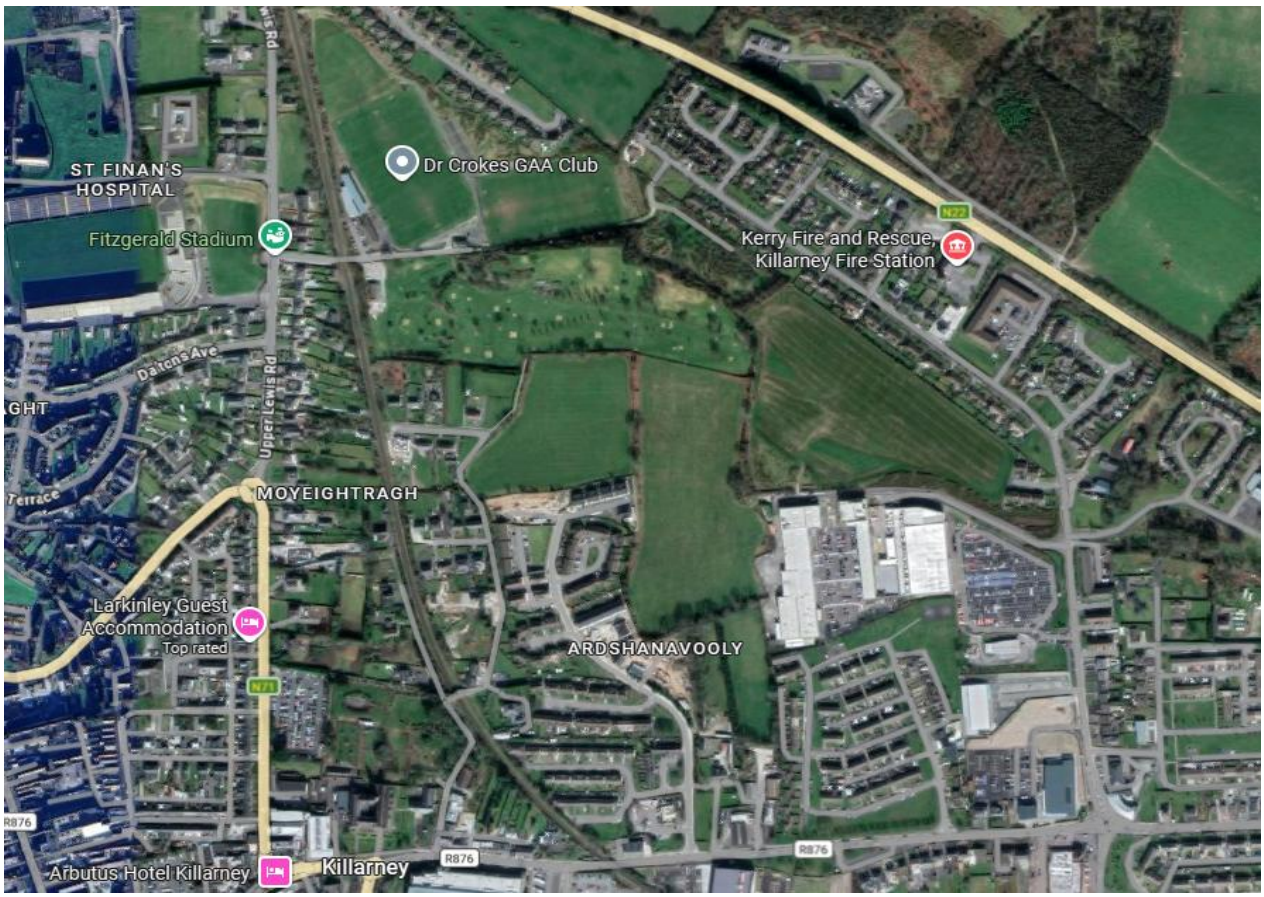
CONSULTING ENGINEERS

Deerpark, Killarney, Co. Kerry

Proposed Large Scale Residential Development, Deerpark, Killarney, Co. Kerry



Traffic and Transportation Assessment

September 2026

MHL & Associates Ltd.
Consulting Engineers






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1 NON TECHNICAL SUMMARY

M.H.L. & Associates Ltd. Consulting Engineers has been engaged by Ross-Park Residential HS Limited to prepare a Traffic and Transportation Assessment (TTA) in support of a Large Scale Residential Development (LRD) by Ross-Park Residential HS Limited for development at lands at Ardshanavooly, Killarney, Co. Kerry.

The proposed development comprises of:

The proposed development will consist of the construction of a residential development of 188 no. residential units with ancillary crèche, landscaping and associated site development works.

120 no. two and three storey houses comprising of 53 no. townhouse units (37 no. 3-bed units, 16 no. 4-bed units), 48 no. semi-detached units (30 no. 3-bed units, 18 no. 4-bed units), 19 no. mews houses (19 no. 2-bed units), and 68 no. apartments in 2 no. four storey blocks (36 no. 1-bed units, 32 no. 2-bed units).

Ancillary infrastructure development works will include wastewater infrastructure, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, ESB substations, and all associated site development works. Vehicular access to the development will be from the extended road network from the south.

This report has been prepared in accordance with the TII's 2014 publication "Traffic and Transport Assessment Guidelines" and the "Guidelines for Traffic Impact Assessments" as published by the Institution of Highways & Transportation U.K. in 1994.

The Opening year is the year of expected completion for the development and is taken to be 2026. In accordance with the TII's "Traffic and Transport Assessment Guidelines", a traffic analysis is required to be undertaken for the **Opening Year (2028), Opening Year +5 (2033)** and fifteen years from this date i.e., the **Opening Year+15 (2043)**.

This TTA assessment focused on the following traffic junctions:

- **Junction 1:** The roundabout of R876/East Avenue/College Street.
- **Junction 2:** The Park Road/Friary downs priority junction.
- **Junction 3:** The roundabout of R876/Countess Rd/R876/Arbutus Dr.

As part of this assessment, 12-hour traffic flows were recorded by third party traffic counters Irish Traffic Surveys Ltd. for Junction 1,2 & 3, with these traffic counts recorded in May 2024. These counts been factored up to the modelling year scenarios 2024 through to 2043 with TII expansion factors.

The overall impact of the development on the adjoining local road is to increase traffic flows entering/existing the development by 258 no. trips in the morning peak and by 216 no. trips in the evening peak in the Opening Year 2028, assuming all traffic generated by the development is new to the network.

- Junction 1 reaches a maximum RFC of 142% with the development during 2043 Sunday Peak and has an RFC 131% without the development. The junction reaches a maximum RFC of 138% with development during 2033 weekday and has an RFC of 130% without the development. The

maximum impact of the development is an increase of RFC by 11% on the junction during the 2043 Sunday Peak.

- Junction 2 reaches a maximum RFC of 69% with the development during 2033 weekday and has an RFC 24% without the development. The junction reaches a maximum RFC of 63% with development during 2043 Sunday Peak and has an RFC of 37% without the development. The maximum impact of the development is an increase of RFC by 45% on the junction during the 2033 weekday.

- Junction 3 reaches a maximum RFC of 71% with the development during 2043 Sunday Peak and has an RFC of 69% without the development. The junction reaches a maximum RFC of 66% with development during 2043 weekday and has an RFC of 63% without the development. The maximum impact of the development is an increase of RFC by 2% on the junction during the 2043 Sunday Peak.

It should be noted that the Modal Shift targets as set out on the Kerry County development plan have not been applied to the development traffic.

This conservative approach provides a very robust basis for the traffic assessment and modelling and gives the worst-case scenario. There are a number of factors that reinforce this conservative approach, namely the proximity of the site to the town centre and Deerpark Retail Park, the on-site creche, the new proposed Bus Stop outside the Site and the extensive proposal to provide dedicated pedestrian and cycling paths along the New Killarney Strategic Link Rad (A-C).

Given the site's proximity to Killarney town centre, together with the existing and proposed active travel infrastructure serving the site and surrounding area, it is anticipated that a proportion of trips associated with the development will be undertaken by sustainable modes of transport, including walking and cycling. On this basis, the traffic volumes adopted for the purposes of the modelling are considered to represent a conservative assessment of the potential traffic demand, as they do not fully account for the potential reduction in vehicular trips arising from the accessibility of the site by active and sustainable travel modes.

It is expected that all these factors will lead to an actual reduction in the conservative traffic figures as presented within this report.

Junction 1 is currently exceeding capacity, with an RFC of 131% in 2043 and significant delays. The development contributes to this decline with RFC of 142% in 2043, and junction improvements will be required to maintain efficient traffic flow.

Junction 2 is expected to operate within acceptable limits through 2043, with an RFC of 69% with the development.

Junction 3 is expected to operate within acceptable limits through 2043, with an RFC of 71% with the development.

This report set out these findings in more detail overleaf.

2 EXISTING SITE

Access to the site will be via Friary Downs from its Junction with Park Rd in Killarney, Co. Kerry. The development is to be accessed via this priority junction located within the 50kph speed control of Killarney Town. The site is approximately less than 1km east of Killarney Town with the location shown below in Figure 2.1 below.



Figure 2.1: Site Location (Credit: Google)

Longterm access to this site will be via by the proposed relief road (Killarney Strategic Road A-C), Linking the N22 with Park Road as shown in Figure 2.2 below. Ross-Park Residential HS Limited have had extensive discussions with both the Kerry NRDO and Kerry County Council as to the position of this infrastructure within their landholding. A route has now been agreed by all parties and this has been incorporated into the proposed site layout as shown below in Figure 3.2.

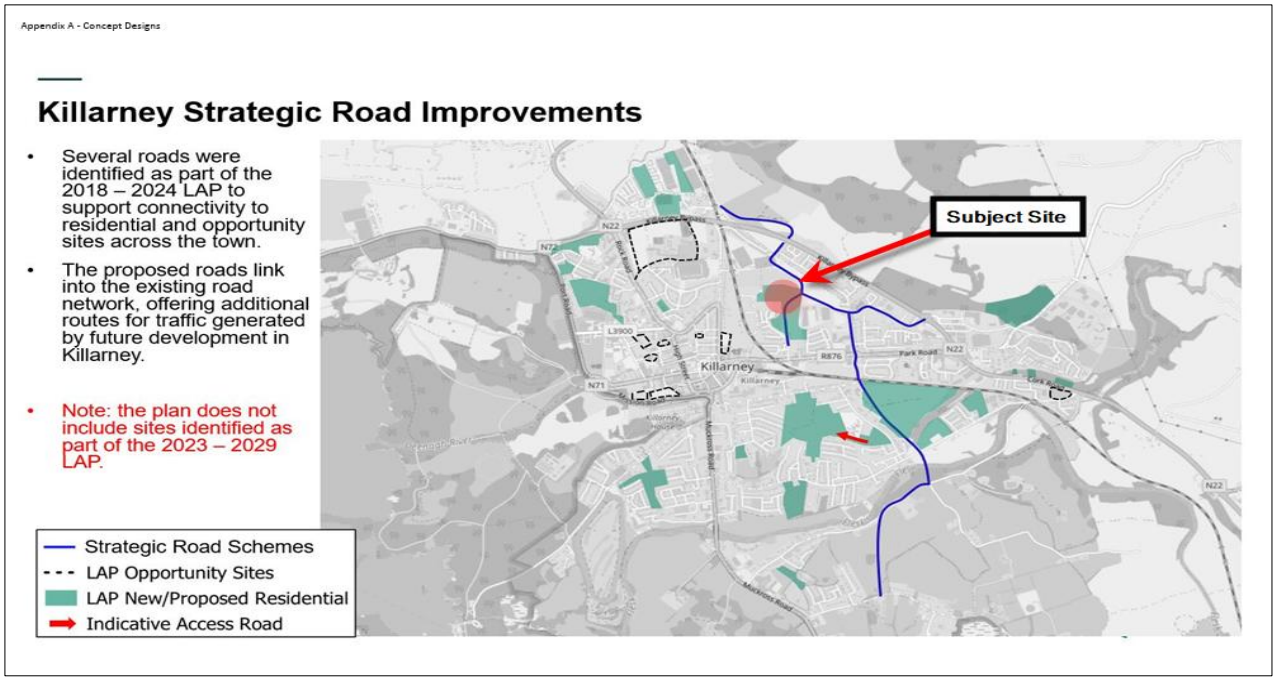


Figure 2.2: Source: Killarney Town Local Transport Plan

3 PROPOSED DEVELOPMENT

The proposed development comprises of:

The proposed development will consist of the construction of a residential development of 188 no. residential units with ancillary crèche, landscaping and associated site development works.

The proposed development includes the provision for 120 houses (9 no. 2-bed units, 73 no. 3-bed units and 36 no. 4-bed units), 68 no. apartments (32 no. 1-bed units and 36 2- bed units).

Ancillary infrastructure development works will include wastewater infrastructure, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, ESB substations, and all associated site development works. Vehicular access to the development will be from the extended road network from the south.

The main spine road (east/West) through the site is developed to connect to the adjoining Ardshanavooly LRD site to the east to accommodate future access when the Killarney Strategic Road A-C is complete. A temporary access point into the western side of the subject site has been developed until the signalised junction is built, (refer to Figure 3.2 below).

The junctions that have been assessed and labelling of each is shown in Figure 3.1. The site layout plan and schedule can be seen below in **Error! Reference source not found.** & Figure 3.4.

