



Vincent Hannon Architects
Housing Development
Gort Uí Lochlainn & Coill Bhruchláin,
Moycullen, Co. Galway

Traffic Report



Housing Development Gort Uí Lochlainn & Coill Bhruchláin, Moycullen, Co. Galway

Traffic Report

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1.0 NON-TECHNICAL SUMMARY

The Non-Technical Summary is a synopsis of the traffic and transportation assessment for the proposed Housing Development at Ballyquirke West, Moycullen, Co. Galway. The proposed development is in the village centre on the L1320 (Mountain Road) approximately 200m south-west of Moycullen village centre and 13km to the north-west of Galway city.

Permission is sought by Galway County Council for the construction of a housing development comprising at Ballycuike West, Moycullen Co. Galway.

The development will consist of the clearance of the existing greenfield site and construction of 31 No. number two-storey housing units including access roads, parking spaces, bin store, landscaping, open space, and all ancillary site development works. Refer to Figure 1-1.

The land surrounding the immediate site consists of the village core to the north and west which consists of mixed medium-density residential, commercial, and retail units. Towards the south and east of the site is made of medium density housing schemes and one-off housing

The proposed development will consist of the following:

1. 31 no. Dwelling units as noted above
2. Open public space
3. Associated Civil Works
4. Access Roads and Junctions
5. New Section of Roadway
6. New Priority Junction



Figure 1-1: Site Layout



Figure 1-2: Site Location

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A review of committed developments in the surrounding area has been carried out and all committed development taken into account. The summation of the proposed and committed development has been assessed using LinSig for the traffic generated volumes for the expected year of opening in 2023 and the design years 2028 and 2038.

The traffic volumes from the TII live traffic counters have been seasonally adjusted and forecast to the design years. The trip rates for the proposed development were generated from the proposed parking numbers. A number of assumptions were made in this report, as outlined in Section 5, 'Trip Generation and Trip Distribution'.

Junction 1 - Signalised Junction at L1313 Church Road/Clifden Road/L1320 Mountain Road/Clifden Road

The LinSig analysis for the design year 2023 without the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that in the morning peak hour scenarios, Arm 1 is forecast to approach capacity. A slight decrease was recorded for Arm 3 in the morning peak, however, this is a result of the analysis software optimising the delays for all of the Traffic Streams within the junction.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for the majority of Traffic Streams and a slight increase in the MMQ for the majority of Traffic Streams (i.e., for Arm 4, Traffic Stream1/2 the DoS increases from 93.7% to 96.3% and the MMQ from 23.8 PCU to 26.1 PCU). The evening peak hour is similar with Arms 1 and 2 forecast to operate above capacity. Again, the inclusion of the proposed development traffic will result in an increase in the DoS and MMQ for these Traffic Streams.

The LinSig analysis for the design year 2023 with the inclusion of the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that for both the morning and evening peak hour scenarios, the junction is forecast to operate within capacity.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for each Stream and a slight increase in the MMQ for each Stream for the morning and evening peak hour scenarios, however the inclusion of the proposed Development traffic is forecast to have minimal effect on the operation of the signalised junction.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for each Stream and a slight increase in the MMQ for each Stream for the morning and evening peak hour scenarios, (the largest impact forecast is for Arm 1, Traffic Stream1/2 for which the Dos increases from 94.0% to 96.8% and the MMQ from 20.9 PCU to 23.1 PCU in the morning peak hour). A slight decrease was recorded for Arm 3 in the morning peak; however, this is a result of the analysis software optimising the delays for all of the traffic Streams within the junction.

Note that the above analysis was carried out with a cycle time of 120 seconds. An increase in the cycle time to 150 seconds results in as increase in the Practical Reserve Capacity for the junction from -7.5% to 5.3% in the morning peak hour and -3.7% to 0.1% in the evening peak hour. The MMQ is also reduced for all Traffic Streams for both scenarios.

2.0 INTRODUCTION

2.1 INTRODUCTION

TOBIN Consulting Engineers Ltd have been appointed by the Vincent Hannon Architects to provide a Traffic and Transportation assessment for a proposed housing development at Ballycuike West, Moycullen, Co. Galway with access from the L-1320 Mountain road. The existing site area is 1.72 ha, comprising of a green field site with a County Council Depot to the front of the site.

In preparing this report, TOBIN Consulting Engineers has made reference to

- The Galway County Development Plan 2015 – 2021 (GCDP);
- NRA 'Traffic and Transport Assessment Guidelines' (May 2014); and
- NRA Project Appraisal Guidelines for National Roads Unit 5.3: Travel Demand Projections

2.2 OBJECTIVES

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

Junction 1: Signalised Junction @ L1313 Church Road/Clifden Road/L1320
 Mountain Road/Clifden Road

In accordance with the Traffic and Transport Assessment Guidelines, ways to promote non-car access to the proposed development will also be explored. This will include convenient pedestrian and cycle interconnection between existing and proposed developments and public transport facilities. Existing public transport networks will be examined. A walking and cycling accessibility assessment will also be conducted to determine the distances to main attractions and public transport connections and to also illustrate the benefits of walking or using a bicycle to access a particular development.

2.3 SCOPING

In order to ensure the scope of this report was to the satisfaction of Galway County Council, a scoping document was issued on the 28th of August 2020 to Galway County Council Roads Department. This document outlined the proposed approach that the Traffic and Transport Assessment would take and the junctions which would be included in the analysis.

The scoping and proposed Development was also discussed at the preplanning meeting held with representatives from Galway County Council's Roads Department, and TOBIN Consulting Engineers. The items discussed at this meeting were captured in the design and the assessment of the proposed Development.

A Stage 1/2 Road Safety Audit has been carried out and will be submitted as part of this application.

2.4 STRUCTURE OF THE REPORT

This report is divided into eight chapters:

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

3.0 PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The housing development site is located on the L-1320, approximately 200m south-west of Moycullen village centre and 13km north-west of Galway City Centre. The site location is shown in Figure 3-1 below.

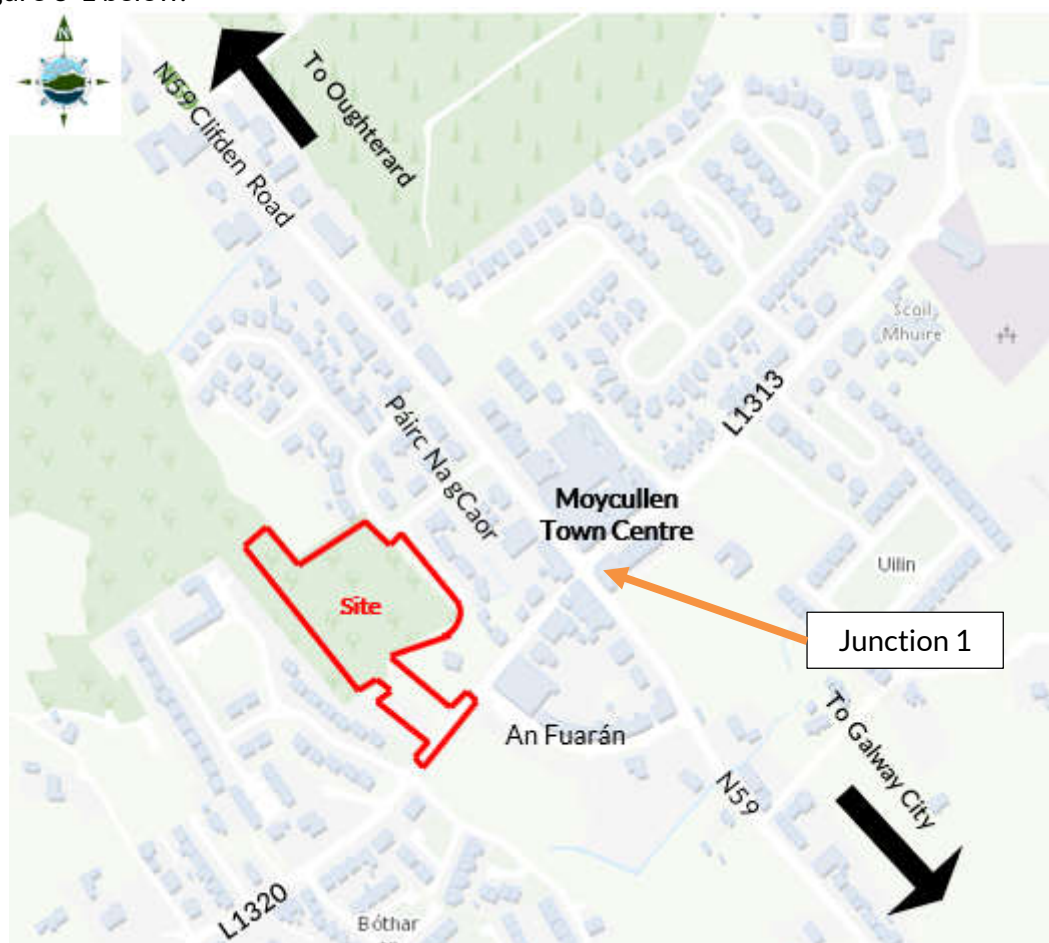


Figure 3-1: Site Location

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3.2 DESCRIPTION OF PROPOSED DEVELOPMENT

The development will consist of the clearance of the existing greenfield site and construction of 31 No. number two-storey housing units including access roads, parking spaces, bin store, landscaping, open space, and all ancillary site development works. Refer to Figure 1-1.

3.3 CUMULATIVE IMPACTS

This assessment shall consider all committed developments within the vicinity of the site. This includes sites which have previously been granted planning permission, but which are yet to become operational.

There are several major committed developments granted in the immediate vicinity of the proposed development. There is also one-off houses and extensions to existing dwellings in the vicinity of the proposed site. An allowance will be made in the traffic projections for these developments.

See Table 3-1 for committed developments in close proximity to the proposed site.

Table 3-1: Committed Developments

Major Committed Developments			
Planning Ref. No.	Status	Location	Description
20/179	Conditional	Kylebroghlan, Moycullen.	(19units) - consisting of change of house type on previously approved residential scheme (Planning Ref; 06/5813)
17/1815	Amendments to 15/4716 & 07/4795	Killaraingy	(59 Units) - Replacement of approved dwelling units previous planning reference no. 07/4795
17/1779	Granted	Killaraingy	61 no. residential units.
17/1718	Conditional	Ballyquirk West	mixed-use development consisting of 35 units and all ancillary site works.
17/1516	Conditional	Moyculen	three-storey mixed use building, including a 586.17 sq.meter 11 bedroom bed and Breakfast facility, 2 no. 3 bedroom apartments, 12 no. 2 bedroom apartments and 2 no. 1 bedroom apartments,
17/1510	Conditional	Kylebroghlan	residential development consisting of 113 residential units
17/1087	Conditional	Kylebroghlan	Construction of a two-storey Primary Care Centre; Construction of 49 no. residential units

There are also a number granted permission in the last 5 years for one-off houses and extensions to existing dwellings.

In order to ensure that the junction to the proposed development can accommodate the expected traffic flows have been assessed as discussed in Sections 5 and 6. Impacts of the network improvements have also been applied to the existing baseflow traffics volumes.

4.0 EXISTING AND PROPOSED TRAFFIC CONDITIONS

4.1 TRAFFIC SURVEY

To determine the magnitude of the existing traffic flows on the surrounding road network, traffic surveys were required for the junctions in the vicinity of the site. However, the Covid 19 restrictions implemented in 2020 have had a major impact on traffic patterns and volumes on national roads across the country.

To address this issue, Tobin Consulting Engineers have devised the following strategy:

- To ascertain the traffic flows for Junction 1 (refer to Figure 4-1 below), contact was made with IDASO, a traffic survey company and they have provided historic traffic counts for the Junction 1 for July 2019 between the hours 07:00 and 19:00.
- As the IDASO traffic counts were carried out in July, the traffic count data does not include school term related traffic. To account for this, data from the TII traffic counter located 5.5km north west of Moycullen on the N59 was used to derive an appropriate factor which could be applied to the IDASO traffic counts to take into account the traffic which would be associated with the school term.
- Utilising the TII Traffic counter data, all traffic recorded on Wednesdays for the 3 school term periods from January to May 2019 was extracted and averaged (refer to Section 5.1 of this Report). This was then compared with the equivalent traffic data recorded on the 17th of July 2019 (IDASO survey data). The comparison revealed that the traffic flows from the survey were lower than the School Term average for the time period 07:00 to 09:00 but were higher for all other survey time periods.
- An adjustment factor for the AM Peak was applied as the traffic flows on the day of the July 2019 survey were lower than the School Term average. No adjustment was applied for the PM peak as the traffic flows on the day of the July 2019 survey were higher than the School Term average to allow for a robust analysis in the PM peak.



Figure 4-1: Junction Locations ©Bing Maps

- Traffic counts were also procured for Junction 2 (refer to Figure 4-1) and were carried out on the 6th of October 2020. The traffic flows on the N59 and the Mountain Rd were compared to the adjusted figures ascertained for Junction 1 and an adjustment factor was applied where flows were found to be lower than the IDASO traffic flows.
- As a further check on the calculated traffic data, the final figures were cross checked against the findings of the N59 Moycullen By-Pass Traffic Modelling Report.

The survey data obtained distinguishes between light good vehicles and heavy good vehicles. The traffic count data is included in **Appendix A** of this Report. The results of the survey indicated that the peak traffic levels for traffic through these junctions occurred between the hours of 07:00 and 08:00 in the AM peak period and 17:00 and 18:00 in the PM peak period.

TII Annual growth indices were applied to the 2019 traffic flows to determine background traffic flows for the required assessment years.

4.2 EXISTING ROAD NETWORK

The proposed development is to be accessed from L-1320. The proposed site access is situated within an 50km/h default urban speed zone. L-1320 has a carriageway width of approximately 6.2m in the vicinity of the site access junction.

4.3 PROPOSED NETWORK IMPROVEMENTS

4.3.1 Moycullen Bypass

The proposed N59 Moycullen Bypass Road Project comprises of the construction of a 4.3km standard single carriageway road bypass of Moycullen village and all ancillary works. The project is located entirely within County Galway and extends from the townland of Drimcong approx. 1.5km north-west of Moycullen village to the townland of Clydagh approx. 2km south-east of Moycullen village.

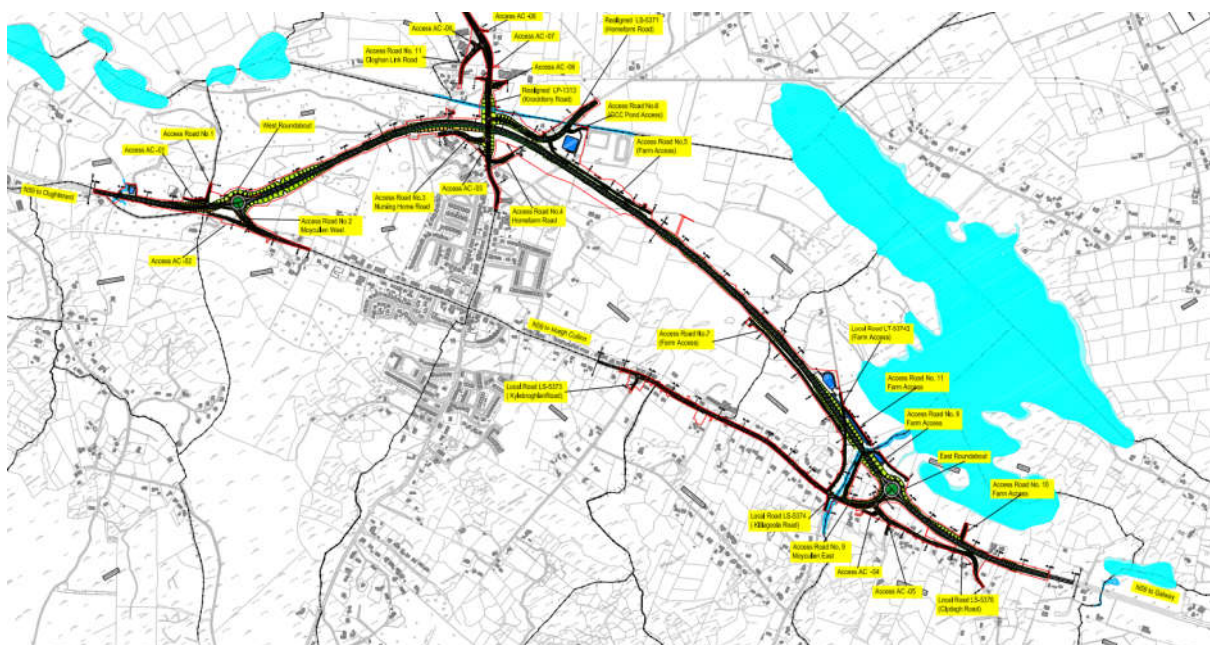


Figure 4-2: Indicative Layout Moycullen Bypass

The N59 Moycullen Bypass project is currently in the Tender process with work scheduled to commence in 2021 and with a completion date towards the end of 2023. The findings of the N59 Moycullen By-Pass Traffic Modelling Report project a reduction in traffic volumes on the N59 in the order of 58% on the N59 East (heading towards Galway City) and 71% on the N59 West (heading towards Oughterard). To ensure a robust analysis, a reduction in the order of 50% on both streams was applied to the base traffic volumes for the “With Bypass” scenarios.

4.3.2 Moycullen Inner Relief Road

An Inner Relief Route is proposed to connect the northern approach of the N59 to the southern approach of the N59, westwards of the village centre, and the reservation of key access points along the existing N59.

4.4 PROPOSED SITE ACCESS JUNCTION

As part of the enabling works for the development, a new section of access road will be constructed to connect the proposed development directly with the L-1320 (Mountain Road). The proposed access will be a priority junction which will operate for the housing development. The proposed access road width is a 6.0m carriageway with 6.0m kerb radii. The existing parking to the south west of the proposed junction is to be removed to accommodate the required sight visibility splays from the junction.

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 SEASONAL ADJUSTMENT

As noted earlier in Section 4.1 of this Report, an exercise was required to take account of the school traffic and to compare the IDASO traffic survey data with the TII Traffic Counter survey data.

As the IDASO traffic counts were conducted on a Wednesday, the TII traffic count data was obtained and averaged for Wednesday weekdays over three different time periods when the school term was in session, namely:

- 07th January 2019 – 05th February 2019
- 25th February 2019 - 12th April 2019 and,
- 29th April 2019 – 24th May 2019.

The TII traffic count data for Wednesdays in the above time periods was averaged (School Term time-period) and compared with the IDASO traffic county survey from July 2019 (Out of School time-period). The results of the comparison are shown in Table 5-1 below.

Table 5-1: Traffic Data Comparison

Hour	School Term Average	Out of School Traffic Count	Out of School as a % of School Term Traffic
07:00 - 08:00	569	451	79.2%
08:00 - 09:00*	562	457	81.3%
09:00 - 10:00	482	503	104.3%
10:00 - 11:00	432	530	122.8%
11:00 - 12:00	397	618	155.5%
12:00 - 13:00	412	552	133.9%
13:00 - 14:00	414	582	140.6%
14:00 - 15:00	491	598	121.7%
15:00 - 16:00	505	632	125.1%
16:00 - 17:00	590	683	115.8%
17:00 - 18:00*	686	741	108.0%
18:00 - 19:00	575	687	119.4%

* Peak Hours

An adjustment factor for the AM Peak of **1.23** (calculated from the School Term average and Out of School Traffic Count) was applied as the traffic flows on the day of the survey were lower than the School Term average.

