Engineering Assessment Report

Proposed Residential Development at Dunshaughlin, County Meath

January 2025

Waterman Moylan Consulting Engineers Limited
Block S, Eastpoint Business Park, Alfie Byrne Road, Dublin 3
www.watermangroup.com

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015)

Issue	Date	Prepared by	Checked by	Approved by
No. 1	Jan 2025	Louis Song	B. Gallagher	B Gallagher

Comments

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A. Traffic Modelling Results

1. Introduction

Waterman Moylan have been appointed by Loughglynn Developments Ltd. to provide Engineering services on the LRD application for revision to approved SHD development at Grange End, Dunshaughlin. This report has been prepared as part of a planning application to Meath County Council for the proposed development of 15 No. residential units which are all 3 bed houses.

This report describes the criteria used to design the storm water discharge, disposal of foul water, water supply and vehicular access to the developed site.

The proposed Large Scale Residential Development (LRD) will consist of amendments to the Strategic Housing Development (SHD) permitted on site under Ref. ABP-307244-20 for 211 no. residential units(112 no. two storey houses and 99 no. apartments in 6 no. blocks), creche and associated works. This amendment application seeks to omit permitted apartment Blocks D and E (comprising 36 no. units) and replace with 15 no. 3 bed houses, resulting in a revised residential development of 190 units in total. Omission of permitted access road from the permitted Distributor Road to the east and associated amendments to residential car parking and provision of additional open spaces. All other site works including boundary treatments, landscaping and site services to facilitate development. The remainder of the development to be carried out in accordance with the parent permission Ref. ABP-307244-20.

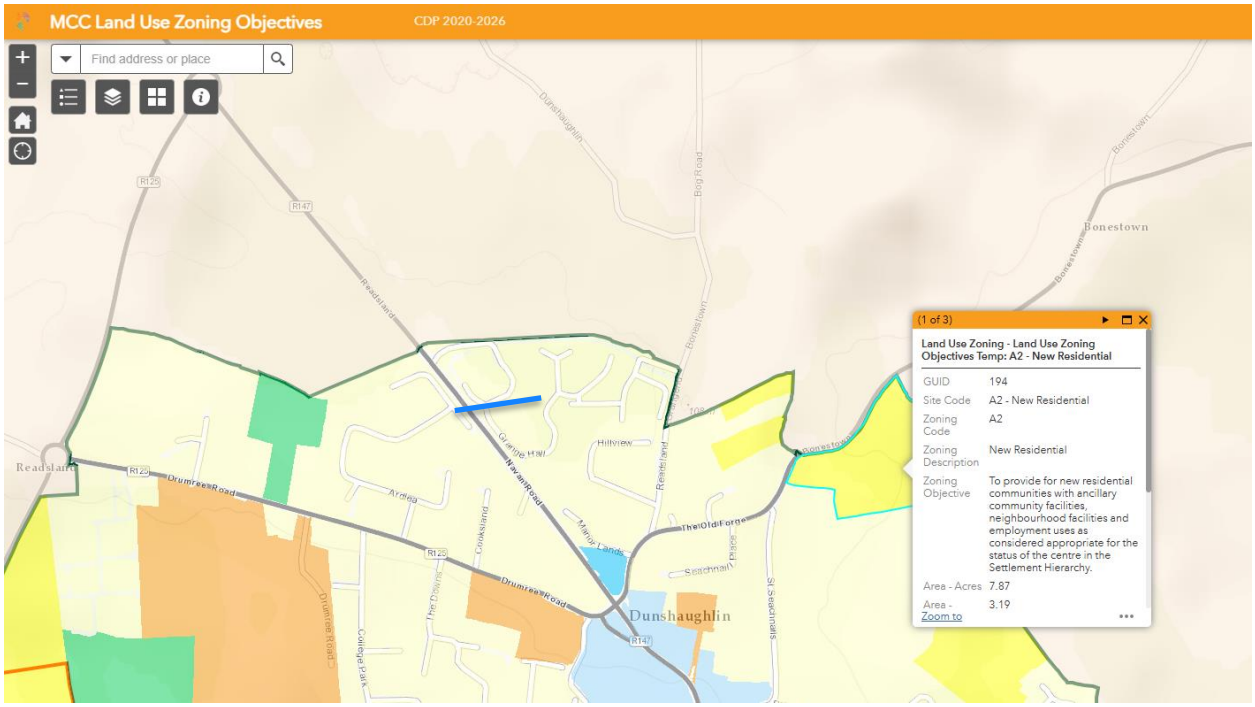
2. Site Description

2.1 Site Location

The proposed amended development is a revised area (in red) within the site boundary of the previously approved planning (in blue) under Planning Reg. Ref. No. SH307244/ABP-307244-20 as shown in Figure 1. According to the Meath County Development Plan 2021-2027 for Dunshaughlin, the land to the south of the subject site is zoned for A2-new residential zoning, as shown in Figure 2.

Figure 1 Site Location

Figure 2 Exttract from Meath County Council Land Use Zoning Objectives



2.2 Existing Development

The proposed amended site area is approximately 0.439 Ha. The site is currently green field. The proposed site generally falls from northwest to southeast with a high point of 94.12 m OD and a low point of 92.09m OD.

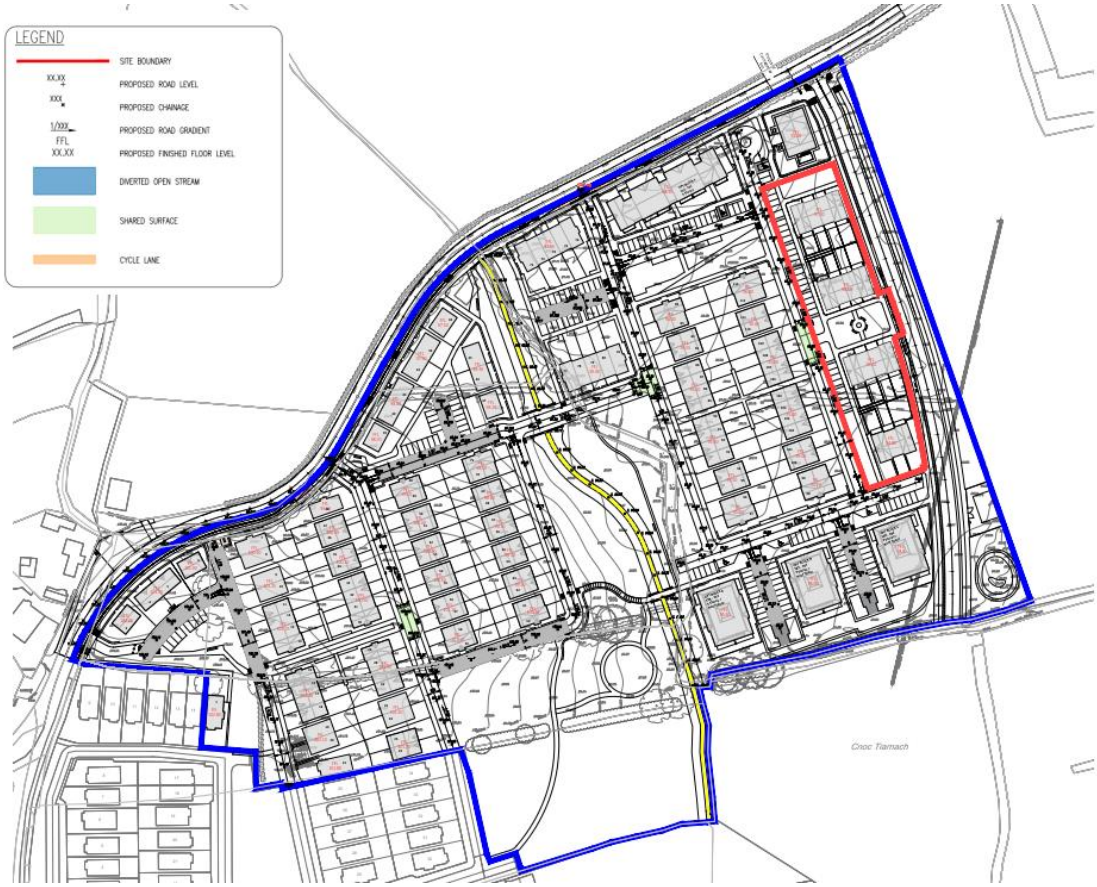
2.3 Proposed Development

The proposed Large Scale Residential Development (LRD) will consist of amendments to the Strategic Housing Development (SHD) permitted on site under Ref. ABP-307244-20 for 211 no. residential units(112 no. two storey houses and 99 no. apartments in 6 no. blocks), creche and associated works. This amendment application seeks to omit permitted apartment Blocks D and E (comprising 36 no. units) and replace with 15 no. 3 bed houses, resulting in a revised residential development of 190 units in total. Omission of permitted access road from the permitted Distributor Road to the east and associated amendments to residential car parking and provision of additional open spaces. All other site works including boundary treatments, landscaping and site services to facilitate development. The remainder of the development to be carried out in accordance with the parent permission Ref. ABP-307244-20.

A foul pumping station will also be built as part of the overall development which includes the proposed amended development to pump foul water to a 225mm diameter foul sewer within the overall development which outfalls to the existing foul sewer in the R125 to the north west of the proposed amendment development. This drains to an existing foul pump station to the east of the development which has recently been refurbished by the client.

Noted as shown in the figure below, the proposed amended development was revised compare to the previouly approved development, Planning Reg. Ref. No. SH307244/ABP-307244-20 (SHD process), bounded by the red line. This involves the replacement of 2 no. apartment blocks (32 no. units) with 15 no. houses.

Figure 3: Proposed Revised Site Layout



3. Foul Water Drainage

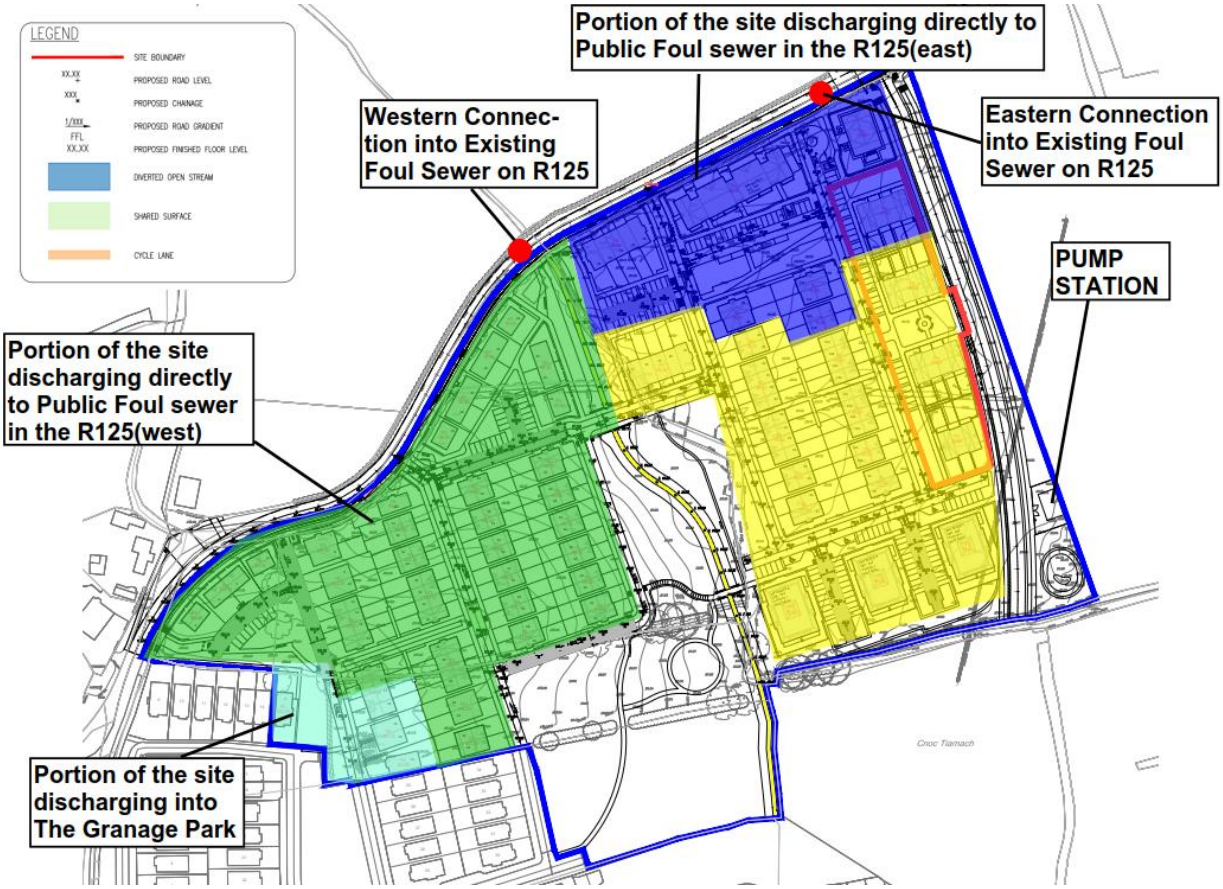
3.1 Receiving Environment

For the proposed amended development, it is proposed to drain the northern 4 no. units northwards, outfall into the existing 225mm diameter public foul sewer on R125. These rest of the 11 no. units will be collected and drained southwards to the new pumping station that was proposed and approved under Planning Reg. Ref. No. SH307244/ABP-307244-20 that will be located to the southeast of the proposed development. The pump station will then pump the collected foul and discharge and join to the proposed on site foul manhole to the north which eventually outfalls into the public foul sewer on R125. Please see attached Waterman Moylan Drawing No. 19-023-P1200-Proposed Drainage Layout for the rising main location, pumping station location and foul drainage details, for the overall development.

