	100	100	0.00	32.02
2	1	R403 Clane		1	C	1123 <	1885	67	0.00	114	-21	218.24	206.76	213.31	91.14 +	100	100	0.00	942.23
3	1					1048	Unrestricted	130	15.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					415	Unrestricted	130	21.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	47	1770	26	24.00	13	604	48.05	42.65	80.41	1.38	100	100	0.00	8.38
6	1					18	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	89	1063	28	0.00	38	140	61.00	46.62	86.46	2.81	100	100	0.00	17.33
8	1					23	Unrestricted	130	123.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	18	731	26	24.00	12	659	48.36	43.56	80.44	1.47	100	100	0.00	3.27
10	1	Capdoo Park Main				65	1965	130	0.00	3	2621	8.48	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	622.28	89.07	6.99	68.49	972.49	30.76	0.00	1003.24
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	622.28	89.07	6.99	68.49	972.49	30.76	0.00	1003.24

Time segment: 08:00-08:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	374	1686	67	0.00	42	112	32.49	20.50	60.78	8.36	100	100	0.00	33.10
2	1	R403 Clane		1	C	936 <	1856	67	0.00	96	-7	309.30	294.14	222.16	101.98 +	100	100	0.00	1112.05
3	1					1006	Unrestricted	130	14.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					457	Unrestricted	130	17.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	51	1770	26	23.00	14	549	48.21	42.81	81.00	1.51	100	100	0.00	9.13
6	1					19	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	112	1144	28	0.00	44	105	62.62	48.38	88.52	3.62	100	100	0.00	22.62
8	1					14	Unrestricted	130	130.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	23	711	26	23.00	16	478	49.40	44.61	80.93	1.47	100	100	0.00	4.28
10	1	Capdoo Park Main				74	1965	130	0.00	4	2290	8.49	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	605.70	102.01	5.94	81.00	1150.27	30.92	0.00	1181.18
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	605.70	102.01	5.94	81.00	1150.27	30.92	0.00	1181.18

Time segment: 08:15-08:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	457	1686	67	0.00	52	74	34.60	22.61	65.79	11.06	100	100	0.00	44.52
2	1	R403 Clane		1	C	802 <	1862	67	0.00	82	9	241.82	225.74	190.37	69.65 +	100	100	0.00	733.25
3	1					830	Unrestricted	130	16.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					577	Unrestricted	130	13.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	79	1770	26	0.00	21	319	49.45	44.06	82.42	2.38	100	100	0.00	14.54
6	1					64	Unrestricted	130	66.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	130	1413	28	0.00	41	118	61.55	47.18	87.57	4.16	100	100	0.00	25.62
8	1					24	Unrestricted	130	119.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	27	678	26	21.00	19	369	50.88	46.10	81.52	1.48	100	100	0.00	5.19
10	1	Capdoo Park Main				106	1965	130	0.00	5	1568	8.51	0.05	0.00	0.00	100	100	0.00	0.02

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	606.29	77.30	7.84	56.18	797.72	25.43	0.00	823.15
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	606.29	77.30	7.84	56.18	797.72	25.43	0.00	823.15

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 16:39:25

A10 - 2027 with dev pm
D10 - 2027 with dev pm*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

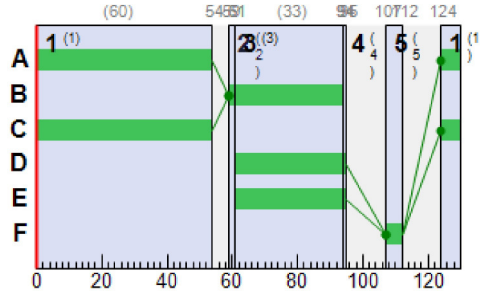
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	54	60	1	7
	2	✓	2	B	59	61	2	1	1
	3	✓	3	B,E,D	61	94	33	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

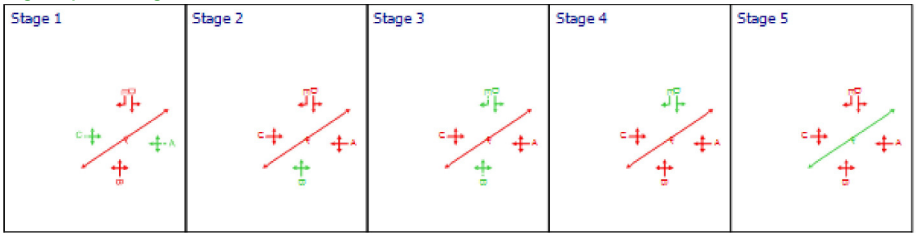
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	54	60
2	1		1	C	124	54	60
5	1		1	D	61	95	34
7	1		1	B	59	94	35
9	1		1	E	61	95	34

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	139	-35	1025			507.22	256.90	1477.18	2050.21	28.82	2079.03
	2	1	85	6	527			41.88	21.63	124.35	87.05	6.14	93.19
	3	1	0	Unrestricted	463			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	773			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	8	1059	23			35.54	1.00	12.78	3.22	0.21	3.44
	6	1	0	Unrestricted	83			0.00	0.00	0.00	0.00	0.00	0.00

	7	1	17	421	48			35.74	1.76	8.49	6.73	0.44	7.17
	8	1	0	Unrestricted	73			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	12	641	13			36.57	1.47	20.95	1.88	0.12	2.00
	10	1	3	2799	36			0.02	0.00	0.00	0.00	0.00	0.00
17:30-17:45	1	1	136	-34	1062	1663	60	149.45	64.48	370.79	626.04	19.87	645.92
	2	1	77	17	481	1331	60	37.28	15.46	88.90	70.73	5.27	76.00
	3	1	0	Unrestricted	420	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	767	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	6	1488	27	1770	34	35.54	0.72	9.22	3.78	0.25	4.03
	6	1	0	Unrestricted	92	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	17	421	64	1337	35	36.49	1.76	8.49	9.21	0.60	9.82
	8	1	0	Unrestricted	82	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	5	1852	9	725	34	35.78	1.46	20.85	1.27	0.08	1.35
	10	1	2	4813	36	1965	130	0.02	0.00	0.00	0.00	0.00	0.00
17:45-18:00	1	1	134	-33	1052	1676	60	385.53	133.21	765.93	1599.76	29.62	1629.38
	2	1	83	9	508	1309	60	42.47	17.52	100.74	85.10	5.96	91.05
	3	1	0	Unrestricted	434	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	785	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	8	1059	37	1770	34	35.78	1.00	12.78	5.22	0.34	5.56
	6	1	0	Unrestricted	93	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	9	875	45	1761	35	35.29	1.20	5.81	6.26	0.41	6.68
	8	1	0	Unrestricted	88	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	12	641	24	734	34	37.38	1.47	20.95	3.54	0.22	3.76
	10	1	3	2799	61	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
18:00-18:15	1	1	139	-35	1095	1685	60	604.87	204.65	1176.76	2612.53	34.42	2646.95
	2	1	83	9	504	1302	60	43.48	17.53	100.79	86.43	5.95	92.38
	3	1	0	Unrestricted	443	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	777	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	4	2157	19	1770	34	35.26	0.51	6.48	2.64	0.17	2.82
	6	1	0	Unrestricted	70	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	9	881	32	1260	35	35.17	0.85	4.09	4.44	0.29	4.73
	8	1	0	Unrestricted	70	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	7	1187	14	744	34	36.10	1.46	20.87	1.99	0.13	2.12
	10	1	2	5259	33	1965	130	0.02	0.00	0.00	0.00	0.00	0.00
18:15-18:30	1	1	115	-22	890	1643	60	957.83	256.90	1477.18	3362.50	31.36	3393.85
	2	1	85	6	615	1539	60	43.67	21.63	124.35	105.94	7.37	113.31
	3	1	0	Unrestricted	555	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	764	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	2	4665	9	1770	34	35.15	0.24	3.04	1.25	0.08	1.33
	6	1	0	Unrestricted	77	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	12	670	50	1545	35	35.56	1.34	6.47	7.01	0.46	7.47
	8	1	0	Unrestricted	53	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	3	3445	5	732	34	35.36	1.46	20.84	0.70	0.05	0.74
	10	1	1	12532	14	1965	130	0.01	0.00	0.00	0.00	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
10	15/04/2019 16:39:16	15/04/2019 16:39:22	17:30	130	2184.82	151.34	138.52	1/1	1	8	1/1	10/1	1/1	
10	15/04/2019 16:39:16	15/04/2019 16:39:22	17:30	130	737.12	50.07	136.12	1/1	1	8	1/1	10/1	1/1	
10	15/04/2019 16:39:16	15/04/2019 16:39:22	17:45	130	1736.44	119.71	133.80	1/1	1	8	1/1	10/1	1/1	
10	15/04/2019 16:39:16	15/04/2019 16:39:22	18:00	130	2749.01	190.71	138.52	1/1	1	8	1/1	10/1	1/1	
10	15/04/2019 16:39:16	15/04/2019 16:39:22	18:15	130	3516.71	244.89	115.43	1/1	1	8	1/1	10/1	1/1	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	139	-35	3064		177.81	2149.09	35.72	2184.82
17:30-17:45	136	-34	3040	873	59.29	711.04	26.08	737.12
17:45-18:00	134	-33	3127	873	137.81	1699.89	36.55	1736.44
18:00-18:15	139	-35	3056	873	224.62	2708.05	40.96	2749.01
18:15-18:30	115	-22	3033	873	290.66	3477.40	39.31	3516.71

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering	Calculated sat flow	Actual green (s (per	Wasted time total (s	Degree of saturation	Practical reserve capacity	JourneyTime (s)	Mean Delay per	Mean stops per	Mean max queue	Delay weighting multiplier	Stop weighting multiplier	Cost of traffic penalties (£	P.I.

