Response to Further Information Request - ILTP Input

Date:

25th April 2025

Distribution:

Client Team

Author:

Ben Waite

Approved By:

Christy O'Sullivan

ILTP Project Code & Reference:

CMHDUND

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1 INTRODUCTION

1.1 Purpose of Report

1.1.1 This report is intended to form part of a response to a further information (FI) request by An Bord Pleanála in relation to a proposed Part 10 planning application located at the former Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14. (ABP-320912-24). This report responds to Item no. 2 of the FI request, which concerns Traffic and Transport matters.

St. Albert's House Dunboyne Co. Meath
tel: 01-8255700 fax: 01-8255730
www.iltp.ie info@iltp.ie

1.2 Item no. 2 – Traffic and Transport

1.2.1 Item no. 2 has been reproduced here for convenience. It states:

(a) Regarding the submitted Traffic and Transport Assessment, the applicant is requested to outline a clearer and more detailed explanation for the translation of 'Total Person based Trip Rates' Table 7.1 to Final External Vehicular Based Trip Generation' (Table 7.2). The applicant is requested to clarify:

i. The difference between the 'Driver' mode share (44%) in the Traffic and Transport Assessment, compared to the 40% mode share used in the Environmental Impact Assessment Report.

ii. Calculations showing how the 'driver' mode share was applied to the total trips and the resultant total for 'vehicular trips'.

iii. Calculations showing how the estimated internal and external trip rates (as per section 7.3.10) were applied to the total number of vehicular trips, and the resultant estimated number of external vehicular trips.

(b) Notwithstanding the submitted response to the National Transport Authority observation, the applicant is requested to clarify the design rationale for the proposed two-lane vehicular exit onto Dundrum Road, particular with reference to section 4.4.3 of the Design Manual for Urban Roads and Streets (Government of Ireland, 2019). In doing so, the applicant is requested to submit a proposal for a one-lane exit option, along with a traffic impact assessment of its junction performance to the two-lane proposal

1.3 Response to Item 2 (a)

1.3.1 The traffic data and analysis underpinning the TTA and EIAR assessments are identical. While the text, tables and figures in the EIAR are all correct, a section of the TTA (pp: 48-51 inclusive) included some text, tables and graphics that had not been updated to reflect the final trip rates and mode share assumptions actually used in the traffic assessments. Some of the information from a previous iteration of the report was included in the final version of TTA due to an oversight. These revised updated pages are included as Appendix A for completeness.

1.3.2 A new version of the TTA&MMP report (dated 25th April 2025) with pages 48-51 updated is also included as part of the FI response pack.

1.3.3 Table 7.1 of the TTA has also been expanded to show additional trip generation sub-total to allow for a more detailed understanding of the mode share calculations and is included as Table 1.1. This additional information does not change the calculations for any of the data used in the TTA or EIAR.

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tel: 01-8255700 fax: 01-8255730
www.iltp.ie info@iltp.ie

Table 1.1: Person-Based Trips (Expanded Table 7.1 for TTA)

Residential Type	Rate Type	Number of Units	AM Rate Arr	AM Rate Dep	PM Rate Arr	PM Rate Dep	AM Trips Arr	AM Trips Dep	PM Trips Arr	PM Trips Dep
Apartments	**per Unit**	932	0.1	0.493	0.347	0.169	93	459	323	158
Assisted Living Units	**per Unit**	2	0.205	0.767	0.602	0.289	0	2	1	1
Total Residential							94	461	325	158
Non-Residential Type	**Rate Type**	**GFA (sqm)**	**AM Rate Arr**	**AM Rate Dep**	**PM Rate Arr**	**PM Rate Dep**	**AM Trips Arr**	**AM Trips Dep**	**PM Trips Arr**	**PM Trips Dep**
Creche	**per 100sqm**	**710**	6.203	2.278	2.373	4.525	44	16	17	32
Retail Cluster	**per 100sqm**	**1160**	6.966	6.875	8.049	8.31	81	80	93	96
Café	**per 100sqm**	**78**	3.093	1.031	5.255	2.801	2	1	4	2
Restaurant	**per 100sqm**	**266**	3.093	1.031	5.255	2.801	8	3	14	7
Community	**per ha.**	**0.1716ha**	79.452	13.014	82.353	46.324	14	2	14	8
Medical	**per 100sqm**	**288**	3.822	1.549	1.918	3.401	11	4	6	10
Management Suite	**per 100sqm**	**123**	1.886	0.123	0.128	1.807	2	0	0	2
Total Non-Residential							162	106	148	158
Part 10 Application Total							256	567	473	316
Future Application										
Enterprise	**per 100sqm**	**5500**	1.886	0.123	0.128	1.807	104	7	7	99
Overal Site Total							360	574	480	416

1.3.4 Table 1.1 was generated with data extracted from the TRICS database. Full outputs of the TRICS outputs were supplied as an appendix to the TTA report submitted as part of the Part 10 planning application. It was necessary to use person-based trip data from TRICS rather than the more conventional vehicular-based trip data as both a public transport assessment and a traffic impact assessment were being carried out. As a result a number of factors needed to be applied to the TRICS outputs to generate the relevant data for our traffic models. These calculations are explained in detail below.

1.3.5 The Dundrum LAP (2023) identified that over 50% of existing trips in the area are made by sustainable travel modes. The planned development seeks to further promoted sustainable travel mode through reduce car parking provision and the implementation of Mobility Management Plan (MMP) measures as set out in the TTA which will further increase the level of sustainable travel modes and reduce the mode share of trips made by private car.

1.3.6 Wider policy including the Climate Action Plan (2024) also aims to reduce the reliance on the private car over time. For the proposed development, an opening mode share target of 45% of trips by car (or 40% Driver mode share) was chosen as an achievable target.