Noted that c. 0.439 Ha of the overall development – which is the proposed amended development - is amended compared to the previously approved development with Planning Reg. Ref. No. SH307244/ABP-307244-20. Including replacement of two apartment blocks with 15 no. houses. Therefore the dwellings contributed to the foul network have been reduced by 21 No. , taking the overall units numbers from 212 units for the previously approved development to 191 no. units for the proposed overall development.

The site pumping station will be reduced in size based on the reduced inflow. A total number of 87 no. units are proposed to be drain to the on site pumping station, giving the required size of the pumping station 39 cubic metres.

Figure 4 Foul network catchments.



3.2 Proposed Foul Water Drainage

The previously approved development will consist of 212 residential units and a new Crèche to accommodate 8 staff and 60 children. Based on Irish Waters Code of Practice, the peak foul flow from the proposed development will be as follows:

Table 1: Calculation of previously approved Foul Water Flow

Description	No. of Units	Flow l/h/day	Population per Unit	Infiltration Factor	Total Discharge (l/d)
Residential Units	212	150	2.7	1.1	94,446
Crèche	1	90	68	1.1	6,732
				Totals	***101,178 l/d***

Calculation of Previously Approved Peak Foul Flow		
Total Daily Discharge *(from Table 1.)*	101,178	l/d
Dry Weather Flow (DWF)	1.171	l/s
Peak Foul Flow (=6 x DWF)	***7.03***	***l/s***

Table 2: Calculation of currently revised overall development Foul Water Flow

Description	No. of Units	Flow l/h/day	Population per Unit	Infiltration Factor	Total Discharge (l/d)
Residential Units	191	150	2.7	1.1	85,091
Crèche	1	90	68	1.1	6,732
				Totals	***91,823 l/d***

Calculation of Proposed Peak Foul Flow		
Total Daily Discharge *(from Table 1.)*	91,823	l/d
Dry Weather Flow (DWF)	1.063	l/s
Peak Foul Flow (=6 x DWF)	***6.38***	***l/s***

From table 1 and 2 above, we can conclude that the peak foul flow of proposed foul water flow is 6.38l/s for overall revised development, which is less than 7.03l/s by previously approved development. This shows that the foul discharge load has been decreased to the foul drainage network, therefore, the previously approved foul drainage network is able to cater the amendment of housing units.

3.3 Network Design

Foul Water Drains will be uPVC to Irish Water specification or concrete socket and spigot pipes (to IS 6).

Drains will be laid to comply with the Building Regulations 2010, and in accordance with the recommendations contained in the Technical Guidance Documents, Section H.

Foul water sewers will consist of uPVC or concrete socket and spigot pipes (to IS 6) and will be laid strictly in accordance with Irish Waters code of practice for Wastewater Infrastructure and Irish Water requirements for taking in charge.

All manholes will be constructed in block work or cast in-situ concrete. Construction details for the proposed drainage systems are included in the accompanying planning submission drawings.

4. Surface Water Drainage

4.1 Introduction

As part of the overall development it is proposed to divert/realign the existing drainage channel/watercourse located within the site so that it forms a more linear path through the centre of the development. The drainage channel falls from north to south with a lowest invert level at the southern boundary of the site of 92.036m OD and at the southeast corner of 91.20 m OD where it then discharges into the Ratoath Stream and subsequently the Broadmeadow River. The capacity of the drainage channel will not be affected by the realignment, therefore the flood risk will not be affected.

The proposed amended development, all 15 no. of the residential houses will be outfall into the attenuation tank located to the east before it discharges to the diverted drainage channel through a proposed headwall with non return valve

4.2 Site Characteristics

The Ratoath Stream flows from west to east adjacent to the southern boundary of the proposed development and then eventually discharges into the Broadmeadow River. The overall site, which is currently green field, forms part of the Ratoath Stream catchment area. It is proposed that the overall development will discharge surface water runoff at a rate (equivalent of the existing agricultural runoff) into the Ratoath Stream.

Table 3 Surface Water Catchment Details (previously approved development)

	Catchment
Site Area (Catchment) – Ha *	6.9
Impermeable Area - Ha	3.96
% Hardstanding	57.4%
SAAR - mm	875
SOIL Index	0.3
Climate Change	20%

Noted that as mentioned in Section 1 of this report, c. 0.439 Ha of the overall development has been amended - which is the proposed amended development - compared to the previously proposed development under Planning Reg. Ref. No. SH307244/ABP-307244-20, consists of replacement of 2 no. apartments with 15 no. houses, which gives a result of less parking spaces and more green areas, therefore causing a decrease in impermeable area of the percentage of hardstanding area. Comparison of the two layouts relates to the detailed hard standing area is listed below. Noted that permeablity coefficient of different elements are different. Roof as 100%, road/pedestrian road as 90%, permeable paving as 70%, greenlands/gardens as 5%.

Table 4: Comparison of Hardstanding Area between Previously Approved & Proposed Development

HARDSTANDING ELEMENTS	PREVIOUSLY APPROVED	CURRENTLY PROPOSED
ROOF	1438.7 m2	1015.0 m2
ROAD/PEDESTRIAN ROAD	1108.5 m2	970.6 m2
PERMEABLE PAVING	467.8 m2	384.2 m2
GREENLAND/GARDEN	55.0 m2	88.1 m2
TOTAL HARDSTANDING AREA	3070.0 m2	2457.9 m2

From table 4 above, we can conclude that the total hardstanding area for the revised section has been decreased by 612.1 m2. The surface water catchment details for the revised development will then be as shown below:

Table 5: Surface Water Catchment Details (proposed development)

	Catchment
Site Area (Catchment) – Ha *	6.9
Impermeable Area - Ha	3.90
% Hardstanding	56.5%
SAAR - mm	875
SOIL Index	0.3
Climate Change	20%

*(1) – Total site area does not include road R125 and public open space to the south of the site. Please refer to Fig. 6.

The greenfield runoff rate for the site has been calculated using the Institute of Hydrology report No 124 “Flood Estimation for Small Catchments” and is 16.33l/s

The same catchment area now has a reduced hardstanding area, therefore previously approved surfacewater network will cater the proposed development under the same circumstances.

4.3 SUDS Assessment

As per Meath County Council guidelines surface water should be managed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies Volume 6, for New Developments and CIRIA documents. These documents specify that surface water run-off should be managed as close to its source as possible, with the re-use of rainwater within the buildings prioritised.

Sustainable Urban Drainage Systems (SUDS) have been developed and are in use to alleviate the detrimental effects of traditional urban storm water drainage practice that typically consisted of piping run-off of rainfall from developments to the nearest receiving watercourse. Surface water drainage methods that take account of quantity, quality and amenity issues are collectively referred to as SUDS. They are typically made up of one or more structures, built to manage surface water run-off. The use of SUDS to control run-off also provides the additional benefit of reducing pollutants in the surface water by settling out suspended solids, and in some cases providing biological treatment.

A stormwater management or treatment train approach ensures that run-off quantity and quality is improved. The following objectives of the treatment train provide an integrated and balanced approach to help mitigate the changes in stormwater run-off flows that occur as land is urbanised and to help mitigate the impacts of stormwater quality on receiving systems:

1) **Source control:** conveyance and infiltration of run-off; and
2) **Site Control:** reduction in volume and rate of surface run-off, with some additional treatment provided.

As part of the site investigation works 5no. soakaway tests were carried out on site on the 26th of February. All 5 soakaway tests failed and therefore SUDS techniques can be used for attenuation purposes only. The applicant has considered the use of all appropriate SUDS measures as part of the site SUDS strategy, details are outlined in Table 3 below.

Table 6 SUDS Measures

SUDS Stage	SUDS Measure	Measure Outline	Use on site
Source Control	Permeable Pavements	Permeable pavements are alternative paving surfaces to standard finishes that allow stormwater run-off to filter through voids in the pavement surface into an underlying stone reservoir, where it is temporarily stored and/or infiltrated.	Permeable paving will be utilised for the on curtilage carparking area to provide treatment and storage to rainwater falling on these areas.
	Swales	Swales are shallow, landscaped depressions designed to store and/or convey run-off and remove pollutants. They may be used as conveyance structures to pass the run-off to the next stage of the treatment train and can be designed to promote infiltration where soil and groundwater conditions allow.	Swales will be used for access road surface water treatment, where possible, to treat water at source before conveying it to a downstream attenuation tank.
SUDS Stage	SUDS Measure	Measure Outline	Use on site
Site Control	Attenuation tank and Hydrobreak	Attenuation tanks are used to create a below ground void space for the temporary storage of surface water before controled release to the stream.	It is proposed to use attenuation tanks to store surface water on site before discharging to the Ratoath Stream via hydrobreaks. Due to the

		Hydrobreaks are used to restrict the outfall from the attenuation tank to the equivalent of the existing agricultural run-off. This ensures the development will not give rise to any impact downstream of the site.	high water table on site, concrete tanks are proposed.
	Petrol Interceptor	A petrol interceptor is a trap used to filter out hydrocarbon pollutants from rainwater run-off. It is typically used in road construction to prevent fuel contamination of water courses carrying away the run-off. Petrol interceptors work on the premise that some hydrocarbons such as petroleum and diesel float on the top of water. The contaminated water enters the interceptor typically after flowing off roads and entering a drain before being deposited into the first tank inside the interceptor. The first tank builds up a layer of the hydrocarbon as well as other scum preventing it from entering the water course.	Petrol Interceptors will be installed, upstream of the proposed Attenuation tanks as a final treatment level before discharging to the attenuation tank.

In accordance with the SUDS Manual CIRIA C753 the pollution prevention guidelines have been followed to ensure appropriate levels of treatment are provide before attenuated run-off from the site is discharged into the ordinary watercourse.

The Pollution Hazard Indices, shown in Table 4 below, for the different proposed land uses have been derived from Table 26.2 of CIRIA C753.

Table 7 Pollution Hazard Indices for different land uses

	TSS	Metals	Hydro-carbons
Residential roof	0.2	0.2	0.05
Residential road/car park	0.5	0.4	0.4
Main access road	0.7	0.6	0.7

In order to ensure the proposed SUDS strategy will appropriately mitigate against the potential pollution derived from these areas the Pollution Mitigation Indices (PMI) in Table 26.3 and 26.15 of CIRIA C753 have been reviewed and laid out in Table 5 below;

Table 8 Indicative SUDS mitigation indices for discharge to surface waters

	TSS (PMI)	Metals (PMI)	Hydro-carbons

Porous Paving	0.7	0.6	0.7
Swale	0.5	0.6	0.6
Pond	0.7	0.7	0.5

Table 6 below shows the calculations for the total pollution prevention for each type of hard standing on site. The following formula has been used to calculate the total mitigation in line with CIRIA C753.

Total SUDS Mitigation index = Mitigation Index $_1$ + 0.5(Mitigation Index $_2$).

In Table 6 below, the Mitigation Indices for the relevant SUDS feature has been taken away from the Pollution Hazard Indices for the land use in order to determine if sufficient treatment has been provided. A negative number indicates that enough treatment has been provided and a positive number indicated additional forms of treatment are required.