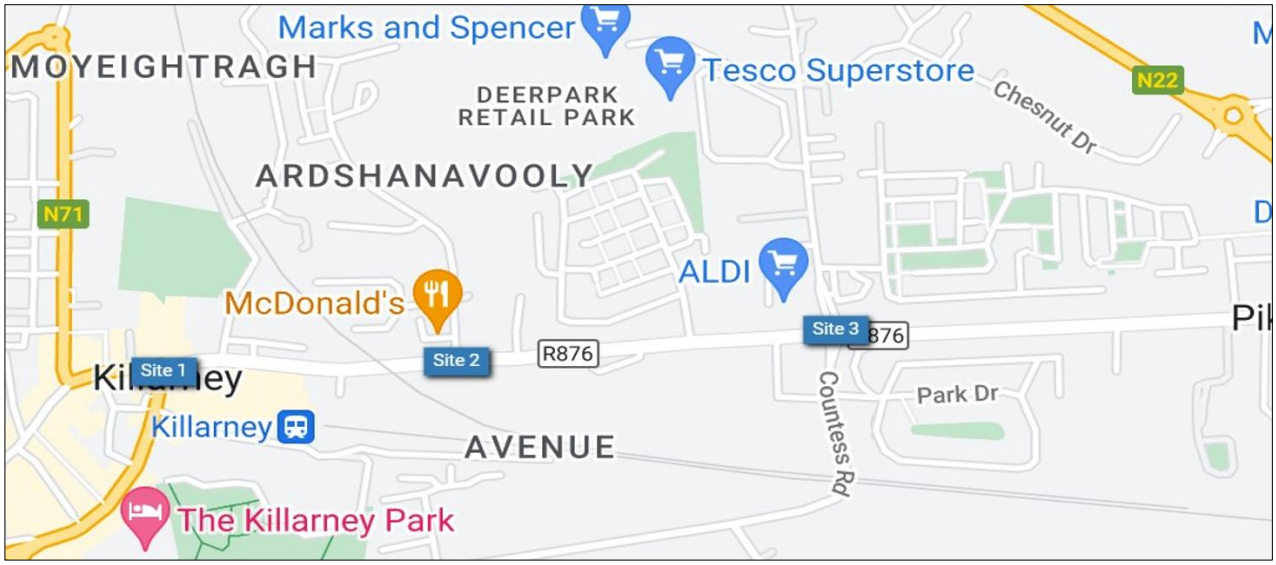


Figure 3.1 Junction Locations and Labels

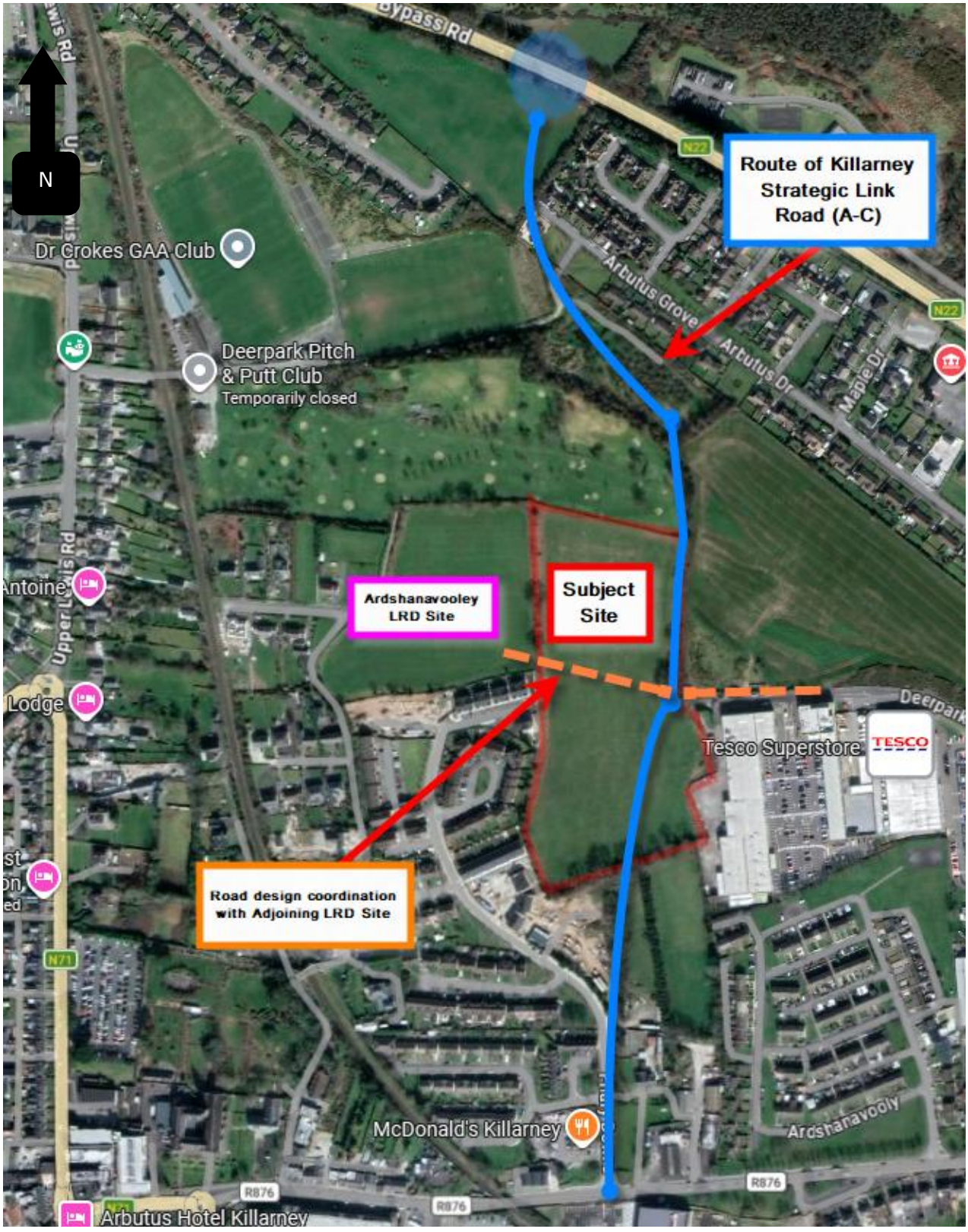


Figure 3.2 Development Site with Connection Details (Credit: Google)



Figure 3.3 Site Layout Map (Credit: reddya+u Architect)

Unit Breakdown:	
3-Bed Townhouse Type 1	27
3-Bed Townhouse Type 2	07
3-Bed Townhouse Type 3	01
4-Bed Front-Entry Townhouse Type 1	06
4-Bed Front-Entry Townhouse Type 2	06
4-Bed Side-Entry Townhouse Type 1	01
4-Bed Side-Entry Townhouse Type 2	03
3-Bed Front-Entry Semi-Detached	26
3-Bed Side-Entry Semi-Detached	06
4-Bed Front-Entry Semi-Detached	13
4-Bed Side-Entry Semi-Detached	05
2- Bed Mews Houses	19
Total houses	**120**
Apartment Block A (4 storeys)	
1-Bed Apartment	20
2-Bed Apartment	19
Apartment Block B (4 storeys)	
1-Bed Apartment	16
2-Bed Apartment	13
Combined **Total**	**188**
Overall Site Area = 3.8 Ha	
Net Site Area = 3.5 Ha	
Gross Density = 49.5 Ha	
Net Density = 53.7 Ha	
Public Open Space = 0.39 Ha (11%)	

Figure 3.4 Proposed Development Schedule (Credit: reddya+u Architect)

4 TRAFFIC

4.1 Traffic Generation -TRICs

Trip generation from the proposed units was garnered via the TRICS database. MHL are a licence holder for the TRICS database and employ it for traffic studies. TRICS is a well-established UK and Irish national database which holds in excess of 2,100 site locations and 7,000 survey counts with over 98 separate land use sub-categories. MHL & Associates Ltd. are one of over 300 worldwide licensed TRICS member organisations. The TRICS program was utilised for the land-use sub-category associated with the development proposal. The "Guidelines for Traffic and Transportation Assessments" state that for residential units, the busiest hours are between 08:00-09:00 and 17:00-18:00. The proposed development Trip Rates per unit are shown below.

The full TRICS output, is included in Appendix of this report and outlines the likely trip rates for a development of this size. A synopsis of the peak hour trip generation rates and figures for the overall development is displayed in figure below.

2028					
Full Proposed Development		**AM PEAK**		**PM PEAK**	
		Arrivals	**Departures**	**Arrivals**	**Departures**
New Deerpark LRD Trip Generation - based on Trics					
188	***Peak Trics Trip Rates***	*0.149*	*0.370*	*0.316*	*0.168*
	Per Unit				
	Peak Trips	*28*	*70*	*59*	*32*
	No. Units				
	SUBTOTAL	*98*		*91*	

Figure 4.1 Peak Hour Tric's Traffic Generation for the Proposed Residential Units

As part of the traffic survey's undertaken, the existing trip rates were recorded exiting and entering by Arlington Heights Estate. These figures were used to generate a new trip rate for the proposed development. A synopsis of the peak hour trip generation rates and figures for the overall development is displayed in Figure below.

2028					
Full Proposed Development		**AM PEAK**		**PM PEAK**	
		Arrivals	**Departures**	**Arrivals**	**Departures**
New Deerpark LRD Trip Generation - based on Arlington Heights Movements					
188	***Peak Trics Trip Rates***	*0.250*	*0.525*	*0.325*	*0.325*
	Per Unit				
	Peak Trips	*47*	*99*	*61*	*61*
	No. Units				
	SUBTOTAL	*146*		*122*	

Figure 4.2 Peak Hour Traffic Generation for the Proposed Residential units based on Neighbouring Development

The counted figure was higher than that calculated by Trics and were used for this assessment. This conservative approach provides a very robust basis for the traffic assessment and modelling that following.

The development also includes a creche within the site extents. A synopsis of the peak hour trip generation rates and figures for the overall creche development is displayed in Figure 4.3 below.

Full Proposed Development		AM PEAK		PM PEAK	
		Arrivals	Departures	Arrivals	Departures
Creche Trip Generation - 175m2 - Based on TRICS Database					
175m2					
	Peak Trips	10	8	6	8
		18		14	

Figure 4.3 Peak Hour Tric's Traffic Generation for the Proposed Creche

A mentioned above, a separate proposed LRD application, adjoining the site to the west has been lodged with Kery County Council for 124 residential development. The proposed traffic generated from this development has also been included within the traffic modelling for this report. The trip generation for the traffic zone as a whole are included in Figure 4.4 below. These trips were included in the 'with Development' scenario.

Full Proposed Development		AM PEAK		PM PEAK	
		Arrivals	Departures	Arrivals	Departures
Ardshanavooly LRD Trip Generation - based on Arlington Heights Movements					
124	Peak Trics Trip Rates Per Unit	0.250	0.525	0.325	0.325
	Peak Trips No. Units	31	65	40	40
	SUBTOTAL	96		81	
New Deerpark LRD Trip Generation - based on Arlington Heights Movements					
188	Peak Trics Trip Rates Per Unit	0.250	0.525	0.325	0.325
	Peak Trips No. Units	47	99	61	61
	SUBTOTAL	146		122	
Creche Trip Generation - 175m2 - Based on TRICS Database					
175m2					
	Peak Trips	10	8	6	8
		18		14	
Total New Trip Generation					
	Sum New Peak Trips No. Units	88	172	107	109
	TOTAL NEW	260		217	

Figure 4.4 AM & PM Peak Hour Tric's Traffic Generation for the Subject site and Adjoining LRD

Full Proposed Development		PM PEAK - Early 4-5	
		Arrivals	Departures
New Residential Development Trip Generation - based on Arlington Heights Movements			
124	Peak Trics Trip Rates Per Unit	0.225	0.225
	Peak Trips No. Units	28	28
	SUBTOTAL	49	
New Deerpark LRD Trip Generation - based on Arlington Heights Movements			
188	Peak Trics Trip Rates Per Unit	0.225	0.325
	Peak Trips No. Units	42	61
	SUBTOTAL	103	
Creche Trip Generation - 175m2 - Based on TRICS Database			
175m2	Peak Trips	6	8
		14	
Total New Trip Generation			
	Sum New Peak Trips No. Units	76	97
	TOTAL NEW	173	

Figure 4.5: Sunday Peak Hour Traffic Generation for the Proposed Residential units based on Neighbouring Development & Trics database

Full Proposed Development		Weekdend Peak 12-13	
		Arrivals	Departures
New Residential Development Trip Generation - based on TRICs database			
124	Peak Trics Trip Rates Per Unit	0.259	0.237
	Peak Trips No. Units	32	29
	SUBTOTAL	62	
New Deerpark LRD Trip Generation - based on Trics			
188	Peak Trics Trip Rates	0.259	0.237
	Per Unit		
	Peak Trips	49	45
	No. Units		
	SUBTOTAL	93	
Creche Trip Generation - 175m2 - Based on TRICS Database			
175m2	Peak Trips	0	0
Total New Trip Generation			
	Sum New Peak Trips	81	74
	No. Units		
	TOTAL NEW	155	

Figure 4.6: Midday Peak Hour Traffic Generation for the Proposed Residential units based on Neighbouring Development & Trics database

4.2 Site Traffic Counts

Traffic counts conducted from 10/05/24 to the 16/05/24 by IDASO Ltd were utilised to establish the actual AM & PM Peak traffic hours for the local road network for the purposes of this assessment. These existing junction traffic counts were growth factored as described in Chapter 5. Based on the traffic counts and considering the recommendation of the Guidelines for Traffic and Transportation Assessments, the peak hours considered in this TTA are reflective of the demand case for the site.

4.3 Modal Choice

In predicting the level of traffic that will be generated by the proposed development, the means of transport (modal choice) and quantity of traffic generated (trip attraction) must be considered. It is assumed that there will be a combination of cars, public transport and active travel, due to the nature of the development. The analysis assumes the cars will dominate the developments traffic movements. Further public transport improvements would encourage a greater modal shift in the future towards sustainable travel modes for those travelling to work or live at the facility, as encouraged by local and National Transport Authority Policy. This would reduce the modelled impact of this development on the surrounding road network.

4.4 Existing Situation

Traffic counts taken at each of the assessed junctions were used as the basis of the modelling, producing morning and evening O/D Matrices. The traffic flows through the junctions were assessed as shown in the following figures.