						(PCU/hr)	(PCU/hr)	cycle))	(per cycle))	(%)	(%)		Veh (s)	Veh (%)	(PCU)	(%)	(%)	per hr)	
1	1	R403 Clebridge		1	A	1025 <			0.00	139	-35	519.13	507.22	292.93	256.90 +	100	100	0.00	2079.03
2	1	R403 Clane		1	C	527 <			0.00	85	6	53.45	41.88	92.85	21.63 +	100	100	0.00	93.19
3	1					463			37.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					773			26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	23			34.00	8	1059	40.94	35.54	73.19	1.00	100	100	0.00	3.44
6	1					83			66.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	48			34.00	17	421	50.05	35.74	73.83	1.76	100	100	0.00	7.17
8	1					73			72.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	13			34.00	12	641	41.37	36.57	73.74	1.47	100	100	0.00	2.00
10	1	Capdoo Park Main				36			130.00	3	2799	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	586.19	170.80	151.34	2149.09	35.72	0.00	2184.82
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	586.19	170.80	151.34	2149.09	35.72	0.00	2184.82

Time segment: 17:30-17:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1062 <	1663	60	0.00	136	-34	161.45	149.45	203.15	64.48 +	100	100	0.00	645.92
2	1	R403 Clane		1	C	481	1331	60	0.00	77	17	49.28	37.28	87.41	15.46	100	100	0.00	76.00
3	1					420	Unrestricted	130	29.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					767	Unrestricted	130	23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	27	1770	34	33.00	6	1488	40.94	35.54	73.11	0.72	100	100	0.00	4.03
6	1					92	Unrestricted	130	58.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	64	1337	35	0.00	17	421	50.80	36.49	75.25	1.76	100	100	0.00	9.82
8	1					82	Unrestricted	130	60.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	9	725	34	33.00	5	1852	40.58	35.78	73.42	1.46	100	100	0.00	1.35
10	1	Capdoo Park Main				36	1965	130	130.00	2	4813	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	577.88	69.34	8.33	50.07	711.04	26.08	0.00	737.12
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	577.88	69.34	8.33	50.07	711.04	26.08	0.00	737.12

Time segment: 17:45-18:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1052 <	1676	60	0.00	134	-33	397.43	385.53	300.44	133.21 +	100	100	0.00	1629.38
2	1	R403 Clane		1	C	508 <	1309	60	0.00	83	9	53.99	42.47	93.51	17.52 +	100	100	0.00	91.05
3	1					434	Unrestricted	130	31.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					785	Unrestricted	130	22.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	37	1770	34	32.00	8	1059	41.18	35.78	73.64	1.00	100	100	0.00	5.56
6	1					93	Unrestricted	130	58.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	45	1761	35	33.00	9	875	49.60	35.29	73.23	1.20	100	100	0.00	6.68
8	1					88	Unrestricted	130	59.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	24	734	34	31.00	12	641	42.18	37.38	74.04	1.47	100	100	0.00	3.76

10	1	Capdoo Park Main				61	1965	130	0.00	3	2799	8.48	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	591.95	139.35	4.25	119.71	1699.89	36.55	0.00	1736.44
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	591.95	139.35	4.25	119.71	1699.89	36.55	0.00	1736.44

Time segment: 18:00-18:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1095 <	1685	60	0.00	139	-35	616.82	604.87	347.25	204.65 +	100	100	0.00	2646.95
2	1	R403 Clane		1	C	504 <	1302	60	0.00	83	9	54.98	43.48	94.11	17.53 +	100	100	0.00	92.38
3	1					443	Unrestricted	130	33.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					777	Unrestricted	130	26.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	19	1770	34	33.00	4	2157	40.66	35.26	72.90	0.51	100	100	0.00	2.82
6	1					70	Unrestricted	130	66.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	32	1260	35	34.00	9	881	49.49	35.17	72.57	0.85	100	100	0.00	4.73
8	1					70	Unrestricted	130	68.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	14	744	34	33.00	7	1187	40.90	36.10	73.60	1.46	100	100	0.00	2.12
10	1	Capdoo Park Main				33	1965	130	130.00	2	5259	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	578.35	209.90	2.76	190.71	2708.05	40.96	0.00	2749.01
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	578.35	209.90	2.76	190.71	2708.05	40.96	0.00	2749.01

Time segment: 18:15-18:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	890 <	1643	60	0.00	115	-22	969.62	957.83	324.34	256.90 +	100	100	0.00	3393.85
2	1	R403 Clane		1	C	615 <	1539	60	0.00	85	6	55.01	43.67	95.51	21.63 +	100	100	0.00	113.31
3	1					555	Unrestricted	130	37.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					764	Unrestricted	130	25.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	9	1770	34	34.00	2	4665	40.55	35.15	72.22	0.24	100	100	0.00	1.33
6	1					77	Unrestricted	130	60.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	50	1545	35	33.00	12	670	49.87	35.56	73.36	1.34	100	100	0.00	7.47
8	1					53	Unrestricted	130	72.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	5	732	34	34.00	3	3445	40.16	35.36	73.26	1.46	100	100	0.00	0.74
10	1	Capdoo Park Main				14	1965	130	130.00	1	12532	8.46	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	596.60	264.61	2.25	244.89	3477.40	39.31	0.00	3516.71
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	596.60	264.61	2.25	244.89	3477.40	39.31	0.00	3516.71

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 14:05:33

A1 - 2037 am with dev
D7 - 2037 with dev am*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

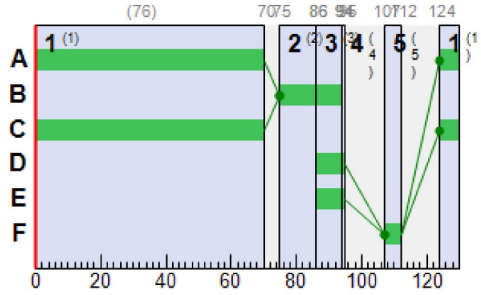
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	70	76	1	7
	2	✓	2	B	75	86	11	1	1
	3	✓	3	B,E,D	86	94	8	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

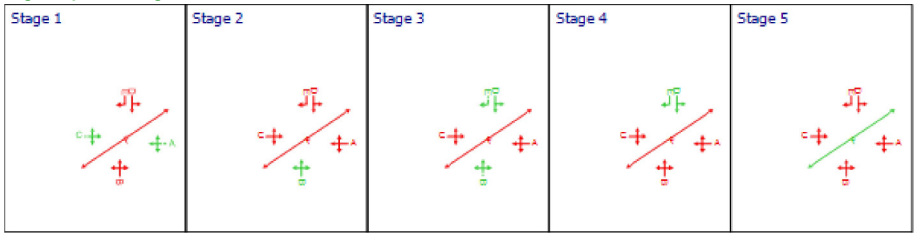
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	70	76
2	1		1	C	124	70	76
5	1		1	D	86	95	9
7	1		1	B	75	94	19
9	1		1	E	86	95	9

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	50	81	401			15.71	10.64	61.18	24.85	2.70	27.54
	2	1	119	-25	1114			258.16	137.18	788.79	1134.13	27.63	1161.76
	3	1	0	Unrestricted	1066			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	513			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	63	42	56			69.52	3.47	44.39	15.36	0.73	16.08
	6	1	0	Unrestricted	31			0.00	0.00	0.00	0.00	0.00	0.00

	7	1	87	3	168			78.96	9.11	43.94	52.25	2.37	54.61
	8	1	0	Unrestricted	46			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	56	62	19			81.66	1.74	24.83	6.04	0.26	6.30
	10	1	6	1425	75			0.04	0.00	0.02	0.01	0.00	0.01
07:30-07:45	1	1	32	178	291	1519	76	14.27	5.33	30.65	16.38	1.81	18.19
	2	1	119	-25	1258	1780	76	101.90	65.53	376.80	505.62	21.52	527.14
	3	1	0	Unrestricted	1112	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	363	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	23	295	31	1770	9	60.22	1.08	13.84	7.36	0.37	7.74
	6	1	0	Unrestricted	16	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	71	26	154	1403	19	68.49	5.88	28.36	41.60	2.02	43.62
	8	1	0	Unrestricted	39	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	0	815	9	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	2	5605	31	1965	130	0.01	0.00	0.00	0.00	0.00	0.00
07:45-08:00	1	1	40	123	407	1704	76	15.37	7.94	45.63	24.67	2.69	27.36
	2	1	116	-23	1247	1813	76	240.13	113.53	652.81	1181.15	31.14	1212.29
	3	1	0	Unrestricted	1145	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	474	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	37	140	51	1770	9	64.68	1.85	23.64	13.01	0.64	13.65
	6	1	0	Unrestricted	19	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	67	35	139	1350	19	68.81	5.33	25.70	37.73	1.82	39.55
	8	1	0	Unrestricted	53	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	32	183	20	818	9	69.50	1.53	21.82	5.48	0.25	5.74
	10	1	4	2391	71	1965	130	0.03	0.00	0.01	0.01	0.00	0.01
08:00-08:15	1	1	40	125	407	1720	76	15.29	7.93	45.62	24.55	2.68	27.23
	2	1	103	-12	1054	1731	76	373.02	137.18	788.79	1550.82	32.16	1582.98
	3	1	0	Unrestricted	1092	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	532	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	41	119	56	1770	9	66.24	2.05	26.20	14.63	0.70	15.34
	6	1	0	Unrestricted	20	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	83	9	176	1385	19	81.48	7.46	35.97	56.57	2.54	59.11
	8	1	0	Unrestricted	46	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	41	117	25	784	9	77.18	1.59	22.72	7.61	0.33	7.94
	10	1	4	2083	81	1965	130	0.04	0.00	0.01	0.01	0.00	0.01
08:15-08:30	1	1	50	81	499	1690	76	17.16	10.64	61.18	33.78	3.61	37.38
	2	1	86	5	896	1760	76	367.53	113.36	651.80	1298.94	25.68	1324.62
	3	1	0	Unrestricted	915	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	682	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	63	42	86	1770	9	77.89	3.47	44.39	26.42	1.19	27.61
	6	1	0	Unrestricted	71	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	87	3	202	1507	19	91.73	9.11	43.94	73.09	3.09	76.18
	8	1	0	Unrestricted	45	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	56	62	30	702	9	93.49	1.74	24.83	11.06	0.44	11.50
	10	1	6	1425	116	1965	130	0.06	0.00	0.02	0.03	0.00	0.03

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
1	15/04/2019 14:05:25	15/04/2019 14:05:32	07:30	130	1266.30	86.81	119.32	2/1	1	8	2/1	10/1	2/1	
1	15/04/2019 14:05:25	15/04/2019 14:05:32	07:30	130	596.68	40.21	119.32	2/1	1	8	2/1	10/1	2/1	
1	15/04/2019 14:05:25	15/04/2019 14:05:32	07:45	130	1298.60	88.88	116.14	2/1	1	8	2/1	10/1	2/1	
1	15/04/2019 14:05:25	15/04/2019 14:05:32	08:00	130	1692.61	116.49	102.82	2/1	1	8	2/1	10/1	2/1	
1	15/04/2019 14:05:25	15/04/2019 14:05:32	08:15	130	1477.32	101.64	87.12	7/1	0	0	7/1	10/1	7/1	✓

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	119	-25	3488		89.60	1232.63	33.67	1266.30
07:30-07:45	119	-25	3295	839	43.93	570.97	25.72	596.68
07:45-08:00	116	-23	3626	839	88.25	1262.05	36.55	1298.60
08:00-08:15	103	-12	3488	839	120.23	1654.19	38.42	1692.61
08:15-08:30	87	0	3542	839	103.31	1443.32	34.00	1477.32

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering	Calculated sat flow	Actual green (s (per	Wasted time total (s	Degree of saturation	Practical reserve capacity	JourneyTime (s)	Mean Delay per	Mean stops per	Mean max queue	Delay weighting multiplier	Stop weighting multiplier	Cost of traffic penalties (£	P.I.