Table 9 Pollution Hazard Indices for different land uses

	Mitigation Method 1			Mitigation Method 2			Total SUDS Mitigation		
	TSS	Metals	H-C	TSS	Metals	H-C	TSS	Metals	H-C
Residential roof	Permeable Paving			Not required as treatment level has already been met.			**-0.5**	**-0.4**	**-0.65**
(Pollution Hazard Table 3 – Mitigation Index Table 4)	-0.5	-0.4	-0.65						
On Curtilage car park	Permeable Paving			Not required as treatment level has already been met.			**-0.2**	**-0.2**	**-0.3**
(Pollution Hazard Table 3 – Mitigation Index Table 4)	-0.2	-0.2	-0.3						
Main access road	Swale			Petrol Interceptor			Appropriate treatment is provided using a Class I Petrol Interceptor		
(Pollution Hazard Table 3 – Mitigation Index Table 4)	+0.2	0	+0.1	Appropriate treatment is provided using a Class I Petrol Interceptor					
Surface car park	Permeable Paving			Not required as treatment level has already been met.			**-0.2**	**-0.2**	**-0.3**
(Pollution Hazard Table 3 – Mitigation Index Table 4)	-0.2	-0.2	-0.3						
Apartment roofs	Petrol Interceptor			Not required as treatment level has already been met.			Appropriate treatment is provided using a Class I Petrol Interceptor		
(Pollution Hazard Table 3 – Mitigation Index Table 4)	Appropriate treatment is provided using a Class I Petrol Interceptor								
Arterial Road	Swale			Pond			**-0.15**	**-0.35**	**-0.15**
(Pollution Hazard Table 3 – Mitigation Index Table 4)	0.2	0	0.1	-0.15	-0.35	-0.15			

As described in Table 6 above all the hardstanding on site passes through adequate levels of treatment to remove the Total Suspended Solids, Metals and Hydrocarbons present before discharge to the watercourse. In conclusion the water quality from this catchment should be high.

4.4 Network Design

As described above the proposed surface water drainage system for the previously approved and the proposed development has been designed as a SUDS system and uses permeable paving, swales and attenuation tanks together with flow control device and petrol interceptors to treat run-off and remove pollutants to improve quality, restrict outflow and control quantity of run-off.

Strict separation of surface water and wastewater will be implemented within the development. Surface water local drains will be a minimum 225mm dia. and generally will consist of PVC (to IS123) or concrete

socket and spigot pipes (to IS 6). These drains will be laid to comply with the requirement of the Building Regulations 2010, and in accordance with the recommendations contained in the Technical Guidance Documents, Section H and will be laid strictly in accordance with the requirements of Meath County Council.

4.5 SUDS Maintenance

For the SUDS strategy to work as designed it is important that the entire drainage system is well maintained. It will be the responsibility of the site management team to ensure the drainage system is maintained. Maintenance and cleaning of gullies, manholes (including catch pits) and attenuation tanks will ensure adequate performance. The recommended program is outlined in the tables below.

Table 10 Attenuation Tank Maintenance Schedule

SUDS Element	Maintenance		
Attenuation Tanks	Maintenance Issues	Failure of components, blockage from debris	
	Maintenance Period	Maintenance Task	Frequency
	Regular	Inspect and identify any elements that are not operating correctly. If required, take remedial action.	Monthly for three months, then annually
		Remove sediment/debris from catchment surface that may lead to blockage of structures.	Monthly or as required
		Remove sediment/debris from catch pits/ gullies and control structures.	Annually, after severe storms or as required
	Remedial Work	Repair inlets, outlets, vents, overflows and control structures.	As required
	Monitoring	Inspect all inlets, outlets, vents, overflows and control structures to ensure they are in good condition and operating as designed.	Annually or after severe storms
		Survey inside of tank for sediment build-up and remove if necessary	Every five years or as required

Table 11 Permeable Paving Maintenance Schedule

SUDS Element	Maintenance		
Permeable Paving	Maintenance period	Maintenance Task	Frequency
	Regular	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or as required, based on site specific observations of clogging or manufacturer's recommendations.
	Occasional	Removal of weeds	As required
	Remedial work	Remediation work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users	As required
	Monitoring	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
		Monitor inspection chambers	Annually

Table 12 Tree pits and Swale Maintenance Schedule

	Maintenance period	Maintenance Task	Frequency
Swale	Regular	Remove the litter and debris	Monthly, or as required
		Cut grass – to retain height within specified design range.	Monthly (during growing season), or as required
		Manage other vegetation and remove nuisance plants.	Monthly at start, then as required
		Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
		Inspect infiltration coverage	Monthly for 6 months, quarterly for 2 years, then half yearly
		Inspect inlets and facility surface for silt accumulation, establish appropriate silt removal frequencies	Half yearly
	Occasional	Reseed areas of poor vegetation growth, alter plant types to better suit conditions, if required	As required or if soil is exposed over 10% or more of the swale treatment area
	Remedial actions	Repair erosion or other damage by re-turfing or re-seeding	As required
		Re-level uneven surfaces and reinstate design levels	As required
		Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip	As required
		Remove and dispose of oils or petrol residues using safe standards practices	As required

5. Water Supply

5.1 Water Supply – General

There is an existing 150mm diameter watermain to the northwest of the proposed amended site within the R125.

Irish Water have confirmed that they can facilitate a connection to serve the previously approved development under Planning Reg. Ref. No. SH307244/ABP-307244-20 from the existing water infrastructure with 212 no. units, whereas the proposed amended development has 191 no. units, less water demand is assumed.

For the proposed amended development, all 15 no. dwellings will be supplied with proposed 150mm diameter PE watermain.

Table 13: Total Water Demand(previously approved development)

Description	No. of Units	Flow l/h/day	Population per Unit	Total Discharge (l/d)
Residential Units	212	150	2.7	85,860
Crèche	1	50	66	3,300
Total				***89,160***

Table 14:Total Water Demand(proposed development)

Description	No. of Units	Flow l/h/day	Population per Unit	Total Discharge (l/d)
Residential Units	191	150	2.7	77,355
Crèche	1	50	66	3,300
Total				***80,655***

The total water requirement from the public supply, for the previously approved development, is estimated at 89m^3/day. The total water requirement for the proposed amended development is estimated at 81 m^3/day. Therefore the previously approved watermain network can cater the water demand for the proposed amended development. The proposed watermain network can be seen on Waterman Moylan drawing 19-023-P1300.

6. Transport

6.1 Site Access

The proposed amended development have site access from the internal roads of the overall development.

6.2 Car Parking

The proposed amended development will comprise of 15 no. 3 bed residential houses.

The 3 no. units of dwellings to the south of the amended development provide the on curtillage parking spaces. The parking strategy for the other 12 no. dwellings are provided with 2 no. car parking spaces per house in communal parking courts to the east off the pedestrain road. Table 15 outlines the car parking spaces provided as part of the amended development.

Table 15 Car Park Space Provision

Land Use	Units/ Staff Members	Standard	Carparking Spaces Proposed
Dwellings (Houses)	15 No. units	2 no. spaces per house	6 spaces (within the curtilage) 24 spaces (within communal parking courts)

6.3 Cycle Parking

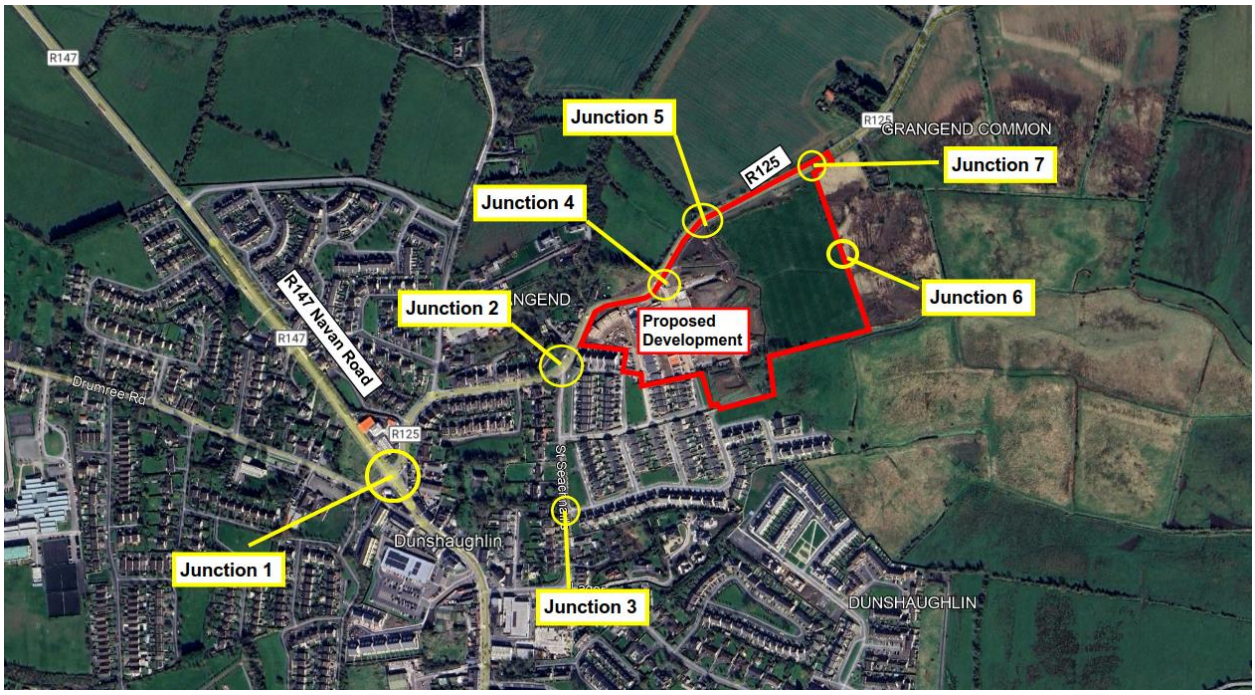
Secure bicycle parking will be provided within the curtilage of each of the individual dwellings.

The location of the cycle parking is as indicated on the architects drawings included with this application.

6.4 Traffic Impact

Traffic modelling has been updated as part of this planning application from that previously granted to take account of reduced unit numbers and also Junction 6 as shown below has been closed and replaced with green public area. Results of the currently proposed 6 junctions can be found Appendix B with summary below in this section. The traffc model year for future design year has also been updated to 2041 from 2038.

Figure 5: Previously Approved Traffic Juntions Location



The volume of traffic expected to be generated by the proposed developments has been derived using the TRICS Software modelling database.

The junctions assessed are outlined in Figure 9 bleow and are as follows :

Junction 1 (Existing Signalised Crossroads): R147 Navan Road / R125 / Drumree Road;

Junction 2 (Existing Priority-controlled T-junction): R125 The Old Forge / St. Seachnails;

Junction 3 (Recently Constructed Priority-controlled T-junction): Grange Park Access Road / St. Seachnails;

Junction 4 (Proposed Priority-controlled T-junction): Phase 1 Access Road / R125;

Junction 5 (Proposed Priority-controlled T-junction): Phase 2 Access Road / R125;

Junction 6 (Proposed Priority-controlled T-junction): R125 / Major Distributor Road.