No reductions were applied for the PM peak, even though the traffic flows on the day of the survey were higher than the School Term average, the higher traffic flows were used to allow for a more robust analysis in the PM peak.

5.2 OPENING AND FUTURE YEAR FLOWS AND ENVIRONMENT

The proposed development will be constructed in one phase. Therefore, the opening year of 2023 was utilised for the purpose of the traffic assessment. In addition to the opening years and in accordance with TII guidelines, the capacity assessment was also based on traffic conditions forecast for the design years 2028 (+5 years) and 2038 (+ 15 years).

Annual growth indices were updated in 2019 by the TII, with annual indices and cumulative growth forecasts shown for the County Galway region in Table 5-1 below. The derived growth factors were applied to 2019 flows to determine background traffic flows for the assessment years. The assessment is split into light vehicles and heavy vehicles.

	2023	2028	2038
LV	1.108	1.259	1.446
HV	1.191	1.481	1.891

Table 5-2: Growth Factors for light vehicle (LV) and heavy vehicles (HV)

5.3 TRIP GENERATION

The volume of traffic expected to be generated during the AM and PM peak hours for the proposed development were established from the Trip Rate Information Computer System (TRICS) database, a computerised database and analysis package for planning and development. TRICS generates rates to represent various land uses. These trip rates are generated from developments of a similar nature.

5.3.1 TRIP GENERATION OF PROPOSED DEVELOPMENT

The volume of traffic expected to be generated by the proposed development is based on the proposed parking allocation for the development as shown in the following Tables:

Table 5-3: Expected Trip Generation for Proposed Development for AM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR AM PEAK HOUR (2023)			
Development Type	No of House	Arrivals	Departures
Houses	31	4	12
Total		4	12

Table 5-4: Expected Trip Generation for Proposed Development for PM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR PM PEAK HOUR (2023)			
Development Type	No of House	Arrivals	Departures
Houses	31	11	6
Total		11	6

5.3.2 Trip Generation for The Moycullen Outer-Bypass

The N59 road forms the main street through Moycullen Village and carries approximately 13,000 vehicles per day including over 450 heavy goods vehicles. This leads to a range of conflicts between locally generated traffic and national through traffic, pedestrian and vehicular traffic, north/south traffic on the Local Road network and east/west traffic on the N59.

The proposed bypass is forecast to result in a 74% reduction in traffic flow in the village north of the signalised junction and a 53 % reduction south of the junction.

It is estimated that the volume of heavy goods vehicles will have reached approx. 600 vehicles by 2028. The proposed road development is forecast to lead to a reduction in heavy goods vehicles passing through the village of approx. 67% northwest of the signalised junction and 62% southeast of the junction in the Design year. This equates to a reduction in the volume of heavy goods vehicles of approx. 406 vehicles and 436 vehicles, respectively.

5.4 TRIP DISTRIBUTION

5.4.1 Trip Distribution of Committed Development

There are a number of committed developments currently in the vicinity of the proposed development site and the existing signalised junction in Moycullen Village. The committed developments have been included in the analysis of the existing signalised junction.

Junction 1
AM PEAK

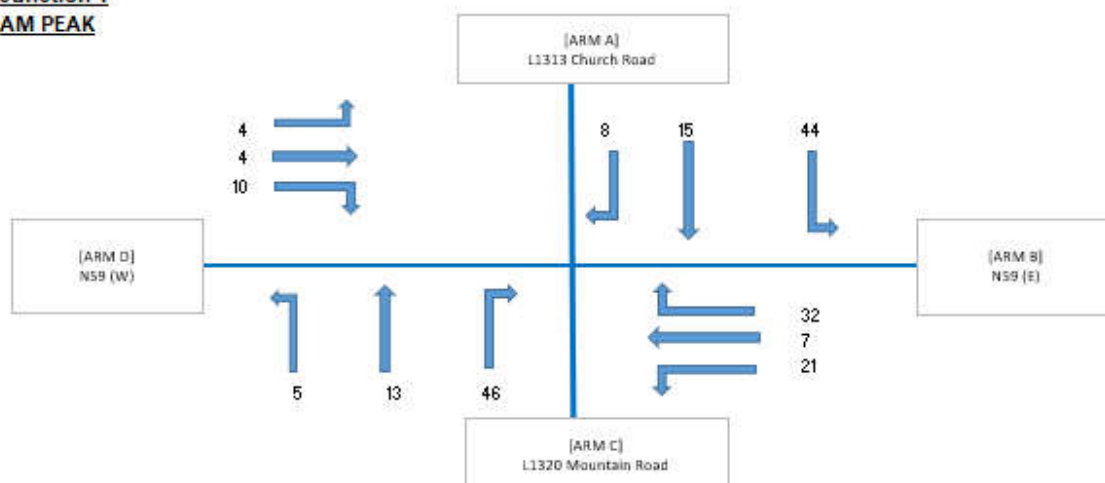


Figure 5-1 Trip Generation & Distribution Junction 1 – AM Peak

Junction 1
PM PEAK

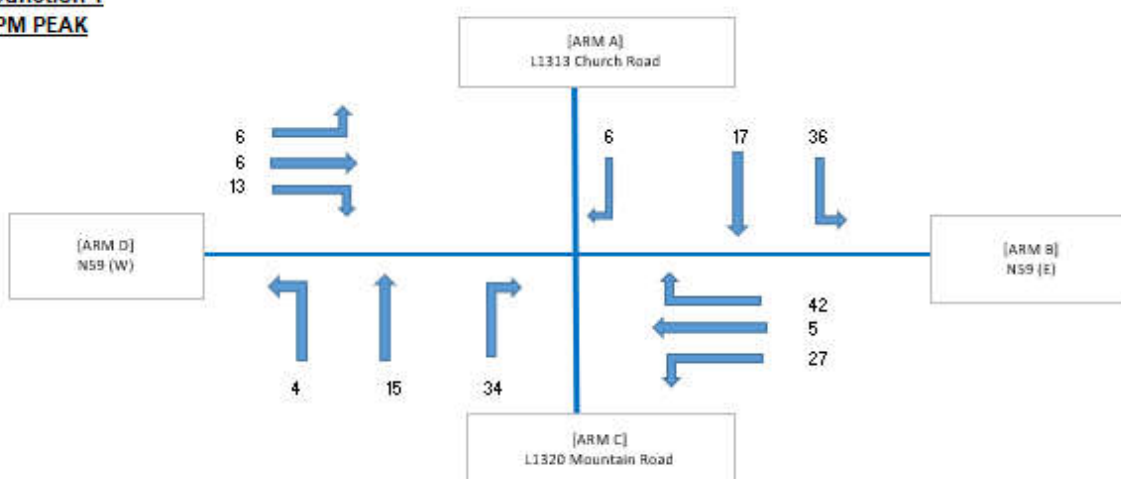


Figure 5-2 Trip Generation & Distribution Junction 1 – PM Peak

5.4.2 Trip Distribution of Proposed Development

It was envisaged the proposed distribution matches the existing traffic distribution at each of the junctions.

5.5 TRIP DISTRIBUTION OF BASEFLOW PLUS GENERATED TRAFFIC

The baseline and baseline plus generated traffic (with both committed and proposed development) for all junctions for the year of opening 2023 and the design year 2038 for both the AM and PM peak hours are shown in the following Figures.

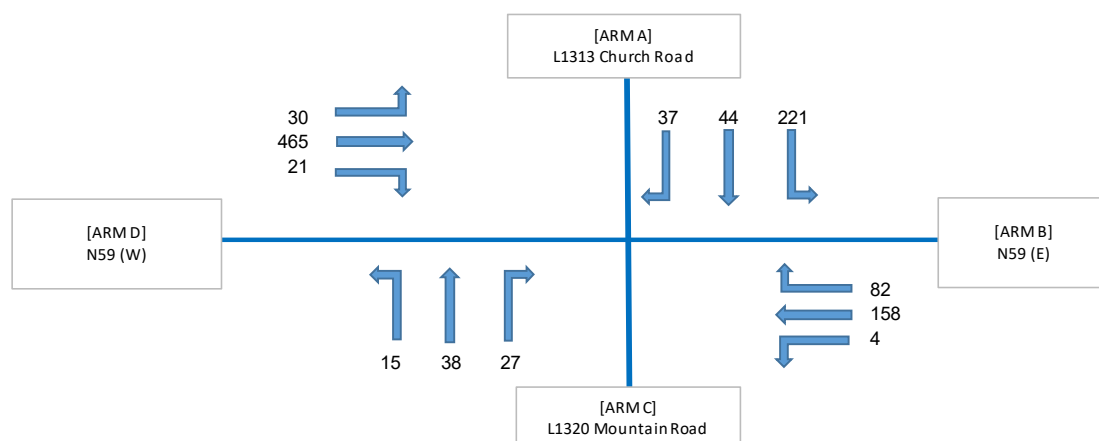


Figure 5-3 Junction 1 - 2019 Base AM Peak

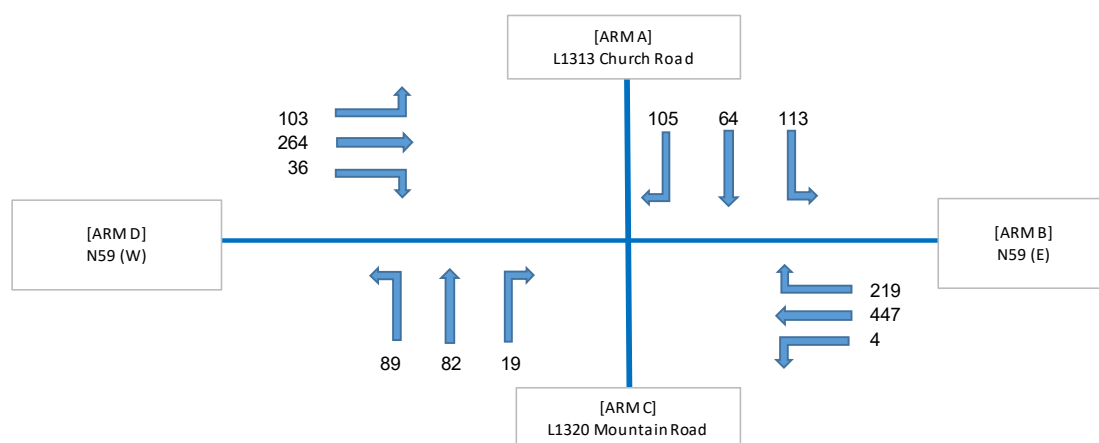


Figure 5-4 Junction 1 - 2019 Base PM Peak

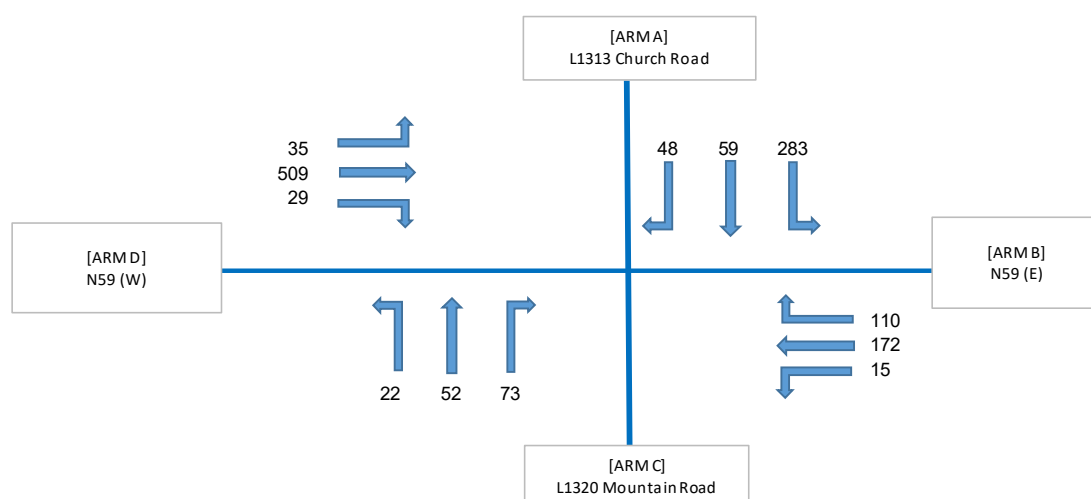


Figure 5-5 Junction 1 - 2023 Base AM Peak (No Bypass)

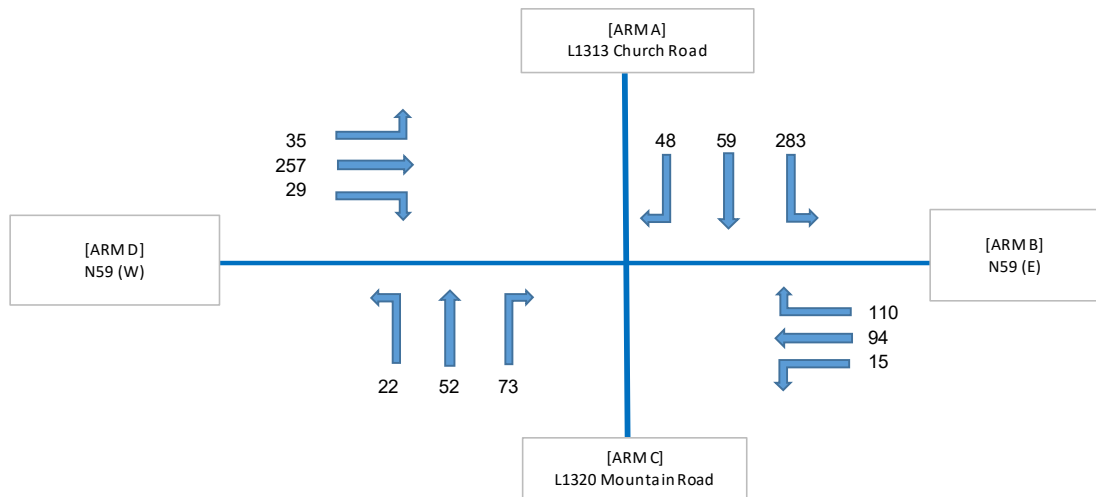


Figure 5-6 Junction 1 - 2023 AM Peak Base (With Bypass)

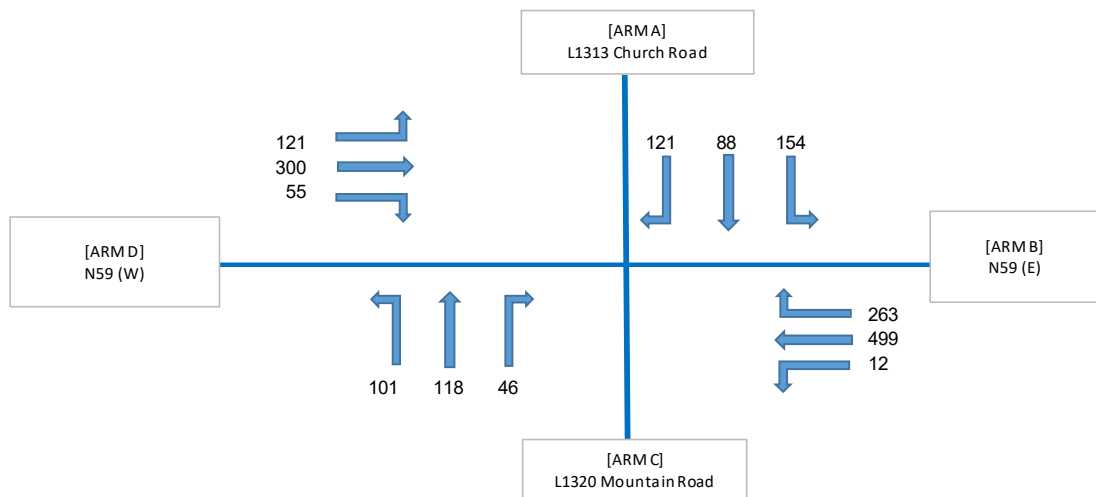


Figure 5-7 Junction 1 - 2023 Base PM Peak (No Bypass)

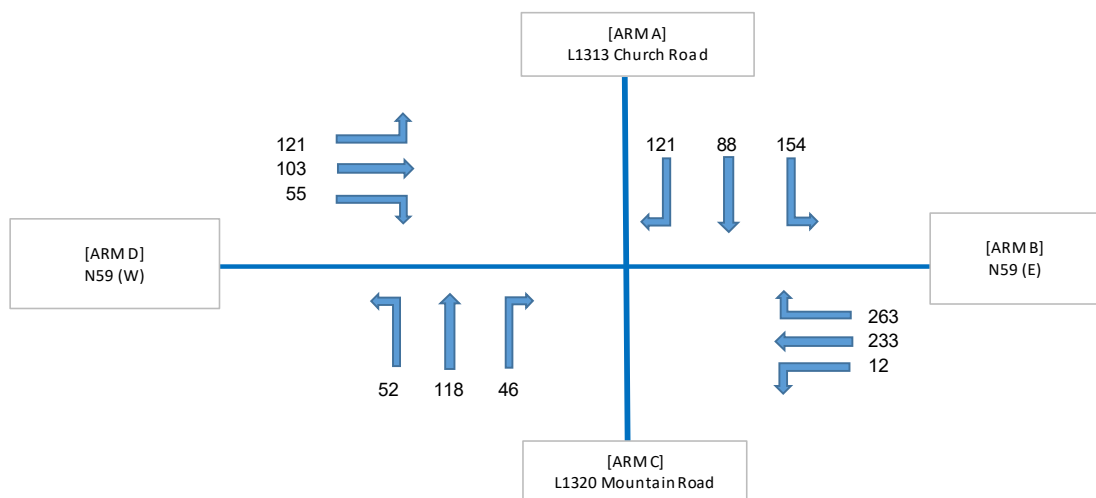


Figure 5-8 Junction 1 - 2023 AM Peak Base (With Bypass)

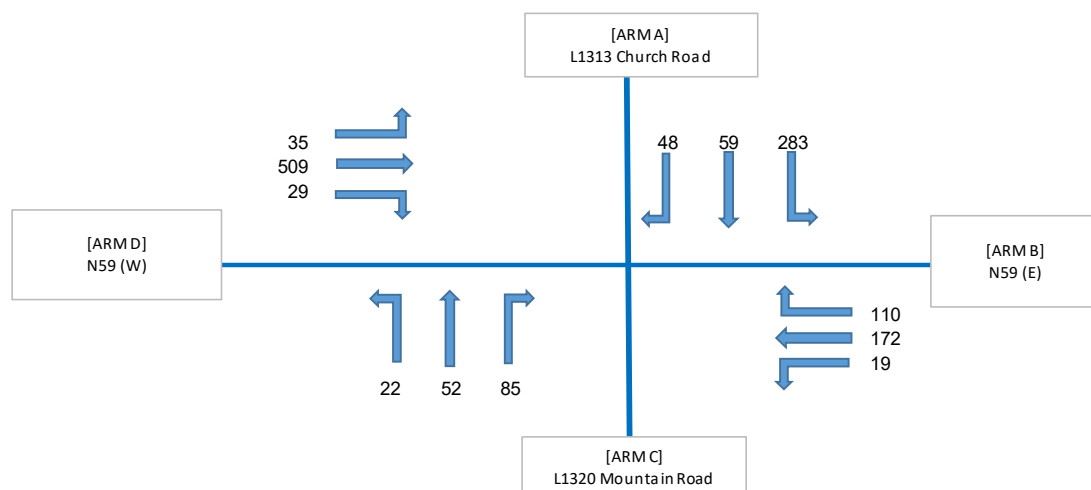


Figure 5-9 Junction 1 - 2023 AM Peak Base with Comm & Prop Development (No Bypass)