						(PCU/hr)	(PCU/hr)	cycle))	(per cycle))	(%)	(%)		Veh (s)	Veh (%)	(PCU)	(%)	(%)	per hr)	
1	1	R403 Clebridge		1	A	401			0.00	50	81	27.71	15.71	53.63	10.64	100	100	0.00	27.54
2	1	R403 Clane		1	C	1114 <			0.00	119	-25	269.73	258.16	215.88	137.18 +	100	100	0.00	1161.76
3	1					1066			5.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					513			11.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	56			7.00	63	42	74.77	69.52	103.32	3.47	100	100	0.00	16.08
6	1					31			130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	168			0.00	87	3	92.40	78.96	112.56	9.11	100	100	0.00	54.61
8	1					46			101.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	19			10.00	56	62	85.85	81.66	109.20	1.74	100	100	0.00	6.30
10	1	Capdoo Park Main				75			130.00	6	1425	8.50	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	681.52	109.34	86.81	1232.63	33.67	0.00	1266.30
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	681.52	109.34	86.81	1232.63	33.67	0.00	1266.30

Time segment: 07:30-07:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	291	1519	76	0.00	32	178	26.27	14.27	49.49	5.33	100	100	0.00	18.19
2	1	R403 Clane		1	C	1258 <	1780	76	0.00	119	-25	113.90	101.90	162.80	65.53 +	100	100	0.00	527.14
3	1					1112	Unrestricted	130	5.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					363	Unrestricted	130	11.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	31	1770	9	7.00	23	295	65.62	60.22	95.85	1.08	100	100	0.00	7.74
6	1					16	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	154	1403	19	0.00	71	26	82.80	68.49	104.36	5.88	100	100	0.00	43.62
8	1					39	Unrestricted	130	77.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	0	815	9	10.00	0	Unrestricted	0.00	0.00	0.00	0.00	100	100	0.00	0.00
10	1	Capdoo Park Main				31	1965	130	130.00	2	5605	8.47	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	640.65	61.56	10.41	40.21	570.97	25.72	0.00	596.68
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	640.65	61.56	10.41	40.21	570.97	25.72	0.00	596.68

Time segment: 07:45-08:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	407	1704	76	0.00	40	123	27.37	15.37	52.74	7.94	100	100	0.00	27.36
2	1	R403 Clane		1	C	1247 <	1813	76	0.00	116	-23	251.81	240.13	231.33	113.53 +	100	100	0.00	1212.29
3	1					1145	Unrestricted	130	4.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					474	Unrestricted	130	9.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	51	1770	9	6.00	37	140	70.04	64.68	99.45	1.85	100	100	0.00	13.65
6	1					19	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	139	1350	19	0.00	67	35	83.88	68.81	104.69	5.33	100	100	0.00	39.55
8	1					53	Unrestricted	130	51.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	20	818	9	6.00	32	183	74.30	69.50	101.66	1.53	100	100	0.00	5.74

10	1	Capdoo Park Main				71	1965	130	0.00	4	2391	8.49	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	702.19	112.20	6.26	88.88	1262.05	36.55	0.00	1298.60
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	702.19	112.20	6.26	88.88	1262.05	36.55	0.00	1298.60

Time segment: 08:00-08:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	407	1720	76	0.00	40	125	27.30	15.29	52.54	7.93	100	100	0.00	27.23
2	1	R403 Clane		1	C	1054 <	1731	76	0.00	103	-12	381.45	373.02	250.17	137.18 +	100	100	0.00	1582.98
3	1					1092	Unrestricted	130	2.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					532	Unrestricted	130	5.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	56	1770	9	6.00	41	119	71.43	66.24	100.38	2.05	100	100	0.00	15.34
6	1					20	Unrestricted	130	130.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	176	1385	19	0.00	83	9	94.74	81.48	115.09	7.46	100	100	0.00	59.11
8	1					46	Unrestricted	130	69.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	25	784	9	5.00	41	117	81.52	77.18	106.42	1.59	100	100	0.00	7.94
10	1	Capdoo Park Main				81	1965	130	0.00	4	2083	8.49	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	687.68	138.31	4.97	116.49	1654.19	38.42	0.00	1692.61
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	687.68	138.31	4.97	116.49	1654.19	38.42	0.00	1692.61

Time segment: 08:15-08:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	499	1690	76	0.00	50	81	29.15	17.16	57.65	10.64	100	100	0.00	37.38
2	1	R403 Clane		1	C	896 <	1760	76	0.00	86	5	382.02	367.53	228.57	113.36 +	100	100	0.00	1324.62
3	1					915	Unrestricted	130	3.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					682	Unrestricted	130	0.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	86	1770	9	0.00	63	42	83.05	77.89	110.23	3.47	100	100	0.00	27.61
6	1					71	Unrestricted	130	56.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	202	1507	19	0.00	87	3	103.54	91.73	122.02	9.11	100	100	0.00	76.18
8	1					45	Unrestricted	130	101.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	30	702	9	3.00	56	62	97.17	93.49	116.54	1.74	100	100	0.00	11.50
10	1	Capdoo Park Main				116	1965	130	0.00	6	1425	8.51	0.06	0.00	0.00	100	100	0.00	0.03

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	695.56	125.29	5.55	101.64	1443.32	34.00	0.00	1477.32
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	695.56	125.29	5.55	101.64	1443.32	34.00	0.00	1477.32

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 15/04/2019 14:08:33

A2 - 2037 pm with dev
D14 - 2037 with dev pm*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

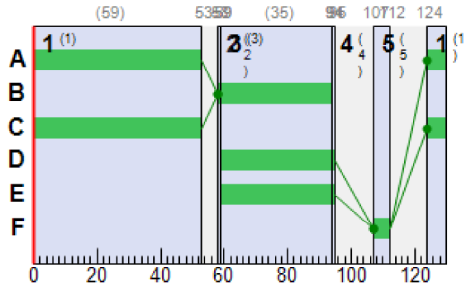
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	53	59	1	7
	2	✓	2	B	58	59	1	1	1
	3	✓	3	B,E,D	59	94	35	1	1
	4	✓	4	E,D	94	95	1	1	1
	5	✓	5	F	107	112	5	1	5

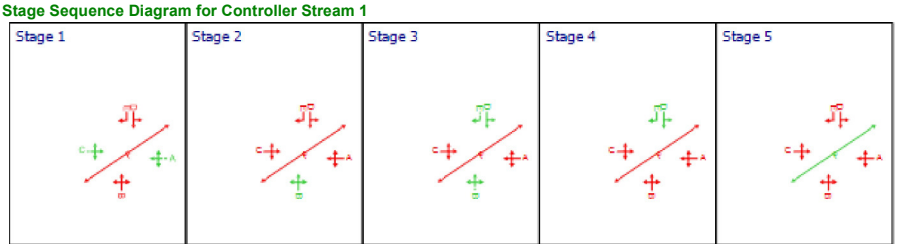
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	53	59
2	1		1	C	124	53	59
5	1		1	D	59	95	36
7	1		1	B	58	94	36
9	1		1	E	59	95	36

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	155	-42	1138			660.56	366.87	2109.49	2964.47	32.56	2997.04
	2	1	115	-22	609			234.14	84.02	483.13	562.22	14.48	576.70
	3	1	0	Unrestricted	460			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	784			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	8	1067	26			34.07	1.11	14.20	3.49	0.23	3.73
	6	1	0	Unrestricted	82			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	31	190	87			36.89	3.36	16.18	12.59	0.83	13.41
	8	1	0	Unrestricted	115			0.00	0.00	0.00	0.00	0.00	0.00

	9	1	13	612	14			35.62	1.47	20.96	1.93	0.12	2.06
	10	1	3	2540	40			0.02	0.00	0.00	0.00	0.00	0.00
17:30-17:45	1	1	154	-42	1184	1664	59	183.51	80.41	462.35	857.02	23.32	880.35
	2	1	107	-16	559	1132	59	85.09	26.86	154.44	187.62	9.11	196.73
	3	1	0	Unrestricted	442	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	781	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	6	1432	32	1914	36	34.09	0.84	10.70	4.30	0.29	4.59
	6	1	0	Unrestricted	92	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	31	190	116	1313	36	38.72	3.36	16.18	17.71	1.15	18.86
	8	1	0	Unrestricted	133	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	5	1655	10	685	36	34.40	1.46	20.85	1.36	0.09	1.45
	10	1	2	4111	42	1965	130	0.02	0.00	0.00	0.00	0.00	0.00
17:45-18:00	1	1	151	-40	1174	1682	59	497.29	182.43	1048.98	2302.84	34.42	2337.26
	2	1	115	-22	592	1112	59	175.55	42.09	242.03	409.93	12.75	422.69
	3	1	0	Unrestricted	415	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	797	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	8	1067	42	1914	36	34.30	1.11	14.20	5.68	0.38	6.06
	6	1	0	Unrestricted	91	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	16	457	81	1761	36	35.58	2.20	10.60	11.37	0.75	12.12
	8	1	0	Unrestricted	135	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	13	612	25	695	36	36.88	1.47	20.96	3.64	0.23	3.86
	10	1	3	2540	67	1965	130	0.03	0.00	0.00	0.01	0.00	0.01
18:00-18:15	1	1	155	-42	1208	1688	59	791.24	285.85	1643.62	3770.19	38.49	3808.68
	2	1	115	-22	587	1105	59	297.39	61.64	354.45	688.56	15.82	704.39
	3	1	0	Unrestricted	430	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	779	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	4	2351	20	1914	36	33.75	0.52	6.61	2.66	0.18	2.84
	6	1	0	Unrestricted	67	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	17	436	59	1236	36	35.90	1.61	7.75	8.36	0.55	8.91
	8	1	0	Unrestricted	107	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	7	1132	15	722	36	34.89	1.46	20.87	2.06	0.14	2.20
	10	1	2	4953	35	1965	130	0.02	0.00	0.00	0.00	0.00	0.00
18:15-18:30	1	1	130	-31	985	1647	59	1268.34	366.87	2109.49	4927.84	34.02	4961.86
	2	1	111	-19	697	1365	59	350.19	84.02	483.13	962.76	20.22	982.98
	3	1	0	Unrestricted	552	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	780	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	2	4803	10	1914	36	33.68	0.26	3.30	1.33	0.09	1.42
	6	1	0	Unrestricted	78	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	21	338	90	1538	36	36.35	2.48	11.94	12.91	0.85	13.76
	8	1	0	Unrestricted	85	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	3	3453	5	693	36	33.91	1.46	20.84	0.67	0.04	0.71
	10	1	1	11690	15	1965	130	0.01	0.00	0.00	0.00	0.00	0.00