1.3.7 In response to Item 2 (a) i, the difference in percentage for the 'Driver' mode share shown in the TTA reports is due to some of the text and Figure 7.2 of the TTA not being updated to reflect the 40% driver mode share used in the TTA assessment and in the EIAR. The 44% value ,as stated in section 1.3.1 above, was left over from earlier version of the report and should have been updated.

1.3.8 For clarity all the traffic modelling and analysis undertaken and included as part of the TTA and EIAR was based on the 40% driver mode share. Table 7.2 of the TTA and Table 18-3 of the EIAR are both identical and have not changed.

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1.3.9 In respect to Item 2 (a) ii and Item 2 (a) iii, the following sets out how the calculation of the resultant external vehicular trips were derived. For the Part 10 application, the opening year mode share estimated that 45% of overall person-based trips would be made by private cars. To calculate this, the results shown in Table 1.1 were multiplied by 0.45. The results of this calculation are shown in Table 1.2.

Table 1.2: Car Trips (45% of Person Trips)

Residential	AM Trips		PM Trips	
Type	Arr	Dep	Arr	Dep
Apartments	42	207	146	71
Assisted Living Units	0	1	1	0
Total Residential	42	207	146	71

Non-Residential	AM Trips		PM Trips	
Type	Arr	Dep	Arr	Dep
Creche	20	7	8	14
Retail Cluster	36	36	42	43
Café	1	0	2	1
Restaurant	4	1	6	3
Community	6	1	6	4
Medical	5	2	2	4
Management Suite	1	0	0	1
Total Non-Residential	73	48	67	71
Part 10 Application Total	115	255	213	142
Future Application				
Enterprise	47	3	3	45
Overall Site Total	162	258	216	187

1.3.10 To calculate the actual number of car trips, an average car occupancy rate of 1.12 was assumed. The car-based trips shown in Table 1.2 were divided by 1.12, and the results of this calculation are shown in Table 1.3.

1.3.11 Data from the EU, UK, and Ireland (NTA Annual Cordon Survey Reports) sources indicate that for work-related travel, car occupancy rates commonly fall between 1.1 and 1.7 persons per vehicle. A lower rate of 1.12 is generally deemed appropriate for modelling vehicular flows during peak hours, where carpooling is less prevalent and solo driving is the norm.

1.3.12 The measures as set out in the MMP accompanying the Part 10 application are likely to result in higher car occupancy rates than the 1.12 rate which will result in lower car movements when the development is complete. This robust approach ensured that the total number of car trips was not underrepresented.

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Table 1.3: Car Trips Adjusted for Occupancy (Actual Car Trips)

Residential	AM Trips		PM Trips	
Type	Arr	Dep	Arr	Dep
Apartments	37	185	130	63
Assisted Living Units	0	1	1	0
Total Residential	38	185	130	64

Non-Residential	AM Trips		PM Trips	
Type	Arr	Dep	Arr	Dep
Creche	18	6	7	13
Retail Cluster	32	32	38	39
Café	1	0	2	1
Restaurant	3	1	6	3
Community	5	1	6	3
Medical	4	2	2	4
Management Suite	1	0	0	1
Total Non-Residential	65	43	60	64
Part 10 Application Total	103	228	190	127
Future Application				
Enterprise	42	3	3	40
Overall Site Total	145	231	193	167

1.3.13 Finally, in order to calculate external vehicular movements, factors were applied to the results of the car occupancy calculations. These factors varied depending on the land use. The factors used were as follows:

- Residential Part 10 Application – 85% of trips to/from assumed to be external
- Non-residential Part 10 Application – 20% of trips to/from assumed to be external
- Future Application (Enterprise) – 90% of trips to/from assumed to be external

1.3.14 The results of these calculations and, ultimately, the numbers that were used in the traffic models are shown in Table 1.4.

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tel: 01-8255700 fax: 01-8255730
www.iltp.ie info@iltp.ie

Table 1.4: Final External Vehicular Trips (Used in Traffic Modelling)

Residential	AM Trips		PM Trips		
Type	Arr	Dep	Arr	Dep	
Apartments	32	157	110	54	
Assisted Living Units	0	1	1	0	
Total Residential	32	158	111	54	85% External Trips
Non-Residential	**AM Trips**		**PM Trips**		
Type	**Arr**	**Dep**	**Arr**	**Dep**	
Creche	4	1	1	3	
Retail Cluster	6	7	8	8	
Café	0	1	0	0	
Restaurant	1	1	1	1	
Community	1	1	1	1	
Medical	1	1	1	1	
Management Suite	0	1	0	0	
Total Non-Residential	13	13	12	13	20% External Trips
Part 10 Application Total	45	171	124	67	
Future Application					
Enterprise	38	2	3	36	90% External Trips
Overall Site Total	**83**	**173**	**126**	**103**	

1.3.15 The "Overall Site Total" trips shown in Table 1.4 are identical to the values used in the TTA traffic modelling and in the EIAR accompanying the planning application.

1.4 Response to Item no. 2 (b)

1.4.1 The primary rationale for the proposed two-lane vehicular access onto Dundrum Road was to limit the impact that the proposed junction would have on mainline traffic along Dundrum Road. The two-lane option reduced the green time allocation for the proposed access road with more green time allocated to Dundrum Road.

1.4.2 The TTA demonstrated that the proposed junction with the two-lane access onto Dundrum Road could operate within its capacity with the proposed development in place. The results summary table from the TTA is reproduced as Table 1.5, for convenience.

St. Albert's House Dunboyne Co. Meath
tel: 01-8255700 fax: 01-8255730
www.iltp.ie info@iltp.ie

Table 1.5: LinSig Traffic Model Output Results – Proposed Access Junction (Two-Lane Exit Option)

Scenario		R117 Southbound (A)		Proposed Access (B)		R117 Northbound (C)	
		Degree of Saturation (%)	Mean Max Queue	Degree of Saturation (%)	Mean Max Queue	Degree of Saturation (%)	Mean Max Queue
Opening Year, with Development	**AM**	45%	7.6	61.2	7.6	69.6%	15.1
	PM	53.5%	9.6	36.8%	1.4	45%	7.3

1.4.3 The FI requested the applicant to submit a design proposal for a one-lane exit option. Drawings for this option have been prepared by Barret Mahony Consulting Engineers (BMCE), an excerpt from this drawing showing the one-lane option is shown in Figure 1.1. Full-scale drawings will be submitted as part of the applicant's response documentation.