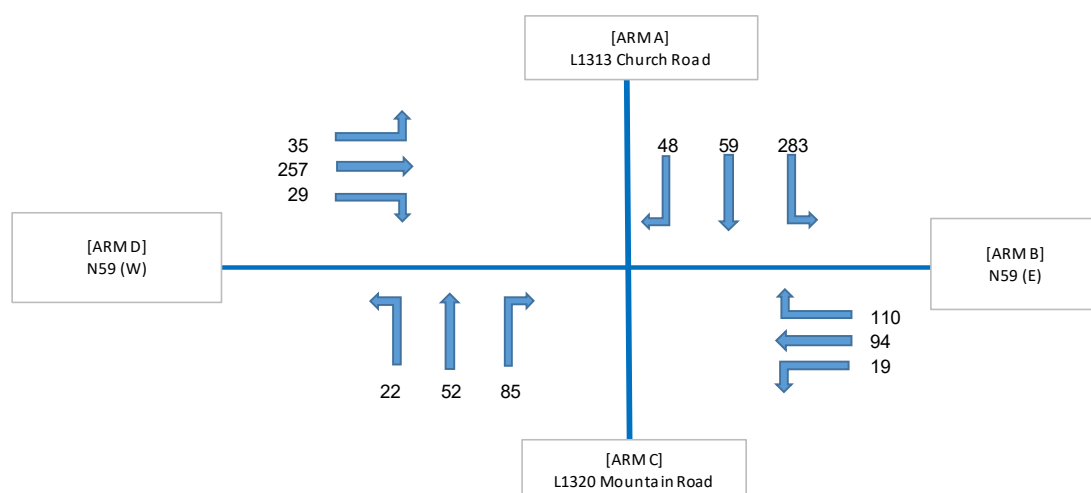


Figure 5-10 Junction 1 - 2023 AM Peak Base with Comm & Prop Development (With Bypass)

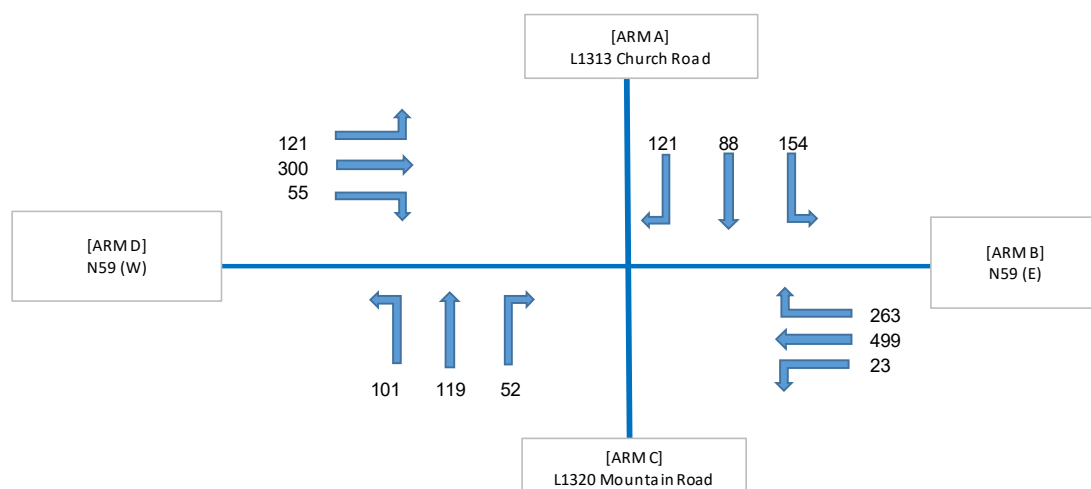


Figure 5-11 Junction 1 - 2023 PM Peak Base with Comm & Prop Development (No Bypass)

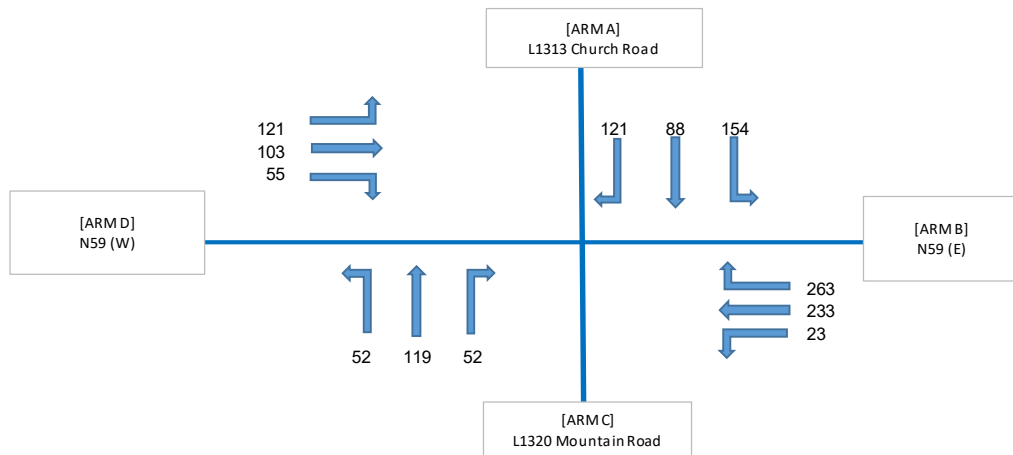


Figure 5-12 Junction 1 - 2023 PM Peak Base with Comm & Prop Development (With Bypass)

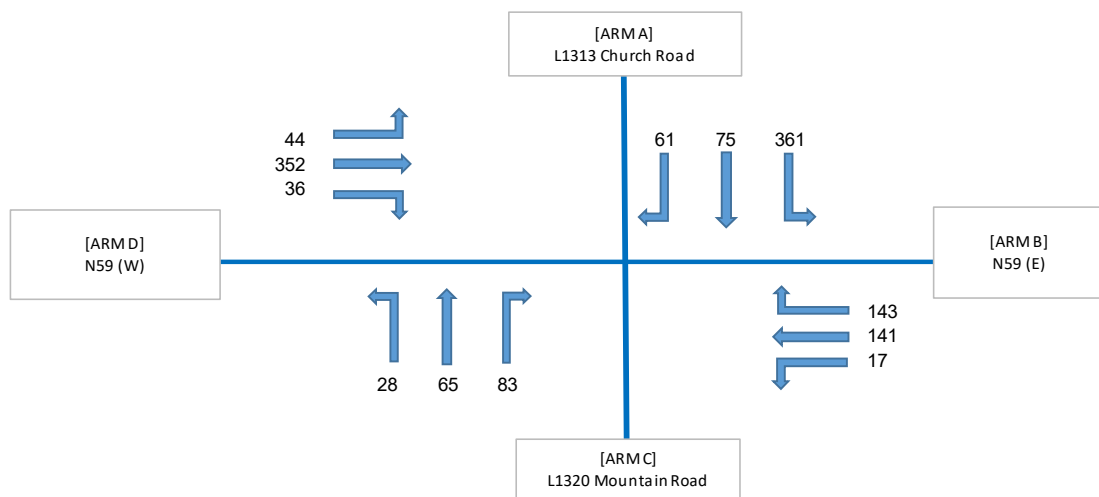


Figure 5-13 Junction 1 - 2038 AM Peak Base (With Bypass)

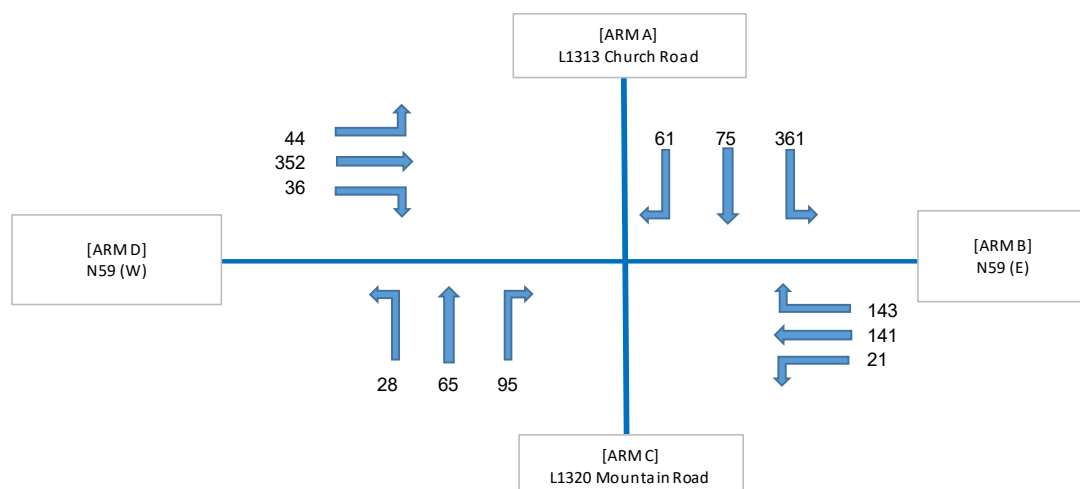


Figure 5-14 Junction 1 - 2038 AM Peak Base with Comm & Prop Development (With Bypass)

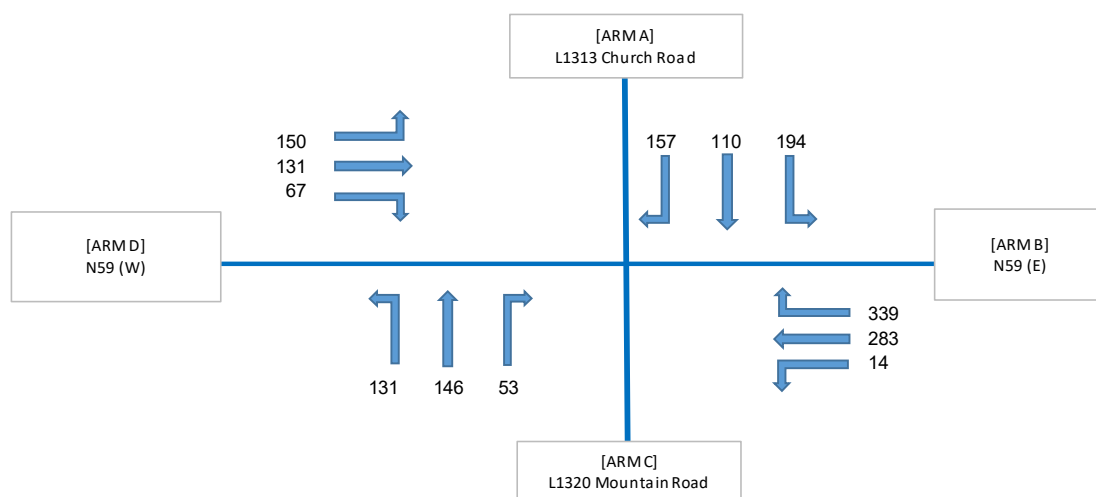


Figure 5-15 Junction 1 - 2038 PM Peak Base (With Bypass)

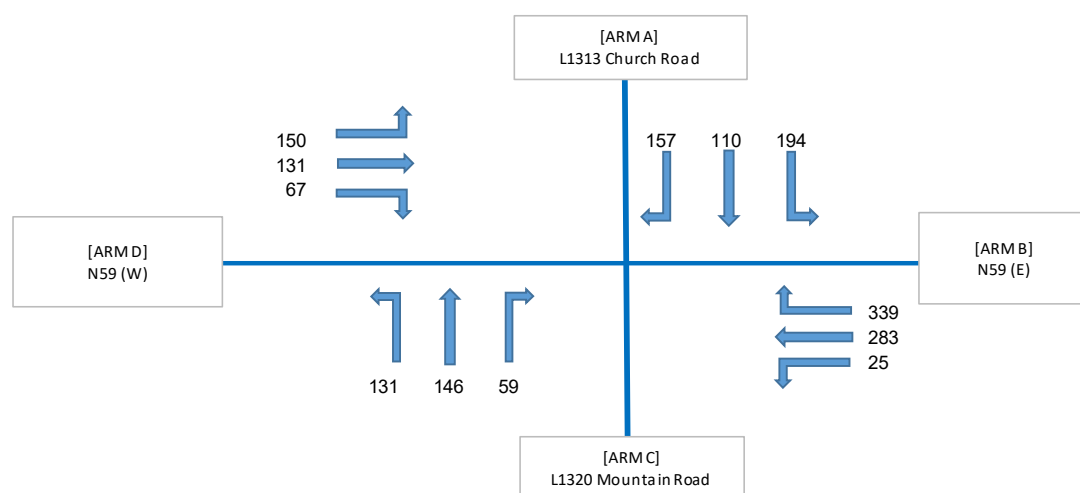


Figure 5-16 Junction 1 - 2038 PM Peak Base with Comm & Prop Development (With Bypass)

6.0 JUNCTION ANALYSIS

6.1 Introduction and Methodology

Junctions have been analysed using JCT Consultancy computer program (LinSig) which is a widely accepted tool used in traffic engineering:

- LinSig, used for the analysis of traffic signal-controlled junctions.

The key parameters examined in the results of the analysis are:

- Degree of Saturation (DOS) - The desirable DOS Values for junctions assessed is less than 0.90 / 90%. Values over 1.00 indicate that the approach arm is over capacity.
- Maximum queue length on any approach to the junctions; and
- Average delay for each vehicle passing through the junction during the modelled period.
- PRC – Practical Reserve Capacity (%) is calculated from the maximum degree of saturation on a Lane controlled by the Stage Stream and is measure of how much additional traffic could pass through a junction by the Stage Stream whilst maintaining a maximum degree of saturation of 90% on all Lanes (LinSig User Guide)

LinSig requires the following input data:

- Basic modelling parameters (usually peak hour traffic counts synthesised over a 90-minute model period)
- Geometric parameters (including lane numbers, widths, visibility, storage provision, etc.)
- Traffic demand data (usually peak hour origin/destination table with composition of heavy goods vehicles input)
- Signal phases,
- Stage sequences,
- Integreen times and
- Controller information.

The LinSig models were calibrated to represent the proposed conditions of the junctions.

For the purpose of this report, the varying vehicle types have been converted into passenger car units (PCU) prior to input. 1 PCU is equivalent to a car / light vehicle while a large HGV is equivalent to 2.3PCU.

The results of the LinSig analysis are presented in the following Sections.

6.2 ASSESSMENT RESULTS

The analysis results for the signalised junction in Moycullen are outlined in the following Sections. The full results of the LinSig software analysis are provided in **Appendix B**.

6.2.1 Junction 1 – L1313 Church Road / Clifden Road N59 (E) / Mountain Road / Clifden Road N59 (W)

The summary of the LinSig analysis for Junction 1 for the forecasted baseflow traffic and with Development traffic for the design years in the morning and evening peak hours is outlined in the following Sections. The results tables indicate the ¹Degree of Saturation, ²Average Delay (PCU/s) and ³Maximum Mean Que (MMQ) for all traffic streams. Full outputs from LinSig are included in **Appendix B**

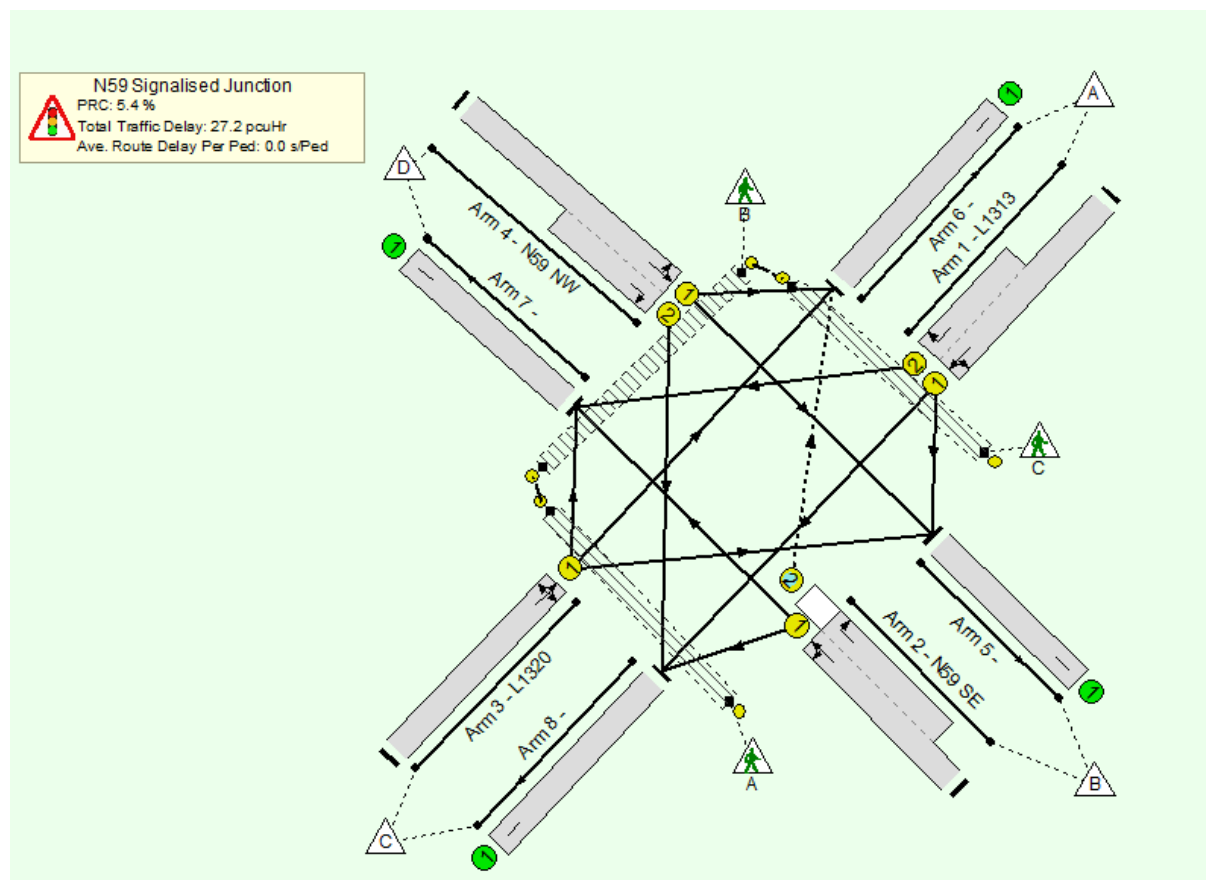


Figure 6-1 Junction 1 Traffic Stream Layout

Sensitivity Growth Factors are as agreed with Galway County Council during scoping. These growth factors are shown in Table 5-2 in the previous section.