Hourly Totals - Junction 1

Time	Period Total
07:00	655
08:00	1404
09:00	1425
10:00	1434
11:00	1358
12:00	1436
13:00	1411
14:00	1454
15:00	1502
16:00	1605
17:00	1597
18:00	1428

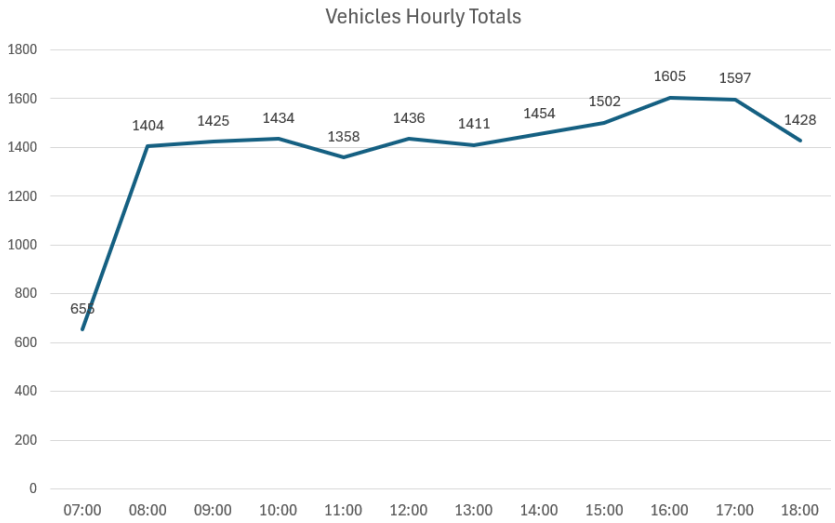


Figure 4.7: Network Traffic Profile for Junction 1 Peak Flow

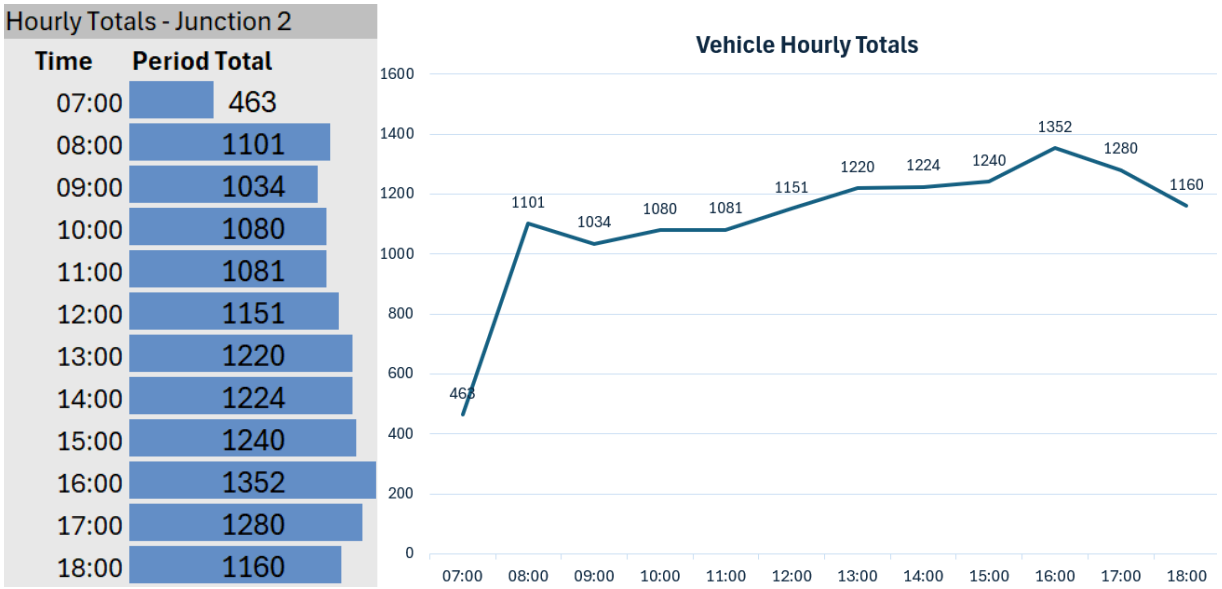


Figure 4.8: Network Traffic Profile for Junction 2 Peak Flow

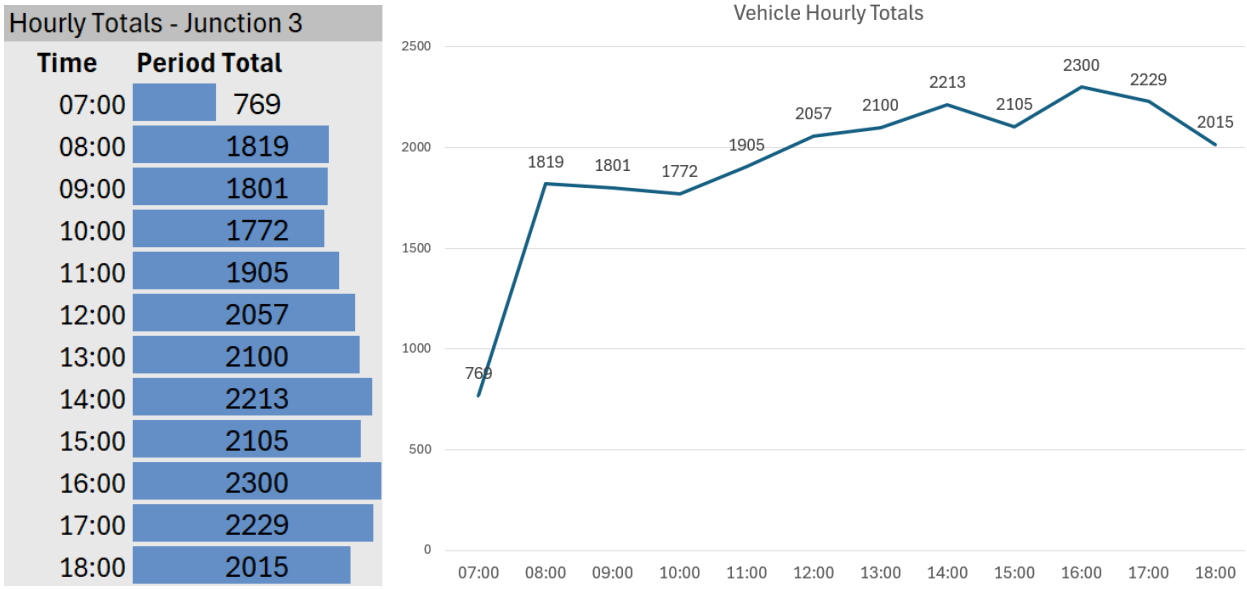


Figure 4.9: Network Traffic Profile for Junction 3 Peak Flow

4.5 Trip Distribution

The current traffic distribution pattern was used to determine directional split to and from the proposed development. This peak hour directional split pattern is assumed to remain constant with the passage of time. The "Guidelines for Traffic and Transportation Assessments" state that for a residential development, the busiest hours are between 08:00-09:00 in the mornings and from 17:00 to 18:00 in the evenings.

Having reviewed the existing measured traffic flows at both existing junctions, it was determined that the most heavily trafficked peak hours were 08:30-09:30 and 17:00-18:00 for the working week.

4.6 Traffic Volumes

Traffic counts taken at the assessed junction was used as the basis of the modelling, producing morning and evening O/D Matrices. The traffic flows through Junction 1, 2 & 3 as recorded in the traffic counts are shown in the following figures.