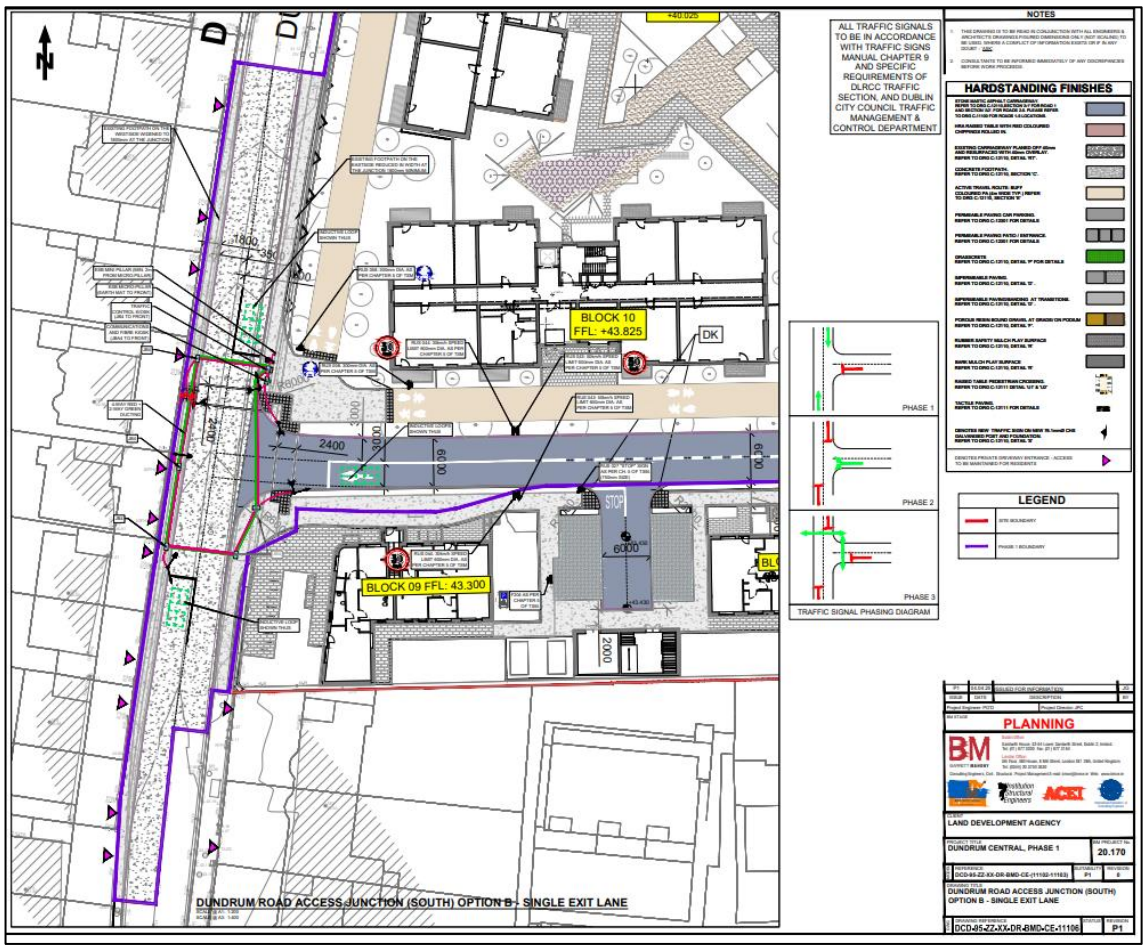

Figure 1.1: One-Lane Exit Option Junction Layout (Source: BMCE)

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tel: 01-8255700 fax: 01-8255730
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1.4.4 Based on the new junction layout drawings, an updated LinSig model was developed to test the capacity of the proposed junction with the one-lane exit option. All other parameters for the model were unchanged.

1.4.5 The results of the updated LinSig traffic modelling for the one-lane exit option are shown in Table 1.6.

Table 1.6: LinSig Traffic Model Output Results – Proposed Access Junction (One-Lane Exit Option)

Scenario		R117 Southbound (A)		Proposed Access (B)		R117 Northbound (C)	
		Degree of Saturation (%)	Mean Max Queue	Degree of Saturation (%)	Mean Max Queue	Degree of Saturation (%)	Mean Max Queue
Opening Year, with Development	**AM**	47.9%	8.2	72.5%	5.4	73.3%	16.8
	PM	54.6%	10.0	53.1%	3.0	46.2%	7.7

1.4.6 The results show that, while there is an increase in the Degree of Saturation across the board with the one-lane exit option in place, the junction continues to perform within its capacity in both the AM and PM peak hours.

1.4.7 The full LinSig outputs for both scenarios are included as Appendix B.

1.4.8 The results show that either a single or two-lane exit from the proposed development onto Dundrum Road are both satisfactory in traffic capacity terms. The main benefit of the two-lane exit is that additional green time is allocated to Dundrum Road traffic. In addition, there is a likelihood that the emergency access to the north would be required less often as the two-lane exit provides some additional flexibility to deal with minor incidents, such a vehicle breakdown on the exit from the proposed development. The single-lane option would have the benefit of reducing pedestrian crossing time and distance across the proposed access road.

1.4.9 Both the original and revised access layouts are generally in accordance with section 4.4.3 of the Design Manual for Urban Road and Streets(DMURS). The applicant has no objection to the proposed access being reduced to a single exit lane should ABP deem it appropriate.