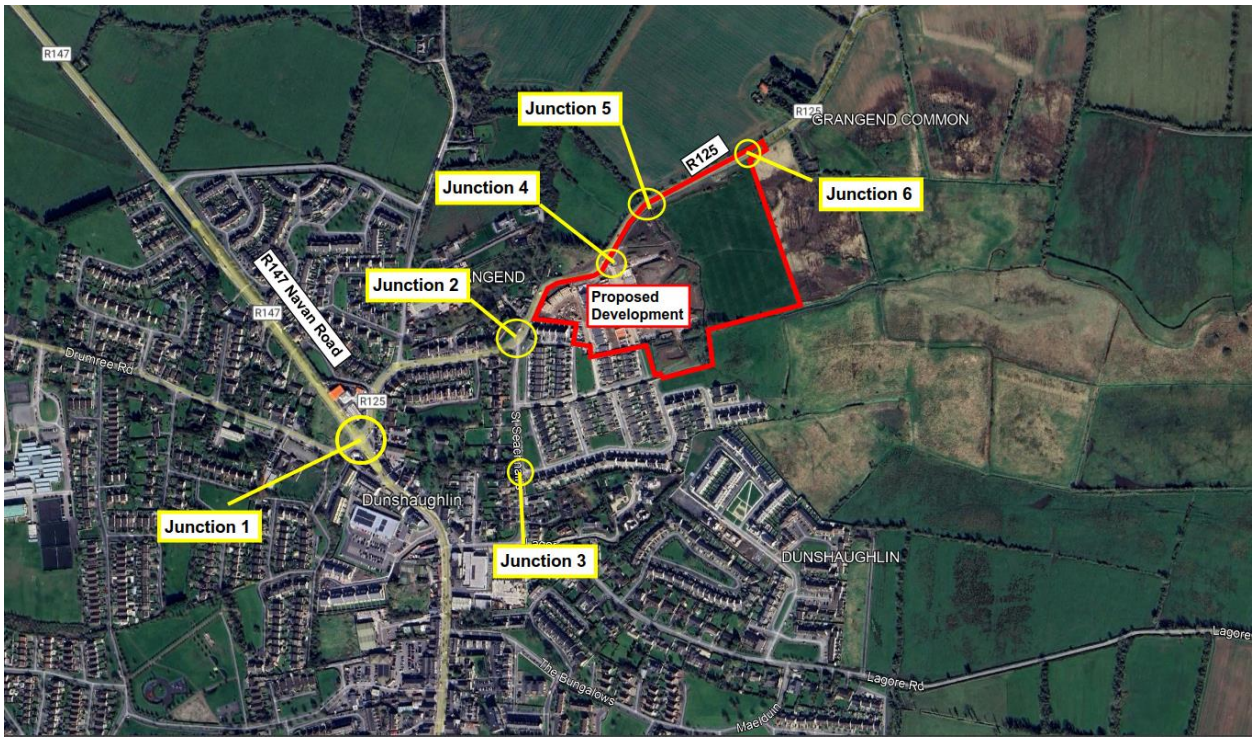


Figure 6:Location Map for Existing and Proposed Assessed Junctions

The performance of the junctions has been analysed for the critical AM and PM Peak Hours (08:00 – 09:00 and 17:00 – 18:00) for DO SOMETHING scenario for future year of 2041 with adjacent developments allowed for and with Distributor road in place as per report under ABP-307244-20.

Junctions 1 to 6 modelling results indicate that they will operate within capacity for the 2041 future assessed scenarios.

Junction 1 Previously Approved Results

Scenario	AM Peak Period (08:00 - 09:00)				PM Peak Period (17:00 - 18:00)			
2038 + OVER. DEV. + ADJ. DEV.	Arm	Mov.	DOS%	Mean Max Queue (Veh.)	Arm	Mov.	DOS%	Mean Max Queue (Veh.)
	A	S/L	62	7.08	A	S/L	69	10.42
		R	31	3.18		R	41	3.94
	B	S/L	27	4.06	B	S/L	72	12.57
		R	7	0.28		R	21	0.90
	C	S/L	57	6.21	C	S/L	33	4.26
		R	68	8.30		R	69	7.49
	D	S/L	68	12.77	D	S/L	58	9.28
		R	22	0.96		R	13	0.57

Junction 1 Updated Results 2041 Scenario

Scenario	AM Peak Period (08:00 - 09:00)				PM Peak Period (17:00 - 18:00)			
2041 + OVER. DEV. + ADJ. DEV.	Arm	Mov.	DOS%	Mean Max Queue (Veh.)	Arm	Mov.	DOS%	Mean Max Queue (Veh.)
	A	S/L	64	7.31	A	S/L	71	10.71
		R	32	3.30		R	42	4.07
	B	S/L	27	4.14	B	S/L	73	12.81
		R	7	0.31		R	21	0.93
	C	S/L	58	6.45	C	S/L	34	4.37
		R	69	8.43		R	70	7.63
	D	S/L	69	13.05	D	S/L	59	9.59
		R	23	1.00		R	13	0.57

The maximum DOS% in AM Peak at this junction has increased from 68 to 69%, with queue increase from 12.77 vehicles to 13.05.

The maximum DOS% in PM Peak at this junction has increased from 72 to 73%, with queue increase from 12.57 vehicles to 12.81

These are reletively minor and due to increase of modelling scenario year from 2038 to 2041.

Junction 2 Previously Approved Results

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2038 + OVERALL DEV. + ADJ. DEV.				
Stream B-C	0.2	0.18	0.2	0.19
Stream B-A	0.1	0.06	0.0	0.04
Stream C-AB	0.3	0.17	0.3	0.23

Junction 2 Updated Results 2041 Scenario

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2041 + OVERALL DEV. + ADJ. DEV.				
Stream B-C	0.2	0.18	0.2	0.20
Stream B-A	0.1	0.06	0.0	0.04
Stream C-AB	0.3	0.18	0.4	0.23

The RFC in AM Peak at this junction has increased from 0.17 to 0.18, with no changes in the vehicle queue numbers.

The maximum RFC in PM Peak at this junction has no changes, with the maximum vehicle queue numbers from 0.3 to 0.4.

These are reletively minor and due to increase of modelling scenario year from 2038 to 2041.

Junction 3 Previously Approved Results

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2038 + OVERALL DEV. + ADJ. DEV.				
Stream B-C	0.1	0.05	0.0	0.02
Stream C-AB	0.0	0.01	0.0	0.01

Junction 3 Updated Results 2041 Scenario

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2041+ OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.1	0.05	0.0	0.023
Stream C-AB	0.0	0.01	0.0	0.011

The maximum RFC in the AM Peak at this junction has no changes, with no changes in maximum vehicle queue number as well.

The maximum RFC in the PM Peak at this junction has increased from 0.02 to 0.023, with no changes in vehicle queue number.

These are reletively minor and due to increase of modelling scenario year from 2038 to 2041.

Junction 4 Previously Approved Results

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2038 + OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.0	0.04	0.0	0.02
Stream C-AB	0.0	0.01	0.0	0.03

Junction 4 Updated Results 2041 Scenario

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC

2041 + OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.0	0.04	0.0	0.05
Stream C-AB	0.0	0.01	0.1	0.07

The maximum RFC in the AM Peak at this junction no changes, with no changes in the vehicle queue number also.

The maximum RFC in the PM Peak at this junction has increased from 0.03 to 0.07, with queue increase from 0.0 vehicle to 0.1.

These are reletively minor and due to increase of modelling scenario year from 2038 to 2041.

Junction 5 Previously Approved Results

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2038 + OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.1	0.05	0.0	0.03
Stream C-AB	0.0	0.01	0.0	0.03

Junction 5 Updated Results 2041 Scenario

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2041 + OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.1	0.102	0.1	0.06
Stream C-AB	0.0	0.010	0.0	0.02

The maximum RFC in the AM Peak at this junction has increased from 0.05 to 0.102, with no changes in vehicle queue numbers

The maximum RFC in the PM Peak at this junction has increased from 0.03 to 0.06, the queue has changed from 0.0 vehicles to 0.1 vehicles.

These are reletively minor and due to increase of modelling scenario year from 2038 to 2041

Junction 6 Previously Approved Results (Notated as Junction 7 in previous report)

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2038 + OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.5	0.35	0.9	0.46
Stream C-AB	0.0	0.01	0.0	0.02

Junction 6 Updated Results 2041 Scenario

Movement	AM (08:00 - 09:00)		PM (17:00 - 18:00)	
	Queue (Veh.)	RFC	Queue (Veh.)	RFC
2041 + OVERALL DEV. + ADJ. DEV.				
Stream B-AC	0.5	0.35	1.0	0.491
Stream C-AB	0.1	0.05	0.0	0.025

The maximum RFC in the AM Peak at this junction has no changes, with no changes in the maximum vehicle queue numbers also.

The maximum RFC in the PM Peak at this junction has increased from 0.46 to 0.491, with queue increase from 0.9 vehicle to 1.0.

These are reletively minor and due to increase of modelling scenario year from 2038 to 2041.

Therefore, it can be concluded that the existing junctions are expected to have the capacity to cater for the proposed development.

7. Flood Risk Assessment

Though the report is focused on the proposed amended development, in terms of flood risk assessment, it is important to take the whole site in to account and analyse the flood risk details occuring on the overall site. As mentioned for the previous sections, only 0.439 Ha of the proposed development has been revised compared to the previously approved development under Planning Reg. Ref. No. SH307244/ABP-307244-20 (SHD process). With the replacement of 36 no. apartments with 16 no. houses, with no lowest FFL level changes. Details of FFL of the overall development can be seen in the attached Waterman Moylan Drawing No. 19-023-P1002-P1003 - Proposed Roads Layout & Levels.

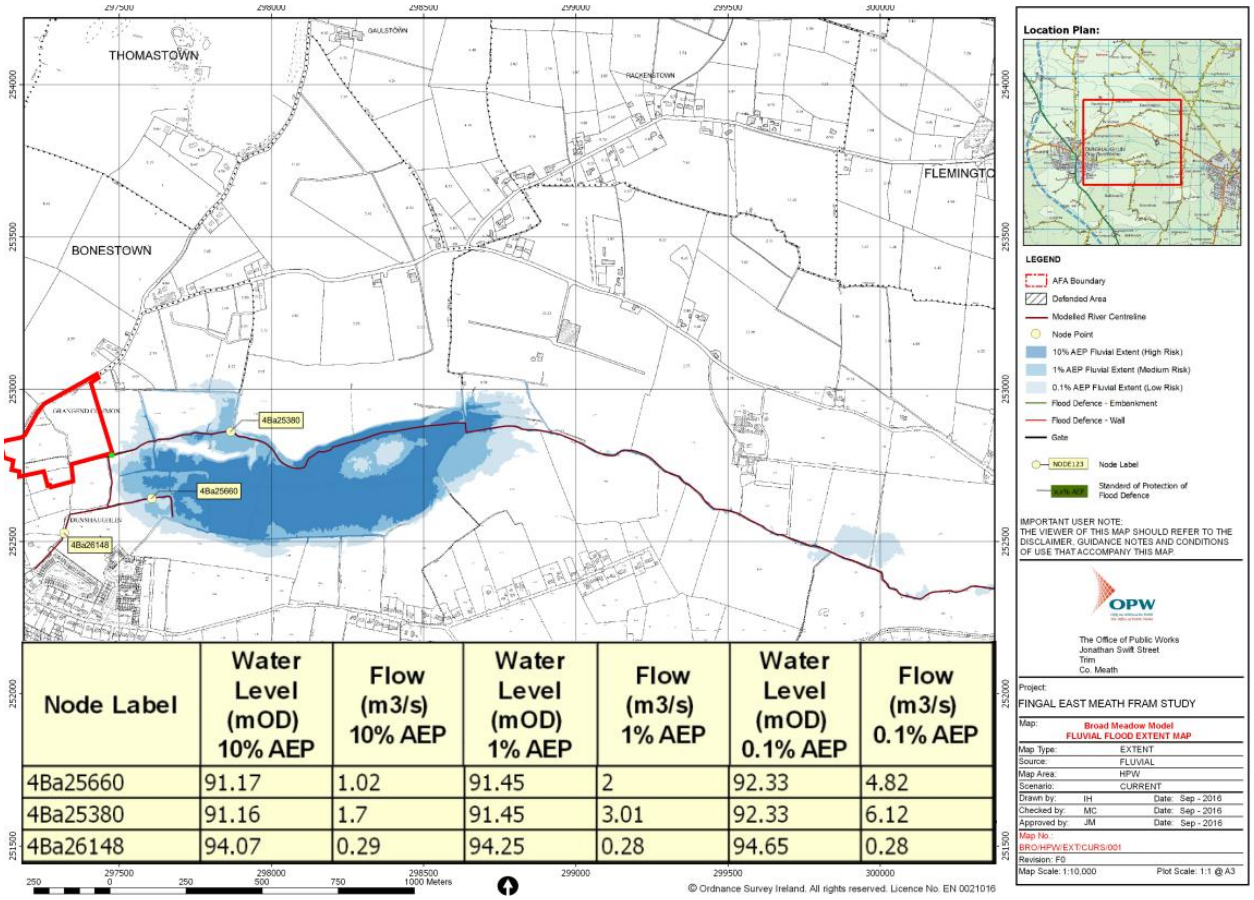
For the previously approved development, it was designed to construct road levels ranging between 102.42m and 94.17m with a lowest finished floor level of 94.7m. Whileas the proposed development is to be constructed with road levels ranging between 102.42m and 94.40m with a lowest finished floor level of 94.7m. The revised lowest road level is higher than the previously approved lowest road levels, and no change on the lowest finished floor level between the two versions of the developments, CFRAM maps have been used to give btter understanding on the proposed development relate to the flooding risks.