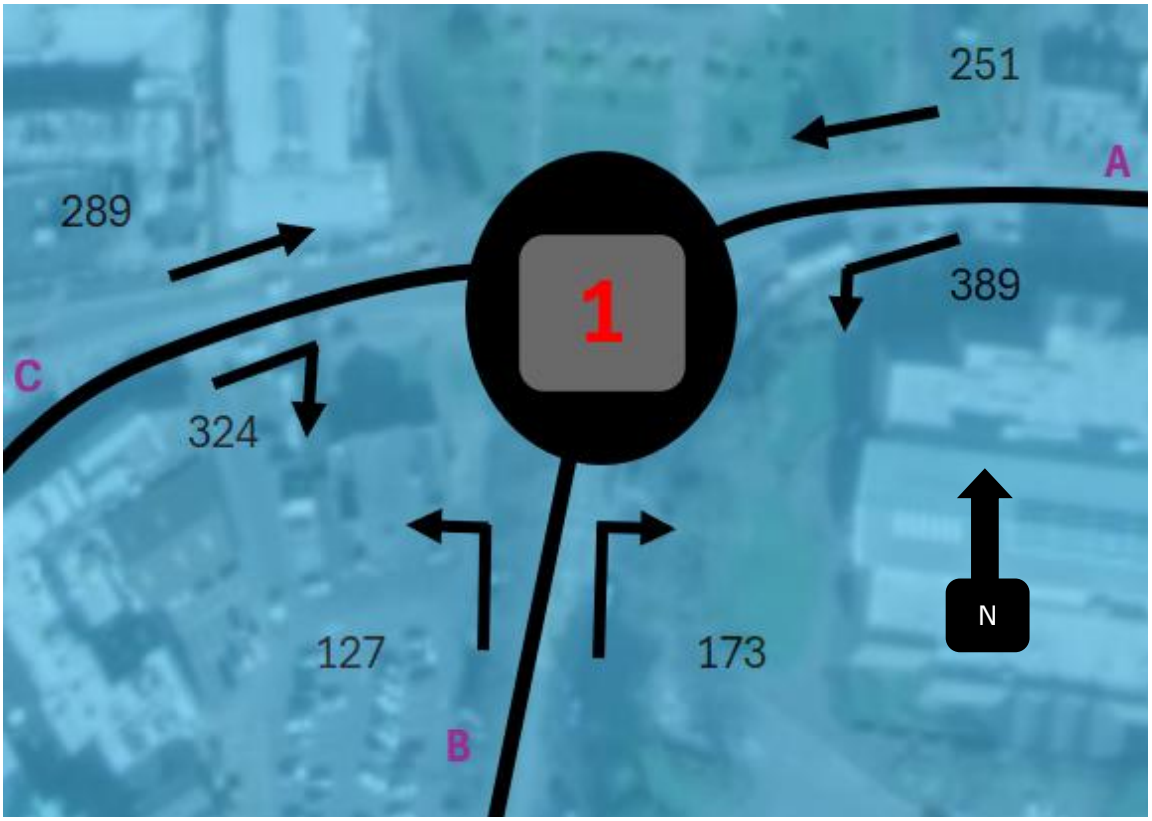


Figure 4.10 2024 AM Turning Counts for Junction 1

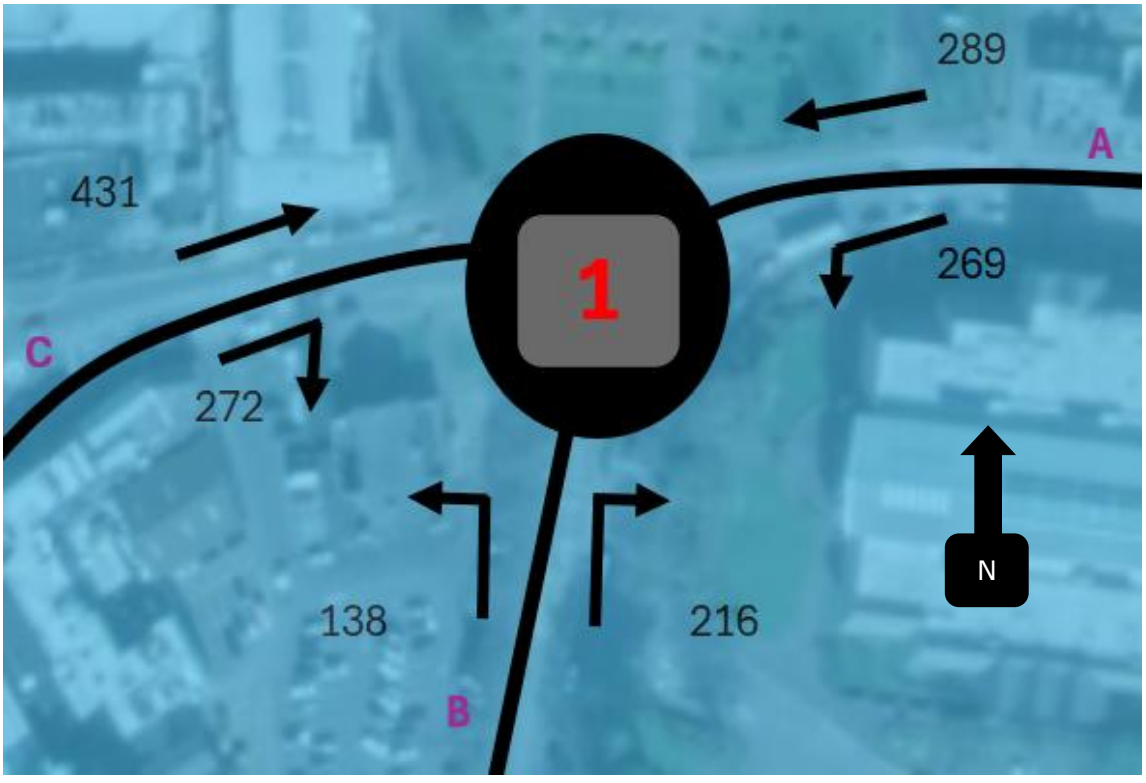


Figure 4.11 2024 PM Turning Counts for Junction 1

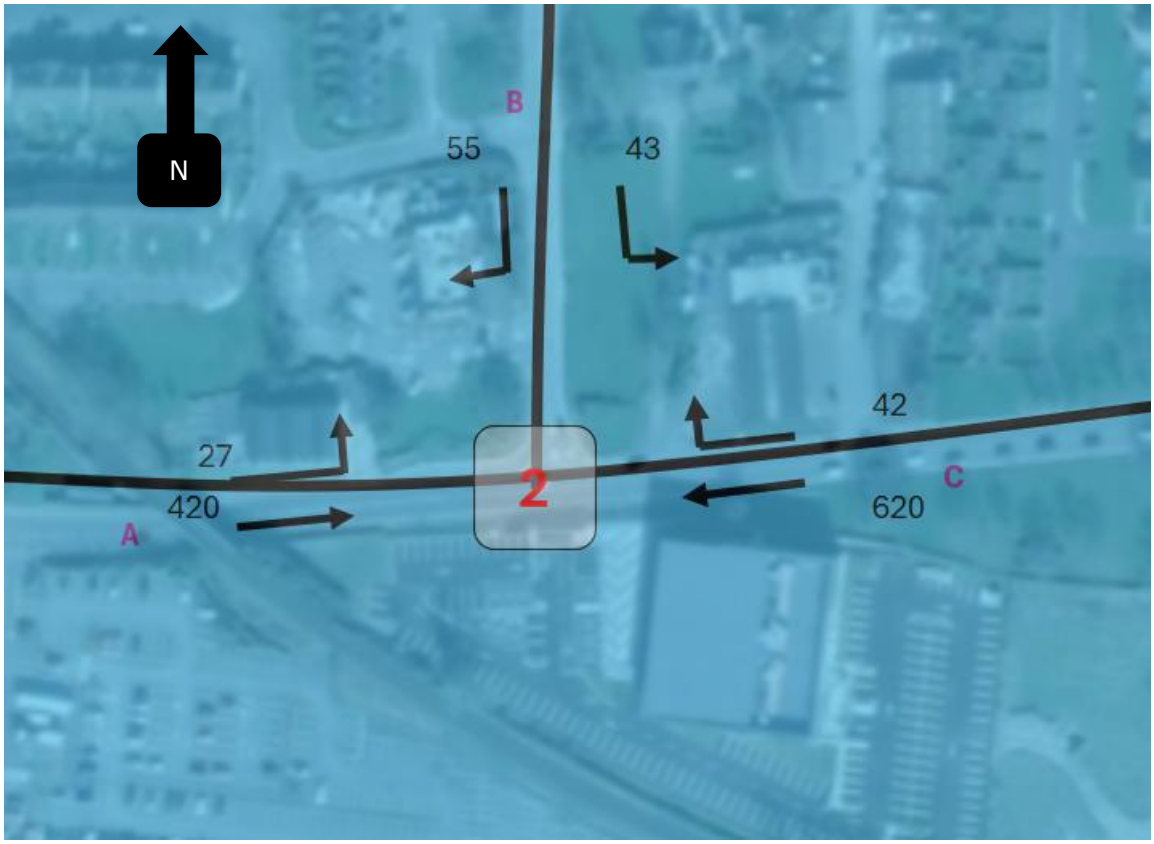


Figure 4.12 2024 AM Turning Counts for Junction 2

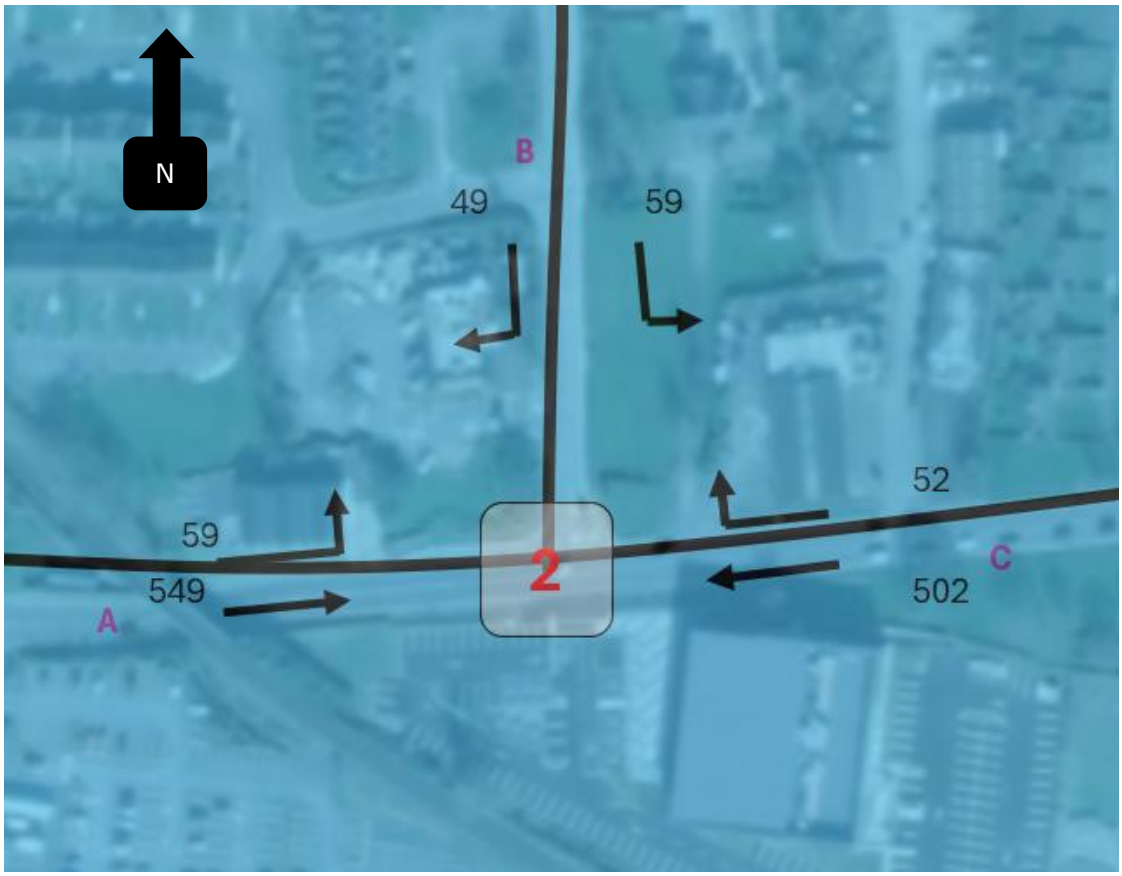


Figure 4.13 2024 PM Turning Counts for Junction 2

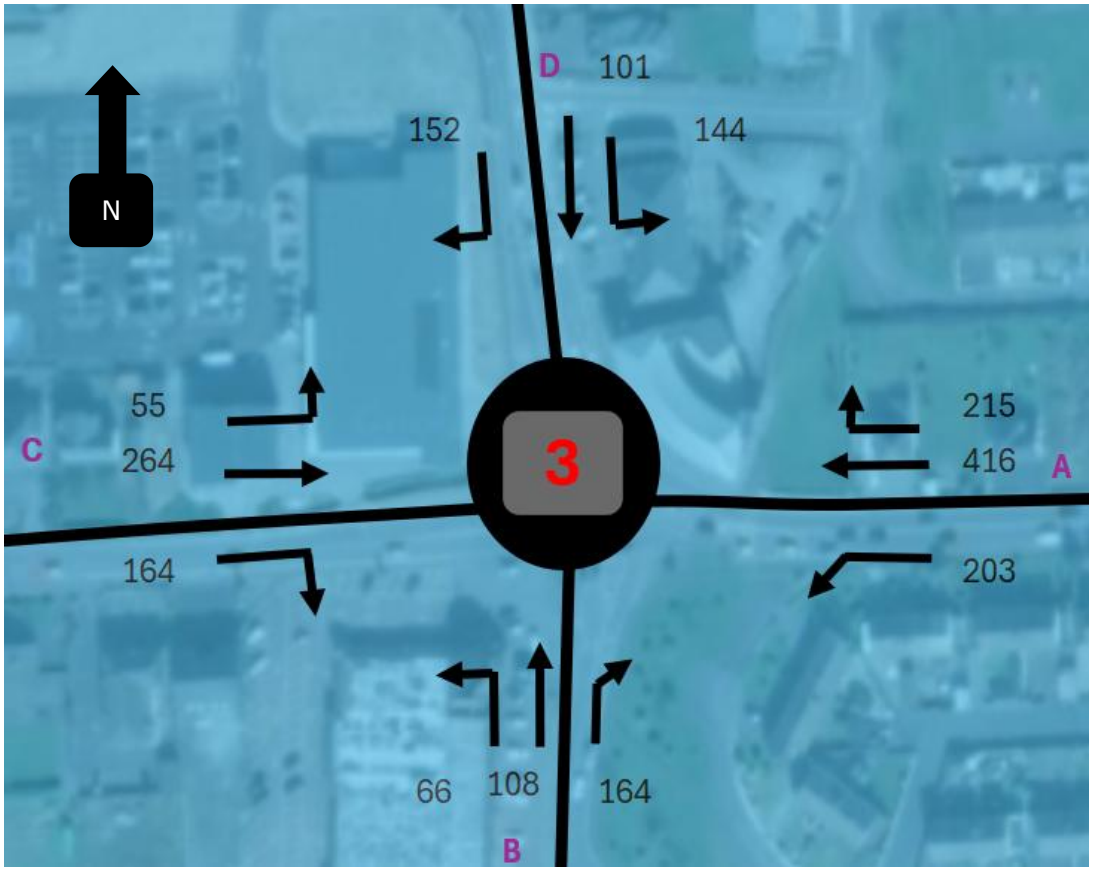


Figure 4.14 2024 AM Turning Counts for Junction 3

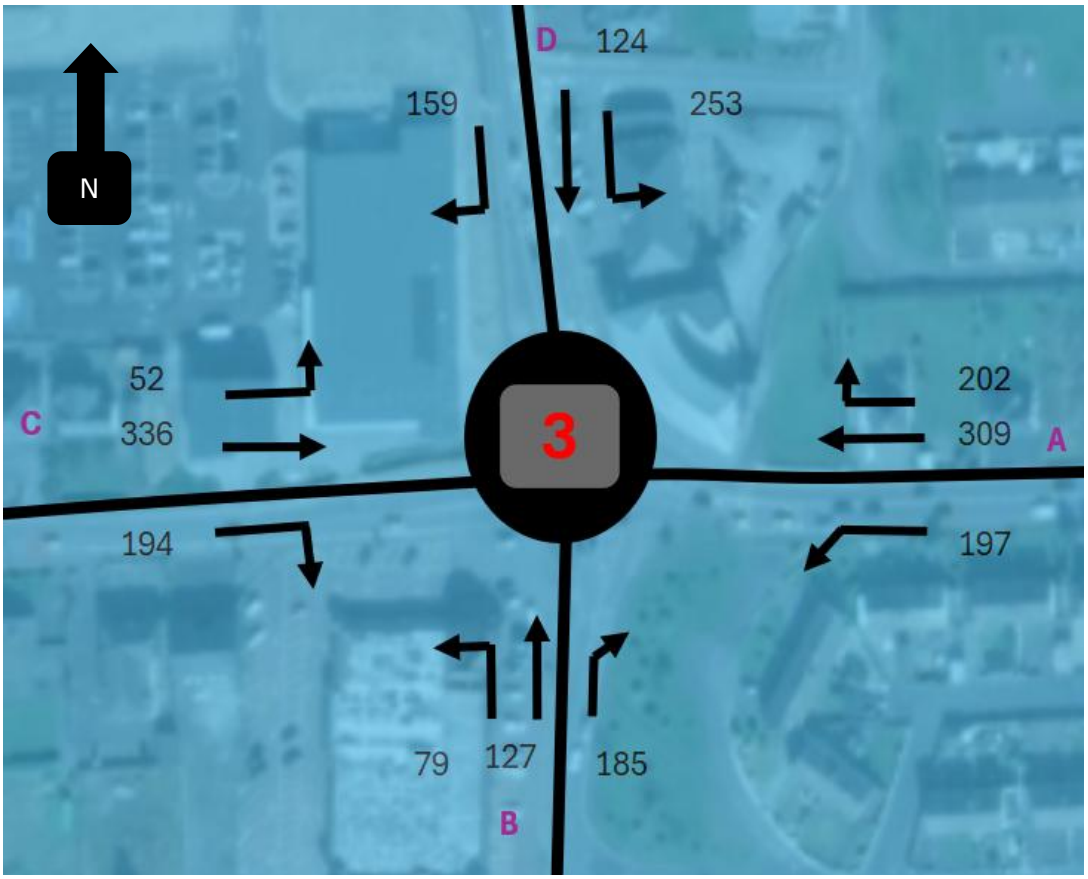


Figure 4.15 2024 PM Turning Counts for Junction 3

5 TRAFFIC ASSESSMENT

The base year is taken as 2024 the year the traffic counts were undertaken. It is anticipated that the first year of operation, subject to a positive outcome from the planning process would be 2028. In accordance with the Guidelines for Traffic and Transportation Assessments as published by the TII, a traffic analysis is required to be undertaken for the Opening Year, Opening Year plus five years and Opening Year plus fifteen years.

The TII publication "Project Appraisal Guidelines for National Routes Unit 5.3 – Travel Demand Projections" was used to calculate growth factors for the road network traffic. Table 5.1 below shows the calculated growth factors:

KERRY COUNTY GROWTH RATES					
CENTRAL GROWTH RATE			Cars/LGV	HGV	Combined
Vehicle Count %:			98%	2%	**100%**
2024	**to**	**2028**	1.045	1.119	**1.047**
2024	**to**	**2033**	1.072	1.224	**1.075**
2024	**to**	**2043**	1.080	1.383	**1.086**
TII Publication - Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections					
Table 6.1 Link-Based Growth Rates: Metropolitan Area Annual Growth Rates					

Figure 5.1 Future Projected Growth Rates

The effects of traffic growth on the existing network plus the additional traffic generated by the proposed development, have been compiled to build junction diagrams of the priority junctions.

6 TRAFFIC MODELLING

6.1 Junctions 11 Analysis

The purpose of this Traffic and Transport Assessment is to determine if the capacity of the existing road network is sufficient to cater for the traffic generated by the proposed development.

In order to assess the capacity of the proposed developments and the adjoining network, traffic models for the priority junctions were produced using the ARCHDY and PICADY traffic modelling software.

The output movements from the models are based on the assigned junction arms. The arms are designated A to C for the Roundabout of R876/East Avenue/College Street, for junction 2 the arms are designated A to C for The Park Road/Friary downs priority junction and for junction 3 the arms are designated A to D for the roundabout of R876/Countess Rd/R876/Arbutus Dr.

The output result sheets from the traffic modelling software consist of tables of demand flow, capacities, queues, and delays for each 15-minute time segment of the peak hour analysis.

The Arcady & PICADY output table contains information on maximum queue length, delay, and Ratio of Flow to Capacity (RFC). The RFC provides the basis for judging the acceptability of junction design and the capacity of existing junctions. Generally, an RFC of 0.85 or less is considered acceptable during the peak period. An RFC of this value indicates that at peak times the junction is at 85% of its operational capacity and therefore has a practical reserve capacity at a junction required to cater for periods of unusually high traffic flow, such as bank holiday weekends, etc. The degree of saturation of a junction is a measure of the capacity of the junction. A junction with an RFC of 0.85 would be considered to be operating at a degree of saturation of 100%.

The following summary junction performance tables for describes each of the junctions RFC's, Delay and Queue values for all morning, evening, and Sunday peaks for all design scenarios as well as the level of service for the junction.

Junction 1 – Roundabout of R876/East Avenue/College Street.

	AM								PM							
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	[Lane Simulation] - 2024 - Base																	
Junction 1 - Arm A	D1	1.1	3	4.39		A	53.45	F	%	D2	0.6	3	3.74		A	207.64	F	%
Junction 1 - Arm B		1.3	5.1	12.49	0.54	B					2.2	6.7	17.33	0.67	C			
Junction 1 - Arm C		25.2	54.5	124.54	1.06	F			[]		86.7	134.3	462.46	1.29	F			[]
	[Lane Simulation] - 2028 - Op Year Without Dev																	
Junction 1 - Arm A	D4	1.2	3	4.39		A	62.16	F	%	D5	0.8	3	3.78		A	248.55	F	%
Junction 1 - Arm B		1.3	3.6	12.56	0.57	B					2.3	9	18.26	0.67	C			
Junction 1 - Arm C		32.7	71.2	148.58	1.08	F			[]		103	164.9	554.64	1.24	F			[]
	[Lane Simulation] - 2028 - Op Year With Dev																	
Junction 1 - Arm A	D6	0.1	1	2.67		A	137.22	F	%	D7	1.1	3	4		A	291.33	F	%
Junction 1 - Arm B		1.1	3.7	9.5	0.48	A					2.5	7.5	21.89	0.69	C			
Junction 1 - Arm C		47.7	89.5	221.76	1.1	F			[]		124.6	178.4	668.89	1.3	F			[]
	[Lane Simulation] - 2033 - Without Dev																	
Junction 1 - Arm A	D10	1.1	3	4.49		A	80.76	F	%	D11	0.7	3	3.87		A	284.93	F	%
Junction 1 - Arm B		1.5	5.2	13.83	0.57	B					2.3	9.3	9.3	0.67	C			
Junction 1 - Arm C		40.7	86.4	195.44	1.08	F			[]		117.8	166.7	634.8	1.3	F			[]
	[Lane Simulation] - 2033 - With Dev																	
Junction 1 - Arm A	D12	1.1	3	4.7		A	104.4	F	%	D13	0.9	3	4.09		A	340.78	F	%
Junction 1 - Arm B		1.4	4.5	15.58	0.65	C					2.3	7.3	21.52	0.71	C			
Junction 1 - Arm C		52.8	93.6	265.34	1.11	F			[]		147.2	208.7	777.81	1.38	F			[]
	[Lane Simulation] - 2043 - Without Dev																	
Junction 1 - Arm A	D16	1	3	4.45		A	94	F	%	D17	0.9	3	3.89		A	305.98	F	%
Junction 1 - Arm B		1.5	6	14.29	0.57	B					2.4	7.2	21.89	0.71	C			
Junction 1 - Arm C		47.8	83.7	226.88	1.13	F			[]		127.9	179	684.35	1.36	F			[]
	[Lane Simulation] - 2043 - With Dev																	
Junction 1 - Arm A	D18	1.5	3	4.82		A	122.57	F	%	D19 *	1	3	4.02		A	353.9	F	%
Junction 1 - Arm B		1.8	5.8	15.38	0.63	C					3.1	8.1	23.35	0.75	C			
Junction 1 - Arm C		63.5	112	312.27	1.17	F			[]		156.7	211.5	809.18	1.35	F			[]