St. Albert's House Dunboyne Co. Meath
tel: 01-8255700 fax: 01-8255730
www.iltp.ie info@iltp.ie

APPENDIX A – UPDATED PAGES (48-52 INCL.) OF TTA

7.3.3 For locations such as the subject site, a lower trip rate should be assumed given its location and accessibility to public transport. Modal split refers to the percentage of different modes of transport used by people in a given area or for a specific journey. It shows the percentage of travellers using each mode, such as cars, public transport, walking, cycling, etc. In transportation planning, modal split analysis helps understand travel behaviour and informs decisions to promote sustainable transport options.

7.3.4 The Dundrum LAP (2023) states the following in respect to current mode share:

> *"Dundrum is relatively well served by public transport, with the opening of the Luas Green Line transforming the connectivity of the Town with the City Centre and Sandyford/Cherrywood—and more recently with the north-west Inner City.*
>
> *The area has a broadly positive modal share of commuters who use public transport/walking and cycling.*
>
> *For residents of Dundrum, **10%** walk to work (higher than both the State and County average) **7%** cycle (more than twice the national rate) and **34%** use public transport (compared to County rate of **23%** and State rate of just **9%**). All told, more than **50%** of residents of Dundrum commute by sustainable modes.*
>
> *Those who commute to Dundrum to work have a similarly positive modal split—**13%** walk, **4%** cycle and **26%** use public transport. The rate of cycling to Dundrum is, however, lower than the County average of **6%**."*

7.3.5 The Dundrum LAP identified that over 50% of existing trips in the area are made by sustainable travel modes. The planned development seeks to further promoted sustainable travel mode through reduce car parking provision and the implementation of mobility management measures as set out in the TTA which will further reduce the mode share of trips made by private car.

7.3.6 For the proposed development, an opening mode share target of 45% of trips by car was chosen as an achievable target.

7.3.7 The final modal split was calculated based on a combination of data from TRICS and with reference to the mode share data provided in the Dundrum LAP (2023). The final modal split used in trip generation calculations is as follows:

- Car (Driver) 40%
- Car (Passenger) 5%
- Pedestrian & Cycle 25%
- Bus 5%
- Luas 25%

7.3.8 Figure 7.2 shows a graphical breakdown of the mode share distribution at the openeing year of the proposed development.

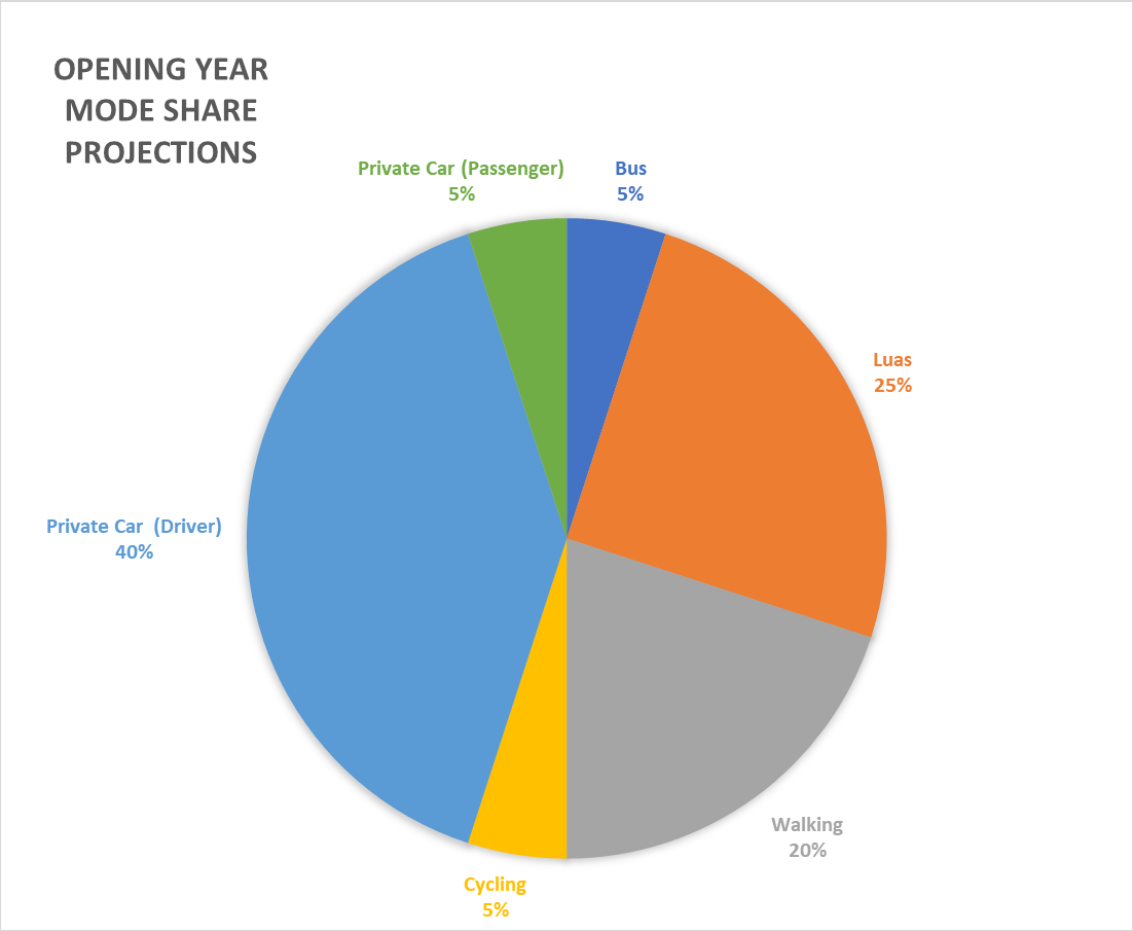

Figure 7.2: Opening Year Mode Share Projections

7.3.9 The assumed car mode share used in the traffic assessment is likely to be lower than that generated by the actual development, due to the lower car parking ratio proposed in the development. Also, the mode share assumption does not take into consideration the recent and planned improvement to the public transport service in the area. The walk and cycle route through the development is also likely to increase walk and cycle use by existing residents of the area. Therefore, the assumed vehicular trip rates used in the traffic capacity assessment are robust assessments and represent a robust assessment.