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
2	15/04/2019 14:08:24	15/04/2019 14:08:30	17:30	130	3592.93	249.63	155.03	1/1	2	17	1/1	10/1	1/1	
2	15/04/2019 14:08:24	15/04/2019 14:08:30	17:30	130	1101.98	75.21	154.16	1/1	2	17	1/1	10/1	1/1	
2	15/04/2019 14:08:24	15/04/2019 14:08:30	17:45	130	2782.01	192.50	151.22	1/1	2	17	1/1	10/1	1/1	
2	15/04/2019 14:08:24	15/04/2019 14:08:30	18:00	130	4527.02	314.92	155.03	1/1	2	17	1/1	10/1	1/1	
2	15/04/2019 14:08:24	15/04/2019 14:08:30	18:15	130	5960.72	415.88	129.57	1/1	2	17	1/1	10/1	1/1	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	155	-42	3354		267.96	3544.71	48.23	3592.93
17:30-17:45	154	-42	3392	876	79.83	1068.02	33.96	1101.98
17:45-18:00	151	-40	3419	876	202.71	2733.47	48.54	2782.01
18:00-18:15	155	-42	3307	876	342.79	4471.84	55.18	4527.02
18:15-18:30	130	-31	3297	876	454.06	5905.50	55.23	5960.72

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1138 <			0.00	155	-42	672.54	660.56	336.06	366.87 +	100	100	0.00	2997.04
2	1	R403 Clane		1	C	609 <			0.00	115	-22	245.29	234.14	213.00	84.02 +	100	100	0.00	576.70

3	1					460			33.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					784			23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	26			36.00	8	1067	39.47	34.07	71.60	1.11	100	100	0.00	3.73
6	1					82			66.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	87			32.00	31	190	51.20	36.89	76.14	3.36	100	100	0.00	13.41
8	1					115			62.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	14			36.00	13	612	40.42	35.62	72.23	1.47	100	100	0.00	2.06
10	1	Capdoo Park Main				40			130.00	3	2540	8.48	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	625.50	270.33	249.63	3544.71	48.23	0.00	3592.93
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	625.50	270.33	249.63	3544.71	48.23	0.00	3592.93

Time segment: 17:30-17:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1184 <	1664	59	0.00	154	-42	195.51	183.51	242.21	80.41 +	100	100	0.00	880.35
2	1	R403 Clane		1	C	559 <	1132	59	0.00	107	-16	97.09	85.09	139.02	26.86 +	100	100	0.00	196.73
3	1					442	Unrestricted	130	25.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					781	Unrestricted	130	19.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	32	1914	36	35.00	6	1432	39.49	34.09	71.56	0.84	100	100	0.00	4.59
6	1					92	Unrestricted	130	57.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	116	1313	36	0.00	31	190	53.03	38.72	78.97	3.36	100	100	0.00	18.86
8	1					133	Unrestricted	130	52.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	10	685	36	35.00	5	1655	39.20	34.40	71.92	1.46	100	100	0.00	1.45
10	1	Capdoo Park Main				42	1965	130	130.00	2	4111	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	631.44	96.26	6.56	75.21	1068.02	33.96	0.00	1101.98
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	631.44	96.26	6.56	75.21	1068.02	33.96	0.00	1101.98

Time segment: 17:45-18:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1174 <	1682	59	0.00	151	-40	509.26	497.29	353.62	182.43 +	100	100	0.00	2337.26
2	1	R403 Clane		1	C	592 <	1112	59	0.00	115	-22	186.47	175.55	198.17	42.09 +	100	100	0.00	422.69
3	1					415	Unrestricted	130	28.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					797	Unrestricted	130	19.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	42	1914	36	34.00	8	1067	39.70	34.30	72.28	1.11	100	100	0.00	6.06
6	1					91	Unrestricted	130	57.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	81	1761	36	0.00	16	457	49.89	35.58	74.24	2.20	100	100	0.00	12.12
8	1					135	Unrestricted	130	52.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	25	695	36	31.00	13	612	41.68	36.88	72.54	1.47	100	100	0.00	3.86
10	1	Capdoo Park Main				67	1965	130	0.00	3	2540	8.49	0.03	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	628.90	213.27	2.95	192.50	2733.47	48.54	0.00	2782.01

Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	628.90	213.27	2.95	192.50	2733.47	48.54	0.00	2782.01

Time segment: 18:00-18:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	**1**	R403 Clebridge		1	A	1208 <	1688	59	0.00	155	-42	803.23	791.24	393.93	285.85 +	100	100	0.00	3808.68
2	**1**	R403 Clane		1	C	587 <	1105	59	0.00	115	-22	308.37	297.39	247.40	61.64 +	100	100	0.00	704.39
3	**1**					430	Unrestricted	130	28.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	**1**					779	Unrestricted	130	23.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	**1**	Capdoo Park Straight Right		1	D	20	1914	36	36.00	4	2351	39.15	33.75	70.73	0.52	100	100	0.00	2.84
6	**1**					67	Unrestricted	130	66.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	**1**	Brooklands		1	B	59	1236	36	32.00	17	436	50.21	35.90	74.49	1.61	100	100	0.00	8.91
8	**1**					107	Unrestricted	130	59.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	**1**	Capdoo Park Flare		1	E	15	722	36	34.00	7	1132	39.69	34.89	72.07	1.46	100	100	0.00	2.20
10	**1**	Capdoo Park Main				35	1965	130	130.00	2	4953	8.47	0.02	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	608.70	335.04	1.82	314.92	4471.84	55.18	0.00	4527.02
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	608.70	335.04	1.82	314.92	4471.84	55.18	0.00	4527.02

Time segment: 18:15-18:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	**1**	R403 Clebridge		1	A	985 <	1647	59	0.00	130	-31	1280.29	1268.34	356.96	366.87 +	100	100	0.00	4961.86
2	**1**	R403 Clane		1	C	697 <	1365	59	0.00	111	-19	361.00	350.19	255.95	84.02 +	100	100	0.00	982.98
3	**1**					552	Unrestricted	130	33.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	**1**					780	Unrestricted	130	21.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	**1**	Capdoo Park Straight Right		1	D	10	1914	36	36.00	2	4803	39.08	33.68	70.68	0.26	100	100	0.00	1.42
6	**1**					78	Unrestricted	130	60.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	**1**	Brooklands		1	B	90	1538	36	0.00	21	338	50.66	36.35	75.29	2.48	100	100	0.00	13.76
8	**1**					85	Unrestricted	130	62.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	**1**	Capdoo Park Flare		1	E	5	693	36	36.00	3	3453	38.71	33.91	71.72	1.46	100	100	0.00	0.71
10	**1**	Capdoo Park Main				15	1965	130	130.00	1	11690	8.46	0.01	0.00	0.00	100	100	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	632.96	436.74	1.45	415.88	5905.50	55.23	0.00	5960.72
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	632.96	436.74	1.45	415.88	5905.50	55.23	0.00	5960.72

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

TRANSYT 15

Version: 15.5.2.7994

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Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 17/04/2019 08:46:22

A3 - 2037 am sensitivity
D3 - 2037 am Sensitivity*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

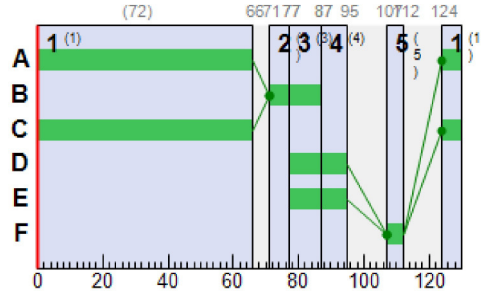
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	66	72	1	7
	2	✓	2	B	71	77	6	1	1
	3	✓	3	B,E,D	77	87	10	1	1
	4	✓	4	E,D	87	95	8	1	1
	5	✓	5	F	107	112	5	1	5

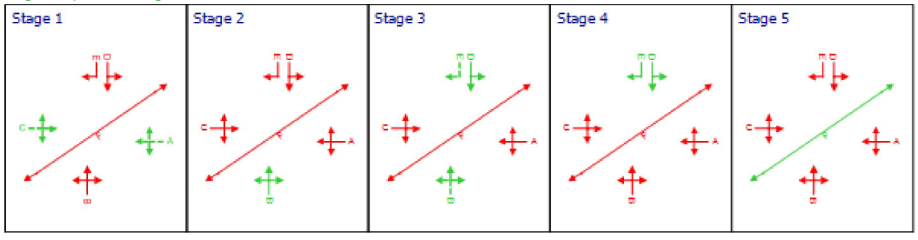
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	66	72
2	1		1	C	124	66	72
5	1		1	D	77	95	18
7	1		1	B	71	87	16
9	1		1	E	77	95	18

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	1	1	68	32	350			22.10	11.61	66.74	30.53	2.86	33.39
	2	1	119	-25	1138			277.91	162.07	931.93	1247.46	28.83	1276.29
	3	1	0	Unrestricted	1005			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	502			0.00	0.00	0.00	0.00	0.00	0.00
	5	1	45	100	106			75.46	3.98	50.81	31.44	1.17	32.61
	6	1	0	Unrestricted	174			0.00	0.00	0.00	0.00	0.00	0.00

	7	1	125	-28	169			202.93	21.88	105.49	135.47	3.67	139.14
	8	1	0	Unrestricted	43			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	98	-8	117			180.80	10.85	155.01	83.79	2.20	85.99
	10	1	147	-39	267			152.22	39.51	322.53	160.01	3.91	163.92
07:30-07:45	1	1	52	74	272	935	72	21.15	6.32	36.32	22.69	2.13	24.82
	2	1	117	-23	1158	1768	72	96.67	58.77	337.94	441.57	19.48	461.06
	3	1	0	Unrestricted	1094	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	291	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	26	245	73	1914	18	51.54	2.38	30.38	14.84	0.82	15.66
	6	1	0	Unrestricted	61	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	96	-7	147	1166	16	110.97	7.55	36.42	64.34	2.52	66.86
	8	1	0	Unrestricted	39	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	0	1154	18	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	4	2323	73	1965	130	0.04	0.00	0.01	0.01	0.00	0.01
07:45-08:00	1	1	52	74	351	1210	72	20.37	7.98	45.88	28.21	2.72	30.93
	2	1	119	-25	1212	1807	72	228.50	105.11	604.37	1092.40	29.26	1121.66
	3	1	0	Unrestricted	1091	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	511	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	38	135	107	1914	18	54.12	3.59	45.91	22.84	1.24	24.08
	6	1	0	Unrestricted	103	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	95	-5	134	1076	16	161.49	8.47	40.82	85.35	2.71	88.06
	8	1	0	Unrestricted	53	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	88	2	151	1168	18	97.03	6.60	94.23	57.79	2.26	60.06
	10	1	13	585	258	1965	130	0.14	0.01	0.08	0.14	0.00	0.14
08:00-08:15	1	1	50	81	346	1238	72	19.84	7.75	44.55	27.07	2.64	29.71
	2	1	106	-15	1036	1737	72	379.76	136.05	782.26	1551.87	31.48	1583.36
	3	1	0	Unrestricted	1040	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	559	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	42	116	117	1914	18	90.75	3.60	46.04	41.82	1.25	43.07
	6	1	0	Unrestricted	111	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	112	-20	167	1138	16	201.45	12.22	58.93	132.70	3.69	136.39
	8	1	0	Unrestricted	43	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	98	-8	165	1147	18	193.71	9.26	132.25	125.90	3.07	128.97
	10	1	115	-22	323	1965	130	127.01	17.40	142.00	161.81	5.67	167.48
08:15-08:30	1	1	68	32	432	1131	72	25.90	11.61	66.74	44.14	3.95	48.09
	2	1	114	-21	1146	1795	72	421.20	162.07	931.93	1903.97	35.11	1939.08
	3	1	0	Unrestricted	797	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	649	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	45	100	126	1914	18	93.32	3.98	50.81	46.26	1.38	47.64
	6	1	0	Unrestricted	421	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	125	-28	229	1404	16	287.28	21.88	105.49	259.49	5.77	265.26
	8	1	0	Unrestricted	37	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	98	-8	154	1074	18	249.03	10.85	155.01	151.47	3.45	154.93
	10	1	147	-39	412	1965	130	294.18	39.51	322.53	478.07	9.98	488.05