Figure 7: Proposed Site Location on CFRAM Flood Maps

The overall development location relate to the CFRAM flood maps is shown as above. The Ratoath Stream is flowing along the southern boundary of the overall development, the surface water network was designed to cater such circumstance for both previously approved development and the revised development.

The site is presented in map E07DRO_EXFCD_F4_14 which shows the fluvial flood extents of the stream near the overall site. The closest node on the map to the site is Node Label. 0705 00291 c. 320m to the northwest boundary of the site which shows a water level of 28.282m OD Malin for the 1 in 1000-year storm.

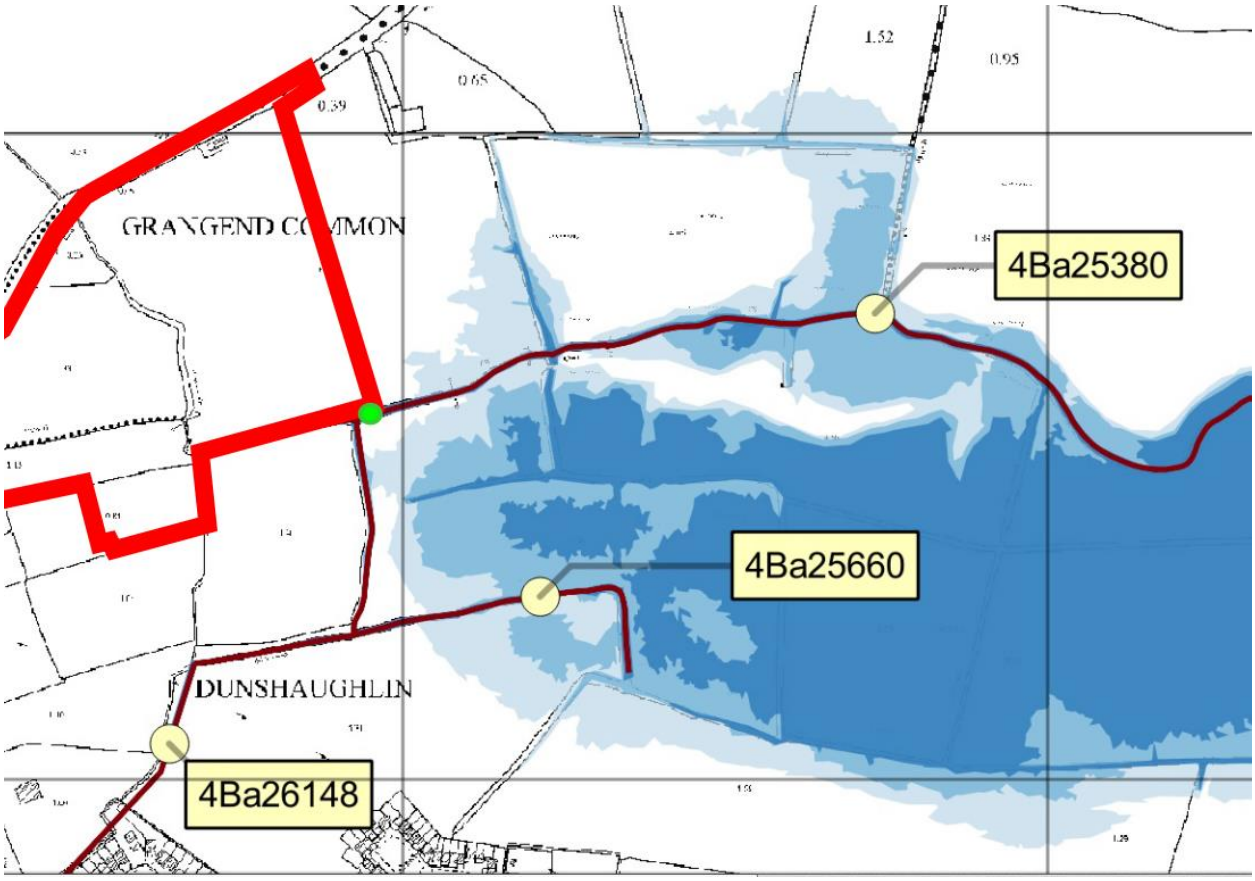
Figure 8: Fluvial Flood Extent Map BRO/HPW/EXT/CURS/001



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
4Ba25660	91.17	1.02	91.45	2	92.33	4.82
4Ba25380	91.16	1.7	91.45	3.01	92.33	6.12
4Ba26148	94.07	0.29	94.25	0.28	94.65	0.28

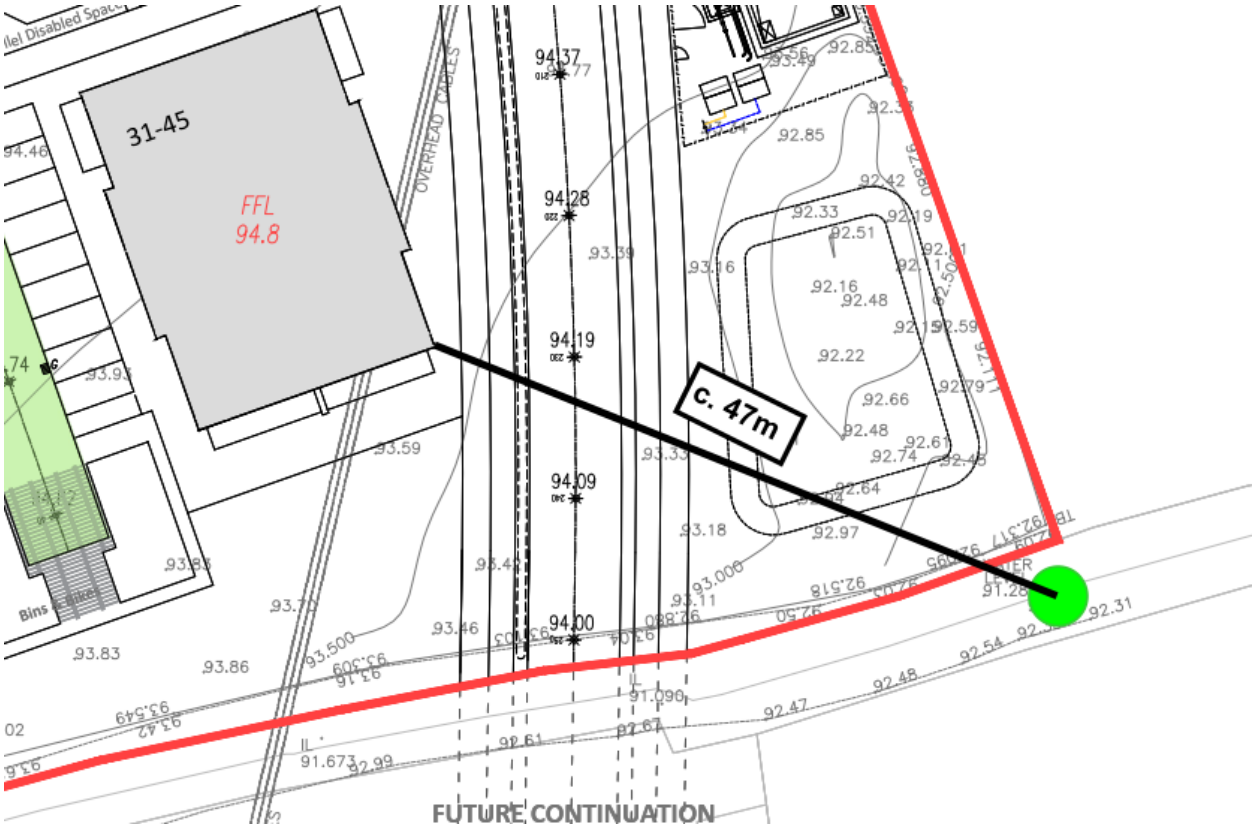
But noted on map BRO/HPW/EXT/CURS/001, all three nodes are within a distance from the overall development. Therefore, we need to investigate the closest point on the Ratoath Stream to the site, shown in green point below. By getting the water level of the green point, Node 4Ba25380 and Node 4Ba26148, the distance between the two nodes along the stream is c. 0.76km, while the green point is c. 0.41km downstream from the Node 4Ba25380. Node 4Ba25380 has a 1 in 1000 year water level of 92.33m, Node 4Ba26148 has a 1 in 1000 year water level of 94.65. By using the information, the water level of the green point can be concluded as c. 93.58m in a 1 in 1000 year circumstance.

Figure 9: Green Point Location on Stream



The distance between the green point and the closest unit within the proposed development is c. 47m. while the FFL of the proposed apartment is 94.8m as shown below, the level difference is c. 1.22m. Therefore, we can conclude that the flood risk can be considered as low.

Figure 10: Distance Between the Green Point on Stream to it's Closest Proposed Apartment



APPENDICES

A. Traffic Modelling Results

TRANSYT 16

Filename: Junction 1 - DO SOMETHING - AM.t15
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 1
Report generation date: 30/01/2025 12:19:26

«A4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - AM : D4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS -, AM :

»Summary
»Arms and Traffic Streams
»Pedestrian Crossings
»Local OD Matrix - Local Matrix: 1
»Signal Timings
»Traffic Stream Results
»Pedestrian Crossing Results
»Network Results
»Final Prediction Table

Summary of network performance

	AM				
	Set ID	PI (£ per hr)	Total delay (Veh-hr/hr)	Highest DOS	Number oversaturated
	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - AM - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS				
Network	A4 D4	361.76	24.33	69% (TS C/2)	0 (0%)

File summary

File description

File title	(untitled)
Location	
Site number	
UTCRegion	
Driving side	Left
Date	06/12/2011
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display OD matrix distances	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber	c m
			✓			✓		✓	✓						

Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Average animation capture interval (s)	Use quick response	Do flow sampling	Uniform vehicle generation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	3.00	999	200	-1	3	60	✓			0	0	0.00

A4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - AM
D4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS -, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
4	30/01/2025 12:19:20	30/01/2025 12:19:24	4.11	08:00	120	361.76	24.33	69.17	C/2	0	0	C/2	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - AM			✓	D4		✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS -	AM				08:00		✓

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
9			1
10			1
11			1
12			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			20.00	✓	Sum of lanes	1800	✓		Normal	
	2				200.00	✓	Sum of lanes	1800	✓		Normal	
Ax	1	(untitled)		✓	182.93						Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
Bx	1	(untitled)		✓	178.44						Normal	
C	1	(untitled)			200.00	✓	Sum of lanes	1800	✓		Normal	
	2				40.00	✓	Sum of lanes	1800	✓		Normal	
Cx	1	(untitled)		✓	194.82						Normal	
D	1	(untitled)			200.00	✓	Sum of lanes	1800	✓		Normal	
	2				30.00	✓	Sum of lanes	1800	✓		Normal	
Dx	1	(untitled)		✓	177.04						Normal	
9	1			✓	48.53						Normal	
10	1			✓	31.46						Normal	
11	1			✓	37.01						Normal	
12	1			✓	34.36						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
A	1	1	(untitled)			1800
	2	1	(untitled)			1800
Ax	1	1	(untitled)			
B	1	1	(untitled)			1800
	2	1	(untitled)			1800
Bx	1	1	(untitled)			
C	1	1	(untitled)			1800
	2	1	(untitled)			1800
Cx	1	1	(untitled)			
D	1	1	(untitled)			1800
	2	1	(untitled)			1800
Dx	1	1	(untitled)			
9	1	1	(untitled)			
10	1	1	(untitled)			
11	1	1	(untitled)			
12	1	1	(untitled)			

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	221	221
	2	114	114
Ax	1	339	339
B	1	171	171
	2	10	10
Bx	1	568	568
C	1	200	200
	2	249	249
Cx	1	224	224
D	1	434	434
	2	31	31
Dx	1	299	299
9	1	335	335
10	1	181	181
11	1	449	449
12	1	465	465

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	D	
	2	1	C	
B	1	1	B	
	2	1	A	
C	1	1	D	
	2	1	C	
D	1	1	B	
	2	1	A	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	15	185	249	0	0	0	0
	2	31	0	144	290	0	0	0	0
	3	192	114	0	29	0	0	0	0
	4	1	170	10	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	11/1	Cx/1	#0000FF
	2	(untitled)	12/1	Dx/1	#FF0000
	3	(untitled)	9/1	Ax/1	#00FF00
	4	(untitled)	10/1	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	9		4	3	10/1, B/2, Ax/1	Normal	10
	10		3	4	9/1, A/1, Bx/1	Normal	29
	11		1	3	11/1, C/1, Ax/1	Normal	185
	12		1	4	11/1, C/2, Bx/1	Normal	249
	13		3	1	9/1, A/1, Cx/1	Normal	192
	14		4	1	10/1, B/1, Cx/1	Normal	1
	15		2	3	12/1, D/1, Ax/1	Normal	144
	16		2	4	12/1, D/1, Bx/1	Normal	290
	19		3	2	9/1, A/2, Dx/1	Normal	114
	20		4	2	10/1, B/1, Dx/1	Normal	170
	43		2	1	12/1, D/2, Cx/1	Normal	31
	44		1	2	11/1, C/1, Dx/1	Normal	15