7.3.10 The proposed trip rates and total person-based trips are shown in Table 7.1. A record of all the data extracted from TRICS is included in Appendix B of the TTA.

Table 7.1: Proposed Total Person Based Trip Rates for Proposed Development

Residential Type	Rate Type	Number of Units	AM Rate		PM Rate		AM Trips		PM Trips	
			Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
Apartments	**per Unit**	932	0.1	0.493	0.347	0.169	93	459	323	158
Assisted Living Units	**per Unit**	2	0.205	0.767	0.602	0.289	0	2	1	1
Total Residential							94	461	325	158

Non-Residential Type	Rate Type	GFA (sqm)	AM Rate		PM Rate		AM Trips		PM Trips	
			Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
Creche	**per 100sqm**	**710**	6.203	2.278	2.373	4.525	44	16	17	32
Retail Cluster	**per 100sqm**	**1160**	6.966	6.875	8.049	8.31	81	80	93	96
Café	**per 100sqm**	**78**	3.093	1.031	5.255	2.801	2	1	4	2
Restaurant	**per 100sqm**	**266**	3.093	1.031	5.255	2.801	8	3	14	7
Community	**per ha.**	**0.1716ha**	79.452	13.014	82.353	46.324	14	2	14	8
Medical	**per 100sqm**	**288**	3.822	1.549	1.918	3.401	11	4	6	10
Management Suite	**per 100sqm**	**123**	1.886	0.123	0.128	1.807	2	0	0	2
Total Non-Residential							162	106	148	158
Part 10 Application Total							256	567	473	316
Future Application										
Enterprise	**per 100sqm**	**5500**	1.886	0.123	0.128	1.807	104	7	7	99
Overal Site Total							360	574	480	416

7.3.11 Based on our professional experience, mixed use developments such as the proposed development tend to generate a larger number of internal trips. Given the mix of uses proposed, not all trips generated will be external as many of the proposed facilities will be used by the residents.

7.3.12 ILTP have conservatively assumed that internal trips to and from the creche, retail uses, and other facilities would account for 15% of the overall residential trips and that the external trips would account for the other 85% of trips. Similarly, the trips to and from the retail and the other facilities provided on-site would be mainly used by the local residents, but 20% were assumed to be external trips. The trip rates used for the future application lands are assumed to be 90% external with 10% coming from within the development.

7.3.13 The mode share assumption was then applied to the overall external vehicle trip forecasts as set out in Table 7.2.

Table 7.2: Final External Vehicular Based Trip Generation for Proposed Development

Part 10 Application	AM Trips		PM Trips	
Residential	Arr	Dep	Arr	Dep
Apartments	32	157	110	54
Assisted Living Units	0	1	1	0

Non-Residential	Arr	Dep	Arr	Dep
Creche	4	1	1	3
Retail Cluster	6	7	8	8
Café	0	1	0	0
Restaurant	1	1	1	1
Community	1	1	1	1
Medical	1	1	1	1
Management Suite	0	1	0	0

Future Application	AM Trips		PM Trips	
	Arr	Dep	Arr	Dep
Enterprise	38	2	3	36

	AM Trips		PM Trips	
	Arr	Dep	Arr	Dep
Total	**83**	**173**	**126**	**103**

7.3.14 The Trip Generation assessment, as set out in Table 7.2, yielded an estimate of an additional 83 no. inward and 173 no. outward vehicular trips for the AM peak hour (08:00 – 09:00). An additional 126 no. inward vehicular trips and 103 no. outward vehicular trips were estimated for the PM peak hour (17:00 – 18:00).

7.3.15 The traffic survey results show that the AM and PM peaks are the times of the day when traffic volumes are at their highest. It can be assumed that if the road network can perform effectively at these times, then it will meet all demands placed upon it.

Table 7.3: Final External Trip Generation for Proposed Part 10 Development by Non-Car Modes of Travel – Opening Year

	Mode Share	**AM**		**PM**	
		Arr	**Dep**	**Arr**	**Dep**
Total External Person Trips	100%	112	413	306	166
Bus	5%	6	21	15	8
Luas	25%	28	103	76	41
Walking	20%	22	83	61	33
Cycling	5%	6	29	24	21

7.3.16 Overall the Trip Generation assessment yielded an estimate of an additional 34 no. inward and 124 no. outward public transport trips for the AM peak hour (08:00 – 09:00). An additional 91 no. inward public transport trips and 49 no. outward public transport trips were estimated for the PM peak hour (17:00 – 18:00).

Table 7.4: Final External Trip Generation for Proposed Part 10 Development by Non-Car Modes of Travel - Design Year

	Mode Share	AM		PM	
		Arr	Dep	Arr	Dep
Total External Person Trips	100%	112	413	306	166
Bus	10%	11	41	31	17
Luas	25%	28	103	76	41
Walking	18%	20	74	55	30
Cycling	10%	11	41	31	17
E-mobility	3%	3	12	9	5
Car Share Schemes	4%	4	17	12	7

7.4 Trip Distribution

7.4.1 Given the central location of the proposed development and the wide range of services and facilities in the area, the vehicular traffic generated by the development is likely to dissipate across the local road network. ILTP also examined the traffic movements to and from the adjacent Annaville Park when determining the trip distribution. In the AM Peak, approximately 40% of movements are to and from Dundrum Road north of Annaville Park with 60% of movements going to and from Dundrum Road south of Annaville Park. This pattern is repeated in the PM Peak.