Figure 6.1 Junction 1 Summary Table AM & PM

	Sunday								
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	[Lane Simulation] - 2024 - Base - Sunday Peaks								
Junction 1 - Arm A	D3	0.8	3	4.07		A	158.06	F	%
Junction 1 - Arm B		2.9	8.8	23.26	0.74	C			
Junction 1 - Arm C		71.7	120	383.16	1.17	F			[]
	[Lane Simulation] - 2028 - Sunday Peaks-Op Year-Without Dev								
Junction 1 - Arm A	D8	0.9	3	4.23		A	206.99	F	%
Junction 1 - Arm B		4.4	13	29.18	0.84	D			
Junction 1 - Arm C		88.8	138	509.28	1.24	F			[]
	[Lane Simulation] - 2028 - Sunday Peaks-Op Year-With Dev								
Junction 1 - Arm A	D9	1.2	3	4.41		A	240.43	F	%
Junction 1 - Arm B		4.5	14.4	35.92	0.88	E			
Junction 1 - Arm C		107.1	159	598.1	1.31	F			[]
	[Lane Simulation] - 2033 - Sunday Peaks-Without Dev								
Junction 1 - Arm A	D14	0.9	3	4.32		A	261.23	F	%
Junction 1 - Arm B		4.9	14.7	32.86	0.86	D			
Junction 1 - Arm C		116.1	175.8	642.71	1.29	F			[]
	[Lane Simulation] - 2033 - Sunday Peaks-With Dev								
Junction 1 - Arm A	D15	0.9	3	4.47		A	305.97	F	%
Junction 1 - Arm B		4.9	17.8	37.06	0.86	E			
Junction 1 - Arm C		139.1	199.2	761.67	1.38	F			[]
	[Lane Simulation] - 2043 - Sunday Peaks-Without Dev								
Junction 1 - Arm A	D20	0.9	3	4.32		A	269.71	F	%
Junction 1 - Arm B		5.5	14.6	39.81	0.85	E			
Junction 1 - Arm C		119.5	179.6	671.65	1.31	F			[]
	[Lane Simulation] - 2043 - Sunday Peaks-With Dev								
Junction 1 - Arm A	D21	1.1	3	4.73		A	312.9	F	%
Junction 1 - Arm B		11.2	27.7	77.42	0.97	F			
Junction 1 - Arm C		145.7	217.8	802.72	1.42	F			[]

Figure 6.2 Junction 1 Summary Table Sunday

A maximum RFC of 142% occurs in the Sunday peak for the 2043 With Development scenario. This occurs on Arm C. A delay of approximately 803 seconds (13.4 minutes) will be experienced

along the arm of the junction. An RFC of 131% occurs in the Sunday peak for the 2043 Without Development scenario. This shows an 11% RFC increase with the development. The analysis shows that the junction is operating above capacity for all scenarios down to and including the 2024 without development scenarios (existing conditions), all experiencing level of service "F". All junction scenarios are experiencing delays above at least 125 seconds along arm C of the junction.

To assess the capacity, an analysis of queue data was carried out using the Junction 11 results and a physical queue survey was also carried out at each junction. From the model software results arm C experiences the maximum average queue length, during Sunday Peaks.

- The existing maximum average queue for the current conditions is 71.7 PCU (72 cars) for 2024 Sunday Peak.
- The 2043 without development Sunday Peak average queue increases to 119.5 (120 cars).
- The 2043 with development Sunday Peak average queue increases to 145.7 (146 cars).
- This means that the introduction of the development has an increase of 26 cars on the average length of the queue along arm C in 2043.

In comparison to the physical queue survey:

- The existing junction arm C has a maximum queue length of 54.5 (55 cars) during midweek AM peak and the maximum queue length during midweek PM peak is 134.3 (135 cars).
- The survey indicated a maximum AM midweek queue length of 16 cars along arm C on 10/05/24 at 08:45 and the maximum PM midweek queue length was 23+ cars on Arm C on 13/05/24 at 17:15.
- The maximum queue length recorded in the entire survey was on the 13/05/24 midweek PM at 17:45 coming from arm C was 23+ cars.

This indicates that the modelled software results are more conservative than the existing surveyed conditions. The future signalisation of Junction 2 Park Road as proposed by Kerry County Council/NRDO as part of the Killarney Strategic Link Road A-C, will also improve both the existing and expected vehicles queuing lengths at this roundabout.



Figure 6.3 Junction 1 Arm Labels

Junction 2 - The Park Road/Friary downs priority junction.

	AM									PM							
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
[Lane Simulation] - 2024 - Base																		
Junction 2 - Arm A	D1	0	~1	0.02		A	1.59	A	%	D2	0	~1	0.05		A	1.63	A	%
Junction 2 - Arm B		0.4	1.4	10.25	0.2	B					0.4	1.5	9.55	0.24	A			
Junction 2 - Arm C		0.2	1.5	1.42		A			[ ]		0.5	3	1.91		A			[ ]
[Lane Simulation] - 2028 - Op Year Without Dev																		
Junction 2 - Arm A	D4	0	~1	0.01		A	1.64	A	%	D5	0	~1	0.05		A	1.79	A	%
Junction 2 - Arm B		0.3	1	10.43	0.24	B					0.4	2	11.22	0.26	B			
Junction 2 - Arm C		0.5	3	1.46		A			[ ]		0.3	3	1.9		A			[ ]
[Lane Simulation] - 2028 - Op Year With Dev																		
Junction 2 - Arm A	D6	0	~1	0		A	10.8	B	%	D7	0	~1	0.07		A	4.96	A	%
Junction 2 - Arm B		0.5	2.2	12.5	0.39	B					1.5	5.2	22.28	0.53	C			
Junction 2 - Arm C		3	3	19.4		C			[ ]		0.9	3	4.25		A			[ ]
[Lane Simulation] - 2033 - Without Dev																		
Junction 2 - Arm A	D10	0	~1	0.02		A	1.68	A	%	D11	0	~1	0.06		A	1.81	A	%
Junction 2 - Arm B		0.4	1.6	10.61	0.24	B					0.4	1.4	10.81	0.28	B			
Junction 2 - Arm C		0.3	3	1.54		A			[ ]		0.5	3	2.01		A			[ ]
[Lane Simulation] - 2033 - With Dev																		
Junction 2 - Arm A	D12	0	~1	0.03		A	7.3	A	%	D13	0.1	1	0.11		A	4.74	A	%
Junction 2 - Arm B		2.5	8.9	31.81	0.69	D					1.7	5.5	20.36	0.57	C			
Junction 2 - Arm C		0.7	3	3.15		A			[ ]		0.6	3	4.01		A			[ ]
[Lane Simulation] - 2043 - Without Dev																		
Junction 2 - Arm A	D16	0	~1	0.02		A	1.74	A	%	D17	0	~1	0.07		A	1.78	A	%
Junction 2 - Arm B		0.3	3	11.01	0.26	B					0.5	3	10.71	0.28	B			
Junction 2 - Arm C		0.4	3	1.53		A			[ ]		0.3	3	1.9		A			[ ]
[Lane Simulation] - 2043 - With Dev																		
Junction 2 - Arm A	D18	0	~1	0.04		A	7.1	A	%	D19	**0**	**~1**	**0.07**		**A**	**4.88**	**A**	%
Junction 2 - Arm B		2.7	9	31.32	0.64	D					**1.6**	**4.5**	**21.44**	**0.53**	C			
Junction 2 - Arm C		0.8	3	3.14		A			[ ]		**1**	**3**	**4.11**		**A**			[ ]

Figure 6.4 Junction 2 Summary Table AM & PM

	Sunday							
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
[Lane Simulation] - 2024 - Base - Sunday Peaks									
Junction 2 - Arm A	D3	0	~1	0.03		A	2.19	A	%
Junction 2 - Arm B		0.6	3.4	11.22	0.31	B			
Junction 2 - Arm C		0.6	3	2.3		A			[ ]
[Lane Simulation] - 2028 - Sunday Peaks-Op Year-Without Dev									
Junction 2 - Arm A	D8	0	~1	0.05		A	2.26	A	%
Junction 2 - Arm B		0.6	2.2	11.57	0.3	B			
Junction 2 - Arm C		0.5	3	2.36		A			[ ]
[Lane Simulation] - 2028 - Sunday Peaks-Op Year-With Dev									
Junction 2 - Arm A	D9	0	~1	0.08		A	4.39	A	%
Junction 2 - Arm B		1.4	4.6	19.04	0.52	C			
Junction 2 - Arm C		0.7	3	3.96		A			[ ]
[Lane Simulation] - 2033 - Sunday Peaks-Without Dev									
Junction 2 - Arm A	D14	0	~1	0.07		A	2.53	A	%
Junction 2 - Arm B		0.8	2.6	12.97	0.35	B			
Junction 2 - Arm C		0.5	3	2.53		A			[ ]
[Lane Simulation] - 2033 - Sunday Peaks-With Dev									
Junction 2 - Arm A	D15	0.1	~1	0.1		A	4.71	A	%
Junction 2 - Arm B		1.4	6.2	20.43	0.59	C			
Junction 2 - Arm C		1.1	3	3.98		A			[ ]
[Lane Simulation] - 2043 - Sunday Peaks-Without Dev									
Junction 2 - Arm A	D20	0	~1	0.05		A	2.69	A	%
Junction 2 - Arm B		0.9	3.2	13.99	0.37	B			
Junction 2 - Arm C		0.5	3	2.4		A			[ ]
[Lane Simulation] - 2043 - Sunday Peaks-With Dev									
Junction 2 - Arm A	D21	0.1	~1	0.21		A	5.34	A	%
Junction 2 - Arm B		1.8	5.1	28.15	0.63	D			
Junction 2 - Arm C		0.7	3	2.52		A			[ ]

Figure 6.5 Junction 2 Summary Table Sunday

A maximum RFC of 69% occurs in the weekday AM peak for the 2033 With Development scenario. This occurs on Arm B. A delay of approximately 32 seconds will be experienced along the arm of the junction. An RFC of 24% occurs in the weekday AM peak for the 2033 Without Development scenario. This shows an 11% RFC increase with the development. The analysis shows that the junction is operates well within capacity for all scenarios down to and including the 2024 without development scenarios for weekday and Sundays, all experiencing level of service "A" expect for 2028 with Development weekday operating at level of service "B". All junction scenarios are experiencing little delays, with the maximum delay of 32 seconds along arm B.

To assess the capacity, an analysis of queue data was carried out using the Junction 11 results and a physical queue survey was also carried out at each junction. From the model results arm B experiences the maximum average queue length, during Sunday Peaks.

- The existing maximum average queue for the current conditions is 0.6 PCU (1 car) for 2024 Sunday Peak.
- The 2043 without development Sunday Peak average queue increases to 0.9 (1 car).
- The 2043 with development Sunday Peak average queue increases to 1.8 (2 cars).
- This means that the introduction of the development has an increase of 1 car on the average length of the queue along arm B in 2043.

In comparison to the physical queue survey:

- The existing junction arm C has a maximum queue length of 1.5 (2 cars) during midweek AM peak and the maximum queue length during midweek PM peak is 3 (3 cars).
- The survey indicated a maximum AM midweek queue length of 5 cars along arm C on 10/05/24 at 08:15 and the maximum PM midweek queue length was 11 cars on Arm C on 10/05/24 at 16:30.
- The maximum queue length recorded in the entire survey was on the 13/05/24 midweek PM at 17:00 coming from arm A where the queue length was 57 cars down to Junction 1.

This indicates that the modelled software queue results don't reflect the existing surveyed conditions as they underestimated the queue lengths. But the future signalisation of this junction at Park Road as proposed by Kerry County Council/NRDO as part of the Killarney Strategic Link Road A-C, will improve both the existing and expected vehicles queuing lengths.

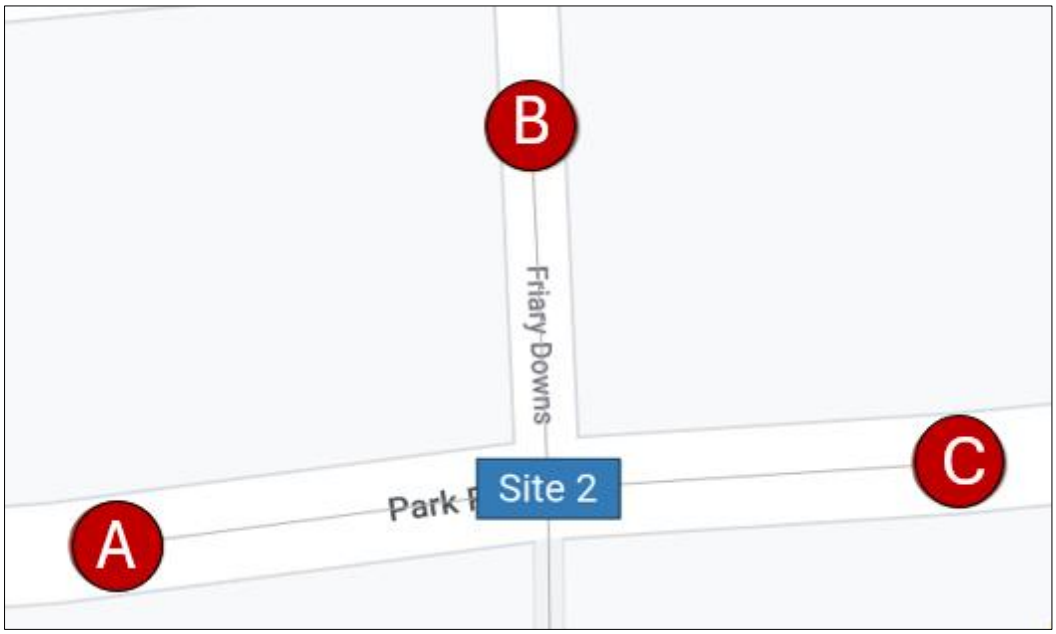


Figure 6.6 Junction 2 Arm Labels

Junction 3 - The roundabout of R876/Countess Rd/R876/Arbutus Dr.