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
3	17/04/2019 08:44:46	17/04/2019 08:44:53	07:30	130	1731.34	118.92	147.21	10/1	4	33	7/1	10/1	10/1	
3	17/04/2019 08:44:46	17/04/2019 08:44:53	07:30	130	568.41	38.27	116.61	2/1	2	17	2/1	10/1	2/1	
3	17/04/2019 08:44:46	17/04/2019 08:44:53	07:45	130	1324.92	90.62	119.47	2/1	2	17	2/1	10/1	2/1	
3	17/04/2019 08:44:46	17/04/2019 08:44:53	08:00	130	2088.97	143.74	114.71	10/1	4	33	7/1	10/1	10/1	
3	17/04/2019 08:44:46	17/04/2019 08:44:53	08:15	130	2943.05	203.06	147.21	10/1	4	33	7/1	10/1	10/1	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	147	-39	3872		110.57	1688.70	42.64	1731.34
07:30-07:45	117	-23	3208	846	42.95	543.46	24.95	568.41
07:45-08:00	119	-25	3971	846	82.16	1286.74	38.18	1324.92
08:00-08:15	115	-22	3906	846	132.48	2041.18	47.80	2088.97
08:15-08:30	147	-39	4403	846	166.04	2883.41	59.64	2943.05

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering	Calculated sat flow	Actual green (s (per	Wasted time total (s	Degree of saturation	Practical reserve capacity	JourneyTime (s)	Mean Delay per	Mean stops per	Mean max queue	Delay weighting multiplier	Stop weighting multiplier	Cost of traffic penalties (£	P.I.

						(PCU/hr)	(PCU/hr)	cycle))	(per cycle))	(%)	(%)		Veh (s)	Veh (%)	(PCU)	(%)	(%)	per hr)	
1	1	R403 Clebridge		1	A	350			0.00	68	32	34.09	22.10	65.10	11.61	100	100	0.00	33.39
2	1	R403 Clane		1	C	1138 <			0.00	119	-25	289.45	277.91	229.54	162.07 +	100	100	0.00	1276.29
3	1					1005			6.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					502			15.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	106			3.00	45	100	80.82	75.46	88.25	3.98	100	100	0.00	32.61
6	1					174			60.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	169 <			0.00	125	-28	214.20	202.93	195.09	21.88 +	100	100	0.00	139.14
8	1					43			122.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	117 <			19.00	98	-8	181.68	180.80	149.11	10.85 +	100	100	0.00	85.99
10	1	Capdoo Park Main				267 <			111.48	147	-39	160.53	152.22	158.55	39.51 +	100	100	0.00	163.92

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	721.97	142.56	118.92	1688.70	42.64	0.00	1731.34
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	721.97	142.56	118.92	1688.70	42.64	0.00	1731.34

Time segment: 07:30-07:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	272	935	72	0.00	52	74	33.15	21.15	62.45	6.32	100	100	0.00	24.82
2	1	R403 Clane		1	C	1158 <	1768	72	0.00	117	-23	108.67	96.67	156.47	58.77 +	100	100	0.00	461.06
3	1					1094	Unrestricted	130	6.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					291	Unrestricted	130	15.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	73	1914	18	0.00	26	245	56.94	51.54	89.27	2.38	100	100	0.00	15.66
6	1					61	Unrestricted	130	60.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	147	1166	16	0.00	96	-7	125.28	110.97	136.73	7.55	100	100	0.00	66.86
8	1					39	Unrestricted	130	77.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	0	1154	18	19.00	0	Unrestricted	0.00	0.00	0.00	0.00	100	100	0.00	0.00
10	1	Capdoo Park Main				73	1965	130	0.00	4	2323	8.49	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	620.03	58.94	10.52	38.27	543.46	24.95	0.00	568.41
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	620.03	58.94	10.52	38.27	543.46	24.95	0.00	568.41

Time segment: 07:45-08:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	351	1210	72	0.00	52	74	32.37	20.37	61.79	7.98	100	100	0.00	30.93
2	1	R403 Clane		1	C	1212 <	1807	72	0.00	119	-25	240.24	228.50	230.00	105.11 +	100	100	0.00	1121.66
3	1					1091	Unrestricted	130	4.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					511	Unrestricted	130	0.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	107	1914	18	0.00	38	135	59.51	54.12	92.07	3.59	100	100	0.00	24.08
6	1					103	Unrestricted	130	50.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	134	1076	16	0.00	95	-5	168.27	161.49	161.10	8.47	100	100	0.00	88.06
8	1					53	Unrestricted	130	55.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	151	1168	18	0.00	88	2	101.83	97.03	119.50	6.60	100	100	0.00	60.06

10	1	Capdoo Park Main				258	1965	130	0.00	13	585	8.59	0.14	0.00	0.01	100	100	0.00	0.14

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	734.88	114.74	6.40	90.62	1286.74	38.18	0.00	1324.92
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	734.88	114.74	6.40	90.62	1286.74	38.18	0.00	1324.92

Time segment: 08:00-08:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	346	1238	72	0.00	50	81	31.87	19.84	60.76	7.75	100	100	0.00	29.71
2	1	R403 Clane		1	C	1036 <	1737	72	0.00	106	-15	390.43	379.76	257.40	136.05 +	100	100	0.00	1583.36
3	1					1040	Unrestricted	130	2.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					559	Unrestricted	130	0.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	117	1914	18	3.00	42	116	96.09	90.75	84.84	3.60	100	100	0.00	43.07
6	1					111	Unrestricted	130	48.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	167	1138	16	0.00	112	-20	212.07	201.45	197.69	12.22	100	100	0.00	136.39
8	1					43	Unrestricted	130	72.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	165 <	1147	18	0.00	98	-8	194.76	193.71	148.67	9.26 +	100	100	0.00	128.97
10	1	Capdoo Park Main				323 <	1965	130	111.37	115	-22	135.46	127.01	160.52	17.40 +	100	100	0.00	167.48

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	724.66	167.18	4.33	143.74	2041.18	47.80	0.00	2088.97
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	724.66	167.18	4.33	143.74	2041.18	47.80	0.00	2088.97

Time segment: 08:15-08:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	432	1131	72	0.00	68	32	37.87	25.90	72.92	11.61	100	100	0.00	48.09
2	1	R403 Clane		1	C	1146 <	1795	72	0.00	114	-21	432.88	421.20	277.69	162.07 +	100	100	0.00	1939.08
3	1					797	Unrestricted	130	4.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					649	Unrestricted	130	0.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	126	1914	18	2.00	45	100	98.64	93.32	87.57	3.98	100	100	0.00	47.64
6	1					421	Unrestricted	130	18.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	229 <	1404	16	0.00	125	-28	299.71	287.28	250.54	21.88 +	100	100	0.00	265.26
8	1					37	Unrestricted	130	122.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	154 <	1074	18	0.00	98	-8	245.90	249.03	178.58	10.85 +	100	100	0.00	154.93
10	1	Capdoo Park Main				412 <	1965	130	111.48	147	-39	302.27	294.18	284.39	39.51 +	100	100	0.00	488.05

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	808.31	229.39	3.52	203.06	2883.41	59.64	0.00	2943.05
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	808.31	229.39	3.52	203.06	2883.41	59.64	0.00	2943.05

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*

TRANSYT 15

Filename: Signalised Junction.t15
Path: S:\Jobs\2018\18039 Housing Dev Clane, Kildare TIA+RSA\18039-02\Reports\Working\TRANSYT
Report generation date: 17/04/2019 08:52:14

A4 - 2037 pm sensitivity
D4 - 2037 pm Sensitivity*

Signal Timings

Network Default: 130s cycle time; 130 steps

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5		5	5	12
	B	5		5			12
	C		5		5	5	12
	D	5		5			12
	E	5		5			12
	F	12	12	12	12	12	

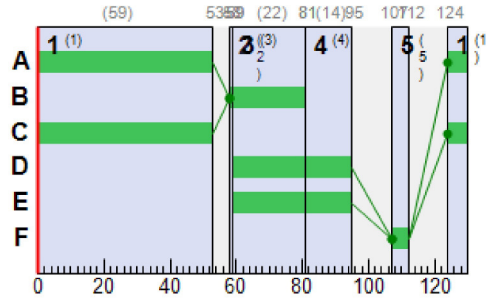
Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A,C	124	53	59	1	7
	2	✓	2	B	58	59	1	1	1
	3	✓	3	B,E,D	59	81	22	1	1
	4	✓	4	E,D	81	95	14	1	1
	5	✓	5	F	107	112	5	1	5

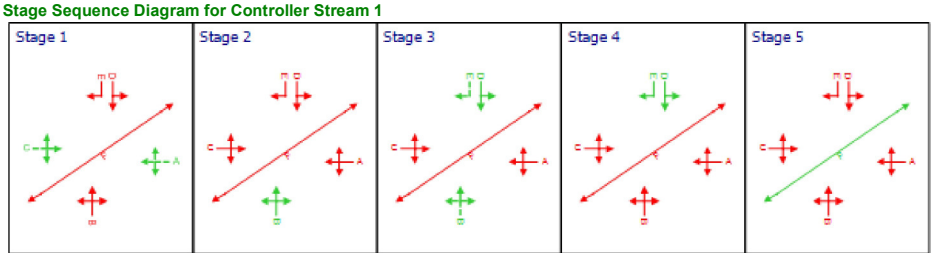
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1	1		1	A	124	53	59
2	1		1	C	124	53	59
5	1		1	D	59	95	36
7	1		1	B	58	81	23
9	1		1	E	59	95	36

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
	1	1	179	-50	1108			817.06	436.79	2511.54	3570.12	31.71	3601.83
	2	1	117	-23	656			228.26	82.30	473.23	590.40	15.56	605.96
	3	1	0	Unrestricted	442			0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	745			0.00	0.00	0.00	0.00	0.00	0.00