7.4.2 The trip distribution for the proposed development is as follows:

Vehicles departing

- 57% estimated to turn left onto Dundrum Road and 43% to turn right.

Vehicles arriving

- 57% of total traffic arriving to the Site is estimated to arrive from the south with 43% estimated to arrive from the north.

7.4.3 Vehicles departing the site will then dissipate throughout the local road network through a number of different junctions. The total estimated Trip Distribution for the proposed development during the morning 08:00 – 09:00 and evening 17:00 – 18:00 peak hours is summarised in Figure 7.3.

APPEDNDIX B – LINSIG OUTPUTS

Basic Input Data and Results

User and Project Details

Project:	**CMHDUND**
Title:	**Proposed Access Junction**
Location:	Dundrum Road
Additional detail:	Two Exit Lane Option
File name:	ProposedAccessJunction.lsg3x
Author:	Ben Waite
Company:	ILTP
Address:	St. Albert's House, Dunboyne, Co. Meath
Linsig Version:	3, 3, 0, 6

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	AM	AM 2027 + CI + Dev	Network Control Plan 1	08:00 - 09:00	90	29.4	8.32
2	PM	PM 2027 + CI + Dev	Network Control Plan 1	17:00 - 18:00	90	68.3	5.82

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Pedestrian		7	7
E	Ind. Arrow	A	4	4

Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E
A		6	-	-	-
B	-		-	6	-
C	-	-		-	6
D	6	-	6		-
E	-	6	-	-	

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage 1	To Stage 2	To Stage 3	To Stage 4
1		6	6	0
2	2		6	0
3	2	X		6
4	6	X	2	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	A E
3	B
4	D

Lane Input Data

Junction: Proposed Access Junction

Lane	Lane Type	Phases	Start Disp. (s)	End Disp. (s)	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient (%)	Nearside Lane	Turns	Turning Radius (m)
1/1 (Dundrum Road NB Entry)	O	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Ahead Arm 6 Right	Inf Inf
2/1 (Dundrum Road SB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Dundrum Road NB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Dundrum Road SB Entry)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead Arm 6 Left	Inf Inf
5/1 (Proposed Access Entry)	U	B	2	3	3.5	Geom	-	3.25	0.00	Y	Arm 2 Left	Inf
5/2 (Proposed Access Entry)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Right	Inf
6/1 (Proposed Acces Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Give-Way Lane Input Data

Junction: Proposed Access Junction											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Dundrum Road NB Entry)	6/1 (Right)	1439	0	4/1	1.09	All	2.00	2.00	0.50	2	2.00

Scenario 1: 'AM' (FG1: 'AM 2027 + CI + Dev ', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Proposed Access Junction								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Dundrum Road NB Entry)	3.50	0.00	Y	Arm 3 Ahead	Inf	94.8 %	1965	1965
				Arm 6 Right	Inf	5.2 %		
2/1 (Dundrum Road SB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Dundrum Road NB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (Dundrum Road SB Entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	92.5 %	1965	1965
				Arm 6 Left	Inf	7.5 %		
5/1 (Proposed Access Entry)	3.25	0.00	Y	Arm 2 Left	Inf	100.0 %	1940	1940
5/2 (Proposed Access Entry)	3.25	0.00	Y	Arm 3 Right	Inf	100.0 %	1940	1940
6/1 (Proposed Acces Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: 'PM' (FG2: 'PM 2027 + CI + Dev', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Proposed Access Junction								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Dundrum Road NB Entry)	3.50	0.00	Y	Arm 3 Ahead	Inf	87.6 %	1965	1965
				Arm 6 Right	Inf	12.4 %		
2/1 (Dundrum Road SB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Dundrum Road NB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (Dundrum Road SB Entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	90.6 %	1965	1965
				Arm 6 Left	Inf	9.4 %		
5/1 (Proposed Access Entry)	3.25	0.00	Y	Arm 2 Left	Inf	100.0 %	1940	1940
5/2 (Proposed Access Entry)	3.25	0.00	Y	Arm 3 Right	Inf	100.0 %	1940	1940
6/1 (Proposed Acces Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2027 + CI + Dev '	08:00	09:00	01:00	
2: 'PM 2027 + CI + Dev'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: 'AM 2027 + CI + Dev '

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	47	849	896
	B	98	0	74	172
	C	445	36	0	481
	Tot.	543	83	923	1549

FG2: 'PM 2027 + CI + Dev'

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	72	508	580
	B	59	0	44	103
	C	518	54	0	572
	Tot.	577	126	552	1255

Scenario 1: 'AM' (FG1: 'AM 2027 + CI + Dev ', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	48	4	7	7
Change Point	0	54	64	77

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Dundrum Road NB Entry Ahead Right	Traffic	58	6	64
B	Proposed Access Entry Left Right	Traffic	7	70	77
C	Dundrum Road SB Entry Ahead Left	Traffic	48	6	54
D	Pedestrians across	Pedestrian	7	83	0
E	IGA	Ind. Arrow	4	60	64

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**69.6%**
Proposed Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**69.6%**
1/1	Dundrum Road NB Entry Ahead Right	O	N/A	N/A	A		1	58	-	-	896	1965	1288	69.6%
2/1	Dundrum Road SB Exit	U	N/A	N/A	-		-	-	-	-	543	Inf	Inf	0.0%
3/1	Dundrum Road NB Exit	U	N/A	N/A	-		-	-	-	-	923	Inf	Inf	0.0%
4/1	Dundrum Road SB Entry Ahead Left	U	N/A	N/A	C		1	48	-	-	481	1965	1070	45.0%
5/2+5/1	Proposed Access Entry Left Right	U	N/A	N/A	B		1	7	-	-	172	1940:1940	121+160	61.2 : 61.2%
6/1	Proposed Acces Exit	U	N/A	N/A	-		-	-	-	-	83	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%