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	120	58

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	70	2	3	Traffic	
	B	(untitled)	7	70	2	3	Traffic	
	C	(untitled)	7	70	2	3	Traffic	
	D	(untitled)	7	70	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	1	1	100
	2	B	1	1	100
	3	C	1	1	100
	4	D	1	1	100
	5	E	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	118, 43, 70, 96, 106	58	

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	5	5	

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

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	111	118	7	1	7
	2	✓	2	B	3	43	40	1	7
	3	✓	3	C	48	70	22	1	7
	4	✓	4	D	75	96	21	1	7
	5	✓	5	E	101	106	5	1	5

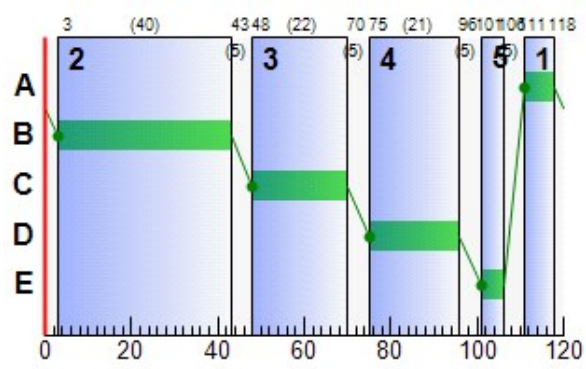
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	111	118	7
	B	1	✓	3	43	40
	C	1	✓	48	70	22
	D	1	✓	75	96	21
	E	1	✓	101	106	5

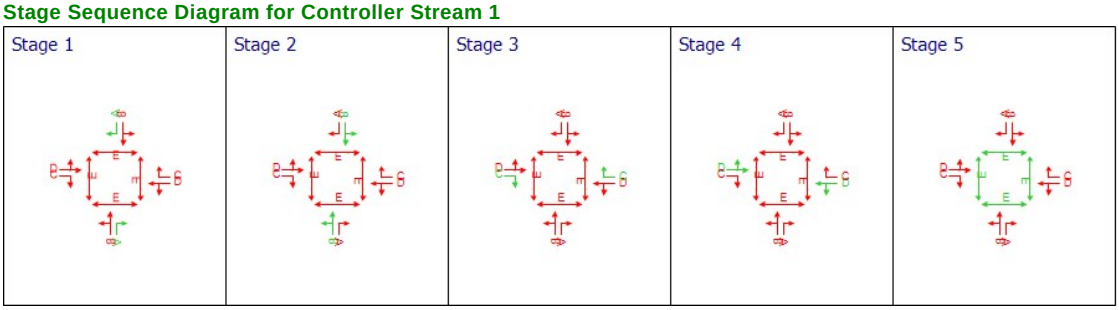
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	D	75	96	21
A	2	1	1	C	48	70	22
B	1	1	1	B	3	43	40
B	2	1	1	A	111	118	7
C	1	1	1	D	75	96	21
C	2	1	1	C	48	70	22
D	1	1	1	B	3	43	40
D	2	1	1	A	111	118	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	64	56	221	1800	21	53.82	7.31	210.24	46.92	2.72	49.63
		2	32	216	114	1800	22	43.32	3.30	9.50	19.48	1.23	20.71
	Ax	1	0	Unrestricted	339	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	27	268	171	1800	40	29.08	4.14	11.89	19.61	1.53	21.14
		2	7	1250	10	1800	7	52.87	0.31	9.94	2.09	0.12	2.20
	Bx	1	0	Unrestricted	568	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	58	73	200	1800	21	51.21	6.45	18.54	40.40	2.39	42.79
		2	69	45	249	1800	22	55.50	8.43	121.23	54.51	3.13	57.64
	Cx	1	0	Unrestricted	224	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	69	45	434	1800	40	39.64	13.05	37.51	67.86	4.84	72.70
		2	23	335	31	1800	7	56.20	1.00	19.14	6.87	0.37	7.24
	Dx	1	0	Unrestricted	299	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	335	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	0	Unrestricted	181	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	11	1	0	Unrestricted	449	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	12	1	0	Unrestricted	465	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	A	1	221	221	0		1800	345	64		56	0.00	21
		2	114	114	0		1800	360	32		216	0.00	22
	Ax	1	339	339	0		Unrestricted	Unrestricted	0		Unrestricted	0.79	120
	B	1	171	171	0		1800	630	27		268	0.00	40
		2	10	10	0		1800	135	7		1250	0.00	7
	Bx	1	568	568	0		Unrestricted	Unrestricted	0		Unrestricted	0.73	120
	C	1	200	200	0		1800	345	58		73	0.00	21
		2	249	249	0		1800	360	69		45	0.00	22
	Cx	1	224	224	0		Unrestricted	Unrestricted	0		Unrestricted	1.20	120
	D	1	434	434	0		1800	630	69		45	0.00	40
		2	31	31	0		1800	135	23		335	0.00	7
	Dx	1	299	299	0		Unrestricted	Unrestricted	0		Unrestricted	0.85	120
	9	1	335	335	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120
	10	1	181	181	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120
	11	1	449	449	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120
	12	1	465	465	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	2.40	53.82	2.74	0.56	46.92	98.05	200.20	16.49	2.72
		2	24.00	43.32	1.30	0.07	19.48	85.92	95.76	2.18	1.23
	Ax	1	21.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	29.08	1.33	0.05	19.61	71.30	120.40	1.51	1.53
		2	2.16	52.87	0.14	0.00	2.09	92.40	9.15	0.09	0.12
	Bx	1	21.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	24.00	51.21	2.45	0.39	40.40	95.30	178.94	11.66	2.39
		2	4.80	55.50	3.08	0.76	54.51	100.23	227.39	22.17	3.13
	Cx	1	23.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	24.00	39.64	4.03	0.75	67.86	88.90	363.55	22.26	4.84
		2	3.60	56.20	0.45	0.03	6.87	95.62	28.63	1.01	0.37
	Dx	1	21.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	5.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	11	1	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	12	1	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	7.31	3.48	210.24	1.01	0.00	0.00	0.00	0.00	0.00	
		2	0.00	3.30	34.78	9.50	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	31.81	0.00	0.00	0.00	0.00	27.00	0.00	27.00	
	B	1	0.00	4.14	34.78	11.89	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	0.31	3.13	9.94	0.00	0.00	0.00	8.00	0.00	8.00	
	Bx	1	0.00	0.00	31.03	0.00	0.00	0.00	0.00	23.00	0.00	23.00	
	C	1	0.00	6.45	34.78	18.54	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	8.43	6.96	121.23	0.14	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	33.88	0.00	0.00	0.00	0.00	66.00	0.00	66.00	
	D	1	0.00	13.05	34.78	37.51	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	1.00	5.22	19.14	0.00	0.00	0.00	7.00	0.00	7.00	
	Dx	1	0.00	0.00	30.79	0.00	0.00	0.00	0.00	30.00	0.00	30.00	
	9	1	0.00	0.00	8.44	0.00	0.00	0.00	0.00	0.00	63.00	63.00	
	10	1	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	11	1	0.00	0.00	6.44	0.00	0.00	0.00	0.00	0.00	22.00	22.00	
	12	1	0.00	0.00	5.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
08:00-09:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	(ALL)	(ALL)	50	50	0		11000	458	11		817	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
08:00-09:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
08:00-09:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Network Results

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
08:00-09:00	4690	4690	0		69		45	1180

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	13.66	18.67	21.70	2.62	345.44	27.75	1224.02	77.38	16.32

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
08:00-09:00	210.24	0.00	161.00	85.00	246.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)	
A	1	(untitled)	1	1	D	221 <	1800	21	0.00	64	56	56.22	53.82	98.05	7.31 +	
	2		1	1	C	114	1800	22	0.00	32	216	67.32	43.32	85.92	3.30	
Ax	1	(untitled)				339	Unrestricted	120	27.00	0	Unrestricted	21.95	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	171	1800	40	0.00	27	268	53.08	29.08	71.30	4.14	
	2		1	1	A	10	1800	7	8.00	7	1250	55.03	52.87	92.40	0.31	
Bx	1	(untitled)				568	Unrestricted	120	23.00	0	Unrestricted	21.41	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	200	1800	21	0.00	58	73	75.21	51.21	95.30	6.45	
	2		1	1	C	249 <	1800	22	0.00	69	45	60.30	55.50	100.23	8.43 +	
Cx	1	(untitled)				224	Unrestricted	120	66.00	0	Unrestricted	23.38	0.00	0.00	0.00	
D	1	(untitled)	1	1	B	434	1800	40	0.00	69	45	63.64	39.64	88.90	13.05	
	2		1	1	A	31	1800	7	7.00	23	335	59.80	56.20	95.62	1.00	
Dx	1	(untitled)				299	Unrestricted	120	30.00	0	Unrestricted	21.24	0.00	0.00	0.00	
9	1		1			335	Unrestricted	120	63.00	0	Unrestricted	5.82	0.00	0.00	0.00	
10	1		1			181	Unrestricted	120	0.00	0	Unrestricted	3.78	0.00	0.00	0.00	
11	1		1			449	Unrestricted	120	22.00	0	Unrestricted	4.44	0.00	0.00	0.00	
12	1		1			465	Unrestricted	120	0.00	0	Unrestricted	4.12	0.00	0.00	0.00	

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	513.77	35.28	14.56	15.53	2.62	257.74	16.32	0.00	274.06
Bus									
Tram									
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	517.17	42.12	12.28	21.70	2.62	345.44	16.32	0.00	361.76

< = 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 16

Filename: Junction 1 - DO SOMETHING - PM.t15
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 1
Report generation date: 30/01/2025 15:20:07

«A4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - PM : D4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS -, PM :

»Summary
»Arms and Traffic Streams
»Pedestrian Crossings
»Local OD Matrix - Local Matrix: 1
»Signal Timings
»Traffic Stream Results
»Pedestrian Crossing Results
»Network Results
»Final Prediction Table

Summary of network performance

	PM				
	Set ID	PI (£ per hr)	Total delay (Veh-hr/hr)	Highest DOS	Number oversaturated
	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - PM - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS				
Network	A4 D4	405.19	27.21	73% (TS B/1)	0 (0%)

File summary

File description

File title	(untitled)
Location	
Site number	
UTCRegion	
Driving side	Left
Date	06/12/2011
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display OD matrix distances	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber	c m
			✓			✓		✓	✓						

Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Average animation capture interval (s)	Use quick response	Do flow sampling	Uniform vehicle generation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	3.00	999	200	-1	3	60	✓			0	0	0.00

A4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - PM
D4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS -, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item wi wors unsignal PRC
4	30/01/2025 15:19:53	30/01/2025 15:19:55	2.58	17:00	120	405.19	27.21	72.61	B/1	0	0	B/1	Dx/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS - PM			✓	D4		✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS -	PM				17:00		✓

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		
9			1
10			1
11			1
12			1

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			20.00	✓	Sum of lanes	1800	✓		Normal	
	2				200.00	✓	Sum of lanes	1800	✓		Normal	
Ax	1	(untitled)		✓	182.93						Normal	
B	1	(untitled)			200.00	✓	Sum of lanes	1800	✓		Normal	
	2				18.00	✓	Sum of lanes	1800	✓		Normal	
Bx	1	(untitled)		✓	178.44						Normal	
C	1	(untitled)			200.00	✓	Sum of lanes	1800	✓		Normal	
	2				40.00	✓	Sum of lanes	1800	✓		Normal	
Cx	1	(untitled)		✓	194.82						Normal	
D	1	(untitled)			200.00	✓	Sum of lanes	1800	✓		Normal	
	2				30.00	✓	Sum of lanes	1800	✓		Normal	
Dx	1	(untitled)		✓	177.04						Normal	
9	1			✓	48.53						Normal	
10	1			✓	31.46						Normal	
11	1			✓	37.01						Normal	
12	1			✓	34.36						Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
A	1	1	(untitled)			1800
	2	1	(untitled)			1800
Ax	1	1	(untitled)			
B	1	1	(untitled)			1800
	2	1	(untitled)			1800
Bx	1	1	(untitled)			
C	1	1	(untitled)			1800
	2	1	(untitled)			1800
Cx	1	1	(untitled)			
D	1	1	(untitled)			1800
	2	1	(untitled)			1800
Dx	1	1	(untitled)			
9	1	1	(untitled)			
10	1	1	(untitled)			
11	1	1	(untitled)			
12	1	1	(untitled)			