	AM									PM							
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	[Lane Simulation] - 2024 - Base																	
Junction 3 - Arm A	D1	2	6.6	5.58	0.58	A	5.28	A	%	D2	0.9	3.1	4.56	0.51	A	5.2	A	%
Junction 3 - Arm B		0.8	3.1	7.98	0.45	A					1.1	3.7	7.7	0.5	A			
Junction 3 - Arm C		0.5	2	3.95		A			[ ]		0.8	3	4.31		A			[ ]
Junction 3 - Arm D		0.5	3	3.98	0.33	A					1	3.6	5.27	0.47	A			
	[Lane Simulation] - 2028 - Op Year Without Dev																	
Junction 3 - Arm A	D4	1.6	5.2	6.06	0.6	A	5.6	A	%	D5	1.3	3.9	5.08	0.53	A	5.68	A	%
Junction 3 - Arm B		0.9	3.7	8.59	0.49	A					1	3	8.6	0.51	A			
Junction 3 - Arm C		0.6	3	3.88		A			[ ]		0.8	3	4.51		A			[ ]
Junction 3 - Arm D		0.6	2	4.11	0.35	A					1.3	5.3	5.69	0.49	A			
	[Lane Simulation] - 2028 - Op Year With Dev																	
Junction 3 - Arm A	D6	316	425.5	1340.52	1.16	F	721.1	F	%	D7	1.8	5.7	6.45	0.57	A	6.6	A	%
Junction 3 - Arm B		7.7	23.8	64.36	0.5	F					1.6	5.5	10.08	0.56	B			
Junction 3 - Arm C		0.1	1	2.64		A			[ ]		0.9	3	4.6		A			[ ]
Junction 3 - Arm D		8.4	28.3	72.74	0.38	F					1.3	5.6	6.62	0.52	A			
	[Lane Simulation] - 2033 - Without Dev																	
Junction 3 - Arm A	D10	1.6	4.9	6.57	0.61	A	6.02	A	%	D11	1.2	5.3	5.09	0.55	A	5.88	A	%
Junction 3 - Arm B		1	3.1	9.57	0.52	A					1.2	4.3	9.07	0.58	A			
Junction 3 - Arm C		0.5	1.7	4.06		A			[ ]		0.8	3	4.59		A			[ ]
Junction 3 - Arm D		0.6	2.1	4.2	0.37	A					1.1	4.3	6.07	0.5	A			
	[Lane Simulation] - 2033 - With Dev																	
Junction 3 - Arm A	D12	1.9	6	7.66	0.68	A	6.65	A	%	D13	1.7	5.9	6.43	0.6	A	6.82	A	%
Junction 3 - Arm B		1.4	4.5	10.03	0.53	B					1.3	4.2	10.89	0.57	B			
Junction 3 - Arm C		0.8	3	4.33		A			[ ]		0.9	3	4.8		A			[ ]
Junction 3 - Arm D		0.8	3	4.81	0.37	A					1	4	6.77	0.51	A			
	[Lane Simulation] - 2043 - Without Dev																	
Junction 3 - Arm A	D16	1.9	6.5	6.85	0.63	A	6.23	A	%	D17	1.1	3.4	5.42	0.56	A	6.01	A	%
Junction 3 - Arm B		1.3	4.2	9.86	0.51	A					1.2	4.3	9.23	0.56	A			
Junction 3 - Arm C		0.6	3	4.2		A			[ ]		0.9	3	4.7		A			[ ]
Junction 3 - Arm D		0.8	2.9	4.27	0.35	A					1.2	4.2	5.95	0.52	A			
	[Lane Simulation] - 2043 - With Dev																	
Junction 3 - Arm A	D18	2.5	6	7.95	0.66	A	7	A	%	D19	1.9	6.2	6.68	0.58	A	7.01	A	%
Junction 3 - Arm B		1.5	5	11.35	0.57	B					1.7	6.1	11.15	0.6	B			
Junction 3 - Arm C		0.8	3	4.44		A			[ ]		0.9	3	4.83		A			[ ]
Junction 3 - Arm D		0.9	3.5	4.8	0.38	A					1.6	4.6	6.98	0.53	A			

Figure 6.7 Junction 2 Summary Table AM & PM

	Sunday							
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	[Lane Simulation] - 2024 - Base - Sunday Peaks								
Junction 3 - Arm A	D3	1.7	5.9	6.27	0.6	A	5.76	A	%
Junction 3 - Arm B		0.7	3	8.14	0.41	A			
Junction 3 - Arm C		0.9	3	4.39		A			[ ]
Junction 3 - Arm D		0.9	3.5	5.26	0.45	A			
	[Lane Simulation] - 2028 - Sunday Peaks-Op Year-Without Dev								
Junction 3 - Arm A	D8	1.8	5.5	7.21	0.66	A	6.35	A	%
Junction 3 - Arm B		0.8	2.6	8.89	0.44	A			
Junction 3 - Arm C		1	3	4.61		A			[ ]
Junction 3 - Arm D		1.2	3.6	5.63	0.49	A			
	[Lane Simulation] - 2028 - Sunday Peaks-Op Year-With Dev								
Junction 3 - Arm A	D9	3	7.7	8.99	0.69	A	7.37	A	%
Junction 3 - Arm B		1.1	4.1	10.06	0.5	B			
Junction 3 - Arm C		1.1	3	4.75		A			[ ]
Junction 3 - Arm D		1.1	4.4	6.47	0.51	A			
	[Lane Simulation] - 2033 - Sunday Peaks-Without Dev								
Junction 3 - Arm A	D14	2.1	7	7.68	0.66	A	6.76	A	%
Junction 3 - Arm B		1.1	3.7	9.8	0.46	A			
Junction 3 - Arm C		0.8	3	4.85		A			[ ]
Junction 3 - Arm D		1.1	3.5	5.87	0.51	A			
	[Lane Simulation] - 2033 - Sunday Peaks-With Dev								
Junction 3 - Arm A	D15	3	11.2	9.58	0.71	A	7.91	A	%
Junction 3 - Arm B		1.2	4.4	11.5	0.52	B			
Junction 3 - Arm C		1.3	3	4.91		A			[ ]
Junction 3 - Arm D		1.6	5.6	6.83	0.53	A			
	[Lane Simulation] - 2043 - Sunday Peaks-Without Dev								
Junction 3 - Arm A	D20	1.9	5.7	8.29	0.69	A	7.1	A	%
Junction 3 - Arm B		1.1	3.4	10.98	0.48	B			
Junction 3 - Arm C		0.9	3	4.74		A			[ ]
Junction 3 - Arm D		1	2.7	5.93	0.55	A			
	[Lane Simulation] - 2043 - Sunday Peaks-With Dev								
Junction 3 - Arm A	D21	2.9	7.8	8.52	0.71	A	7.45	A	%
Junction 3 - Arm B		1.4	5.2	11.56	0.56	B			
Junction 3 - Arm C		1.3	3	5.36		A			[ ]
Junction 3 - Arm D		1.5	5.2	6.21	0.57	A			

Figure 6.8 Junction 2 Summary Table Sunday

A maximum RFC of 71% occurs in the Sunday peak for the 2043 With Development scenario. This occurs on Arm A. A delay of approximately 9 seconds will be experienced along the arm of the junction. An RFC of 69% occurs in the Sunday peak for the 2043 Without Development scenario. This shows a 2% RFC increase with the development. The analysis shows that the junction operates well within capacity for all scenarios down to and including the 2024 without development scenarios for weekday and Sundays, all experiencing level of service "A" expect for 2028 with Development weekday operating at level of service "F". All junction scenarios are experiencing little delays, with the maximum delay of 12 seconds along arm B.

To assess the capacity, an analysis of queue data was carried out using the Junction 11 results and a physical queue survey was also carried out at each junction. From the model results arm A experiences the maximum average queue length, during Sunday Peaks.

- The existing maximum average queue for the current conditions is 1.7 PCU (2 cars) for 2024 Sunday Peak.
- The 2043 without development Sunday Peak average queue increases to 1.9 (2 cars).
- The 2043 with development Sunday Peak average queue increases to 2.9 (3 cars).
- This means that the introduction of the development has an increase of 1 car on the maximum average length of the queue along arm A in 2043 Sunday Peak.

In comparison to the physical queue survey:

- The existing junction arm A has a maximum queue length of 6.6 (7 cars) during midweek AM peak and arm B has the maximum queue length during midweek PM peak of 3.7 (4 cars).
- The survey indicated a maximum AM midweek queue length of 17 cars along arm A on 15/05/24 at 08:45 and the maximum PM midweek queue length was 15 cars on Arm B on 15/05/24 at 15:00.
- The maximum queue length recorded in the entire survey was on the 16/05/24 midweek PM at 17:15 coming from arm C where the queue length was 81 cars.

This indicates that the modelled software queue results don't reflect the existing surveyed conditions as they underestimated the queue lengths. The future signalisation of Junction 2 Park Road as proposed by Kerry County Council/NRDO as part of the Killarney Strategic Link Road A-C, will improve both the existing and expected vehicles queuing lengths at this roundabout.



Figure 6.9 Junction 3 Arm Labels

6.2 Cumulative Impact

The cumulative impact of the scheme on the surrounding roads network for future years is determined by modelling future scenarios on future projected traffic data and expected development traffic.

The overall impact of the development traffic on Junction 1 along arm C is to increase the RFC by 2% during the morning peak and by 6% during the evening peak in the 2028 Opening Year, assuming all traffic generated by the development is new to the network. The junction is currently operating over capacity for all scenarios and the development impact are not significant.

The overall impact of the development traffic on Junction 2 along arm B is to increase the RFC by 15% during the morning peak and by 27% during the evening peak in the 2028 Opening Year, assuming all traffic generated by the development is new to the network. The junction is operating well within its capacity across all scenarios, meaning it can facilitate the traffic from the development without adding delays.

The overall impact of the development traffic in 2043 on Junction 3 is to increase the RFC on all arms from 25% to 29% during the morning peak and by 5% during the evening peak, assuming all traffic generated by the development is new to the network.

7 ROAD SAFETY

Please refer to the Stage 1 Road Safety Report (RSA) submitted as part of this planning submission.

8 INTERNAL LAYOUT & PARKING PROVISION

The site is to have a hard tarmac or concrete surface with adequate foundation to withstand the wheel loads involved. The overall drainage of the site should be adequate to cope with storm water. The whole site is to be well lit to ensure the safe execution of manoeuvres, the safety of passengers and the security of vehicles and their contents. The lighting should be from a high level to prevent glare during manoeuvres and reduce the potential for vandalism. The layout of the site is to be designed to reduce the need for reversing manoeuvres. Where these are unavoidable, there should be an adequate area to safely execute the reversing or turning manoeuvres necessary. All parking spaces provided are required to be a minimum 2.4m x 4.8m in size. It is proposed to provide a total of 223 no. surface car parking spaces, 2 dedicated drop off spaces for the creche and 141 bicycle spaces.



Figure 8.1 Site layout showing parking proposals (Credit: reddya+u Architect)

9 PEDESTRIAN / CYCLIST / DISABILITY

All internal footpaths should be dished at all entrances and crossings with tapered/dropped kerbs and tactile paving used on approaches in accordance with the design guidelines for use with tactile paving. This is to accommodate wheelchair access and guide the visually impaired users safely through the development. Adequate bicycle parking provision is proposed as per development schedules presented.

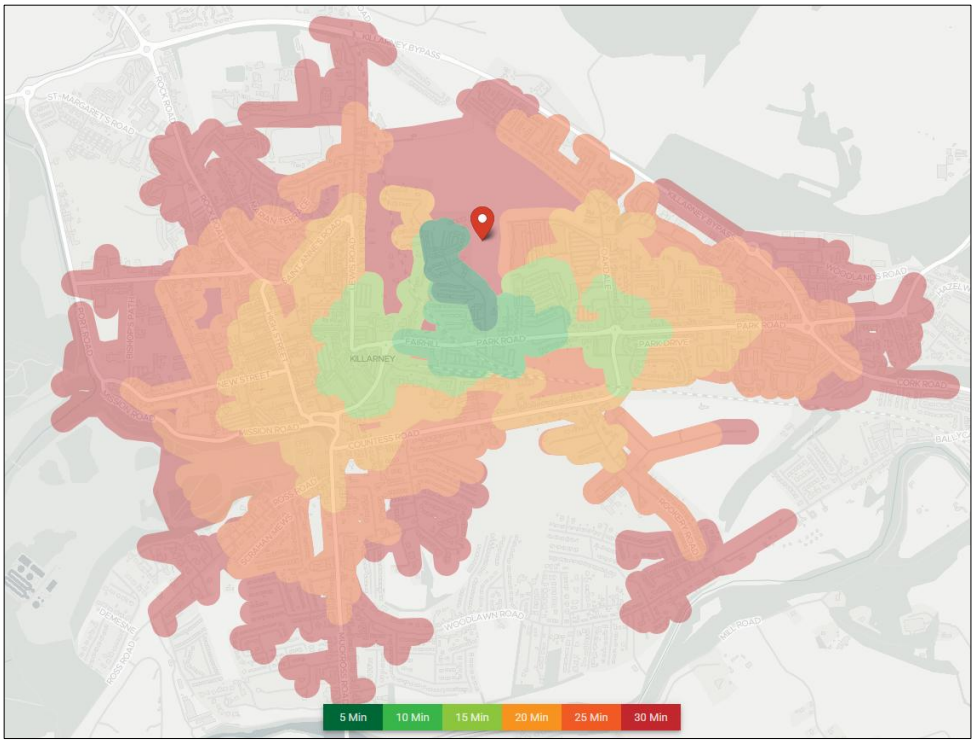


Figure 9.1 30min Walking Distance from Site

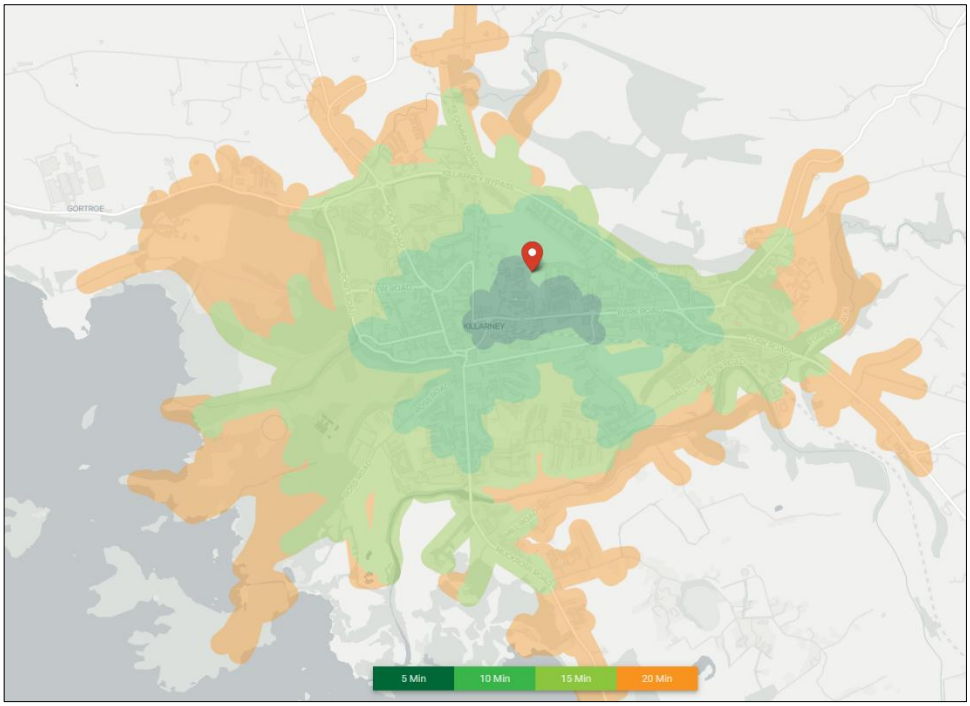


Figure 9.2 20min Cycle Distance from Site

10 SUMMARY CONCLUSION

In accordance with the TII's "Traffic and Transport Assessment Guidelines", the traffic analysis was undertaken for the **Opening Year (2028), Opening Year +5 (2033)** and fifteen years from this date i.e., the **Opening Year+15 (2043)**.