Basic Input Data and Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	**-**	**-**	**42**	**4**	**1**	**6.0**	**2.3**	**0.0**	**8.3**	**-**	**-**	**-**	**-**	
Proposed Access Junction	**-**	**-**	**42**	**4**	**1**	**6.0**	**2.3**	**0.0**	**8.3**	**-**	**-**	**-**	**-**	
1/1	896	896	42	4	1	2.4	1.1	0.0	3.6	14.5	13.9	1.1	15.1	
2/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	923	923	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	481	481	-	-	-	1.7	0.4	-	2.1	15.4	7.2	0.4	7.6	
5/2+5/1	172	172	-	-	-	1.9	0.8	-	2.6	55.4	2.3	0.8	3.1	
6/1	83	83	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	

C1 PRC for Signalled Lanes (%): 29.4 Total Delay for Signalled Lanes (pcuHr): 8.32 Cycle Time (s): 90
PRC Over All Lanes (%): 29.4 Total Delay Over All Lanes(pcuHr): 8.32

Scenario 2: 'PM' (FG2: 'PM 2027 + CI + Dev', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	48	4	7	7
Change Point	0	54	64	77

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Dundrum Road NB Entry Ahead Right	Traffic	58	6	64
B	Proposed Access Entry Left Right	Traffic	7	70	77
C	Dundrum Road SB Entry Ahead Left	Traffic	48	6	54
D	Pedestrians across	Pedestrian	7	83	0
E	IGA	Ind. Arrow	4	60	64

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**53.5%**
Proposed Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**53.5%**
1/1	Dundrum Road NB Entry Ahead Right	O	N/A	N/A	A		1	58	-	-	580	1965	1277	45.4%
2/1	Dundrum Road SB Exit	U	N/A	N/A	-		-	-	-	-	577	Inf	Inf	0.0%
3/1	Dundrum Road NB Exit	U	N/A	N/A	-		-	-	-	-	552	Inf	Inf	0.0%
4/1	Dundrum Road SB Entry Ahead Left	U	N/A	N/A	C		1	48	-	-	572	1965	1070	53.5%
5/2+5/1	Proposed Access Entry Left Right	U	N/A	N/A	B		1	7	-	-	103	1940:1940	119+160	36.8 : 36.8%
6/1	Proposed Acces Exit	U	N/A	N/A	-		-	-	-	-	126	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%

Basic Input Data and Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	**-**	**-**	**64**	**6**	**2**	**4.4**	**1.3**	**0.1**	**5.8**	**-**	**-**	**-**	**-**	
Proposed Access Junction	**-**	**-**	**64**	**6**	**2**	**4.4**	**1.3**	**0.1**	**5.8**	**-**	**-**	**-**	**-**	
1/1	580	580	64	6	2	1.2	0.4	0.1	1.8	11.0	6.9	0.4	7.3	
2/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	572	572	-	-	-	2.1	0.6	-	2.7	16.8	9.1	0.6	9.6	
5/2+5/1	103	103	-	-	-	1.1	0.3	-	1.4	48.6	1.4	0.3	1.7	
6/1	126	126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	

C1 PRC for Signalled Lanes (%): 68.3 Total Delay for Signalled Lanes (pcuHr): 5.82 Cycle Time (s): 90
PRC Over All Lanes (%): 68.3 Total Delay Over All Lanes(pcuHr): 5.82

Basic Input Data and Results

User and Project Details

Project:	**CMHDUND**
Title:	**Proposed Access Junction – Single Lane Option**
Location:	Dundrum Road
Additional detail:	Single Exit Lane Option
File name:	Proposed Access Junction Single Lane Option.lsg3x
Author:	Ben Waite
Company:	ILTP
Address:	St. Albert's House, Dunboyne, Co. Meath
Linsig Version:	3, 3, 0, 6

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	AM	AM 2027 + CI + Dev	Network Control Plan 1	08:00 - 09:00	90	22.8	9.79
2	PM	PM 2027 + CI + Dev	Network Control Plan 1	17:00 - 18:00	90	64.9	6.32

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Pedestrian		7	7
E	Ind. Arrow	A	4	4

Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E
A		6	-	-	-
B	-		-	6	-
C	-	-		-	6
D	6	-	6		-
E	-	6	-	-	

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage 1	To Stage 2	To Stage 3	To Stage 4
1		6	6	0
2	2		6	0
3	2	X		6
4	6	X	2	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	A E
3	B
4	D

Lane Input Data

Junction: Proposed Access Junction

Lane	Lane Type	Phases	Start Disp. (s)	End Disp. (s)	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient (%)	Nearside Lane	Turns	Turning Radius (m)
1/1 (Dundrum Road NB Entry)	O	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Ahead Arm 6 Right	Inf Inf
2/1 (Dundrum Road SB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Dundrum Road NB Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Dundrum Road SB Entry)	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead Arm 6 Left	Inf Inf
5/1 (Proposed Access Entry)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Left Arm 3 Right	Inf Inf
6/1 (Proposed Acces Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Give-Way Lane Input Data

Junction: Proposed Access Junction											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (Dundrum Road NB Entry)	6/1 (Right)	1439	0	4/1	1.09	All	2.00	2.00	0.50	2	2.00

Scenario 1: 'AM' (FG1: 'AM 2027 + CI + Dev ', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Proposed Access Junction								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Dundrum Road NB Entry)	3.50	0.00	Y	Arm 3 Ahead	Inf	94.8 %	1965	1965
				Arm 6 Right	Inf	5.2 %		
2/1 (Dundrum Road SB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Dundrum Road NB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (Dundrum Road SB Entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	92.5 %	1965	1965
				Arm 6 Left	Inf	7.5 %		
5/1 (Proposed Access Entry)	3.25	0.00	Y	Arm 2 Left	Inf	57.0 %	1940	1940
				Arm 3 Right	Inf	43.0 %		
6/1 (Proposed Acces Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: 'PM' (FG2: 'PM 2027 + CI + Dev', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Proposed Access Junction								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Dundrum Road NB Entry)	3.50	0.00	Y	Arm 3 Ahead	Inf	87.6 %	1965	1965
				Arm 6 Right	Inf	12.4 %		
2/1 (Dundrum Road SB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Dundrum Road NB Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (Dundrum Road SB Entry)	3.50	0.00	Y	Arm 2 Ahead	Inf	90.6 %	1965	1965
				Arm 6 Left	Inf	9.4 %		
5/1 (Proposed Access Entry)	3.25	0.00	Y	Arm 2 Left	Inf	57.3 %	1940	1940
				Arm 3 Right	Inf	42.7 %		
6/1 (Proposed Acces Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 2