¹ Degree of Saturation is defined as the ratio of demand flow to the maximum flow which can be passed through the intersection from a particular approach. (Degree of Saturation = Demand / Capacity). The maximum degree of saturation is 95%.

² Delay (sec/PCU). The average delay per PCU to traffic on the route caused by queuing.

³ The Mean Maximum Queue is the sum of the Maximum Back of Uniform Queue and the Random & Oversaturation Queue. It represents the maximum queue within a typical cycle averaged over all the cycles within the modelled time period.

Table 6-1 Junction 1- 2019 Scenario

Traffic Stream		Time	Cycle Time (s)	Degree of Saturation (%)		Average Delay (PCU/)		Max Queue (PCU)	
				Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Arm 1	Stream 1/2	08:00 - 09:00	120	77.1%		63.8		10.0	
Arm 2	Stream 1/2	08:00 - 09:00	120	31.1%		29.5		4.1	
Arm 3	Stream 1	08:00 - 09:00	120	61.3%		89.0		3.3	
Arm 4	Stream 1/2	08:00 - 09:00	120	78.4%		48.9		17.0	
Arm 1	Stream 1/2	17:00 - 18:00	120	80.6%		75.1		7.7	
Arm 2	Stream 1/2	17:00 - 18:00	120	82.3%		42.3		17.2	
Arm 3	Stream 1	17:00 - 18:00	120	79.0%		84.2		7.9	
Arm 4	Stream 1/2	17:00 - 18:00	120	57.9%		39.4		10.7	

Note. The above figures include central Growth Rates

The LinSig analysis for the design year 2019 indicates that in the junction is operating within capacity for the morning and evening peak hour scenarios, and that the junction has practical reserve capacity (PRC for Signalled Lanes of 14.8% in the morning peak hour and 9.0% in the evening peak hour).

Table 6-2 Junction 1- 2023 no Bypass (With Committed & Proposed Development)

Traffic Stream		Time	Cycle Time (s)	Degree of Saturation (%)		Average Delay (PCU/)		Max Queue (PCU)	
				Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Arm 1	Stream 1/2	08:00 - 09:00	120	95.8%	95.8%	106.1	106.1	18.3	18.3
Arm 2	Stream 1/2	08:00 - 09:00	120	39.0%	40.6%	32.3	33.4	5.0	5.3
Arm 3	Stream 1	08:00 - 09:00	120	90.9%	89.6%	138.3	126.3	8.3	8.4
Arm 4	Stream 1/2	08:00 - 09:00	120	93.7%	96.3%	76.9	89.8	23.8	26.1
Arm 1	Stream 1/2	17:00 - 18:00	120	100.5%	100.5%	150.1	150.1	18.7	18.7
Arm 2	Stream 1/2	17:00 - 18:00	120	102.4%	104.3%	128.1	153.9	41.0	48.1
Arm 3	Stream 1	17:00 - 18:00	120	96.6%	99.2%	134.7	153.8	14.9	16.7
Arm 4	Stream 1/2	17:00 - 18:00	120	74.6%	74.6%	49.1	49.1	14.5	14.5

Note. The above figures include central Growth Rates

The LinSig analysis for the design year 2023 without the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that in the morning peak hour scenarios, Arm 1 is forecast to approach capacity. A slight decrease was recorded for Arm 3 in the morning peak, however, this is a result of the analysis software optimising the delays for all of the Traffic Streams within the junction.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for the majority of Traffic Streams and a slight increase in the MMQ for the majority of Traffic Streams (i.e., for Arm 4, Traffic Stream1/2 the DoS increases from 93.7% to

96.3% and the MMQ from 23.8 PCU to 26.1 PCU). The evening peak hour is similar with Arms 1 and 2 forecast to operate above capacity. Again, the inclusion of the proposed development traffic will result in an increase in the DoS and MMQ for these Traffic Streams.

Table 6-3 Junction 1- 2023 with Bypass (With Committed & Proposed Development)

Traffic Stream		Time	Cycle Time (s)	Degree of Saturation (%)		Average Delay (PCU/)		Max Queue (PCU)	
				Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Arm 1	Stream 1/2	08:00 - 09:00	120	73.8%	73.8%	51.3	51.3	12.1	12.1
Arm 2	Stream 1/2	08:00 - 09:00	120	30.7%	32.5%	38.3	39.5	3.2	3.4
Arm 3	Stream 1	08:00 - 09:00	120	69.9%	70.4%	79.1	77.0	5.8	6.2
Arm 4	Stream 1/2	08:00 - 09:00	120	72.8%	75.5%	58.9	61.9	10.5	10.8
Arm 1	Stream 1/2	17:00 - 18:00	120	70.5%	70.5%	52.2	52.2	8.5	8.5
Arm 2	Stream 1/2	17:00 - 18:00	120	69.4%	72.3%	46.0	47.3	8.4	9.0
Arm 3	Stream 1	17:00 - 18:00	120	69.4%	71.7%	66.2	67.8	7.9	8.2
Arm 4	Stream 1/2	17:00 - 18:00	120	59.8%	59.8%	53.7	53.7	7.3	7.3

Note. The above figures include central Growth Rates

The LinSig analysis for the design year 2023 with the inclusion of the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that for both the morning and evening peak hour scenarios, the junction is forecast to operate within capacity.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for each Stream and a slight increase in the MMQ for each Stream for the morning and evening peak hour scenarios, however the inclusion of the proposed Development traffic is forecast to have minimal effect on the operation of the signalised junction.

Table 6-4 Junction 1- 2038 with Bypass (With Committed & Proposed Development)

Traffic Stream		Time	Cycle Time (s)	Degree of Saturation (%)		Average Delay (PCU/)		Max Queue (PCU)	
				Without Dev.	With Dev.	Without Dev.	With Dev.	Without Dev.	With Dev.
Arm 1	Stream 1/2	08:00 - 09:00	120	94.0%	96.8%	83.3	98.9	20.9	23.1
Arm 2	Stream 1/2	08:00 - 09:00	120	43.2%	44.2%	39.6	39.8	4.8	4.9
Arm 3	Stream 1	08:00 - 09:00	120	90.6%	89.5%	124.9	115.7	9.3	9.4
Arm 4	Stream 1/2	08:00 - 09:00	120	94.8%	94.8%	96.4	96.4	19.6	19.6
Arm 1	Stream 1/2	17:00 - 18:00	120	91.7%	91.7%	79.1	79.1	15.8	15.8
Arm 2	Stream 1/2	17:00 - 18:00	120	90.2%	93.4%	65.8	74.3	14.2	15.7
Arm 3	Stream 1	17:00 - 18:00	120	89.0%	90.7%	85.1	89.9	14.1	14.9
Arm 4	Stream 1/2	17:00 - 18:00	120	83.3%	83.3%	71.8	71.8	11.7	11.7

Note. The above figures include central Growth Rates

The LinSig analysis for the design year 2038 with the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that for both the morning and evening peak hour scenarios, the junction is forecast to operate within capacity. However, Arms 1 and 4 are approaching capacity in the morning peak hour scenario.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for each Stream and a slight increase in the MMQ for each Stream for the morning and evening peak hour scenarios, (the largest impact forecast is for Arm 1, Traffic Stream1/2 for which the Dos increases from 94.0% to 96.8% and the MMQ from 20.9 PCU to 23.1 PCU in the morning peak hour). A slight decrease was recorded for Arm 3 in the morning peak; however, this is a result of the analysis software optimising the delays for all of the traffic Streams within the junction.

Note that the above analysis was carried out with a cycle time of 120 seconds. An increase in the cycle time to 150 seconds results in as increase in the Practical Reserve Capacity for the junction from -7.5% to 5.3% in the morning peak hour and -3.7% to 0.1% in the evening peak hour. The MMQ is also reduced for all Traffic Streams for both scenarios.

7.0 OTHER ROAD ISSUES

7.1 ROAD SAFETY

Visibility splays of 2.4 x 45metres are required at the proposed junctions for traffic leaving the proposed development onto the L-1320 (in accordance with DMURS 2019 Guidelines at the current posted speed limit of 50km/h). The proposed visibility splay of 2.4 x 45 metres is achievable to both the right-hand splay and left hand-splay with clearance of the existing boundary wall / hedgerow and removal of the on street parking along the L-1320.

A Stage 1-2 Road Safety Audit was carried out on the proposed design for the site. The Audit identified a small number of items with the proposed design. These were reviewed and responded to by the Design Team and the Road Safety Audit was signed off by the Audit Team Leader, Designer and the Employer. A copy of the completed Audit is appended to this Report – refer to **Appendix C**.

An investigation of road collision data from the Road Safety Authority website (source: <https://www.rsa.ie/en/RSA/Road-Safety/RSA-Statistics/Collision-Statistics/Ireland-Road-Collisions/>) (see Figure 7-1 for map) indicates that there was 1 serious collisions and 1 fatal recorded collisions in the vicinity of the Junctions since 2005.

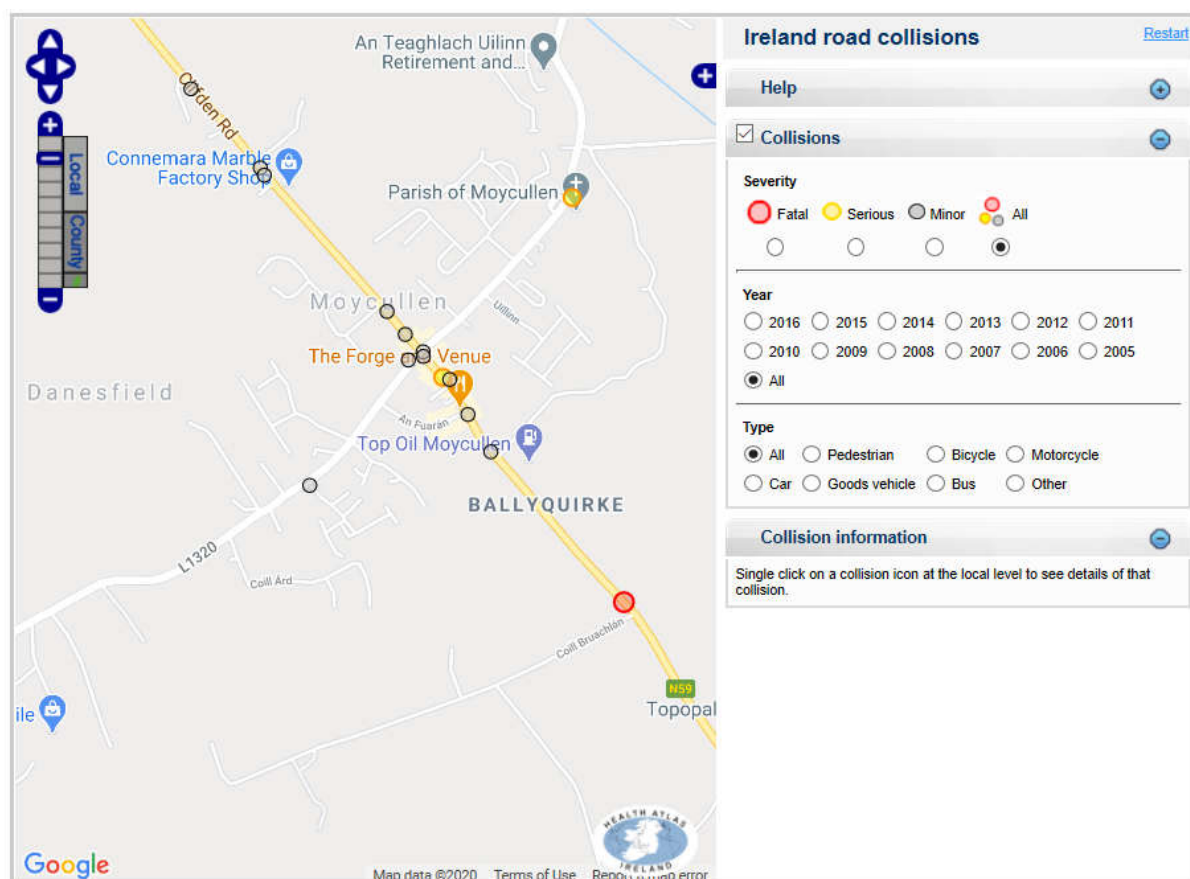


Figure 7-1: RSA Irish Road Collision Statistics

7.2 PARKING PROVISION

The parking provisions at the site have been proposed in accordance with the Galway County Development Plan.

A total of 56 no. car parking spaces will be provided onsite of which 48 are specific to the housing units and 8 to cater for the playground.

7.3 SWEPT PATH ANALYSIS

A Vehicle Swept Path Analysis has been carried out at the site access from the L-1320 to the site and for the internal road's layout. The purpose of the AUTOTRACK analysis is to identify and resolve potential issues and conflict points during the design stage. The analysis undertaken included an articulated vehicle (Collection at Bottle Bank) and refuse truck.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

This Report assessed the potential impact of the proposed development on the surrounding road network. The resulting assessment is summarised as follows:

Junction 1 - Signalised Junction at L1313 Church Road/Clifden Road/L1320 Mountain Road/Clifden Road

The LinSig analysis for the design year 2023 without the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that in the morning peak hour scenarios, Arm 1 is forecast to approach capacity. A slight decrease was recorded for Arm 3 in the morning peak, however, this is a result of the analysis software optimising the delays for all of the Traffic Streams within the junction.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for the majority of Traffic Streams and a slight increase in the MMQ for the majority of Traffic Streams (i.e., for Arm 4, Traffic Stream1/2 the DoS increases from 93.7% to 96.3% and the MMQ from 23.8 PCU to 26.1 PCU). The evening peak hour is similar with Arms 1 and 2 forecast to operate above capacity. Again, the inclusion of the proposed development traffic will result in an increase in the DoS and MMQ for these Traffic Streams.

The LinSig analysis for the design year 2023 with the inclusion of the Bypass (including the base traffic with growth indices applied and inclusion of current Committed Development traffic) indicates that for both the morning and evening peak hour scenarios, the junction is forecast to operate within capacity.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for each Stream and a slight increase in the MMQ for each Stream for the morning and evening peak hour scenarios, however the inclusion of the proposed Development traffic is forecast to have minimal effect on the operation of the signalised junction.

The inclusion of the proposed Development traffic will result in a slight increase in the Degree of Saturation (DoS) for each Stream and a slight increase in the MMQ for each Stream for the morning and evening peak hour scenarios, (the largest impact forecast is for Arm 1, Traffic Stream1/2 for which the Dos increases from 94.0% to 96.8% and the MMQ from 20.9 PCU to 23.1 PCU in the morning peak hour). A slight decrease was recorded for Arm 3 in the morning peak; however, this is a result of the analysis software optimising the delays for all of the traffic Streams within the junction.

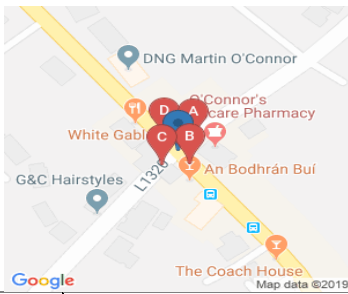
Note that the above analysis was carried out with a cycle time of 120 seconds. An increase in the cycle time to 150 seconds results in as increase in the Practical Reserve Capacity for the junction from -7.5% to 5.3% in the morning peak hour and -3.7% to 0.1% in the evening peak hour. The MMQ is also reduced for all Traffic Streams for both scenarios.

8.2 RECOMMENDATIONS

This report recommends that:

- Site access junction visibility splays should provide at minimum 2.4m x 45m visibility splay at the new access to the L-1320. Visibility splays should be kept free of all restrictions including signage.
- Stop markings and a stop sign should be installed at the main entrance.
- Pedestrian footway links with associated dropped kerbing and tactile paving to be provided at all pedestrian crossing points internally.

Appendix A – Traffic Count Summary



IDASO

Survey Name:

Moycullen Traffic Survey Final Report

Site:

Site 1

Location:

L1313 Church Road/Clifden Road/L1320 Mountain Road/Clifden Road

Date:

17-Jul-2019

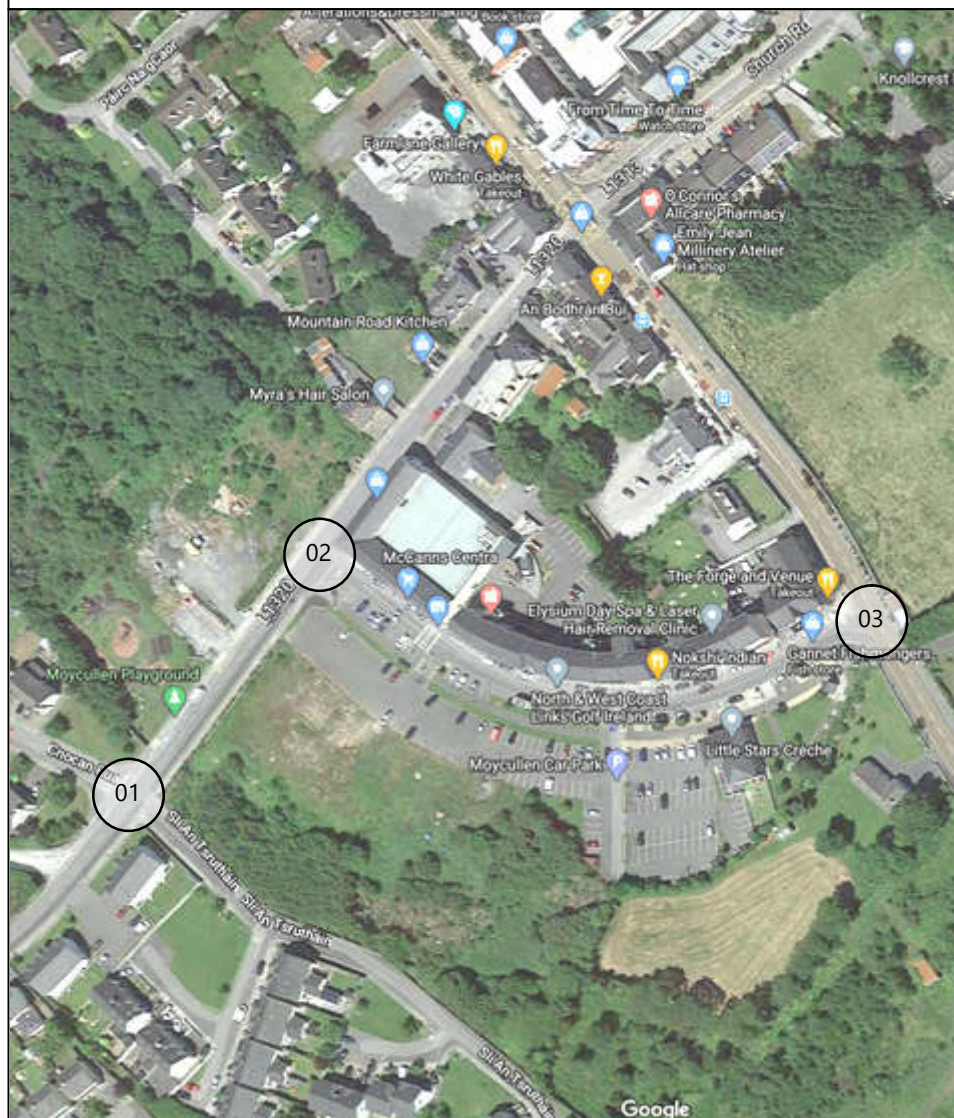
TIME	A-B						TOT	PCU	A-C						TOT	PCU	A-D						TOT	PCU
	CAR	TAXI	LGV	OGV1	OGV2	PSV			CAR	TAXI	LGV	OGV1	OGV2	PSV			CAR	TAXI	LGV	OGV1	OGV2	PSV		
07:00	27	0	3	1	0	0	31	32	1	0	1	0	0	0	2	2	0	0	2	0	0	1	3	4
07:15	28	0	7	0	0	0	35	35	4	0	1	0	0	0	5	5	1	0	0	0	0	0	1	1
07:30	48	0	9	1	1	0	59	61	6	0	0	0	0	0	6	6	3	0	0	0	0	0	3	3
07:45	27	0	3	1	0	0	31	32	10	0	2	1	0	0	13	14	7	0	1	0	0	1	9	10
H/TOT	130	0	22	3	1	0	156	159	21	0	4	1	0	0	26	27	11	0	3	0	0	2	16	18
08:00	35	0	5	1	1	0	42	44	6	0	2	0	0	1	9	10	6	0	2	0	0	0	8	8
08:15	49	1	2	0	0	0	52	52	6	0	4	0	0	0	10	10	6	0	3	0	0	0	9	9
08:30	43	0	5	1	0	0	49	50	9	0	0	2	0	1	12	14	4	0	1	1	0	0	6	7
08:45	36	0	4	0	0	0	40	40	6	0	0	0	0	0	6	6	6	0	1	0	0	0	7	7
H/TOT	163	1	16	2	1	0	183	185	27	0	6	2	0	2	37	40	22	0	7	1	0	0	30	31
09:00	39	0	2	1	0	0	42	43	11	0	0	0	0	0	11	11	6	0	0	0	0	0	6	6
09:15	27	0	3	0	0	0	30	30	5	0	0	0	0	0	5	5	12	0	1	1	0	0	14	15
09:30	29	0	4	0	1	0	34	35	4	0	1	0	0	0	5	5	6	0	2	0	0	0	8	8
09:45	49	0	5	0	1	0	55	56	14	0	2	0	0	0	16	16	16	0	1	0	0	0	17	17
H/TOT	144	0	14	1	2	0	161	164	34	0	3	0	0	0	37	37	40	0	4	1	0	0	45	46
10:00	52	0	4	1	0	0	57	58	14	0	4	0	0	0	18	18	17	0	0	0	0	1	18	19
10:15	27	0	1	0	0	0	28	28	9	0	1	0	0	0	10	10	12	0	2	0	1	0	15	16
10:30	31	0	2	1	0	0	34	35	11	0	1	0	0	0	12	12	12	0	0	0	0	1	13	14
10:45	24	0	2	0	0	0	26	26	10	0	1	0	0	0	11	11	12	0	0	0	0	0	12	12
H/TOT	134	0	9	2	0	0	145	146	44	0	7	0	0	0	51	51	53	0	2	0	1	2	58	61
11:00	34	0	1	0	0	0	35	35	5	0	1	0	0	0	6	6	12	0	1	1	0	0	14	15
11:15	21	0	2	0	0	1	24	25	3	0	2	0	0	0	5	5	13	0	0	0	0	0	13	13
11:30	34	0	3	2	0	0	39	40	9	0	1	0	0	0	10	10	3	0	0	0	0	0	3	3
11:45	13	0	3	1	1	0	18	20	13	0	3	0	0	0	16	16	14	0	0	0	0	0	14	14
H/TOT	102	0	9	3	1	1	116	120	30	0	7	0	0	0	37	37	42	0	1	1	0	0	44	45
12:00	21	0	3	0	0	0	24	24	2	1	1	0	0	0	4	4	12	0	2	0	0	0	14	14
12:15	24	0	4	1	0	0	29	30	8	0	1	1	0	0	10	11	14	0	1	0	0	0	15	15
12:30	18	0	1	1	0	0	20	21	11	0	1	0	0	0	12	12	6	0	4	0	0	0	10	10
12:45	24	0	5	2	0	0	31	32	4	0	1	0	0	0	5	5	7	0	1	0	0	0	8	8
H/TOT	87	0	13	4	0	0	104	106	25	1	4	1	0	0	31	32	39	0	8	0	0	0	47	47
13:00	35	0	3	0	0	0	38	38	9	0	2	2	0	0	13	14	15	0	6	0	0	0	21	21
13:15	25	0	1	0	0	0	26	26	12	0	2	0	0	0	14	14	13	0	2	0	0	0	15	15
13:30	21	0	1	1	0	0	23	24	13	0	2	0	0	0	15	15	11	1	1	0	0	0	13	13
13:45	23	0	4	0	0	0	27	27	5	0	0	0	0	0	5	5	11	0	2	1	0	0	14	15
H/TOT	104	0	9	1	0	0	114	115	39	0	6	2	0	0	47	48	50	1	11	1	0	0	63	64
14:00	30	0	2	1	0	0	33	34	8	0	0	0	0	0	8	8	21	0	2	1	0	0	24	25
14:15	26	2	2	1	0	0	31	32	6	0	1	0	0	0	7	7	4	0	2	0	0	0	6	6
14:30	28	0	4	0	1	0	33	34	16	0	3	0	0	0	19	19	25	0	1	1	0	0	27	28
14:45	30	0	1	3	0	0	34	36	8	0	1	0	0	0	9	9	20	0	2	0	0	0	22	22
H/TOT	114	2	9	5	1	0	131	135	38	0	5	0	0	0	43	43	70	0	7	2	0	0	79	80
15:00	33	0	4	1	0	0	38	39	15	0	4	0	0	0	19	19	17	1	0	0	0	0	18	18
15:15	31	1	5	1	0	0	38	39	8	0	0	0	0	0	8	8	15	0	0	0	0	0	15	15
15:30	15	0	1	0	0	0	16	16	7	0	0	0	0	0	7	7	9	0	4	0	0	0	13	13
15:45	22	1	5	1	1	0	30	32	9	0	0	0	0	1	10	11	12	0	3	0	0	0	15	15
H/TOT	101	2	15	3	1	0	122	125	39	0	4	0	0	1	44	45	53	1	7	0	0	0	61	61
16:00	26	1	2	0	0	0	29	29	14	0	0	0	0	0	14	14	12	0	0	1	0	0	13	14
16:15	23	0	4	0	0	0	27	27	8	0	0	0	0	0	8	8	15	0	3	0	0	0	18	18
16:30	18	0	6	0	1	0	25	26	14	0	2	0	0	0	16	16	17	0	1	0	0	0	18	18
16:45	25	1	5	0	0	0	31	31	9	0	0	0	0	0	9	9	12	0	2	0	0	0	14	14
H/TOT	92	2	17	0	1	0	112	113	45	0	2	0	0	0	47	47	56	0	6	1	0	0	63	64
17:00	23	0	3	0	0	0	26	26	7	0	7	0	0	0	14	14	13	0	1	1	0	0	15	16
17:15	15	0	7	1	0	0	23	24	11	0	2	0	0	0	13	13	9	0	2	0	0	0	11	11
17:30	16	0	6	0	1	0	23	24	13	0	3	0	0	0	16	16	30	0	4	0	0	0	34	34
17:45	31	1	5	1	0	0	38	39	17	0	4	0	0	0	21	21	42	0	2	0	0	0	44	44
H/TOT	85	1	21	2	1	0	110	112	48	0	16	0	0	0	64	64	94	0	9	1	0	0	104	105
18:00	18	0	1	0	0	0	19	19	8	0	3	1	0	0	12	13	30	0	3	0	0	0	33	33
18:15	26	1	3	0	0	0	30	30	8	0	1	0	0	0	9	9	21	0	5	0	0	0	26	26
18:30	32	0	4	0	0	0	36	36	11	0	2	0	0	0	13	13	17	0	2	0	0	0	19	19
18:45	24	0	4	0	1	0	29	30	8	0	1	0	0	0	9	9	16	0	2	0	0	0	18	18
H/TOT	100	1	12	0	1	0	114	115	35	0	7	1	0	0	43	44	84	0	12	0	0	0	96	96
12 TOT	1356	9	166	26	10	1	1568	1595	425	1	71	7	0	3	507	514	614	2	77	8	1	4	706	715

B-A							PCU	B-C							PCU	B-D							PCU	CAR
CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT		CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT		CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT		
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3	0	2	1	0	0	6	7	0	0	0	1	0	0	1	2	10	0	4	0	0	1	15	16	1
5	1	1	1	0	0	8	9	0	0	0	0	0	0	0	0	18	0	3	1	3	0	25	29	5
5	0	4	1	0	0	10	11	0	0	0	0	0	0	0	0	18	1	11	0	2	0	32	35	4
17	1	8	3	0	0	29	31	0	0	0	1	0	0	1	2	52	1	25	3	5	1	87	96	11
8	0	7	1	1	0	17	19	0	0	0	0	0	0	0	0	12	0	5	1	1	0	19	21	7
10	0	4	0	1	0	15	16	0	0	1	0	0	0	1	1	30	0	5	1	0	1	37	39	6
9	0	3	1	0	0	13	14	0	0	0	0	0	0	0	0	26	0	11	2	0	2	41	44	7
15	0	1	2	0	0	18	19	2	0	0	0	0	0	2	2	28	0	2	1	1	5	37	44	4
42	0	15	4	2	0	63	68	2	0	1	0	0	0	3	3	96	0	23	5	2	8	134	147	24
17	0	3	0	0	0	20	20	0	0	1	0	0	0	1	1	36	1	5	1	0	3	46	50	4
18	0	6	0	1	1	26	28	1	0	0	0	0	0	1	1	35	0	6	3	1	4	49	56	9
17	0	5	0	0	0	22	22	1	0	0	0	0	0	1	1	41	1	9	5	0	3	59	65	12
29	0	5	0	1	0	35	36	0	0	0	0	0	0	0	0	39	0	5	1	0	1	46	48	16
81	0	19	0	2	1	103	107	2	0	1	0	0	0	3	3	151	2	25	10	1	11	200	217	41
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15	0	0	0	0	0	15	15	1	0	0	0	0	0	1	1	59	0	8	2	1	1	71	74	10
65	0	5	1	0	0	71	72	10	0	1	0	0	0	11	11	210	0	40	4	2	8	264	277	37
12	0	2	1	0	0	15	16	1	0	0	0	0	0	1	1	37	0	6	2	1	0	46	48	4
28	0	1	0	0	0	29	29	2	0	0	0	0	0	2	2	63	0	6	4	1	0	74	77	5
17	0	2	0	1	0	20	21	0	0	0	0	0	0	0	0	42	1	7	2	0	1	53	55	8
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23	0	5	0	0	0	28	28	1	0	1	0	0	0	2	2	64	1	8	1	0	0	74	75	9
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105	0	11	2	0	0	118	119	7	1	3	0	0	0	11	11	252	2	25	6	3	1	289	297	40
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29	1	6	1	1	0	38	40	1	0	0	0	0	0	1	1	86	2	9	1	0	2	100	103	6
36	1	1	0	0	0	38	38	3	0	0	0	0	0	3	3	78	1	6	3	1	1	90	94	4
142	3	14	1	1	1	162	165	7	0	0	0	0	0	7	7	294	3	27	7	2	5	338	349	38
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33	0	8	0	0	0	41	41	0	0	0	0	0	0	0	0	77	1	5	1	1	3	88	93	13
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42	0	1	0	1	0	44	45	1	0	0	0	0	0	1	1	87	0	10	1	0	0	98	99	24
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48	0	3	0	0	0	51	51	0	0	0	0	0	0	0	0	99	0	9	2	0	1	111	113	20
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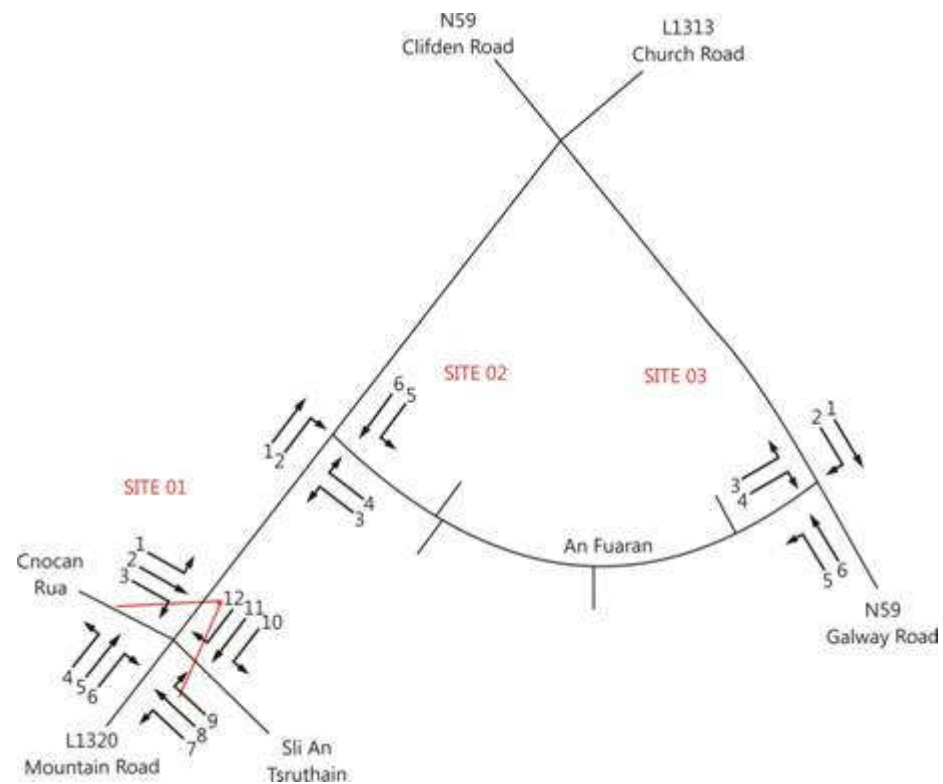
C-A						PCU	C-B						PCU	C-D						PCU				
TAXI	LGV	OGV1	OGV2	PSV	TOT		CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	CAR	TAXI		
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0	1	0	0	0	8	8	7	0	1	0	0	0	8	8	1	0	2	0	0	0	3	3	5	0
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0	2	0	0	0	14	14	4	0	0	0	0	0	4	4	8	0	2	1	0	0	11	12	12	0
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0	5	0	0	0	46	46	17	0	0	0	0	0	17	17	22	0	6	2	0	0	30	31	61	0
0	3	0	0	0	12	12	3	0	1	0	0	0	4	4	5	0	2	0	0	0	7	7	21	0
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1	72	7	3	0	544	551	221	3	17	2	1	1	245	248	420	1	74	8	1	0	504	509	595	2

D-A					TOT	PCU	D-B						TOT	PCU	D-C							TOT	PCU
LGV	OGV1	OGV2	PSV	CAR			TAXI	LGV	OGV1	OGV2	PSV	CAR			TAXI	LGV	OGV1	OGV2	PSV				
2	0	0	0	5	5	67	0	12	1	2	0	82	85	5	0	0	0	0	0	5	5		
0	0	0	0	2	2	83	0	12	2	0	0	97	98	3	0	2	0	0	0	5	5		
2	0	0	0	6	6	90	0	13	3	0	0	106	108	5	0	0	0	0	0	5	5		
3	0	0	0	7	7	82	0	17	4	0	0	103	105	4	0	1	0	0	0	5	5		
7	0	0	0	20	20	322	0	54	10	2	0	388	396	17	0	3	0	0	0	20	20		
2	0	0	0	7	7	87	0	17	1	1	2	108	112	2	0	3	0	0	0	5	5		
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3	0	0	0	6	6	77	1	11	0	2	0	91	94	3	0	2	0	0	0	5	5		
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2	1	0	1	65	67	270	0	30	11	3	2	316	327	23	0	4	1	0	0	28	29		
4	0	0	0	25	25	90	0	7	4	1	0	102	105	1	0	0	0	0	0	1	1		
1	0	0	0	14	14	77	0	8	0	0	3	88	91	7	0	0	0	0	0	7	7		
1	0	0	0	10	10	62	1	6	1	0	0	70	71	6	0	5	0	0	0	11	11		
1	0	1	1	13	15	66	0	8	1	0	1	76	78	4	0	1	0	0	0	5	5		
7	0	1	1	62	64	295	1	29	6	1	4	336	344	18	0	6	0	0	0	24	24		
1	0	0	0	13	13	71	0	5	2	0	1	79	81	7	0	1	0	0	0	8	8		
0	0	0	0	18	18	85	0	14	0	2	0	101	104	3	0	1	1	0	0	5	6		
2	1	0	0	12	13	88	0	11	3	0	3	105	110	5	0	2	0	0	0	7	7		
1	0	0	0	12	12	64	0	4	2	0	0	70	71	3	0	1	0	0	0	4	4		
4	1	0	0	55	56	308	0	34	7	2	4	355	365	18	0	5	1	0	0	24	25		
3	0	0	0	13	13	65	2	10	4	0	0	81	83	5	0	2	0	0	0	7	7		
1	0	0	0	13	13	68	0	9	4	0	0	81	83	8	0	0	0	0	0	8	8		
2	0	0	0	14	14	51	0	9	0	0	2	62	64	11	0	2	0	0	0	13	13		
1	0	0	0	10	10	74	2	2	2	3	0	83	88	7	0	1	0	0	0	8	8		
7	0	0	0	50	50	258	4	30	10	3	2	307	318	31	0	5	0	0	0	36	36		
1	1	0	0	16	17	76	0	9	4	0	1	90	93	5	0	3	0	0	0	8	8		
2	0	0	0	13	13	90	0	3	3	0	0	96	98	8	0	1	1	0	0	10	11		
1	1	0	0	10	11	60	0	6	4	0	0	70	72	2	0	0	1	0	0	3	4		
1	0	0	0	14	14	82	0	17	1	1	0	101	103	9	0	0	0	0	0	9	9		
5	2	0	0	53	54	308	0	35	12	1	1	357	365	24	0	4	2	0	0	30	31		
5	0	0	0	20	20	56	0	5	3	1	0	65	68	11	0	0	0	0	0	11	11		
2	2	0	0	22	23	63	0	7	6	0	3	79	85	6	0	2	0	0	0	8	8		
1	0	0	0	19	19	56	0	8	1	1	2	68	72	4	0	2	0	0	0	6	6		
2	1	0	0	18	19	66	0	4	5	1	6	82	92	6	0	0	0	0	0	6	6		
10	3	0	0	79	81	241	0	24	15	3	11	294	316	27	0	4	0	0	0	31	31		
0	0	0	0	10	10	60	0	7	3	1	1	72	76	4	0	0	0	0	0	4	4		
2	1	0	0	8	9	52	0	6	2	1	1	62	65	6	0	1	0	0	0	7	7		
0	0	0	0	8	8	51	0	11	2	0	4	68	73	5	0	1	0	0	0	6	6		
0	0	1	0	15	16	76	2	7	1	1	2	89	93	8	0	0	0	0	0	8	8		
2	1	1	0	41	43	239	2	31	8	3	8	291	307	23	0	2	0	0	0	25	25		
1	0	0	0	8	8	44	0	5	3	1	4	57	64	5	0	2	0	0	1	8	9		
0	0	0	0	10	10	54	1	4	0	1	1	61	63	8	0	1	0	0	0	9	9		
0	0	0	0	6	6	57	1	4	0	0	0	62	62	7	0	0	0	0	0	7	7		
4	0	0	0	22	22	51	0	8	1	0	0	60	61	6	0	1	0	0	0	7	7		
5	0	0	0	46	46	206	2	21	4	2	5	240	250	26	0	4	0	0	1	31	32		
4	0	0	0	25	25	68	0	11	0	1	1	81	83	9	0	2	0	0	0	11	11		
2	1	0	0	36	37	59	0	7	1	0	3	70	74	10	0	1	0	0	0	11	11		
3	0	0	0	20	20	45	1	6	1	0	2	55	58	10	0	0	0	0	0	10	10		
4	0	0	0	21	21	48	0	9	2	0	2	61	64	3	0	1	0	0	0	4	4		
13	1	0	0	102	103	220	1	33	4	1	8	267	278	32	0	4	0	0	0	36	36		
2	0	0	0	22	22	69	0	5	0	0	1	75	76	5	0	0	0	0	0	5	5		
2	0	0	0	23	23	68	1	6	1	0	0	76	77	4	0	0	0	0	0	4	4		
5	0	0	0	31	31	52	0	6	2	2	1	63	68	6	0	1	0	0	0	7	7		
2	0	0	0	17	17	48	0	5	2	1	1	57	60	6	0	0	1	0	0	7	8		
11	0	0	0	93	93	237	1	22	5	3	3	271	280	21	0	1	1	0	0	23	24		
79	10	2	2	690	700	3236	13	390	94	27	50	3810	3942	271	0	49	5	0	1	326	330		