In summary, the TTA assessment focused on the 2 no. nearby traffic junction and the proposed development junction for this application. The R876/East Avenue roundabout, priority Cross road junction of Park Road and Friary Downs was assessed as the development access junction and the R876/Countess Rd/R876/Arbutus Dr roundabout.

The traffic modelling analysis carried out for these design year scenarios shows that:

The assessed junctions are operating below capacity for all design years up to 2043 for both morning and evening peaks, except for Junction 1 which is over capacity.

- Junction 1 reaches a maximum RFC of 142% in the 2043 Sunday with development scenario which is an 11% RFC increase compared to RFC of 131% without the development.

- Junction 2 reaches a maximum RFC of 69% in the 2033 weekday AM with development scenario.

- Junction 3 reaches a maximum RFC of 71% in the 2043 Sunday with development scenario.

- The queue length comparison observed the physical surveyed lengths to the model software lengths. For Junction 1, the software produced conservative lengths compared to the physical queues recorded. In contrast, for both junction 2 and junction 3, the modelled software queue results were less than the existing surveyed queues. Both methods have limitations, software modelling doesn't account for changes in traffic from day to day, while physical surveys are compiled from CCTV observations and are therefore subject to the limitations of the camera view. The data provides an idea of what is happening at each junction but does not represent exact everyday conditions.

- Based on observations of vehicles queueing on site or from one junction to the next, consideration should be given to installing a yellow box junction at Junction 2 to facilitate vehicles entering or exiting from Friary Downs to do so safely, eliminating blockages from queues from Junction 1 and 3.

- Particular upgrade improvements have been proposed by The NRDO & Kerry County Council to the junction of the Park Rd & Friary Downs (Junction 2) to increase the capacity at the junction. These upgrade works involve the signalisation of the junction.

- The traffic modelling has indicated that only Junction 1 is likely to operate at or over capacity in the various future design year scenarios in the peak hour periods. But this will be the case for all the modelled scenarios, including those modelled with the current day Traffic and those without the development traffic.

- Due to the and proximity to the town centre and the urban nature of the site of both these junctions and the development, a certain level of congestion is to be expected during peak times and the proposed traffic volumes are considered within the norms of a busy urban environment.

- Given the subject site's proximity to Killarney town centre and the availability of both existing and proposed active travel facilities nearby, the traffic volumes predicted in the modelling are deemed conservative in Nature.

- Comparing the analysis of the traffic models, this development will have a negligible impact on Junctions 2 and 3, but it will add localised capacity pressure to Junction 1, which is already operating above its design capacity.

11 REFERENCES

- TII. Traffic and Transport Assessment Guidelines, PE-PDV-02045
- National Roads Authority (2014) Traffic and Transport Assessment Guidelines
- Institution of Highways & Transportation (1994) Guidelines for Traffic Impact Assessment IHT, London
- National Roads Authority (2000) Road Geometry Handbook NRA, Dublin
- National Roads Authority Design Manual for Roads and Bridges NRA, Dublin
- Design Manual for Urban Roads and Streets
- Transport for Ireland (Oct 2016) Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts
- Transport for Ireland 2017. Geometric Design of Junctions, DN-GEO-03060
- Transport for Ireland 2017. Rural Road Link Design, DN-GEO-03031
- National Disability Authority (NDA) guidelines – Towards Best Practice in Provision of Transport Services
- TII approved junction simulation modelling program, Junctions 9
- Trip Rate Information Computer System (TRICS)
- Traffic Surveys: Irish Traffic Surveys Ltd.
- PCU (passenger carrying units) factors, Transport in The Urban Environment, The Institution of highways and Transportation.
- Google Maps
- Openstreetmaps

12 APPENDIX

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13 TRAFFIC COUNT DATA

(Traffic Count Data Available Upon Request)

14 JUNCTION 11 MODELLING RESULTS

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Junctions 11

ARCADY 11 - Roundabout Module
PICADY 11 - Priority Intersection Module

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Filename: 26010TT-MHL-Deerpark LRD-Combined Network-Rev 02.j11
Path: N:\TIA\26010TT Deerpark Killarney LRD\TTA\Traffic Modelling
Report generation date: 6/12/2026 11:44:09 AM

»D1 - 2024 | Base | AM
»D2 - 2024 | Base | PM
»D3 - 2024 | Base - Sunday Peaks | AM
»D4 - 2028 | Op Year Without Dev | AM
»D5 - 2028 | Op Year Without Dev | PM
»D6 - 2028 | Op Year With Dev | AM
»D7 - 2028 | Op Year With Dev | PM
»D8 - 2028 | Sunday Peaks-Op Year-Without Dev | AM
»D9 - 2028 | Sunday Peaks-Op Year-With Dev | AM
»D10 - 2033 | Without Dev | AM
»D11 - 2033 | Without Dev | PM
»D12 - 2033 | With Dev | AM
»D13 - 2033 | With Dev | PM
»D14 - 2033 | Sunday Peaks-Without Dev | AM
»D15 - 2033 | Sunday Peaks-With Dev | AM
»D16 - 2043 | Without Dev | AM
»D17 - 2043 | Without Dev | PM
»D18 - 2043 | With Dev | AM
»D19 - 2043 | With Dev | PM
»D20 - 2043 | Sunday Peaks-Without Dev | AM
»D21 - 2043 | Sunday Peaks-With Dev | AM
»D22 - 2024 | Base-Midday Peak | PM
»D23 - 2028 | Without Dev-Midday Peak | PM
»D24 - 2028 | With Dev - Midday Peak | PM
»D25 - 2033 | Without Dev -Midday Peak | PM
»D26 - 2033 | With Dev -Midday Peak | PM
»D27 - 2043 | Without Dev -Midday Peak | PM
»D28 - 2043 | With Dev -Midday Peak | PM

Summary of junction performance

	AM									PM								
	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	[Lane Simulation] - 2024 - Base																	
Junction 1 - Arm A	D1	1.1	3.0	4.39		A	53.45	F	% [ ]	D2	0.6	3.0	3.74		A	207.64	F	% [ ]
Junction 1 - Arm B		1.3	5.1	12.49	0.54	B					2.2	6.7	17.33	0.67	C			
Junction 1 - Arm C		25.2	54.5	124.54	1.06	F					86.7	134.3	462.46	1.29	F			
Junction 2 - Arm A		0.0	~1	0.02		A	1.59	A			0.0	~1	0.05		A	1.63	A	
Junction 2 - Arm B		0.4	1.4	10.25	0.20	B					0.4	1.5	9.55	0.24	A			
Junction 2 - Arm C		0.2	1.5	1.42		A					0.5	3.0	1.91		A			
Junction 3 - Arm A		2.0	6.6	5.58	0.58	A	5.28	A			0.9	3.1	4.56	0.51	A	5.20	A	
Junction 3 - Arm B		0.8	3.1	7.98	0.45	A					1.1	3.7	7.70	0.50	A			
Junction 3 - Arm C		0.5	2.0	3.95		A					0.8	3.0	4.31		A			
Junction 3 - Arm D		0.5	3.0	3.98	0.33	A					1.0	3.6	5.27	0.47	A			
	[Lane Simulation] - 2024 - Base - Sunday Peaks																	
Junction 1 - Arm A	D3	0.8	3.0	4.07		A	158.06	F	% [ ]									
Junction 1 - Arm B		2.9	8.8	23.26	0.74	C												
Junction 1 - Arm C		71.7	120.0	383.16	1.17	F												
Junction 2 - Arm A		0.0	~1	0.03		A	2.19	A										
Junction 2 - Arm B		0.6	3.4	11.22	0.31	B												
Junction 2 - Arm C		0.6	3.0	2.30		A												
Junction 3 - Arm A		1.7	5.9	6.27	0.60	A	5.76	A										
Junction 3 - Arm B		0.7	3.0	8.14	0.41	A												
Junction 3 - Arm C		0.9	3.0	4.39		A												
Junction 3 - Arm D		0.9	3.5	5.26	0.45	A												
	[Lane Simulation] - 2028 - Op Year Without Dev																	
Junction 1 - Arm A	D4	1.2	3.0	4.39		A	62.16	F	% [ ]	D5	0.8	3.0	3.78		A	248.55	F	% [ ]
Junction 1 - Arm B		1.3	3.6	12.56	0.57	B					2.3	9.0	18.26	0.67	C			
Junction 1 - Arm C		32.7	71.2	148.58	1.08	F					103.0	164.9	554.64	1.24	F			
Junction 2 - Arm A		0.0	~1	0.01		A	1.64	A			0.0	~1	0.05		A	1.79	A	
Junction 2 - Arm B		0.3	1.0	10.43	0.24	B					0.4	2.0	11.22	0.26	B			
Junction 2 - Arm C		0.5	3.0	1.46		A					0.3	3.0	1.90		A			
Junction 3 - Arm A		1.6	5.2	6.06	0.60	A	5.60	A			1.3	3.9	5.08	0.53	A	5.68	A	
Junction 3 - Arm B		0.9	3.7	8.59	0.49	A					1.0	3.0	8.60	0.51	A			
Junction 3 - Arm C		0.6	3.0	3.88		A					0.8	3.0	4.51		A			
Junction 3 - Arm D		0.6	2.0	4.11	0.35	A					1.3	5.3	5.69	0.49	A			
	[Lane Simulation] - 2028 - Op Year With Dev																	
Junction 1 - Arm A	D6	0.1	1.0	2.67		A	137.22	F	% [ ]	D7	1.1	3.0	4.00		A	291.33	F	% [ ]
Junction 1 - Arm B		1.1	3.7	9.50	0.48	A					2.5	7.5	21.89	0.69	C			
Junction 1 - Arm C		47.7	89.5	221.76	1.10	F					124.6	178.4	668.89	1.30	F			
Junction 2 - Arm A		0.0	~1	0.00		A	10.80	B			0.0	~1	0.07		A	4.96	A	
Junction 2 - Arm B		0.5	2.2	12.50	0.39	B					1.5	5.2	22.28	0.53	C			
Junction 2 - Arm C		3.0	3.0	19.40		C					0.9	3.0	4.25		A			
Junction 3 - Arm A		316.0	425.5	1340.52	1.16	F	721.10	F			1.8	5.7	6.45	0.57	A	6.60	A	
Junction 3 - Arm B		7.7	23.8	64.36	0.50	F					1.6	5.5	10.08	0.56	B			
Junction 3 - Arm C		0.1	1.0	2.64		A					0.9	3.0	4.60		A			
Junction 3 - Arm D		8.4	28.3	72.74	0.38	F					1.3	5.6	6.62	0.52	A			
	[Lane Simulation] - 2028 - Sunday Peaks-Op Year-Without Dev																	
Junction 1 - Arm A	D8	0.9	3.0	4.23		A	206.99	F	% [ ]									
Junction 1 - Arm B		4.4	13.0	29.18	0.84	D												
Junction 1 - Arm C		88.8	138.0	509.28	1.24	F												
Junction 2 - Arm A		0.0	~1	0.05		A	2.26	A										
Junction 2 - Arm B		0.6	2.2	11.57	0.30	B												
Junction 2 - Arm C		0.5	3.0	2.36		A												
Junction 3 - Arm A		1.8	5.5	7.21	0.66	A	6.35	A										
Junction 3 - Arm B		0.8	2.6	8.89	0.44	A												
Junction 3 - Arm C		1.0	3.0	4.61		A												
Junction 3 - Arm D		1.2	3.6	5.63	0.49	A												
	[Lane Simulation] - 2028 - Sunday Peaks-Op Year-With Dev																	
Junction 1 - Arm A	D9	1.2	3.0	4.41		A	240.43	F	% [ ]									
Junction 1 - Arm B		4.5	14.4	35.92	0.88	E												
Junction 1 - Arm C		107.1	159.0	598.10	1.31	F												
Junction 2 - Arm A		0.0	~1	0.08		A	4.39	A										