Summary	5	1	24	271	84			35.78	3.45	44.14	11.85	0.77	12.62
	6	1	0	Unrestricted	250			0.00	0.00	0.00	0.00	0.00	0.00
	7	1	50	79	86			50.76	3.98	19.18	17.22	0.97	18.18
	8	1	0	Unrestricted	111			0.00	0.00	0.00	0.00	0.00	0.00
	9	1	73	24	126			51.22	6.69	95.51	25.51	1.24	26.75
	10	1	22	316	210			0.70	2.44	19.89	0.58	0.18	0.76
17:30-17:45	1	1	179	-50	1161	1402	59	220.59	88.04	506.22	1010.20	23.79	1033.99
	2	1	108	-16	633	1275	59	84.79	30.27	174.08	211.71	10.27	221.98
	3	1	0	Unrestricted	428	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	704	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	18	411	96	1914	36	35.73	2.61	33.29	13.53	0.89	14.42
	6	1	0	Unrestricted	281	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	50	79	115	1242	23	55.71	3.98	19.18	25.27	1.37	26.64
	8	1	0	Unrestricted	126	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	29	205	92	1097	36	42.20	2.49	35.55	15.31	0.88	16.19
	10	1	10	841	188	1965	130	0.10	0.01	0.04	0.07	0.00	0.07
17:45-18:00	1	1	173	-48	1144	1434	59	616.22	213.09	1225.29	2780.66	34.09	2814.75
	2	1	117	-23	677	1257	59	179.22	48.70	280.02	478.60	14.66	493.26
	3	1	0	Unrestricted	429	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	851	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	24	271	132	1914	36	36.62	3.45	44.14	19.06	1.20	20.26
	6	1	0	Unrestricted	279	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	26	253	83	1761	23	47.30	2.60	12.55	15.48	0.89	16.38
	8	1	0	Unrestricted	127	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	73	24	229	1104	36	60.40	6.69	95.51	54.55	2.31	56.87
	10	1	22	316	361	1965	130	1.50	2.44	19.89	2.13	0.72	2.85
18:00-18:15	1	1	174	-48	1171	1455	59	979.60	336.17	1932.99	4524.71	37.05	4561.77
	2	1	109	-18	607	1205	59	309.86	66.46	382.15	741.88	16.93	758.81
	3	1	0	Unrestricted	423	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	759	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	13	581	72	1914	36	35.09	1.93	24.66	9.97	0.66	10.63
	6	1	0	Unrestricted	203	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	26	246	55	1147	23	48.59	1.76	8.47	10.54	0.60	11.14
	8	1	0	Unrestricted	109	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	43	111	138	1136	36	46.45	3.88	55.45	25.28	1.35	26.63
	10	1	11	742	210	1965	130	0.11	0.01	0.05	0.09	0.00	0.09
18:15-18:30	1	1	149	-40	955	1388	59	1583.48	436.79	2511.54	5964.89	31.92	5996.81
	2	1	107	-16	706	1433	59	333.75	82.30	473.23	929.41	20.39	949.80
	3	1	0	Unrestricted	489	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	4	1	0	Unrestricted	667	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	5	1	7	1262	36	1914	36	34.17	0.94	12.04	4.85	0.32	5.18
	6	1	0	Unrestricted	236	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	7	1	32	182	91	1543	23	48.96	2.90	14.01	17.57	1.00	18.57
	8	1	0	Unrestricted	83	Unrestricted	130	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	15	514	46	1103	36	37.89	1.47	21.01	6.87	0.42	7.29
	10	1	4	2057	82	1965	130	0.04	0.00	0.01	0.01	0.00	0.01

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network within capacity
4	17/04/2019 08:51:12	17/04/2019 08:51:17	17:30	130	4266.10	296.88	179.41	1/1	2	17	1/1	10/1	1/1	
4	17/04/2019 08:51:12	17/04/2019 08:51:17	17:30	130	1313.29	89.87	179.41	1/1	2	17	1/1	10/1	1/1	
4	17/04/2019 08:51:12	17/04/2019 08:51:17	17:45	130	3404.37	235.95	172.89	1/1	2	17	1/1	10/1	1/1	
4	17/04/2019 08:51:12	17/04/2019 08:51:17	18:00	130	5369.07	374.12	174.38	1/1	2	17	1/1	10/1	1/1	
4	17/04/2019 08:51:12	17/04/2019 08:51:17	18:15	130	6977.67	487.58	149.04	1/1	2	17	1/1	10/1	1/1	

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
Summary	179	-50	3818		279.92	4215.67	50.43	4266.10
17:30-17:45	179	-50	3824	863	84.61	1276.09	37.20	1313.29
17:45-18:00	173	-48	4312	863	196.99	3350.50	53.87	3404.37
18:00-18:15	174	-48	3746	863	359.55	5312.48	56.60	5369.07
18:15-18:30	149	-40	3391	863	517.62	6923.62	54.05	6977.67

Final Prediction Table

Time segment: Summary

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1108 <			0.00	179	-50	829.05	817.06	384.84	436.79 +	100	100	0.00	3601.83
2	1	R403 Clane		1	C	656 <			0.00	117	-23	239.04	228.26	207.93	82.30 +	100	100	0.00	605.96
3	1					442			27.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					745			20.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	84			35.00	24	271	41.17	35.78	73.03	3.45	100	100	0.00	12.62
6	1					250			49.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	86			17.00	50	79	65.06	50.76	89.52	3.98	100	100	0.00	18.18
8	1					111			63.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	126			27.00	73	24	55.97	51.22	78.32	6.69	100	100	0.00	26.75
10	1	Capdoo Park Main				210			19.70	22	316	9.15	0.70	6.82	2.44	100	100	0.00	0.76

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	681.57	319.37	296.88	4215.67	50.43	0.00	4266.10
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	681.57	319.37	296.88	4215.67	50.43	0.00	4266.10

Time segment: 17:30-17:45

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1161 <	1402	59	0.00	179	-50	232.59	220.59	293.24	88.04 +	100	100	0.00	1033.99
2	1	R403 Clane		1	C	633 <	1275	59	0.00	108	-16	96.79	84.79	139.17	30.27 +	100	100	0.00	221.98
3	1					428	Unrestricted	130	19.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					704	Unrestricted	130	14.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	96	1914	36	0.00	18	411	41.13	35.73	74.25	2.61	100	100	0.00	14.42
6	1					281	Unrestricted	130	39.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	115	1242	23	0.00	50	79	70.02	55.71	94.78	3.98	100	100	0.00	26.64
8	1					126	Unrestricted	130	53.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	92	1097	36	0.00	29	205	47.00	42.20	76.28	2.49	100	100	0.00	16.19
10	1	Capdoo Park Main				188	1965	130	0.00	10	841	8.55	0.10	0.00	0.01	100	100	0.00	0.07

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	683.50	112.65	6.07	89.87	1276.09	37.20	0.00	1313.29
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	683.50	112.65	6.07	89.87	1276.09	37.20	0.00	1313.29

Time segment: 17:45-18:00

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)	Delay weighting multiplier (%)	Stop weighting multiplier (%)	Cost of traffic penalties (£ per hr)	P.I.
1	1	R403 Clebridge		1	A	1144 <	1434	59	0.00	173	-48	628.20	616.22	410.84	213.09 +	100	100	0.00	2814.75
2	1	R403 Clane		1	C	677 <	1257	59	0.00	117	-23	190.39	179.22	201.48	48.70 +	100	100	0.00	493.26
3	1					429	Unrestricted	130	15.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					851	Unrestricted	130	1.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	132	1914	36	4.00	24	271	42.01	36.62	72.38	3.45	100	100	0.00	20.26

6	1					279	Unrestricted	130	40.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	83	1761	23	0.00	26	253	61.60	47.30	85.89	2.60	100	100	0.00	16.38
8	1					127	Unrestricted	130	53.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	229	1104	36	0.00	73	24	65.18	60.40	80.59	6.69	100	100	0.00	56.87
10	1	Capdoo Park Main				361	1965	130	19.70	22	316	9.95	1.50	15.90	2.44	100	100	0.00	2.85

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	745.76	260.65	2.86	235.95	3350.50	53.87	0.00	3404.37
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	745.76	260.65	2.86	235.95	3350.50	53.87	0.00	3404.37

Time segment: 18:00-18:15

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	1	R403 Clebridge		1	A	1171 <	1455	59	0.00	174	-48	991.59	979.60	440.06	336.17 +	100	100	0.00	4561.77
2	1	R403 Clane		1	C	607 <	1205	59	0.00	109	-18	320.02	309.86	242.71	66.46 +	100	100	0.00	758.81
3	1					423	Unrestricted	130	21.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					759	Unrestricted	130	11.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	72	1914	36	0.00	13	581	40.49	35.09	73.32	1.93	100	100	0.00	10.63
6	1					203	Unrestricted	130	49.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	55	1147	23	17.00	26	246	62.88	48.59	87.40	1.76	100	100	0.00	11.14
8	1					109	Unrestricted	130	59.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	138	1136	36	0.00	43	111	51.10	46.45	77.92	3.88	100	100	0.00	26.63
10	1	Capdoo Park Main				210	1965	130	0.00	11	742	8.56	0.11	0.00	0.01	100	100	0.00	0.09

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	661.62	395.85	1.67	374.12	5312.48	56.60	0.00	5369.07
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	661.62	395.85	1.67	374.12	5312.48	56.60	0.00	5369.07

Time segment: 18:15-18:30

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	WEIGHTS		PENALTIES	P.I.
Arm	**Traffic Stream**	**Name**	**Traffic node**	**Controller stream**	**Phase**	**Calculated flow entering (PCU/hr)**	**Calculated sat flow (PCU/hr)**	**Actual green (s (per cycle))**	**Wasted time total (s (per cycle))**	**Degree of saturation (%)**	**Practical reserve capacity (%)**	**JourneyTime (s)**	**Mean Delay per Veh (s)**	**Mean stops per Veh (%)**	**Mean max queue (PCU)**	**Delay weighting multiplier (%)**	**Stop weighting multiplier (%)**	**Cost of traffic penalties (£ per hr)**	**P.I.**
1	1	R403 Clebridge		1	A	955 <	1388	59	0.00	149	-40	1595.46	1583.48	397.34	436.79 +	100	100	0.00	5996.81
2	1	R403 Clane		1	C	706 <	1433	59	0.00	107	-16	343.61	333.75	245.86	82.30 +	100	100	0.00	949.80
3	1					489	Unrestricted	130	27.00	0	Unrestricted	36.47	0.00	0.00	0.00	100	100	0.00	0.00
4	1					667	Unrestricted	130	20.00	0	Unrestricted	35.92	0.00	0.00	0.00	100	100	0.00	0.00
5	1	Capdoo Park Straight Right		1	D	36	1914	36	35.00	7	1262	39.57	34.17	71.58	0.94	100	100	0.00	5.18
6	1					236	Unrestricted	130	41.00	0	Unrestricted	38.36	0.00	0.00	0.00	100	100	0.00	0.00
7	1	Brooklands		1	B	91	1543	23	0.00	32	182	63.26	48.96	87.48	2.90	100	100	0.00	18.57
8	1					83	Unrestricted	130	63.00	0	Unrestricted	36.80	0.00	0.00	0.00	100	100	0.00	0.00
9	1	Capdoo Park Flare		1	E	46	1103	36	27.00	15	514	42.68	37.89	72.30	1.47	100	100	0.00	7.29
10	1	Capdoo Park Main				82	1965	130	0.00	4	2057	8.49	0.04	0.00	0.00	100	100	0.00	0.01