Site Locations



Movement Numbering



Job number:

TRA/20/110

Client:

Tobin Consulting Engineers

Job date:

6th October 2020

Job day

Tuesday

Drawing No:

TRA/20/110-01

Author:

SPW

traffinomics
ie

OCTOBER 2020
TRA/20/110

LOCATION: L1320 Mountain Road/An Fuaran	DAY: Tuesday	LOCATION: L1320 Mountain Road/An Fuaran	DAY: Tuesday
---	--------------	---	--------------

PCU's Through Junction
38
55
91
89
271
89
106
107
111
412
94
72
57
56
278
64
50
60
54
227
57
67
61
62
246
71
59
71
55
256

OCTOBER 2020
TRA/20/110

LOCATION: L1320 Mountain Road/An Fuaran	DAY: Tuesday	LOCATION: L1320 Mountain Road/An Fuaran	DAY: Tuesday
---	--------------	---	--------------

PCU's Through Junction
91
74
82
74
321
85
81
87
72
325
86
76
68
79
308
90
98
98
98
383
109
108
120
102
439
107
87
77
66
336
3799

Weekly Volume Report NRA 000000001591 2019-01-07 to 2019-02-15

Site Name TMU N59 280.0 S
Site ID 000000001591
Grid 117758236428
Description N59 Between Oughterard and Moycullen, Knockaunranny, Co. Galway

Setup 1591
Channel Each Direction
Time Period 1 hour
Class Any
Exclude data: Holidays & Events

All directions												
	<--	Average of each						-->	Average		Total	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		Workday	7 Day	Count	
00:00:00	22	19	18	26	27	44	40		22	28	1091	
01:00:00	14	11	12	11	11	30	32		12	17	660	
02:00:00	11	16	13	16	15	22	30		14	18	685	
03:00:00	10	12	9	14	14	16	25		12	14	561	
04:00:00	21	16	17	15	16	14	17		17	17	674	
05:00:00	56	52	53	47	47	28	13		51	42	1731	
06:00:00	169	164	157	164	148	51	34		161	127	5242	
07:00:00	548	561	545	533	482	130	57		534	408	16949	
08:00:00	521	553	526	521	511	218	118		526	424	17473	
09:00:00	418	422	432	446	426	338	219		429	386	15645	
10:00:00	346	354	370	350	377	404	285		359	355	14224	
11:00:00	336	337	324	350	377	478	414		345	374	14808	
12:00:00	364	365	368	357	434	503	507		378	414	16375	
13:00:00	395	368	367	397	477	503	548		401	437	17282	
14:00:00	427	426	440	440	568	491	510		460	472	18813	
15:00:00	424	445	452	463	561	450	493		469	470	18785	
16:00:00	529	524	543	546	595	471	534		548	535	21453	
17:00:00	636	615	621	635	646	445	488		631	584	23587	
18:00:00	474	497	499	497	533	358	395		500	465	18770	
19:00:00	287	308	305	334	388	263	282		324	309	12451	
20:00:00	189	196	216	221	252	175	201		215	207	8322	
21:00:00	138	155	175	167	191	133	134		165	156	6293	
22:00:00	94	98	104	104	117	88	71		104	97	3902	
23:00:00	38	46	57	57	78	68	48		55	56	2233	
07-19	5420	5468	5486	5536	5987	4790	4567		5579	5322	214164	
06-22	6203	6291	6339	6423	6965	5412	5218		6444	6121	246472	
06-24	6335	6435	6500	6584	7160	5567	5337		6603	6274	252607	
00-24	6469	6560	6623	6713	7291	5721	5494		6731	6410	258009	
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	08:00:00	11:00:00	11:00:00		07:00:00	08:00:00		
Peak Volume	548	561	545	533	511	478	414		534	424		
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	13:00:00		17:00:00	17:00:00		
Peak Volume	636	615	621	635	646	503	548		631	584		
All Eastbound												
	<--	Average of each						-->	Average		Total	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		Workday	7 Day	Count	
00:00:00	8	5	6	6	5	13	16		6	8	323	
01:00:00	6	3	3	4	4	9	13		4	6	227	
02:00:00	6	6	3	4	4	7	11		5	6	227	
03:00:00	7	6	4	7	7	7	9		6	7	261	
04:00:00	16	12	14	11	13	8	9		13	12	481	
05:00:00	46	43	46	36	40	17	8		42	34	1391	
06:00:00	146	138	132	144	123	37	24		137	106	4401	
07:00:00	446	460	442	434	386	89	38		434	328	13640	
08:00:00	354	371	350	344	346	143	63		353	282	11626	
09:00:00	269	275	284	280	282	218	119		278	247	10031	
10:00:00	207	201	219	210	231	241	150		214	208	8365	
11:00:00	183	183	181	187	213	266	239		189	207	8205	
12:00:00	187	197	192	185	225	271	296		197	222	8753	
13:00:00	202	188	182	203	229	252	303		201	223	8801	
14:00:00	218	220	224	226	285	231	283		235	241	9610	
15:00:00	182	202	202	222	241	201	270		210	217	8649	
16:00:00	196	204	217	209	225	214	278		210	220	8768	
17:00:00	199	203	193	200	214	188	250		202	207	8249	
18:00:00	144	146	147	159	164	152	182		152	156	6233	
19:00:00	113	114	113	126	130	116	124		119	119	4770	
20:00:00	64	64	77	67	75	71	76		69	71	2822	
21:00:00	49	43	62	53	55	47	50		52	51	2057	
22:00:00	30	29	32	25	30	31	30		29	30	1183	
23:00:00	12	10	12	17	24	21	16		15	16	638	
07-19	2788	2850	2834	2860	3042	2466	2472		2875	2759	110930	
06-22	3160	3208	3218	3250	3424	2737	2747		3252	3106	124980	
06-24	3202	3248	3263	3292	3478	2790	2792		3296	3152	126801	
00-24	3290	3322	3338	3361	3550	2851	2858		3372	3224	129711	
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	07:00:00	11:00:00	11:00:00		07:00:00	07:00:00		

Peak Volume	446	460	442	434	386	266	239	434	328		
pm Peak	14:00:00	14:00:00	14:00:00	14:00:00	14:00:00	12:00:00	13:00:00	14:00:00	14:00:00		
Peak Volume	218	220	224	226	285	271	303	235	241		
All Westbound											
	<--	Average of each						-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count	
00:00:00	14	14	13	20	21	31	24	16	20	768	
01:00:00	8	8	8	7	8	21	19	8	11	433	
02:00:00	6	9	10	11	11	15	19	9	12	458	
03:00:00	4	6	6	7	7	9	16	6	8	300	
04:00:00	5	4	3	4	4	6	8	4	5	193	
05:00:00	9	9	7	10	8	11	5	9	8	340	
06:00:00	24	26	25	20	26	14	10	24	21	841	
07:00:00	102	101	103	99	96	42	19	100	80	3309	
08:00:00	167	182	176	177	164	75	54	173	142	5847	
09:00:00	149	147	147	166	144	120	100	150	139	5614	
10:00:00	139	153	151	140	146	164	135	146	147	5859	
11:00:00	153	154	142	164	164	213	175	155	166	6603	
12:00:00	176	168	176	172	210	232	211	180	192	7622	
13:00:00	193	179	185	194	248	251	245	200	214	8481	
14:00:00	210	207	215	214	283	261	226	226	231	9203	
15:00:00	242	243	250	241	320	248	223	259	253	10136	
16:00:00	333	320	326	337	370	257	256	337	314	12685	
17:00:00	437	412	428	435	432	257	238	429	377	15338	
18:00:00	330	351	352	338	369	206	213	348	308	12537	
19:00:00	174	194	192	208	258	147	158	205	190	7681	
20:00:00	124	132	139	154	177	103	125	145	136	5500	
21:00:00	89	113	112	114	136	86	84	113	105	4236	
22:00:00	63	69	73	80	87	57	41	74	67	2719	
23:00:00	27	36	44	39	54	46	33	40	40	1595	
07-19	2632	2618	2653	2676	2945	2324	2095	2705	2563	103234	
06-22	3043	3082	3121	3173	3541	2675	2471	3192	3015	121492	
06-24	3133	3187	3238	3292	3682	2778	2545	3306	3122	125806	
00-24	3179	3237	3285	3352	3741	2871	2636	3359	3186	128298	
am Peak	08:00:00	08:00:00	08:00:00	08:00:00	08:00:00	11:00:00	11:00:00	08:00:00	11:00:00		
Peak Volume	167	182	176	177	164	213	175	173	166		
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	14:00:00	16:00:00	17:00:00	17:00:00		
Peak Volume	437	412	428	435	432	261	256	429	377		
Eastbound											
	<--	Average of each						-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count	
00:00:00	8	5	6	6	5	13	16	6	8	323	
01:00:00	6	3	3	4	4	9	13	4	6	227	
02:00:00	6	6	3	4	4	7	11	5	6	227	
03:00:00	7	6	4	7	7	7	9	6	7	261	
04:00:00	16	12	14	11	13	8	9	13	12	481	
05:00:00	46	43	46	36	40	17	8	42	34	1391	
06:00:00	146	138	132	144	123	37	24	137	106	4401	
07:00:00	446	460	442	434	386	89	38	434	328	13640	
08:00:00	354	371	350	344	346	143	63	353	282	11626	
09:00:00	269	275	284	280	282	218	119	278	247	10031	
10:00:00	207	201	219	210	231	241	150	214	208	8365	
11:00:00	183	183	181	187	213	266	239	189	207	8205	
12:00:00	187	197	192	185	225	271	296	197	222	8753	
13:00:00	202	188	182	203	229	252	303	201	223	8801	
14:00:00	218	220	224	226	285	231	283	235	241	9610	
15:00:00	182	202	202	222	241	201	270	210	217	8649	
16:00:00	196	204	217	209	225	214	278	210	220	8768	
17:00:00	199	203	193	200	214	188	250	202	207	8249	
18:00:00	144	146	147	159	164	152	182	152	156	6233	
19:00:00	113	114	113	126	130	116	124	119	119	4770	
20:00:00	64	64	77	67	75	71	76	69	71	2822	
21:00:00	49	43	62	53	55	47	50	52	51	2057	
22:00:00	30	29	32	25	30	31	30	29	30	1183	
23:00:00	12	10	12	17	24	21	16	15	16	638	
07-19	2788	2850	2834	2860	3042	2466	2472	2875	2759	110930	
06-22	3160	3208	3218	3250	3424	2737	2747	3252	3106	124980	
06-24	3202	3248	3263	3292	3478	2790	2792	3296	3152	126801	
00-24	3290	3322	3338	3361	3550	2851	2858	3372	3224	129711	
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	07:00:00	11:00:00	11:00:00	07:00:00	07:00:00		
Peak Volume	446	460	442	434	386	266	239	434	328		
pm Peak	14:00:00	14:00:00	14:00:00	14:00:00	14:00:00	12:00:00	13:00:00	14:00:00	14:00:00		
Peak Volume	218	220	224	226	285	271	303	235	241		
Westbound											
	<--	Average of each						-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count	
00:00:00	14	14	13	20	21	31	24	16	20	768	

01:00:00	8	8	8	7	8	21	19	8	11	433
02:00:00	6	9	10	11	11	15	19	9	12	458
03:00:00	4	6	6	7	7	9	16	6	8	300
04:00:00	5	4	3	4	4	6	8	4	5	193
05:00:00	9	9	7	10	8	11	5	9	8	340
06:00:00	24	26	25	20	26	14	10	24	21	841
07:00:00	102	101	103	99	96	42	19	100	80	3309
08:00:00	167	182	176	177	164	75	54	173	142	5847
09:00:00	149	147	147	166	144	120	100	150	139	5614
10:00:00	139	153	151	140	146	164	135	146	147	5859
11:00:00	153	154	142	164	164	213	175	155	166	6603
12:00:00	176	168	176	172	210	232	211	180	192	7622
13:00:00	193	179	185	194	248	251	245	200	214	8481
14:00:00	210	207	215	214	283	261	226	226	231	9203
15:00:00	242	243	250	241	320	248	223	259	253	10136
16:00:00	333	320	326	337	370	257	256	337	314	12685
17:00:00	437	412	428	435	432	257	238	429	377	15338
18:00:00	330	351	352	338	369	206	213	348	308	12537
19:00:00	174	194	192	208	258	147	158	205	190	7681
20:00:00	124	132	139	154	177	103	125	145	136	5500
21:00:00	89	113	112	114	136	86	84	113	105	4236
22:00:00	63	69	73	80	87	57	41	74	67	2719
23:00:00	27	36	44	39	54	46	33	40	40	1595
07-19	2632	2618	2653	2676	2945	2324	2095	2705	2563	103234
06-22	3043	3082	3121	3173	3541	2675	2471	3192	3015	121492
06-24	3133	3187	3238	3292	3682	2778	2545	3306	3122	125806
00-24	3179	3237	3285	3352	3741	2871	2636	3359	3186	128298
am Peak	08:00:00	08:00:00	08:00:00	08:00:00	08:00:00	11:00:00	11:00:00	08:00:00	11:00:00	
Peak Volume	167	182	176	177	164	213	175	173	166	
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	14:00:00	16:00:00	17:00:00	17:00:00	
Peak Volume	437	412	428	435	432	261	256	429	377	

Event key:

Accident

Road Works

Special

Road Closed

Holiday

Offline

Weekends and defined holidays

Notes on data:

Weekly (7-day) averages are calculated as the average of workday values and weekend values, weighted in the proportion 5:2.

Holidays & Events:

None

Weekly Volume Report NRA 000000001591 2019-02-25 to 2019-04-12

Site Name TMU N59 280.0 S
Site ID 000000001591
Grid 117758236428
Description N59 Between Oughterard and Moycullen, Knockaunranny, Co. Galway

Setup 1591
Channel Each Direction
Time Period 1 hour
Class Any
Exclude data: Holidays & Events

All directions												
	<--	Average of each						-->	Average		Total	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		Workday	7 Day	Count	
00:00:00	24	19	22	26	33	48	56		25	32	1429	
01:00:00	16	10	12	14	16	31	45		14	20	840	
02:00:00	12	12	14	14	16	22	31		14	17	767	
03:00:00	9	11	11	10	13	17	22		11	13	588	
04:00:00	23	16	17	17	17	14	17		18	17	803	
05:00:00	48	47	46	48	52	27	16		48	41	1932	
06:00:00	160	189	177	179	166	67	37		174	140	6677	
07:00:00	503	599	585	579	528	148	78		559	432	20831	
08:00:00	495	579	573	577	541	263	152		553	456	21691	
09:00:00	425	472	485	506	469	418	277		471	438	20386	
10:00:00	391	418	439	408	440	501	379		419	427	19576	
11:00:00	406	399	393	386	452	531	509		407	440	19982	
12:00:00	432	398	416	423	491	565	558		432	469	21300	
13:00:00	438	411	430	437	533	592	656		450	499	22570	
14:00:00	495	465	487	502	620	558	590		514	531	24290	
15:00:00	493	483	504	522	623	529	563		525	531	24362	
16:00:00	561	581	602	600	637	540	553		596	582	26872	
17:00:00	661	707	690	702	691	528	571		690	649	30179	
18:00:00	524	586	581	594	653	450	500		588	555	25770	
19:00:00	312	353	354	422	448	355	371		378	373	17210	
20:00:00	221	239	249	274	320	233	270		261	258	11876	
21:00:00	153	171	186	214	222	172	158		189	183	8452	
22:00:00	97	115	108	139	145	110	86		121	115	5321	
23:00:00	46	50	54	72	88	79	49		62	63	2893	
07-19	5823	6098	6186	6236	6678	5624	5384		6204	6007	277809	
06-22	6669	7050	7152	7326	7834	6452	6219		7206	6960	322024	
06-24	6812	7215	7314	7537	8068	6641	6355		7389	7138	330238	
00-24	6944	7330	7437	7667	8214	6800	6541		7518	7279	336597	
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	08:00:00	11:00:00	11:00:00		07:00:00	08:00:00		
Peak Volume	503	599	585	579	541	531	509		559	456		
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	13:00:00		17:00:00	17:00:00		
Peak Volume	661	707	690	702	691	592	656		690	649		
All Eastbound												
	<--	Average of each						-->	Average		Total	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		Workday	7 Day	Count	
00:00:00	8	5	7	7	9	14	20		7	10	430	
01:00:00	7	4	4	6	5	12	20		5	8	328	
02:00:00	4	4	3	4	4	9	10		4	6	246	
03:00:00	5	6	5	5	5	6	8		5	6	254	
04:00:00	18	13	14	11	13	8	8		14	12	568	
05:00:00	39	39	41	42	43	14	10		41	33	1560	
06:00:00	137	159	150	153	138	45	26		147	116	5557	
07:00:00	403	480	470	463	411	95	50		445	340	16414	
08:00:00	325	385	376	379	368	170	80		367	299	14246	
09:00:00	263	290	310	305	276	256	134		289	264	12319	
10:00:00	218	237	235	238	256	289	192		237	239	10988	
11:00:00	229	204	208	200	245	282	271		217	234	10647	
12:00:00	232	209	206	215	246	280	313		222	243	11003	
13:00:00	237	208	212	223	253	285	376		227	255	11518	
14:00:00	253	230	251	259	306	255	327		260	268	12259	
15:00:00	231	214	229	250	258	239	304		237	246	11239	
16:00:00	238	235	233	238	222	246	292		233	243	11102	
17:00:00	235	247	227	250	234	224	316		239	246	11271	
18:00:00	186	198	205	219	220	209	279		206	216	9845	
19:00:00	128	147	146	167	166	176	205		151	162	7363	
20:00:00	84	98	95	95	108	102	124		96	100	4582	
21:00:00	56	51	62	62	67	66	73		59	62	2836	
22:00:00	31	31	30	34	42	42	37		34	35	1618	
23:00:00	15	14	16	24	28	27	16		20	20	926	
07-19	3052	3137	3163	3238	3295	2831	2935		3177	3092	142851	
06-22	3456	3592	3616	3714	3774	3219	3362		3630	3531	163189	
06-24	3502	3637	3662	3773	3844	3288	3416		3684	3587	165733	
00-24	3583	3707	3735	3848	3923	3351	3491		3759	3661	169119	
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	07:00:00	10:00:00	11:00:00		07:00:00	07:00:00		