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	329	329
	2	133	133
Ax	1	264	264
B	1	403	403
	2	29	29
Bx	1	469	469
C	1	159	159
	2	220	220
Cx	1	333	333
D	1	327	327
	2	18	18
Dx	1	552	552
9	1	462	462
10	1	432	432
11	1	379	379
12	1	345	345

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	D	
	2	1	C	
B	1	1	B	
	2	1	A	
C	1	1	D	
	2	1	C	
D	1	1	B	
	2	1	A	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)		1		Farside	7.00	4.67	5.40
2	(untitled)		1		Farside	8.00	5.33	5.40
3	(untitled)		1		Farside	8.00	5.33	5.40
4	(untitled)		1		Farside	7.00	4.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
(ALL)	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1	(untitled)	✓	✓	Path Equalisation	✓		✓			✓	1.25				

Normal Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	20	139	220	0	0	0	0
	2	18	0	96	231	0	0	0	0
	3	311	133	0	18	0	0	0	0
	4	4	399	29	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows (Veh/hr)

		To							
		1	2	3	4	5	6	7	8
From	1	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	50	50	0
	6	0	0	0	0	50	0	0	50
	7	0	0	0	0	50	0	0	50
	8	0	0	0	0	0	50	50	0

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	11/1	Cx/1	#0000FF
	2	(untitled)	12/1	Dx/1	#FF0000
	3	(untitled)	9/1	Ax/1	#00FF00
	4	(untitled)	10/1	Bx/1	#FFFF00
	5	(untitled)	3:2E, 1:1E	3:2X, 1:1X	#FF00FF
	6	(untitled)	2:1E, 1:2E	2:1X, 1:2X	#008000
	7	(untitled)	4:2E, 3:1E	4:2X, 3:1X	#FFA500
	8	(untitled)	4:1E, 2:2E	4:1X, 2:2X	#00FFFF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	9		4	3	10/1, B/2, Ax/1	Normal	29
	10		3	4	9/1, A/1, Bx/1	Normal	18
	11		1	3	11/1, C/1, Ax/1	Normal	139
	12		1	4	11/1, C/2, Bx/1	Normal	220
	13		3	1	9/1, A/1, Cx/1	Normal	311
	14		4	1	10/1, B/1, Cx/1	Normal	4
	15		2	3	12/1, D/1, Ax/1	Normal	96
	16		2	4	12/1, D/1, Bx/1	Normal	231
	19		3	2	9/1, A/2, Dx/1	Normal	133
	20		4	2	10/1, B/1, Dx/1	Normal	399
	43		2	1	12/1, D/2, Cx/1	Normal	18
	44		1	2	11/1, C/1, Dx/1	Normal	20

Pedestrian Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Pedestrian calculated flow (Ped/hr)
1	17		8	7	4:1E, 4:2X	Normal	50
	18		8	6	2:2E, 2:1X	Normal	50
	22		5	7	3:2E, 3:1X	Normal	50
	23		5	6	1:1E, 1:2X	Normal	50
	34		6	8	2:1E, 2:2X	Normal	50
	35		6	5	1:2E, 1:1X	Normal	50
	41		7	8	4:2E, 4:1X	Normal	50
	42		7	5	3:1E, 3:2X	Normal	50

Signal Timings

Network Default: 120s cycle time; 120 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	(untitled)		1	NetworkDefault	120	58

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Relative

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	10	2	3	Traffic	
	B	(untitled)	7	70	2	3	Traffic	
	C	(untitled)	7	70	2	3	Traffic	
	D	(untitled)	7	70	2	3	Traffic	
	E	(untitled)	5	5	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	1	1	100
	2	B	1	1	100
	3	C	1	1	100
	4	D	1	1	100
	5	E	1	1	100

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3, 4, 5	12, 52, 76, 110, 0	58	

Intergreen Matrix for Controller Stream 1

		To				
		A	B	C	D	E
From	A		5	5	5	5
	B	5		5	5	5
	C	5	5		5	5
	D	5	5	5		5
	E	5	5	5	5	

Banned Stage transitions for Controller Stream 1

		To				
		1	2	3	4	5
From	1					
	2					
	3					
	4					
	5					

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

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	5	12	7	1	7
	2	✓	2	B	17	52	35	1	7
	3	✓	3	C	57	76	19	1	7
	4	✓	4	D	81	110	29	1	7
	5	✓	5	E	115	0	5	1	5

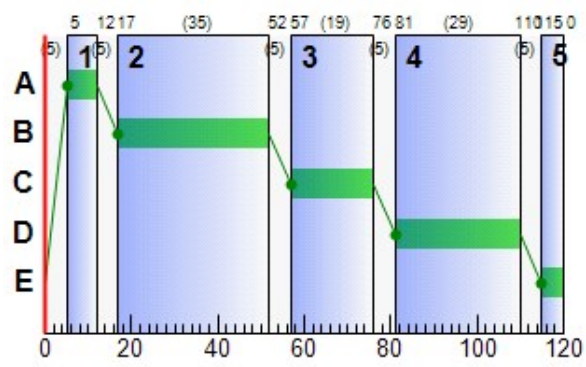
Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	5	12	7
	B	1	✓	17	52	35
	C	1	✓	57	76	19
	D	1	✓	81	110	29
	E	1	✓	115	0	5

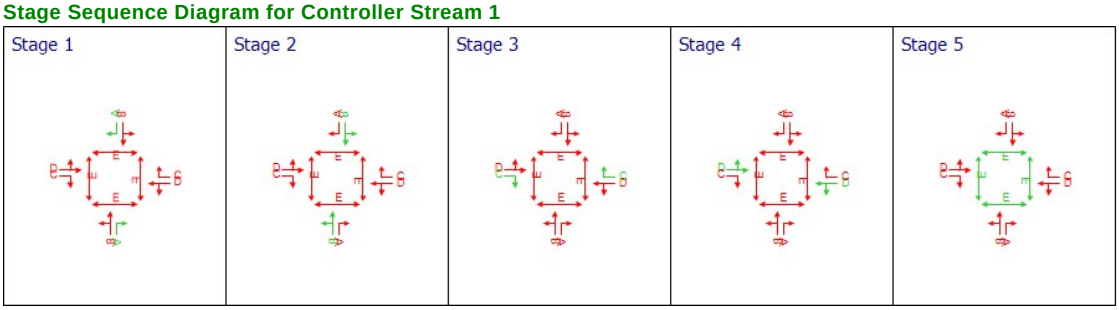
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	D	81	110	29
A	2	1	1	C	57	76	19
B	1	1	1	B	17	52	35
B	2	1	1	A	5	12	7
C	1	1	1	D	81	110	29
C	2	1	1	C	57	76	19
D	1	1	1	B	17	52	35
D	2	1	1	A	5	12	7

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	71	41	329	1800	29	49.54	10.71	307.82	64.29	3.98	68.27
		2	42	137	133	1800	19	48.25	4.07	11.70	25.31	1.51	26.83
	Ax	1	0	Unrestricted	264	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	73	38	403	1800	35	45.40	12.81	36.82	72.17	4.75	76.92
		2	21	366	29	1800	7	55.85	0.93	29.76	6.39	0.35	6.74
	Bx	1	0	Unrestricted	469	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	34	192	159	1800	29	38.22	4.37	12.57	23.97	1.62	25.59
		2	70	43	220	1800	19	59.36	7.63	109.66	51.51	2.83	54.35
	Cx	1	0	Unrestricted	333	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	59	70	327	1800	35	39.69	9.59	27.58	51.20	3.56	54.75
		2	13	650	18	1800	7	53.95	0.57	10.93	3.83	0.21	4.04
	Dx	1	0	Unrestricted	552	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	0	Unrestricted	462	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	0	Unrestricted	432	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	11	1	0	Unrestricted	379	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	12	1	0	Unrestricted	345	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	A	1	329	329	0		1800	465	71		41	0.00	29
		2	133	133	0		1800	315	42		137	0.00	19
	Ax	1	264	264	0		Unrestricted	Unrestricted	0		Unrestricted	0.72	120
	B	1	403	403	0		1800	555	73		38	0.00	35
		2	29	29	0		1800	135	21		366	0.00	7
	Bx	1	469	469	0		Unrestricted	Unrestricted	0		Unrestricted	0.85	120
	C	1	159	159	0		1800	465	34		192	0.00	29
		2	220	220	0		1800	315	70		43	0.00	19
	Cx	1	333	333	0		Unrestricted	Unrestricted	0		Unrestricted	1.18	120
	D	1	327	327	0		1800	555	59		70	0.00	35
		2	18	18	0		1800	135	13		650	0.00	7
	Dx	1	552	552	0		Unrestricted	Unrestricted	0		Unrestricted	0.91	120
	9	1	462	462	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120
	10	1	432	432	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120
	11	1	379	379	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120
	12	1	345	345	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	120

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	A	1	2.40	49.54	3.69	0.84	64.29	96.40	292.53	24.63	3.98
		2	24.00	48.25	1.63	0.15	25.31	90.78	116.17	4.56	1.51
	Ax	1	21.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	24.00	45.40	4.14	0.94	72.17	94.08	351.36	27.77	4.75
		2	2.16	55.85	0.42	0.03	6.39	95.35	26.78	0.87	0.35
	Bx	1	21.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	24.00	38.22	1.60	0.09	23.97	81.49	126.92	2.65	1.62
		2	4.80	59.36	2.84	0.78	51.51	102.72	203.07	22.91	2.83
	Cx	1	23.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	24.00	39.69	3.19	0.42	51.20	86.71	271.10	12.44	3.56
		2	3.60	53.95	0.26	0.01	3.83	94.05	16.62	0.31	0.21
	Dx	1	21.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	1	5.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10	1	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	11	1	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	12	1	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	A	1	0.00	10.71	3.48	307.82	2.41	0.00	0.00	0.00	0.00	0.00	
		2	0.00	4.07	34.78	11.70	0.00	0.00	0.00	0.00	0.00	0.00	
	Ax	1	0.00	0.00	31.81	0.00	0.00	0.00	0.00	29.00	0.00	29.00	
	B	1	0.00	12.81	34.78	36.82	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	0.93	3.13	29.76	0.00	0.00	0.00	7.00	0.00	7.00	
	Bx	1	0.00	0.00	31.03	0.00	0.00	0.00	0.00	31.00	0.00	31.00	
	C	1	0.00	4.37	34.78	12.57	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	7.63	6.96	109.66	0.03	0.00	0.00	0.00	0.00	0.00	
	Cx	1	0.00	0.00	33.88	0.00	0.00	0.00	0.00	62.00	0.00	62.00	
	D	1	0.00	9.59	34.78	27.58	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	0.57	5.22	10.93	0.00	0.00	0.00	7.00	0.00	7.00	
	Dx	1	0.00	0.00	30.79	0.00	0.00	0.00	0.00	38.00	0.00	38.00	
	9	1	0.00	0.00	8.44	0.00	0.00	0.00	0.00	0.00	80.00	80.00	
	10	1	0.00	0.00	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	11	1	0.00	0.00	6.44	0.00	0.00	0.00	0.00	0.00	11.00	11.00	
	12	1	0.00	0.00	5.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Pedestrian Crossing Results

Pedestrian Crossings: Pedestrian summary

Time Segment	Crossing	Side	Degree of saturation (%)	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Mean Delay Per Ped (s)	Mean max queue (Ped)	Weighted cost of delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	(ALL)	(ALL)	11	50	11000	5	55.58	1.60	10.96	10.96

Pedestrian Crossings: Flows and signals

Time Segment	Crossing	Side	Calculated flow entering (Ped/hr)	Calculated flow out (Ped/hr)	Flow discrepancy (Ped/hr)	Adjusted flow warning	Calculated sat flow (Ped/hr)	Calculated capacity (Ped/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	(ALL)	(ALL)	50	50	0		11000	458	11		817	0.00	5