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	635.38	508.33	1.25	487.58	6923.62	54.05	0.00	6977.67
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Pedestrians	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	635.38	508.33	1.25	487.58	6923.62	54.05	0.00	6977.67

- *< = adjusted flow warning (upstream links/traffic streams are over-saturated)*
- ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- *+ = average link/traffic stream excess queue is greater than 0*
- ***P.I. = PERFORMANCE INDEX***

Appendix 10.2 ESB Networks Plan

ESB Networks

TITLE:

20190718-005_A0

COLOUR CODE:

- BLACK - 38KV & HIGHER VOLTAGE OVERHEAD LINES
- GREEN - MV(10KV/20KV) OVERHEAD LINES
- BLUE - LV (400V/230V) OVERHEAD LINES
- CYAN - 38KV & HIGHER VOLTAGE UNDERGROUND CABLE ROUTES
- RED - MV/LV (10KV/20KV/400V/230V) UNDERGROUND CABLE ROUTES

DATE: 18-Jul-2019

** SCALE: 1:1000

** SCALE WHEN PRINTED ON AN A0 PAGE
XY COORDINATES DISPLAYED IN IRISH GRID COORDINATE SYSTEM

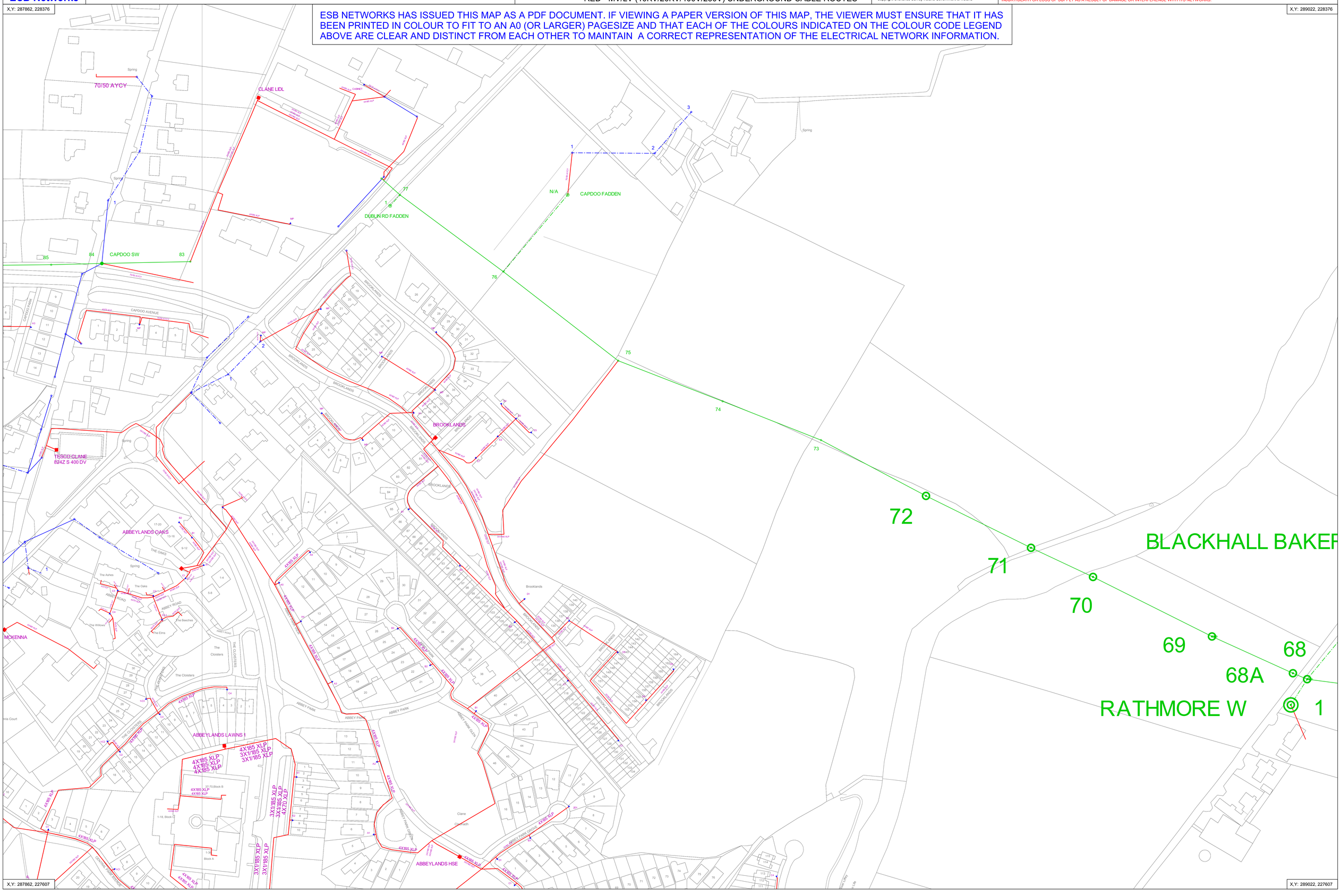
ESB NETWORKS HAS ISSUED THIS MAP AS A PDF DOCUMENT. IF VIEWING A PAPER VERSION OF THIS MAP, THE VIEWER MUST ENSURE THAT IT HAS BEEN PRINTED IN COLOUR TO FIT TO AN A0 (OR LARGER) PAGESIZE AND THAT EACH OF THE COLOURS INDICATED ON THE COLOUR CODE LEGEND ABOVE ARE CLEAR AND DISTINCT FROM EACH OTHER TO MAINTAIN A CORRECT REPRESENTATION OF THE ELECTRICAL NETWORK INFORMATION.

X,Y: 287862, 228376

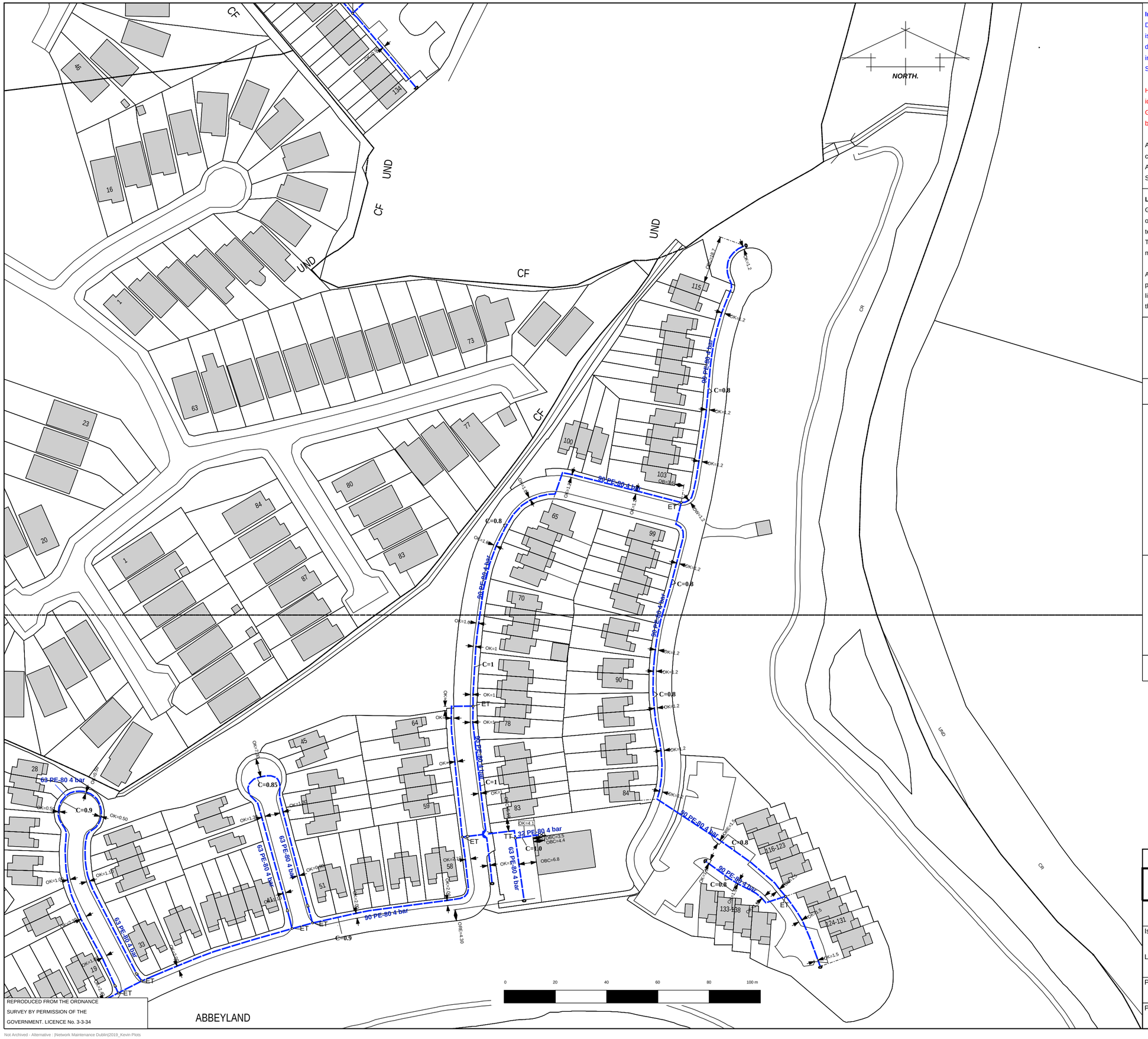
X,Y: 289022, 228376

X,Y: 287862, 227607

X,Y: 289022, 227607



Appendix 10.3 Gas Networks Ireland Plan



REPRODUCED FROM THE ORDNANCE SURVEY BY PERMISSION OF THE GOVERNMENT. LICENCE No. 3-3-34

Important Safety Notice:

Damage to gas pipelines can result in serious injury or death. Gas network information is provided as a general guide. The exact location and depth of medium or low pressure distribution gas pipes must be verified on site by carrying out necessary investigations, including, for example, hand digging trial holes along the route of the pipe.
Service pipes are not generally shown but their presence should always be anticipated.

High pressure transmission pipelines are shown in red. If a transmission pipeline is identified within 10m of any intended excavations then work must not proceed before GNI has been consulted. The true location and depth of a transmission pipeline must be verified on site by a representative of GNI. Contact can be made through 1850 427 747.