Peak Volume	403	480	470	463	411	289	271	445	340		
pm Peak	14:00:00	17:00:00	14:00:00	14:00:00	14:00:00	13:00:00	13:00:00	14:00:00	14:00:00		
Peak Volume	253	247	251	259	306	285	376	260	268		
All Westbound											
	<--	Average of each						-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count	
00:00:00	16	13	15	20	24	34	36	18	23	999	
01:00:00	9	7	8	8	11	19	25	9	12	512	
02:00:00	8	8	11	10	12	12	21	10	12	521	
03:00:00	5	5	6	5	8	11	14	6	8	334	
04:00:00	5	4	3	6	4	6	9	4	5	235	
05:00:00	9	8	5	6	9	13	6	8	8	372	
06:00:00	23	30	27	26	28	22	12	27	24	1120	
07:00:00	100	119	115	116	117	52	27	113	93	4417	
08:00:00	169	193	198	198	174	93	72	186	157	7445	
09:00:00	162	182	175	201	192	161	142	183	174	8067	
10:00:00	173	182	204	170	185	212	186	183	188	8588	
11:00:00	178	195	185	186	207	249	238	190	205	9335	
12:00:00	199	189	210	208	245	286	245	210	226	10297	
13:00:00	201	203	218	214	280	306	280	223	244	11052	
14:00:00	242	235	236	243	314	304	263	254	263	12031	
15:00:00	262	268	275	272	365	290	259	288	285	13123	
16:00:00	322	346	369	362	415	295	261	363	339	15770	
17:00:00	425	460	463	452	457	304	256	452	403	18908	
18:00:00	338	388	376	375	433	241	221	382	339	15925	
19:00:00	184	205	209	255	282	180	165	227	212	9847	
20:00:00	137	142	154	179	213	132	146	165	157	7294	
21:00:00	97	121	124	153	155	107	85	130	121	5616	
22:00:00	66	83	78	105	103	68	49	87	79	3703	
23:00:00	31	36	38	48	60	52	33	43	43	1967	
07-19	2771	2961	3023	2998	3383	2793	2449	3027	2916	134958	
06-22	3213	3458	3536	3611	4061	3234	2857	3576	3429	158835	
06-24	3310	3577	3652	3764	4223	3353	2939	3705	3551	164505	
00-24	3361	3622	3701	3819	4291	3448	3050	3759	3618	167478	
am Peak	11:00:00	11:00:00	10:00:00	09:00:00	11:00:00	11:00:00	11:00:00	11:00:00	11:00:00		
Peak Volume	178	195	204	201	207	249	238	190	205		
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	13:00:00	17:00:00	17:00:00		
Peak Volume	425	460	463	452	457	306	280	452	403		
Eastbound											
	<--	Average of each						-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count	
00:00:00	8	5	7	7	9	14	20	7	10	430	
01:00:00	7	4	4	6	5	12	20	5	8	328	
02:00:00	4	4	3	4	4	9	10	4	6	246	
03:00:00	5	6	5	5	5	6	8	5	6	254	
04:00:00	18	13	14	11	13	8	8	14	12	568	
05:00:00	39	39	41	42	43	14	10	41	33	1560	
06:00:00	137	159	150	153	138	45	26	147	116	5557	
07:00:00	403	480	470	463	411	95	50	445	340	16414	
08:00:00	325	385	376	379	368	170	80	367	299	14246	
09:00:00	263	290	310	305	276	256	134	289	264	12319	
10:00:00	218	237	235	238	256	289	192	237	239	10988	
11:00:00	229	204	208	200	245	282	271	217	234	10647	
12:00:00	232	209	206	215	246	280	313	222	243	11003	
13:00:00	237	208	212	223	253	285	376	227	255	11518	
14:00:00	253	230	251	259	306	255	327	260	268	12259	
15:00:00	231	214	229	250	258	239	304	237	246	11239	
16:00:00	238	235	233	238	222	246	292	233	243	11102	
17:00:00	235	247	227	250	234	224	316	239	246	11271	
18:00:00	186	198	205	219	220	209	279	206	216	9845	
19:00:00	128	147	146	167	166	176	205	151	162	7363	
20:00:00	84	98	95	95	108	102	124	96	100	4582	
21:00:00	56	51	62	62	67	66	73	59	62	2836	
22:00:00	31	31	30	34	42	42	37	34	35	1618	
23:00:00	15	14	16	24	28	27	16	20	20	926	
07-19	3052	3137	3163	3238	3295	2831	2935	3177	3092	142851	
06-22	3456	3592	3616	3714	3774	3219	3362	3630	3531	163189	
06-24	3502	3637	3662	3773	3844	3288	3416	3684	3587	165733	
00-24	3583	3707	3735	3848	3923	3351	3491	3759	3661	169119	
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	07:00:00	10:00:00	11:00:00	07:00:00	07:00:00		
Peak Volume	403	480	470	463	411	289	271	445	340		
pm Peak	14:00:00	17:00:00	14:00:00	14:00:00	14:00:00	13:00:00	13:00:00	14:00:00	14:00:00		
Peak Volume	253	247	251	259	306	285	376	260	268		
Westbound											
	<--	Average of each						-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count	
00:00:00	16	13	15	20	24	34	36	18	23	999	

01:00:00	9	7	8	8	11	19	25	9	12	512
02:00:00	8	8	11	10	12	12	21	10	12	521
03:00:00	5	5	6	5	8	11	14	6	8	334
04:00:00	5	4	3	6	4	6	9	4	5	235
05:00:00	9	8	5	6	9	13	6	8	8	372
06:00:00	23	30	27	26	28	22	12	27	24	1120
07:00:00	100	119	115	116	117	52	27	113	93	4417
08:00:00	169	193	198	198	174	93	72	186	157	7445
09:00:00	162	182	175	201	192	161	142	183	174	8067
10:00:00	173	182	204	170	185	212	186	183	188	8588
11:00:00	178	195	185	186	207	249	238	190	205	9335
12:00:00	199	189	210	208	245	286	245	210	226	10297
13:00:00	201	203	218	214	280	306	280	223	244	11052
14:00:00	242	235	236	243	314	304	263	254	263	12031
15:00:00	262	268	275	272	365	290	259	288	285	13123
16:00:00	322	346	369	362	415	295	261	363	339	15770
17:00:00	425	460	463	452	457	304	256	452	403	18908
18:00:00	338	388	376	375	433	241	221	382	339	15925
19:00:00	184	205	209	255	282	180	165	227	212	9847
20:00:00	137	142	154	179	213	132	146	165	157	7294
21:00:00	97	121	124	153	155	107	85	130	121	5616
22:00:00	66	83	78	105	103	68	49	87	79	3703
23:00:00	31	36	38	48	60	52	33	43	43	1967
07-19	2771	2961	3023	2998	3383	2793	2449	3027	2916	134958
06-22	3213	3458	3536	3611	4061	3234	2857	3576	3429	158835
06-24	3310	3577	3652	3764	4223	3353	2939	3705	3551	164505
00-24	3361	3622	3701	3819	4291	3448	3050	3759	3618	167478
am Peak	11:00:00	11:00:00	10:00:00	09:00:00	11:00:00	11:00:00	11:00:00	11:00:00	11:00:00	
Peak Volume	178	195	204	201	207	249	238	190	205	
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	13:00:00	17:00:00	17:00:00	
Peak Volume	425	460	463	452	457	306	280	452	403	

Event key:

Accident

Road Works

Special

Road Closed

Holiday

Offline

Weekends and defined holidays

Notes on data: Weekly (7-day) averages are calculated as the average of workday values and weekend values, weighted in the proportion 5:2.

Holidays & Events:

Start	End	Type	Lanes	Included	Description
17/03/2019 00:00	17/03/2019 23:59	Holiday	-	No	Holiday

Weekly Volume Report NRA 000000001591 2019-04-28 to 2019-05-24

Site Name TMU N59 280.0 S
Site ID 000000001591
Grid 117758236428
Description N59 Between Oughterard and Moycullen, Knockaunranny, Co. Galway

Setup 1591
Channel Each Direction
Time Period 1 hour
Class Any
Exclude data: Holidays & Events

All directions												
	<--	Average of each							-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count		
00:00:00	25	21	32	28	36	45	57	28	35	905		
01:00:00	16	13	11	14	23	34	45	15	22	570		
02:00:00	8	14	14	14	17	22	29	14	17	438		
03:00:00	11	14	11	13	14	33	23	13	17	436		
04:00:00	21	19	16	16	16	15	21	17	18	461		
05:00:00	56	56	56	54	53	40	19	55	47	1239		
06:00:00	194	200	187	187	186	90	50	191	155	4092		
07:00:00	570	578	578	552	497	187	89	554	433	11448		
08:00:00	565	616	588	598	585	337	160	592	490	12892		
09:00:00	523	538	531	540	540	523	330	535	500	13056		
10:00:00	467	481	486	503	525	631	451	494	504	13078		
11:00:00	431	474	476	481	524	602	542	480	505	13091		
12:00:00	435	451	453	470	544	608	654	473	519	13421		
13:00:00	438	458	445	498	588	648	631	488	531	13740		
14:00:00	508	493	548	520	672	617	594	550	565	14680		
15:00:00	514	534	560	552	699	617	608	575	585	15207		
16:00:00	645	618	624	618	716	608	636	644	638	16604		
17:00:00	736	719	747	723	784	645	635	742	713	18576		
18:00:00	599	652	646	637	735	527	592	657	630	16427		
19:00:00	366	388	397	455	563	422	456	437	438	11398		
20:00:00	277	282	304	335	425	319	333	327	327	8500		
21:00:00	207	223	235	255	305	212	216	247	238	6196		
22:00:00	134	142	138	164	198	142	117	156	148	3863		
23:00:00	49	66	72	72	105	91	73	74	76	1975		
07-19	6431	6612	6683	6693	7410	6550	5922	6783	6614	172220		
06-22	7475	7704	7806	7925	8888	7593	6977	7985	7773	202406		
06-24	7658	7912	8016	8160	9192	7826	7167	8216	7997	208244		
00-24	7795	8048	8156	8299	9351	8015	7362	8358	8153	212293		
am Peak	07:00:00	08:00:00	08:00:00	08:00:00	08:00:00	10:00:00	11:00:00	08:00:00	11:00:00			
Peak Volume	570	616	588	598	585	631	542	592	505			
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	12:00:00	17:00:00	17:00:00			
Peak Volume	736	719	747	723	784	648	654	742	713			

All Eastbound												
	<--	Average of each							-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count		
00:00:00	8	8	8	8	11	14	19	9	11	285		
01:00:00	5	4	2	4	8	14	20	5	9	216		
02:00:00	2	7	4	5	5	9	12	5	6	161		
03:00:00	6	8	6	6	6	13	8	6	7	191		
04:00:00	19	15	12	9	10	8	9	13	12	301		
05:00:00	46	44	48	45	45	27	9	46	37	984		
06:00:00	163	163	159	156	150	57	31	158	125	3299		
07:00:00	452	455	460	438	385	106	49	437	333	8824		
08:00:00	384	417	396	401	384	188	78	397	319	8423		
09:00:00	301	297	304	315	314	275	147	306	277	7234		
10:00:00	244	254	259	279	276	324	211	264	262	6826		
11:00:00	220	241	250	250	267	280	279	247	256	6645		
12:00:00	208	225	217	232	250	255	334	228	248	6427		
13:00:00	217	228	215	246	261	256	332	234	253	6546		
14:00:00	251	255	278	255	324	265	308	274	278	7229		
15:00:00	236	242	264	260	306	273	343	263	277	7192		
16:00:00	272	260	250	261	273	295	368	263	284	7348		
17:00:00	269	264	274	268	292	328	379	273	297	7694		
18:00:00	244	241	236	242	258	287	360	244	268	6934		
19:00:00	171	170	176	189	200	245	284	182	206	5321		
20:00:00	118	124	132	122	140	154	185	128	140	3632		
21:00:00	87	84	102	85	107	101	107	93	97	2507		
22:00:00	45	54	51	53	62	59	58	53	55	1421		
23:00:00	12	24	25	25	34	33	28	25	26	681		
07-19	3299	3380	3404	3446	3590	3132	3188	3430	3354	87322		
06-22	3837	3920	3974	3999	4187	3689	3796	3991	3922	102081		
06-24	3894	3998	4050	4077	4282	3781	3882	4069	4003	104183		
00-24	3980	4084	4130	4155	4368	3866	3959	4152	4085	106321		
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	07:00:00	10:00:00	11:00:00	07:00:00	07:00:00			
Peak Volume	452	456	460	438	385	324	279	437	333			
pm Peak	16:00:00	17:00:00	14:00:00	17:00:00	14:00:00	17:00:00	17:00:00	14:00:00	17:00:00			
Peak Volume	272	264	278	268	324	328	379	274	297			

All Westbound												
	<--	Average of each							-->	Average		Total
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count		
00:00:00	17	13	23	20	25	32	38	20	24	620		
01:00:00	11	9	8	9	15	20	24	10	14	354		
02:00:00	6	7	10	9	12	13	17	9	11	277		
03:00:00	5	6	6	8	8	20	15	7	10	245		
04:00:00	2	4	5	6	6	7	12	5	6	160		
05:00:00	10	12	8	8	8	14	10	9	10	255		
06:00:00	31	37	28	31	35	33	19	33	30	793		
07:00:00	118	122	118	115	112	82	40	117	100	2624		
08:00:00	181	199	191	197	201	149	82	194	171	4469		
09:00:00	222	241	227	225	226	249	183	229	224	5822		
10:00:00	223	227	227	224	248	307	240	230	241	6252		
11:00:00	212	234	226	231	257	322	263	233	249	6446		
12:00:00	226	226	236	238	294	353	320	245	270	6994		
13:00:00	220	230	230	253	327	391	299	254	278	7194		

14:00:00	257	238	270	264	348	352	286	276	287	7451
15:00:00	278	292	296	292	393	344	265	312	308	8015
16:00:00	373	358	374	357	443	313	268	381	354	9256
17:00:00	467	455	473	455	493	317	256	469	415	10882
18:00:00	355	411	410	395	477	240	233	413	362	9493
19:00:00	195	218	220	266	363	177	172	256	232	6077
20:00:00	159	158	172	212	284	165	147	199	187	4868
21:00:00	121	140	133	170	198	110	109	154	141	3689
22:00:00	89	89	86	110	136	83	59	103	93	2442
23:00:00	37	41	48	47	72	58	45	49	50	1294
07-19	3132	3232	3279	3247	3820	3418	2734	3353	3260	84898
06-22	3638	3784	3832	3926	4701	3904	3181	3994	3850	100325
06-24	3764	3914	3967	4083	4909	4045	3286	4147	3994	104061
00-24	3814	3964	4026	4144	4984	4149	3402	4206	4068	105972
am Peak	10:00:00	09:00:00	09:00:00	11:00:00	11:00:00	11:00:00	11:00:00	11:00:00	11:00:00	
Peak Volume	223	241	227	231	257	322	263	233	249	
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	12:00:00	17:00:00	17:00:00	
Peak Volume	467	455	473	455	493	391	320	469	415	
Eastbound										
	<--	Average of each						-->	Average	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count
00:00:00	8	8	8	8	11	14	19	9	11	285
01:00:00	5	4	2	4	8	14	20	5	9	216
02:00:00	2	7	4	5	5	9	12	5	6	161
03:00:00	6	8	6	6	6	13	8	6	7	191
04:00:00	19	15	12	9	10	8	9	13	12	301
05:00:00	46	44	48	45	45	27	9	46	37	984
06:00:00	163	163	159	156	150	57	31	158	125	3299
07:00:00	452	455	460	438	385	106	49	437	333	8824
08:00:00	384	417	396	401	384	188	78	397	319	8423
09:00:00	301	297	304	315	314	275	147	306	277	7234
10:00:00	244	254	259	279	276	324	211	264	262	6826
11:00:00	220	241	250	250	267	280	279	247	256	6645
12:00:00	208	225	217	232	250	255	334	228	248	6427
13:00:00	217	228	215	246	261	256	332	234	253	6546
14:00:00	251	255	278	255	324	265	308	274	278	7229
15:00:00	236	242	264	260	306	273	343	263	277	7192
16:00:00	272	260	250	261	273	295	368	263	284	7348
17:00:00	269	264	274	268	292	328	379	273	297	7694
18:00:00	244	241	236	242	258	287	360	244	268	6934
19:00:00	171	170	176	189	200	245	284	182	206	5321
20:00:00	118	124	132	122	140	154	185	128	140	3632
21:00:00	87	84	102	85	107	101	107	93	97	2507
22:00:00	45	54	51	53	62	59	58	53	55	1421
23:00:00	12	24	25	25	34	33	28	25	26	681
07-19	3299	3380	3404	3446	3590	3132	3188	3430	3354	87322
06-22	3837	3920	3974	3999	4187	3689	3796	3991	3922	102081
06-24	3894	3998	4050	4077	4282	3781	3882	4069	4003	104183
00-24	3980	4084	4130	4155	4368	3866	3959	4152	4085	106321
am Peak	07:00:00	07:00:00	07:00:00	07:00:00	07:00:00	10:00:00	11:00:00	07:00:00	07:00:00	
Peak Volume	452	456	460	438	385	324	279	437	333	
pm Peak	16:00:00	17:00:00	14:00:00	17:00:00	14:00:00	17:00:00	17:00:00	14:00:00	17:00:00	
Peak Volume	272	264	278	268	324	328	379	274	297	
Westbound										
	<--	Average of each						-->	Average	
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Workday	7 Day	Count
00:00:00	17	13	23	20	25	32	38	20	24	620
01:00:00	11	9	8	9	15	20	24	10	14	354
02:00:00	6	7	10	9	12	13	17	9	11	277
03:00:00	5	6	6	8	8	20	15	7	10	245
04:00:00	2	4	5	6	6	7	12	5	6	160
05:00:00	10	12	8	8	8	14	10	9	10	255
06:00:00	31	37	28	31	35	33	19	33	30	793
07:00:00	118	122	118	115	112	82	40	117	100	2624
08:00:00	181	199	191	197	201	149	82	194	171	4469
09:00:00	222	241	227	225	226	249	183	229	224	5822
10:00:00	223	227	227	224	248	307	240	230	241	6252
11:00:00	212	234	226	231	257	322	263	233	249	6446
12:00:00	226	226	236	238	294	353	320	245	270	6994
13:00:00	220	230	230	253	327	391	299	254	278	7194
14:00:00	257	238	270	264	348	352	286	276	287	7451
15:00:00	278	292	292	292	393	344	265	312	308	8015
16:00:00	373	358	374	357	443	313	268	381	354	9256
17:00:00	467	455	473	455	493	317	256	469	415	10882
18:00:00	355	411	410	395	477	240	233	413	362	9493
19:00:00	195	218	220	266	363	177	172	256	232	6077
20:00:00	159	158	172	212	284	165	147	199	187	4868
21:00:00	121	140	133	170	198	110	109	154	141	3689
22:00:00	89	89	86	110	136	83	59	103	93	2442
23:00:00	37	41	48	47	72	58	45	49	50	1294
07-19	3132	3232	3279	3247	3820	3418	2734	3353	3260	84898
06-22	3638	3784	3832	3926	4701	3904	3181	3994	3850	100325
06-24	3764	3914	3967	4083	4909	4045	3286	4147	3994	104061
00-24	3814	3964	4026	4144	4984	4149	3402	4206	4068	105972
am Peak	10:00:00	09:00:00	09:00:00	11:00:00	11:00:00	11:00:00	11:00:00	11:00:00	11:00:00	
Peak Volume	223	241	227	231	257	322	263	233	249	
pm Peak	17:00:00	17:00:00	17:00:00	17:00:00	17:00:00	13:00:00	12:00:00	17:00:00	17:00:00	
Peak Volume	467	455	473	455	493	391	320	469	415	

Event key:

Accident

Road Works

Special

Road Closed

Holiday

Offline

Notes on data: Weekly (7-day) averages are calculated as the average of workday values and weekend values, weighted in the proportion 5:2.