Pedestrian Crossings: Stops and delays

Time Segment	Crossing	Side	Mean Cruise Time per Ped (s)	Mean Delay per Ped (s)	Uniform delay (Ped-hr/hr)	Random plus oversat delay (Ped-hr/hr)	Weighted cost of delay (£ per hr)
17:00-18:00	1	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96
	2	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	3	1	6.33	55.58	0.77	0.00	10.96
		2	6.33	55.58	0.77	0.00	10.96
	4	1	5.67	55.58	0.77	0.00	10.96
		2	5.67	55.58	0.77	0.00	10.96

Pedestrian Crossings: Queues and blocking

Time Segment	Crossing	Side	Mean max queue (Ped)	Max queue storage (Ped)	Utilised storage (%)	Average storage excess queue (Ped)	Average limit excess queue (Ped)	Excess queue penalty (£ per hr)
17:00-18:00	(ALL)	(ALL)	1.60	10.00	15.97	0.00	0.00	0.00

Network Results

Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s (per cycle))
17:00-18:00	5254	5254	0		73		38	1180

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	13.64	18.64	23.95	3.26	386.37	28.56	1404.56	96.14	18.82

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))
17:00-18:00	307.82	0.00	174.00	91.00	265.00

Final Prediction Table

Traffic Stream Results

				SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
Arm	Traffic Stream	Name	Traffic node	Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/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 (Veh)	
A	1	(untitled)	1	1	D	329 <	1800	29	0.00	71	41	51.94	49.54	96.40	10.71 +	
	2		1	1	C	133	1800	19	0.00	42	137	72.25	48.25	90.78	4.07	
Ax	1	(untitled)				264	Unrestricted	120	29.00	0	Unrestricted	21.95	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	403	1800	35	0.00	73	38	69.40	45.40	94.08	12.81	
	2		1	1	A	29	1800	7	7.00	21	366	58.01	55.85	95.35	0.93	
Bx	1	(untitled)				469	Unrestricted	120	31.00	0	Unrestricted	21.41	0.00	0.00	0.00	
C	1	(untitled)	1	1	D	159	1800	29	0.00	34	192	62.22	38.22	81.49	4.37	
	2		1	1	C	220 <	1800	19	0.00	70	43	64.16	59.36	102.72	7.63 +	
Cx	1	(untitled)				333	Unrestricted	120	62.00	0	Unrestricted	23.38	0.00	0.00	0.00	
D	1	(untitled)	1	1	B	327	1800	35	0.00	59	70	63.69	39.69	86.71	9.59	
	2		1	1	A	18	1800	7	7.00	13	650	57.55	53.95	94.05	0.57	
Dx	1	(untitled)				552	Unrestricted	120	38.00	0	Unrestricted	21.24	0.00	0.00	0.00	
9	1		1			462	Unrestricted	120	80.00	0	Unrestricted	5.82	0.00	0.00	0.00	
10	1		1			432	Unrestricted	120	0.00	0	Unrestricted	3.78	0.00	0.00	0.00	
11	1		1			379	Unrestricted	120	11.00	0	Unrestricted	4.44	0.00	0.00	0.00	
12	1		1			345	Unrestricted	120	0.00	0	Unrestricted	4.12	0.00	0.00	0.00	

Pedestrian Crossing Results

				SIGNALS		FLOWS		PERFORMANCE			PER PED		QUEUES	WEIGHTS	PEN
Pedestrian	Side	Name	Traffic node	Controller stream	Phase	Calculated Flow Entering (Ped/hr)	Calculated sat flow (Ped/hr)	Actual green (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Ped (s)	Mean max queue (Ped)	Delay weighting (%)	Co tra pen (£ p
1	1	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0
2	1	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
3	1	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.92	55.58	1.60	100	0
4	1	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0
	2	(untitled)	1	1	E	50	11000	5	11	817	61.25	55.58	1.60	100	0

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-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	577.31	40.28	14.33	17.77	3.26	298.67	18.82	0.00	317.49
Bus									
Tram									
Pedestrians	3.40	6.84	0.50	6.18	0.00	87.70	0.00	0.00	87.70
TOTAL	580.71	47.12	12.32	23.95	3.26	386.37	18.82	0.00	405.19

< = 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

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

Filename: Junction 2 - DO SOMETHING - AM-PM.j9
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 2
Report generation date: 30/01/2025 12:53:28

»JUNCTION 2 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM
»JUNCTION 2 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	JUNCTION 2 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-C	D7	0.2	6.70	0.18	A					
Stream B-A		0.1	8.86	0.06	A					
Stream C-AB		0.3	5.80	0.18	A					
	JUNCTION 2 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-C						D8	0.2	7.75	0.20	A
Stream B-A							0.0	9.92	0.04	A
Stream C-AB							0.4	8.35	0.23	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	27/05/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓
D8	2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	JUNCTION 2	100.000

JUNCTION 2 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D8 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R125 (N)		Major
B	St.Seachnails (S)		Minor
C	R125 (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			90.0	✓	0.00

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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	6.00	3.80	3.00	3.00	✓	1.00	190	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	595	0.108	0.274	0.172	0.391
B-C	752	0.115	0.291	-	-
C-B	626	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	188	100.000
B		✓	142	100.000
C		✓	377	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	12	176
	B	26	0	116
	C	297	80	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.18	6.70	0.2	A
B-A	0.06	8.86	0.1	A
C-AB	0.18	5.80	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	116	653	0.178	116	0.2	6.700	A
B-A	26	432	0.060	26	0.1	8.859	A
C-AB	132	752	0.176	132	0.3	5.802	A
C-A	245			245			
A-B	12			12			
A-C	176			176			

JUNCTION 2 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D8 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D8	2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	470	100.000
B		✓	130	100.000
C		✓	208	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	25	445
	B	16	0	114
	C	105	103	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	5
	B	5	0	5
	C	5	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.20	7.75	0.2	A
B-A	0.04	9.92	0.0	A
C-AB	0.23	8.35	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	114	578	0.197	114	0.2	7.750	A
B-A	16	379	0.042	16	0.0	9.918	A
C-AB	127	558	0.228	127	0.4	8.345	A
C-A	81			81			
A-B	25			25			
A-C	445			445			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

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

Filename: Junction 3 - DO SOMETHING - AM-PM.j9
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 3
Report generation date: 30/01/2025 13:01:24

»JUNCTION 3 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM
»JUNCTION 3 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	JUNCTION 3 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-AC	D7	0.1	6.79	0.05	A					
Stream C-AB		0.0	5.27	0.01	A					
	JUNCTION 3 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-AC						D8	0.0	6.62	0.02	A
Stream C-AB							0.0	5.37	0.01	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	10/04/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓
D8	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	JUNCTION 3	100.000

JUNCTION 3 - 2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D8 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.83	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

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.30			100.0	✓	0.00

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)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.50	100	70

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	573	0.103	0.260	0.164	0.372
B-C	701	0.106	0.268	-	-
C-B	632	0.242	0.242	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2041+ OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	91	100.000
B		✓	28	100.000
C		✓	124	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	8	83
	B	21	0	7
	C	121	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.05	6.79	0.1	A
C-AB	0.01	5.27	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	28	558	0.050	28	0.1	6.790	A
C-AB	4	687	0.005	4	0.0	5.268	A
C-A	120			120			
A-B	8			8			
A-C	83			83			

JUNCTION 3 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D8 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D8	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	127	100.000
B		✓	13	100.000
C		✓	126	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	16	111
	B	9	0	4
	C	120	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.02	6.62	0.0	A
C-AB	0.01	5.37	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	13	556	0.023	13	0.0	6.624	A
C-AB	7	678	0.011	7	0.0	5.368	A
C-A	119			119			
A-B	16			16			
A-C	111			111			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

Filename: Junction 4 - DO SOMETHING - AM-PM.j9
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 4
Report generation date: 30/01/2025 13:11:50

»JUNCTION 4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM
»JUNCTION 4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	JUNCTION 4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-AC	D7	0.1	6.51	0.08	A	D8	0.0	7.19	0.05	A
Stream C-AB		0.1	4.73	0.04	A		0.1	6.73	0.07	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	10/04/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓
D8	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	JUNCTION 4	100.000

JUNCTION 4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D8 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.80	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

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.40			100.0	✓	0.00

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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	90	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	543	0.097	0.246	0.155	0.351
B-C	670	0.101	0.255	-	-
C-B	632	0.241	0.241	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D7	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	164	100.000
B		✓	47	100.000
C		✓	323	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	2	162
	B	5	0	42
	C	305	18	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.08	6.51	0.1	A
C-AB	0.04	4.73	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	600	0.078	47	0.1	6.506	A
C-AB	29	790	0.037	29	0.1	4.729	A
C-A	294			294			
A-B	2			2			
A-C	162			162			

JUNCTION 4 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D8 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D8	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	453	100.000
B		✓	25	100.000
C		✓	121	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	5	448
	B	3	0	22
	C	85	36	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.05	7.19	0.0	A
C-AB	0.07	6.73	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	25	526	0.048	25	0.0	7.186	A
C-AB	42	577	0.073	42	0.1	6.732	A
C-A	79			79			
A-B	5			5			
A-C	448			448			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

Filename: Junction 5 - DO SOMETHING - AM-PM.j9
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 5
Report generation date: 30/01/2025 14:31:00

»JUNCTION 5 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM
»JUNCTION 5 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	JUNCTION 5 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-AC	D5	0.1	8.49	0.10	A	D6	0.1	9.12	0.06	A
Stream C-AB		0.0	4.56	0.01	A		0.0	6.43	0.02	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	10/04/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓
D6	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	JUNCTION 5	100.000

JUNCTION 5 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D6 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.83	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

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.40			110.0	✓	0.00

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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	50	90

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	525	0.094	0.237	0.149	0.339
B-C	664	0.100	0.253	-	-
C-B	638	0.243	0.243	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	154	100.000
B		✓	48	100.000
C		✓	310	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	16	138
	B	37	0	11
	C	305	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.10	8.49	0.1	A
C-AB	0.01	4.56	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48	472	0.102	48	0.1	8.494	A
C-AB	8	797	0.010	8	0.0	4.562	A
C-A	302			302			
A-B	16			16			
A-C	138			138			

JUNCTION 5 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D6 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.46	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 segment length (min)	Single time segment only
D6	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	480	100.000
B		✓	24	100.000
C		✓	87	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	32	448
	B	19	0	5
	C	78	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.06	9.12	0.1	A
C-AB	0.02	6.43	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	24	419	0.057	24	0.1	9.122	A
C-AB	10	570	0.018	10	0.0	6.430	A
C-A	77			77			
A-B	32			32			
A-C	448			448			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

Filename: Junction 7 - DO SOMETHING - AM-PM.j9
Path: M:\Projects\19\19-023 - Dunshaughlin SHD\Design\Civil\Traffic\Jan 2025\Junction 7
Report generation date: 30/01/2025 13:43:01

»JUNCTION 7 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM
»JUNCTION 7 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	JUNCTION 7 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS									
Stream B-AC	D5	0.5	11.72	0.35	B	D6	1.0	16.57	0.49	C
Stream C-AB		0.1	4.84	0.05	A		0.0	6.97	0.02	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	10/04/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DOMAIN\f.silva
Description	

Units

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓
D6	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	JUNCTION 7	100.000

JUNCTION 7 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D6 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.62	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

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.40			100.0	✓	0.00

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)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.25	90	100

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	571	0.102	0.258	0.163	0.369
B-C	704	0.106	0.268	-	-
C-B	632	0.241	0.241	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D5	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	273	100.000
B		✓	164	100.000
C		✓	342	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	134	139
	B	149	0	15
	C	321	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.35	11.72	0.5	B
C-AB	0.05	4.84	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	164	470	0.349	163	0.5	11.722	B
C-AB	36	780	0.046	36	0.1	4.837	A
C-A	306			306			
A-B	134			134			
A-C	139			139			

JUNCTION 7 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D6 - 2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D6	2041 + OVERALL DEVELOPMENT + ADJ DEVELOPMENTS	PM	FLAT	17:00	18:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	664	100.000
B		✓	208	100.000
C		✓	97	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	213	451
	B	180	0	28
	C	86	11	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.49	16.57	1.0	C
C-AB	0.02	6.97	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	208	423	0.491	207	1.0	16.569	C
C-AB	13	529	0.025	13	0.0	6.973	A
C-A	84			84			
A-B	213			213			
A-C	451			451			

UK and Ireland Office Locations