All work in the vicinity of the gas network must be completed in accordance with the current edition of the Health & Safety Authority publication, Code of Practice For Avoiding Danger From Underground Services which is available from the Health and Safety Authority (1890 289 389) or can be downloaded at www.hsa.ie.

Legal Notice:

Gas Networks Ireland (GNI) and its affiliates, accept no responsibility for the accuracy of any information contained in this document including data concerning location and technical designation of the gas distribution and transmission network (the Information). The Information should not be relied on for accurate distance or depth of cover measurements.

Any representations and warranties, express or implied, are excluded to the fullest extent permitted by law. No liability shall be accepted for any loss or damage including, without limitation, direct, indirect or consequential loss, arising out of or in connection with the use or re-use of the Information.

- Aurora Telecom Fibre Optic Cable
- Aurora Telecom Duct
- Aurora Telecom Sub-duct
- Aurora Telecom Inserted Gas Pipe

Contact Aurora Telecom on 1850-427-399 or (01)203-0120.

- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted Pipe (Medium Pressure)
- Inserted Pipe (Low Pressure)
- Distribution Pipe (Abandoned)

.C=?	Cover (depth in meters)		Pressure Monitor
CP	CP Test Point		Protection (Sleeve)
	End Cap		Protection (Slabbing)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification **		Transition

** Please contact GNI on 1850-427747 for specific information.

Design Department - CORK

Gas Networks Ireland

GAS NETWORK INFORMATION

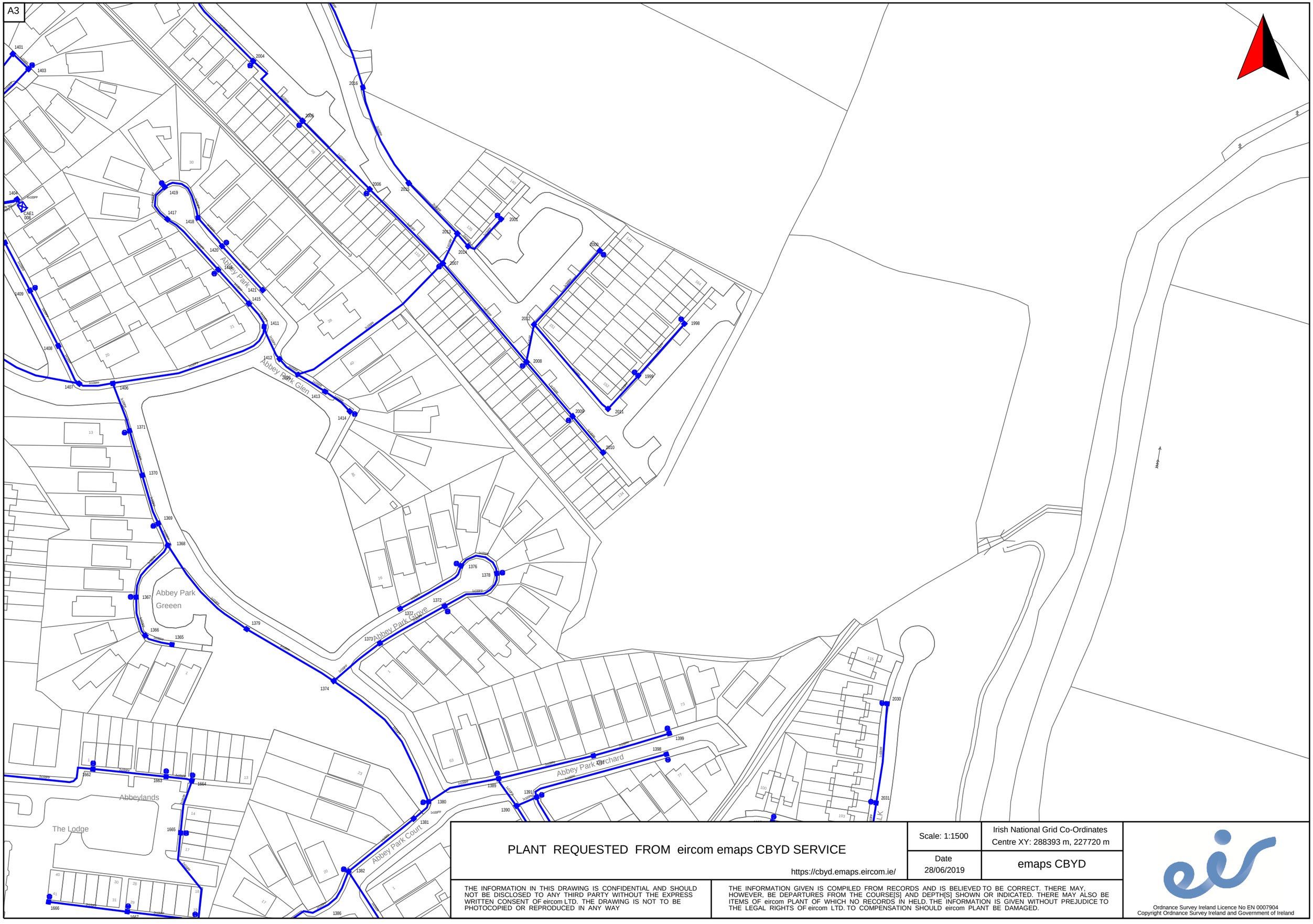
Issue:
Westar Group

Location:
Alexandra Walk Clane

Plot Date:	Contact:
16/05/2019	P Fadden
Plotted by:	**Scale:**
KOC	1:1000

Appendix 10.4 Eir Networks Plan

A3



PLANT REQUESTED FROM eircom emaps CBYD SERVICE https://cbyd.emaps.eircom.ie/	Scale: 1:1500 Date 28/06/2019	Irish National Grid Co-Ordinates Centre XY: 288393 m, 227720 m emaps CBYD

Appendix 11.1 Results of Programme of Archaeological Testing

A programme of Archaeological Testing was undertaken within the proposed development extents of the subject lands from 12th – 16th August 2019 under licence (Ref: 19E0500) from the Department of Culture, Heritage and the Gaeltacht.

The subject lands are subdivided into four separate fields – Plate 1 – and most of the associated boundaries are planted with bushes and trees.

Field 1 slopes gently from north to south and is under meadow. Field 2 was planted with trees and bushes until early 2019 when such were removed and the field –'de-stumped', resulting in significant surface disturbance and surface rutting/scaring Field 3 is under meadow, and slopes gently from west to east, with a slight depression in the centre; the surface is partially rutted/scarred due to its use associated with the construction of the residential estate to the immediate east and south.. Field 4 is very overgrown and contains some surface disturbance (rutting and scarring) associated with its use during the construction of the adjacent residential estate; some construction-related materials, including spoil are stored in the field, particularly along the southern, western and northern areas.

Plate 11.1 Aerial view of site and immediate environs

A total of 30 test trenches were excavated within the overall extents of the proposed development site, the locations of which are illustrated below in Figure 1. The locations of the trenches were largely based on the existing topographical nature of the site, together the preliminary proposed development layout.

The lengths of the trenches were:

T1 – 175m	**T12-T15– 30m**	**T26 – 85m**
T2-T9 – 45m	**T16-T20 – 45m**	**T27-T29– 130m**
T10 – 85m	**T21 – 115m**	**T30 – 65m**
T11 – 210m	**T22-T25 – 110m**	

Table 11.1 Length of test trenches.

Figure 11.1 Locations of archaeological test trenches

All trenches were excavated by machine fitted with a toothless ditching bucket (approx. Width 1.5). All resultant spoil was 'raked through' in an effort to increase the chances of artefact recovery. The trenches were excavated in spits of approx. 10cm depth, with the surface of each spit examined before excavation of the next spit. In addition, the trenches terminated at the surface of the underlying subsoil.

Field No. 1

A total of 10 trenches (T1 – T 10) were excavated in this field (Figure 11.1).

The results were largely similar. The topsoil, with a maximum depth of 220mm, comprised moderately loose mid-brown silty clay with moderate amounts of pebbles and small-medium cobbles, and very occasional large cobbles/small stones, dispersed randomly throughout. This lay directly upon firm brown clay subsoil with a grey or orange hue. This was excavated to a depth of 500mm at a number of locations to prove that it was 'in-situ' subsoil and archaeologically-sterile in form and nature.

Selections of the trenches excavated in Field 1 are illustrated below in Plates 11.2-11.7.

Plate 11.2 T1 from east

Plate 11.3 T2 from north

Plate 11.4 T4 from south

Plate 11.5 T6 from north

Plate 11.6 T8 from north

Plate 11.7 T10 from south

Field No. 2

A total of 6 trenches (T21 – T26) were excavated in this field (Figure 11.1).

The results were largely similar. The topsoil, with a maximum depth of 310mm, comprised moderately loose mid-brown silty clay with moderate amounts of pebbles and cobbles and occasional small stones, dispersed randomly throughout. This lay directly upon firm brown clay subsoil with a grey or orange hue. This was excavated to a depth of 500mm at a number of locations to prove that it was 'in-situ' subsoil and archaeologically-sterile in form and nature.

Selections of the trenches excavated in Field 2 are illustrated below in Plates 11.8 – 11.11

Plate 11.8 T21 from east

Plate 11.9 T22 from south

Plate 11.10 T24 from south

Plate 11.11 T26 from east

Field No. 3

A total of 10 trenches (T11 – T20) were excavated in this field (Figure 11.1). The results were largely similar. The topsoil, with a maximum depth of 260mm, comprised moderately loose mid-brown silty clay

with moderate amounts of pebbles and small-medium cobbles and occasional large stones, dispersed randomly throughout. This lay directly upon firm brown clay subsoil with a grey or orange hue. This was excavated to a depth of 500mm at a number of locations to prove that it was 'in-situ' subsoil and archaeologically-sterile in form and nature.

Selections of the trenches excavated in Field 2 are illustrated below in Plates 11.12 – 11.18

Plate 11.13 T11 from east

Plate 11.14 T12 from north

Plate 11.15 T14 from north

Plate 11.16 T16 from north

Plate 11.17 T18 from south

Plate 11.18 T20 from south

Field No. 4

A total of 4 trenches (T27 – T30) were excavated in this field (Figure 1).

The results were largely similar. The topsoil, with a maximum depth of 290mm, comprised moderately loose mid-brown silty clay with moderate amounts of pebbles and small-medium cobbles and occasional large stones, dispersed randomly throughout. This lay directly upon firm brown clay subsoil with a grey or orange hue. This was excavated to a depth of 500mm at a number of locations to prove that it was 'in-situ' subsoil and archaeologically-sterile in form and nature. In addition, there were localised areas of previous model disturbance noted, particularly in the southern area of T29 and in the north-eastern area of T30.

Selections of the trenches excavated in Field 2 are illustrated below in Plates 20 - 22.

Plate 11.19 T27 from south

Plate 11.20 T29 from north

Plate 11.21 T30 from northeast

No subsurface features of archaeological interest or potential were uncovered and no artefacts of archaeological or historical interest were recovered during the course of the Archaeological Testing.