Junction 2 - Arm B		1.4	4.6	19.04	0.52	C											
Junction 2 - Arm C		0.7	3.0	3.96		A											
Junction 3 - Arm A		3.0	7.7	8.99	0.69	A	7.37	A									
Junction 3 - Arm B		1.1	4.1	10.06	0.50	B											
Junction 3 - Arm C		1.1	3.0	4.75		A											
Junction 3 - Arm D		1.1	4.4	6.47	0.51	A											
	[Lane Simulation] - 2033 - Without Dev																
Junction 1 - Arm A		1.1	3.0	4.49		A	80.76	F			0.7	3.0	3.87		A	284.93	F
Junction 1 - Arm B		1.5	5.2	13.83	0.57	B					2.3	9.3	20.52	0.67	C		
Junction 1 - Arm C		40.7	86.4	195.44	1.08	F					117.8	166.7	634.80	1.30	F		
Junction 2 - Arm A		0.0	~1	0.02		A	1.68	A			0.0	~1	0.06		A	1.81	A
Junction 2 - Arm B	D10	0.4	1.6	10.61	0.24	B			%	D11	0.4	1.4	10.81	0.28	B		
Junction 2 - Arm C		0.3	3.0	1.54		A			[ ]		0.5	3.0	2.01		A		
Junction 3 - Arm A		1.6	4.9	6.57	0.61	A	6.02	A			1.2	5.3	5.09	0.55	A	5.88	A
Junction 3 - Arm B		1.0	3.1	9.57	0.52	A					1.2	4.3	9.07	0.58	A		
Junction 3 - Arm C		0.5	1.7	4.06		A					0.8	3.0	4.59		A		
Junction 3 - Arm D		0.6	2.1	4.20	0.37	A					1.1	4.3	6.07	0.50	A		
	[Lane Simulation] - 2033 - With Dev																
Junction 1 - Arm A		1.1	3.0	4.70		A	104.40	F			0.9	3.0	4.09		A	340.78	F
Junction 1 - Arm B		1.4	4.5	15.58	0.65	C					2.3	7.3	21.52	0.71	C		
Junction 1 - Arm C		52.8	93.6	265.34	1.11	F					147.2	208.7	777.81	1.38	F		
Junction 2 - Arm A		0.0	~1	0.03		A	7.30	A			0.0	~1	0.11		A	4.74	A
Junction 2 - Arm B	D12	2.5	8.9	31.81	0.69	D			%	D13	1.7	5.5	20.36	0.57	C		
Junction 2 - Arm C		0.7	3.0	3.15		A			[ ]		0.6	3.0	4.01		A		
Junction 3 - Arm A		1.9	6.0	7.66	0.68	A	6.65	A			1.7	5.9	6.43	0.60	A	6.82	A
Junction 3 - Arm B		1.4	4.5	10.03	0.53	B					1.3	4.2	10.89	0.57	B		
Junction 3 - Arm C		0.8	3.0	4.33		A					0.9	3.0	4.80		A		
Junction 3 - Arm D		0.8	3.0	4.81	0.37	A					1.0	4.0	6.77	0.51	A		
	[Lane Simulation] - 2033 - Sunday Peaks-Without Dev																
Junction 1 - Arm A		0.9	3.0	4.32		A	261.23	F									
Junction 1 - Arm B		4.9	14.7	32.86	0.86	D											
Junction 1 - Arm C		116.1	175.8	642.71	1.29	F											
Junction 2 - Arm A		0.0	~1	0.07		A	2.53	A									
Junction 2 - Arm B	D14	0.8	2.6	12.97	0.35	B			%								
Junction 2 - Arm C		0.5	3.0	2.53		A			[ ]								
Junction 3 - Arm A		2.1	7.0	7.68	0.66	A	6.76	A									
Junction 3 - Arm B		1.1	3.7	9.80	0.46	A											
Junction 3 - Arm C		0.8	3.0	4.85		A											
Junction 3 - Arm D		1.1	3.5	5.87	0.51	A											
	[Lane Simulation] - 2033 - Sunday Peaks-With Dev																
Junction 1 - Arm A		0.9	3.0	4.47		A	305.97	F									
Junction 1 - Arm B		4.9	17.8	37.06	0.86	E											
Junction 1 - Arm C		139.1	199.2	761.67	1.38	F											
Junction 2 - Arm A		0.1	~1	0.10		A	4.71	A									
Junction 2 - Arm B	D15	1.4	6.2	20.43	0.59	C			%								
Junction 2 - Arm C		1.1	3.0	3.98		A			[ ]								
Junction 3 - Arm A		3.0	11.2	9.58	0.71	A	7.91	A									
Junction 3 - Arm B		1.2	4.4	11.50	0.52	B											
Junction 3 - Arm C		1.3	3.0	4.91		A											
Junction 3 - Arm D		1.6	5.6	6.83	0.55	A											
	[Lane Simulation] - 2043 - Without Dev																
Junction 1 - Arm A		1.0	3.0	4.45		A	94.00	F			0.9	3.0	3.89		A	305.98	F
Junction 1 - Arm B		1.5	6.0	14.29	0.57	B					2.4	7.2	21.89	0.71	C		
Junction 1 - Arm C		47.8	83.7	226.88	1.13	F					127.9	179.0	684.35	1.36	F		
Junction 2 - Arm A		0.0	~1	0.02		A	1.74	A			0.0	~1	0.07		A	1.78	A
Junction 2 - Arm B	D16	0.3	3.0	11.01	0.26	B			%	D17	0.5	3.0	10.71	0.28	B		
Junction 2 - Arm C		0.4	3.0	1.53		A			[ ]		0.3	3.0	1.90		A		
Junction 3 - Arm A		1.9	6.5	6.85	0.63	A	6.23	A			1.1	3.4	5.42	0.56	A	6.01	A
Junction 3 - Arm B		1.3	4.2	9.86	0.51	A					1.2	4.3	9.23	0.56	A		
Junction 3 - Arm C		0.6	3.0	4.20		A					0.9	3.0	4.70		A		
Junction 3 - Arm D		0.8	2.9	4.27	0.35	A					1.2	4.2	5.95	0.52	A		
	[Lane Simulation] - 2043 - With Dev																
Junction 1 - Arm A	D18	1.5	3.0	4.82		A	122.57	F	%	D19	1.0	3.0	4.02		A	353.90	F
Junction 1 - Arm B		1.8	5.8	15.38	0.63	C			[ ]		3.1	8.1	23.35	0.75	C		
Junction 1 - Arm C		63.5	112.0	312.27	1.17	F					156.7	211.5	809.18	1.35	F		

Junction 2 - Arm A		0.0	~1	0.04		A					0.0	~1	0.07		A			
Junction 2 - Arm B		2.7	9.0	31.32	0.64	D	7.10	A			1.6	4.5	21.44	0.53	C	4.88	A	
Junction 2 - Arm C		0.8	3.0	3.14		A					1.0	3.0	4.11		A			
Junction 3 - Arm A		2.5	6.0	7.95	0.66	A					1.9	6.2	6.68	0.58	A			
Junction 3 - Arm B		1.5	5.0	11.35	0.57	B	7.00	A			1.7	6.1	11.15	0.60	B	7.01	A	
Junction 3 - Arm C		0.8	3.0	4.44		A					0.9	3.0	4.83		A			
Junction 3 - Arm D		0.9	3.5	4.80	0.38	A					1.6	4.6	6.98	0.53	A			
	[Lane Simulation] - 2043 - Sunday Peaks-Without Dev																	
Junction 1 - Arm A		0.9	3.0	4.32		A												
Junction 1 - Arm B		5.5	14.6	39.81	0.85	E	269.71	F										
Junction 1 - Arm C		119.5	179.6	671.65	1.31	F												
Junction 2 - Arm A		0.0	~1	0.05		A												
Junction 2 - Arm B	D20	0.9	3.2	13.99	0.37	B	2.69	A	%									
Junction 2 - Arm C		0.5	3.0	2.40		A			[ ]									
Junction 3 - Arm A		1.9	5.7	8.29	0.69	A												
Junction 3 - Arm B		1.1	3.4	10.98	0.48	B	7.10	A										
Junction 3 - Arm C		0.9	3.0	4.74		A												
Junction 3 - Arm D		1.0	2.7	5.93	0.55	A												
	[Lane Simulation] - 2043 - Sunday Peaks-With Dev																	
Junction 1 - Arm A		1.1	3.0	4.73		A												
Junction 1 - Arm B		11.2	27.7	77.42	0.97	F	312.90	F										
Junction 1 - Arm C		145.7	217.8	802.72	1.42	F												
Junction 2 - Arm A		0.1	~1	0.21		A												
Junction 2 - Arm B	D21	1.8	5.1	28.15	0.63	D	5.34	A	%									
Junction 2 - Arm C		0.7	3.0	2.52		A			[ ]									
Junction 3 - Arm A		2.9	7.8	8.52	0.71	A												
Junction 3 - Arm B		1.4	5.2	11.56	0.56	B	7.45	A										
Junction 3 - Arm C		1.3	3.0	5.36		A												
Junction 3 - Arm D		1.5	5.2	6.21	0.57	A												
	[Lane Simulation] - 2024 - Base-Midday Peak																	
Junction 1 - Arm A											0.5	1.9	3.12		A			
Junction 1 - Arm B											0.0	~1	0.00	0.00	A	3.12	A	
Junction 1 - Arm C											0.0	~1	0.00	0.00	A			
Junction 2 - Arm A											0.0	~1	0.00		A			
Junction 2 - Arm B										D22	0.2	1.0	6.76	0.18	A	2.02	A	%
Junction 2 - Arm C											0.3	3.0	1.66		A			[ ]
Junction 3 - Arm A											1.0	4.0	4.50	0.49	A			
Junction 3 - Arm B											0.7	2.5	7.32	0.46	A	4.87	A	
Junction 3 - Arm C											0.3	2.0	3.29		A			
Junction 3 - Arm D											0.8	3.0	4.31	0.42	A			
	[Lane Simulation] - 2028 - Without Dev-Midday Peak																	
Junction 1 - Arm A											0.5	3.0	3.16		A			
Junction 1 - Arm B											0.0	~1	0.00	0.00	A	3.16	A	
Junction 1 - Arm C											0.0	~1	0.00	0.00	A			
Junction 2 - Arm A											0.0	~1	0.00		A			
Junction 2 - Arm B										D23	0.3	1.2	6.99	0.20	A	2.17	A	%
Junction 2 - Arm C											0.4	3.0	1.81		A			[ ]
Junction 3 - Arm A											0.9	3.0	4.64	0.52	A			
Junction 3 - Arm B											1.1	3.7	8.55	0.51	A	5.23	A	
Junction 3 - Arm C											0.3	2.0	3.31		A			
Junction 3 - Arm D											1.0	3.3	4.48	0.45	A			
	[Lane Simulation] - 2028 - With Dev - Midday Peak																	
Junction 1 - Arm A											0.6	3.0	3.34		A			
Junction 1 - Arm B											0.0	~1	0.00	0.00	A	3.34	A	
Junction 1 - Arm C											0.0	~1	0.00	0.00	A			
Junction 2 - Arm A											0.0	~1	0.00		A			
Junction 2 - Arm B										D24	0.9	3.0	10.85	0.39	B	4.01	A	%
Junction 2 - Arm C											0.6	3.0	2.96		A			[ ]
Junction 3 - Arm A											1.2	4.0	5.06	0.55	A			
Junction 3 - Arm B											1.1	3.5	9.16	0.52	A	5.63	A	
Junction 3 - Arm C											0.3	1.7	3.54		A			
Junction 3 - Arm D											1.2	5.2	4.96	0.48	A			
	[Lane Simulation] - 2033 - Without Dev -Midday Peak																	
Junction 1 - Arm A										D25	0.6	3.0	3.16		A	3.16	A	%
Junction 1 - Arm B											0.0	~1	0.00	0.00	A			[ ]

Junction 1 - Arm C										0.0	~1	0.00	0.00	A					
Junction 2 - Arm A										0.0	~1	0.00		A					
Junction 2 - Arm B										0.4	2.0	7.05	0.22	A	2.15	A			
Junction 2 - Arm C										0.4	3.0	1.77		A					
Junction 3 - Arm A										1.5	5.5	4.74	0.53	A					
Junction 3 - Arm B										1.2	4.0	8.65	0.53	A	5.40	A			
Junction 3 - Arm C										0.3	1.0	3.46		A					
Junction 3 - Arm D										1.0	3.6	4.76	0.47	A					
[Lane Simulation] - 2033 - With Dev -Midday Peak																			
Junction 1 - Arm A										0.8	3.0	3.36		A					
Junction 1 - Arm B										0.0	~1	0.00	0.00	A	3.36	A			
Junction 1 - Arm C										0.0	~1	0.00	0.00	A					
Junction 2 - Arm A										0.0	~1	0.00		A					
Junction 2 - Arm B									D26	1.0	3.8	10.71	0.38	B	4.01	A		%	
Junction 2 - Arm C										0.5	3.0	2.98		A				[ ]	
Junction 3 - Arm A										1.4	5.5	5.46	0.56	A					
Junction 3 - Arm B										1.5	5.0	9.84	0.56	A	6.01	A			
Junction 3 - Arm C										0.3	1.4	3.63		A					
Junction 3 - Arm D										1.1	4.0	5.27	0.49	A					
[Lane Simulation] - 2043 - Without Dev -Midday Peak																			
Junction 1 - Arm A										0.6	3.0	3.19		A					
Junction 1 - Arm B										0.0	~1	0.00	0.00	A	3.19	A			
Junction 1 - Arm C										0.0	~1	0.00	0.00	A					
Junction 2 - Arm A										0.0	~1	0.00		A					
Junction 2 - Arm B									D27	0.2	1.0	6.99	0.21	A	2.24	A		%	
Junction 2 - Arm C										0.2	3.0	1.95		A				[ ]	
Junction 3 - Arm A										1.4	4.5	4.82	0.54	A					
Junction 3 - Arm B										1.0	3.7	8.97	0.54	A	5.51	A			
Junction 3 - Arm C										0.3	2.0	3.44		A					
Junction 3 - Arm D										0.9	2.9	4.87	0.47	A					
[Lane Simulation] - 2043 - With Dev -Midday Peak																			
Junction 1 - Arm A										0.8	3.0	3.60		A					
Junction 1 - Arm B										0.0	~1	0.00	0.00	A	3.60	A			
Junction 1 - Arm C										0.0	~1	0.00	0.00	A					
Junction 2 - Arm A										0.0	~1	0.01		A					
Junction 2 - Arm B									D28	0.8	3.0	12.28	0.40	B	4.44	A		%	
Junction 2 - Arm C										0.7	3.0	3.13		A				[ ]	
Junction 3 - Arm A										1.8	7.0	6.50	0.59	A					
Junction 3 - Arm B										1.6	6.3	12.52	0.57	B	7.29	A			
Junction 3 - Arm C										0.5	2.4	3.91		A					
Junction 3 - Arm D										1.6	5.5	6.44	0.50	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. Arm and junction delays are averages for all movements, including movements with zero delay. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

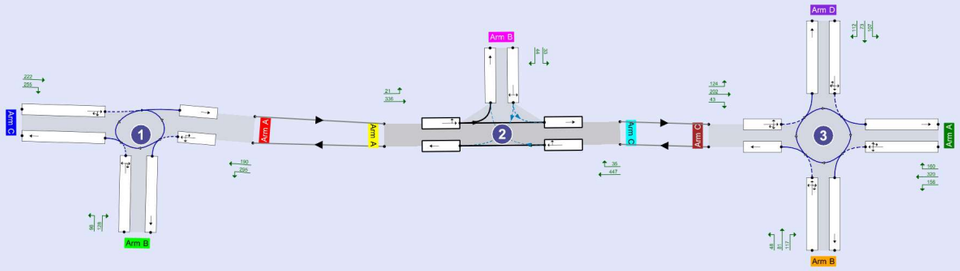
File summary

File Description

Title	
Location	
Site number	
Date	5/29/2026
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MHL\szare
Description	

Units

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



Flows show modelled flow through junction (PCU/hr).

Lane simulation visualisation time: 08:30:00

The junction diagram reflects the last run of Junctions.

Analysis Options

PICADY short flare model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 11.1	5.75	✓				✓	Delay	0.85	36.00	20.00		

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Calculate RFCs	Relaxation factor for capacity/RFC runs	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)	Last run total time taken (s)
Delay	1.00	10	100000	Calculate for all arms	3.00	-1	3	1	60	✓			846940223	97	10.09	28.47

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