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2027 + CI + Dev '	08:00	09:00	01:00	
2: 'PM 2027 + CI + Dev'	17:00	18:00	01:00	

Traffic Flows, Desired
FG1: 'AM 2027 + CI + Dev '
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	47	849	896
	B	98	0	74	172
	C	445	36	0	481
	Tot.	543	83	923	1549

FG2: 'PM 2027 + CI + Dev'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	72	508	580
	B	59	0	44	103
	C	518	54	0	572
	Tot.	577	126	552	1255

Scenario 1: 'AM' (FG1: 'AM 2027 + CI + Dev ', Plan 1: 'Network Control Plan 1')
Stage Timings

Stage	1	2	3	4
Duration	45	4	10	7
Change Point	0	51	61	77

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Dundrum Road NB Entry Ahead Right	Traffic	55	6	61
B	Proposed Access Entry Left Right	Traffic	10	67	77
C	Dundrum Road SB Entry Ahead Left	Traffic	45	6	51
D	Pedestrians across	Pedestrian	7	83	0
E	IGA	Ind. Arrow	4	57	61

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**73.3%**
Proposed Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**73.3%**
1/1	Dundrum Road NB Entry Ahead Right	O	N/A	N/A	A		1	55	-	-	896	1965	1223	73.3%
2/1	Dundrum Road SB Exit	U	N/A	N/A	-		-	-	-	-	543	Inf	Inf	0.0%
3/1	Dundrum Road NB Exit	U	N/A	N/A	-		-	-	-	-	923	Inf	Inf	0.0%
4/1	Dundrum Road SB Entry Ahead Left	U	N/A	N/A	C		1	45	-	-	481	1965	1004	47.9%
5/1	Proposed Access Entry Left Right	U	N/A	N/A	B		1	10	-	-	172	1940	237	72.5%
6/1	Proposed Acces Exit	U	N/A	N/A	-		-	-	-	-	83	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%

Basic Input Data and Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	**-**	**-**	**42**	**4**	**1**	**6.7**	**3.1**	**0.0**	**9.8**	**-**	**-**	**-**	**-**	
Proposed Access Junction	**-**	**-**	**42**	**4**	**1**	**6.7**	**3.1**	**0.0**	**9.8**	**-**	**-**	**-**	**-**	
1/1	896	896	42	4	1	2.9	1.4	0.0	4.3	17.4	15.4	1.4	16.8	
2/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	923	923	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	481	481	-	-	-	1.9	0.5	-	2.4	17.7	7.7	0.5	8.2	
5/1	172	172	-	-	-	1.8	1.3	-	3.1	64.7	4.1	1.3	5.4	
6/1	83	83	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	

C1 PRC for Signalled Lanes (%): 22.8 Total Delay for Signalled Lanes (pcuHr): 9.79 Cycle Time (s): 90
PRC Over All Lanes (%): 22.8 Total Delay Over All Lanes(pcuHr): 9.79

Scenario 2: 'PM' (FG2: 'PM 2027 + CI + Dev', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	47	4	8	7
Change Point	0	53	63	77

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Dundrum Road NB Entry Ahead Right	Traffic	57	6	63
B	Proposed Access Entry Left Right	Traffic	8	69	77
C	Dundrum Road SB Entry Ahead Left	Traffic	47	6	53
D	Pedestrians across	Pedestrian	7	83	0
E	IGA	Ind. Arrow	4	59	63

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**54.6%**
Proposed Access Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**54.6%**
1/1	Dundrum Road NB Entry Ahead Right	O	N/A	N/A	A		1	57	-	-	580	1965	1255	46.2%
2/1	Dundrum Road SB Exit	U	N/A	N/A	-		-	-	-	-	577	Inf	Inf	0.0%
3/1	Dundrum Road NB Exit	U	N/A	N/A	-		-	-	-	-	552	Inf	Inf	0.0%
4/1	Dundrum Road SB Entry Ahead Left	U	N/A	N/A	C		1	47	-	-	572	1965	1048	54.6%
5/1	Proposed Access Entry Left Right	U	N/A	N/A	B		1	8	-	-	103	1940	194	53.1%
6/1	Proposed Acces Exit	U	N/A	N/A	-		-	-	-	-	126	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	D		1	7	-	-	0	-	0	0.0%

Basic Input Data and Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	**-**	**-**	**64**	**6**	**2**	**4.6**	**1.6**	**0.1**	**6.3**	**-**	**-**	**-**	**-**	
Proposed Access Junction	**-**	**-**	**64**	**6**	**2**	**4.6**	**1.6**	**0.1**	**6.3**	**-**	**-**	**-**	**-**	
1/1	580	580	64	6	2	1.3	0.4	0.1	1.9	11.6	7.2	0.4	7.7	
2/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	572	572	-	-	-	2.2	0.6	-	2.8	17.6	9.4	0.6	10.0	
5/1	103	103	-	-	-	1.1	0.6	-	1.7	58.1	2.4	0.6	3.0	
6/1	126	126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	

C1 PRC for Signalled Lanes (%): 64.9 Total Delay for Signalled Lanes (pcuHr): 6.32 Cycle Time (s): 90
PRC Over All Lanes (%): 64.9 Total Delay Over All Lanes(pcuHr): 6.32