Holidays & Events:	Start	End	Type	Lanes	Included	Description
	06/05/2019 00:00	06/05/2019 23:59	Holiday	-	No	Holiday

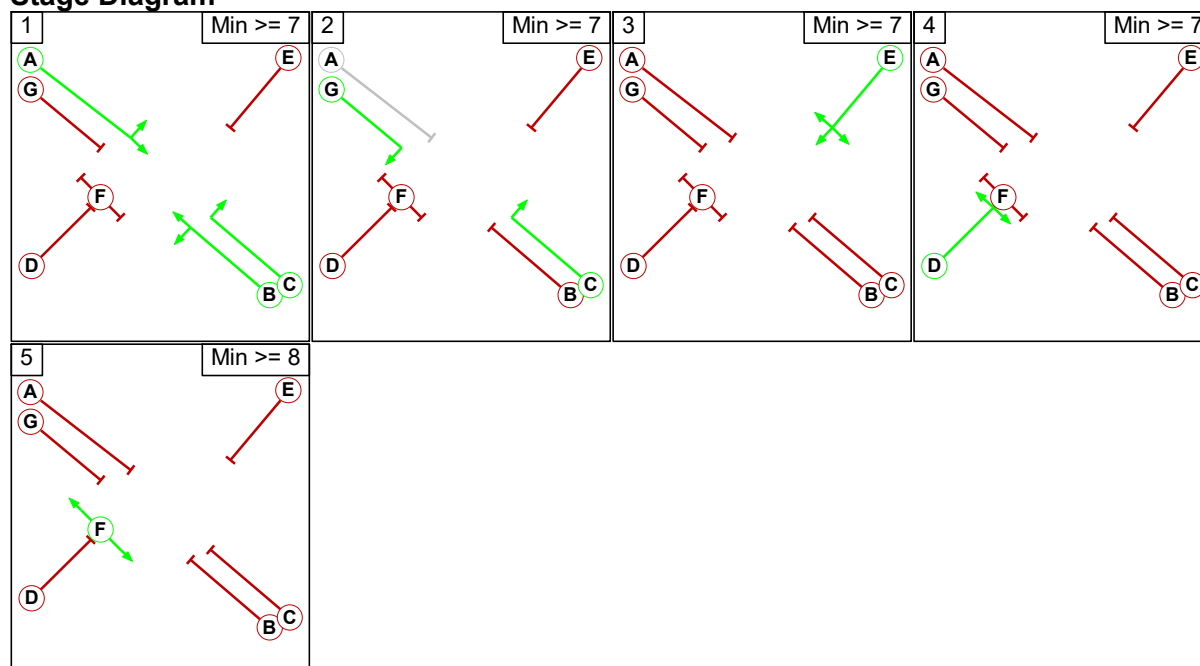
Appendix B – LinSig Detailed Outputs

Basic Results Summary
Basic Results Summary

User and Project Details

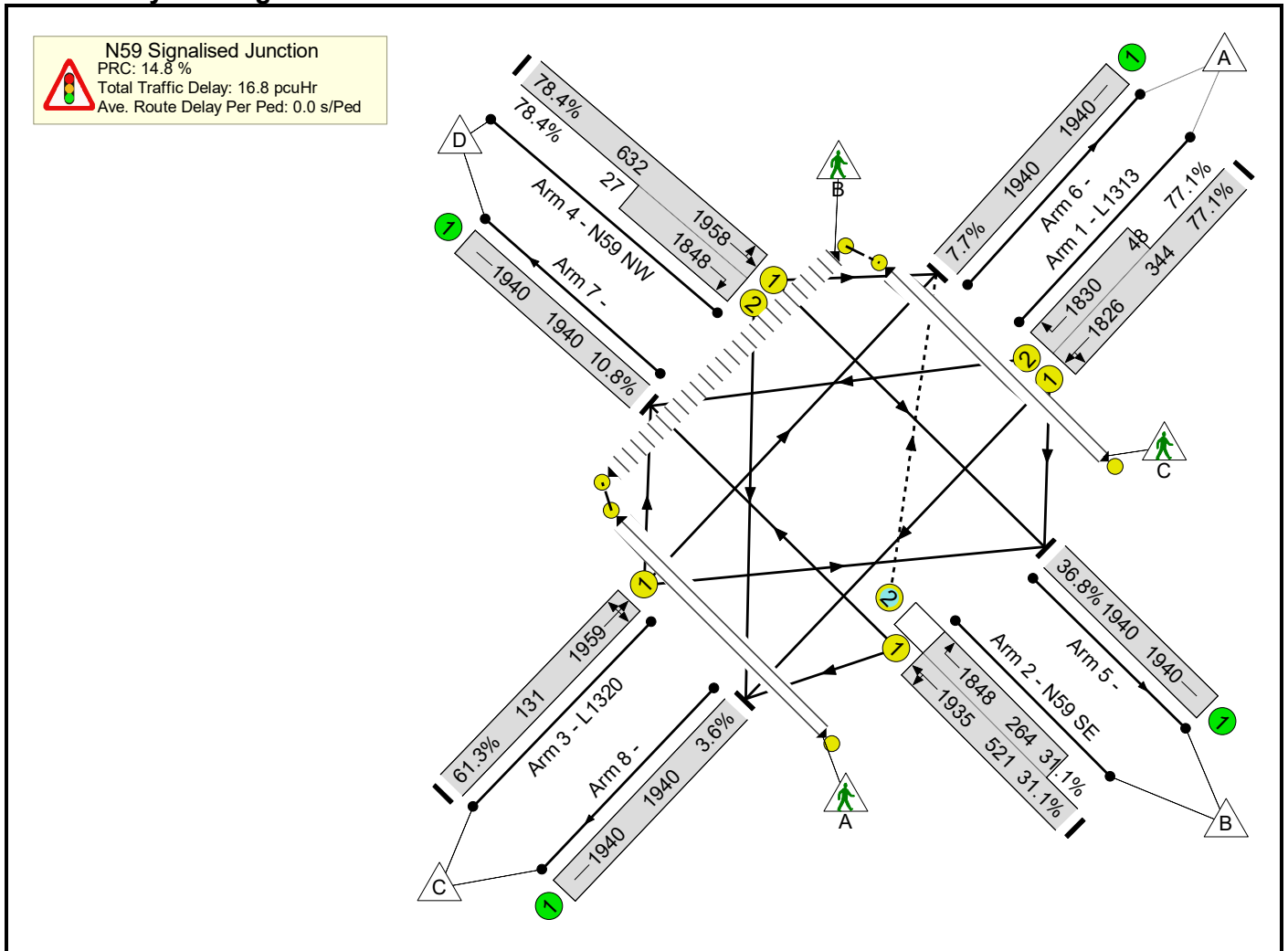
Project:	31 Unit Housing Development
Title:	N59 Moycullen Signalised Junction
Location:	Moycullen, Co Galway
Client:	Galway City Council
Site Ref(s):	10578
Date Started:	05.11.2020
Checked By:	M Geraghty
Additional detail:	
File name:	10578 N59 Linsig Model.lsg3x
Author:	D Burke
Company:	Tobin Consulting Engineers
Address:	Fairgreen House, Fairgreen Road, Galway

Stage Diagram



Scenario 1: 'AM Peak Existing 2019' (FG1: 'AM Peak Existing 2019', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



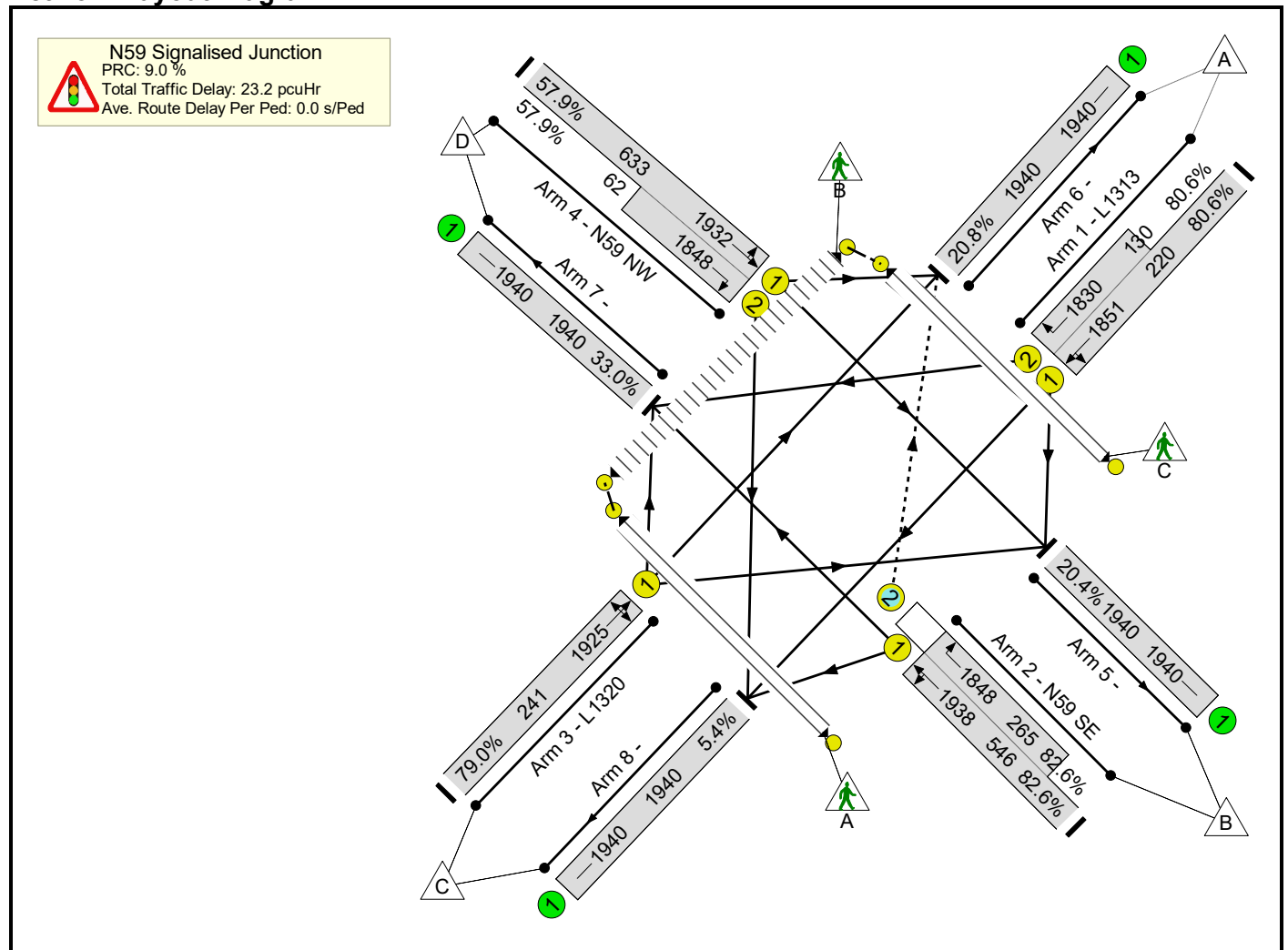
Network Results

C1 - Moycullen 6 Stage /RLM/ MOVA With out loop	PRC for Signalled Lanes (%):	14.8	Total Delay for Signalled Lanes (pcuHr):	16.35	Cycle Time (s): 120
	PRC Over All Lanes (%):	14.8	Total Delay Over All Lanes (pcuHr):	16.76	

Basic Results Summary

Scenario 2: 'PM Peak Existing 2019' (FG2: 'PM Peak Existing 2019', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

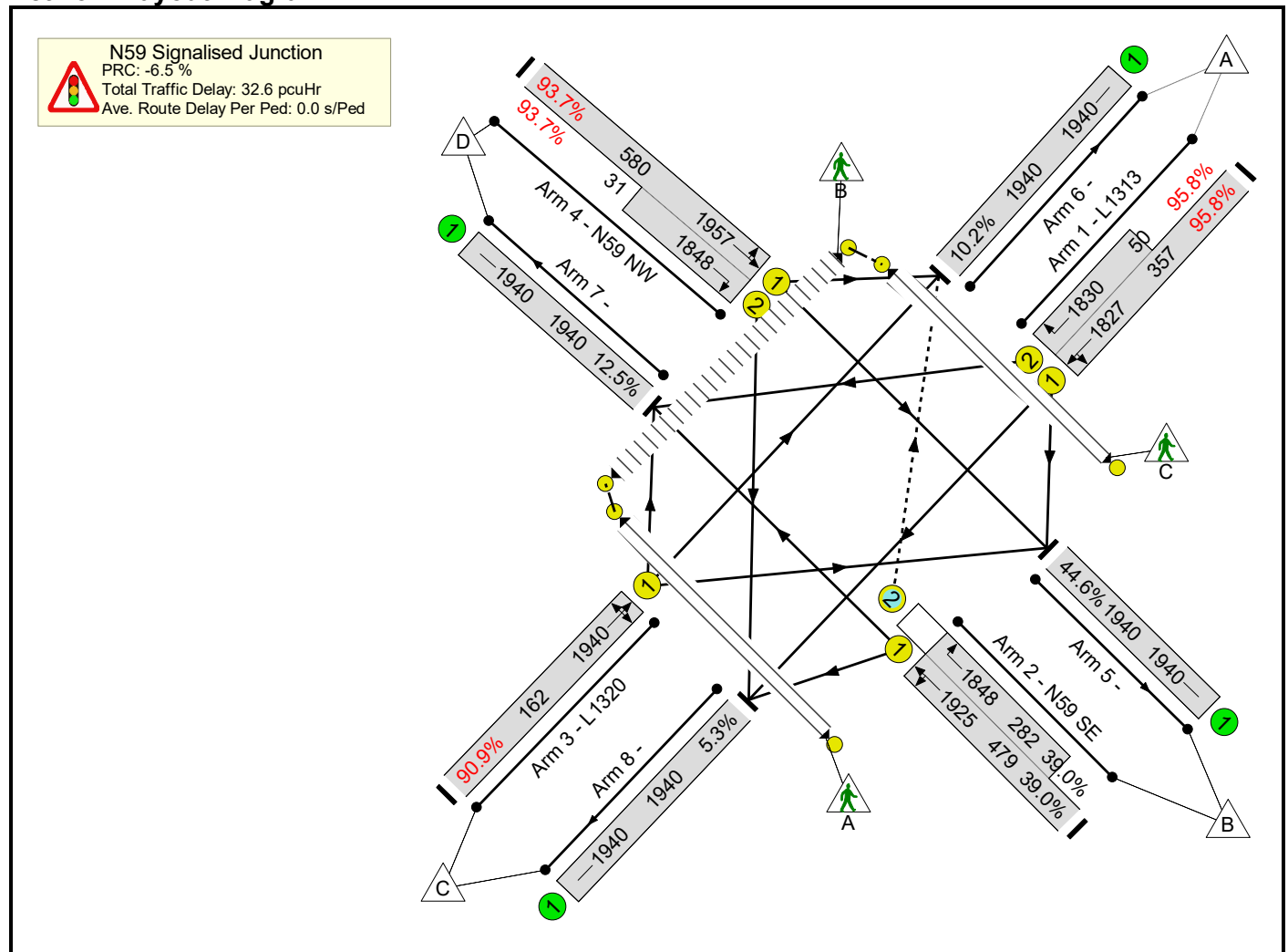
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: N59 Moycullen Signalised Junction	-	-	-		-	-	-	-	-	-	82.6%	197	18	4	23.2	-	-
N59 Signalised Junction	-	-	-		-	-	-	-	-	-	82.6%	197	18	4	23.2	-	-
1/1+1/2	L1313 Left Right Ahead	U	E		1	14	-	282	1851:1830	220+130	80.6 : 80.6%	-	-	-	5.9	75.1	7.7
2/1+2/2	N59 SE Right Ahead Left	U+O	B C		1	41:53	-	670	1938:1848	546+265	82.6 : 82.6%	197	18	4	7.9	42.3	17.2
3/1	L1320 Right Ahead Left	U	D		1	14	-	190	1925	241	79.0%	-	-	-	4.4	84.2	7.9
4/1+4/2	N59 NW Ahead Left Right	U	A G		1	41:7	-	403	1932:1848	633+62	57.9 : 57.9%	-	-	-	4.4	39.4	10.7
5/1		U	-		-	-	-	396	1940	1940	20.4%	-	-	-	0.1	1.2	0.1
6/1		U	-		-	-	-	404	1940	1940	20.8%	-	-	-	0.1	1.2	2.3
7/1		U	-		-	-	-	641	1940	1940	33.0%	-	-	-	0.2	1.4	0.2
8/1		U	-		-	-	-	104	1940	1940	5.4%	-	-	-	0.0	1.0	0.0
Ped Link: P1	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
C1 - Moycullen 6 Stage /RLM/ MOVA With out loop				PRC for Signalised Lanes (%):		9.0	PRC Over All Lanes (%):		9.0	Total Delay for Signalised Lanes (pcuHr):		22.62	Total Delay Over All Lanes(pcuHr):		23.16	Cycle Time (s): 120	

Basic Results Summary

Scenario 3: 'AM Peak No Dev 2023' (FG3: 'AM Peak No Dev 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

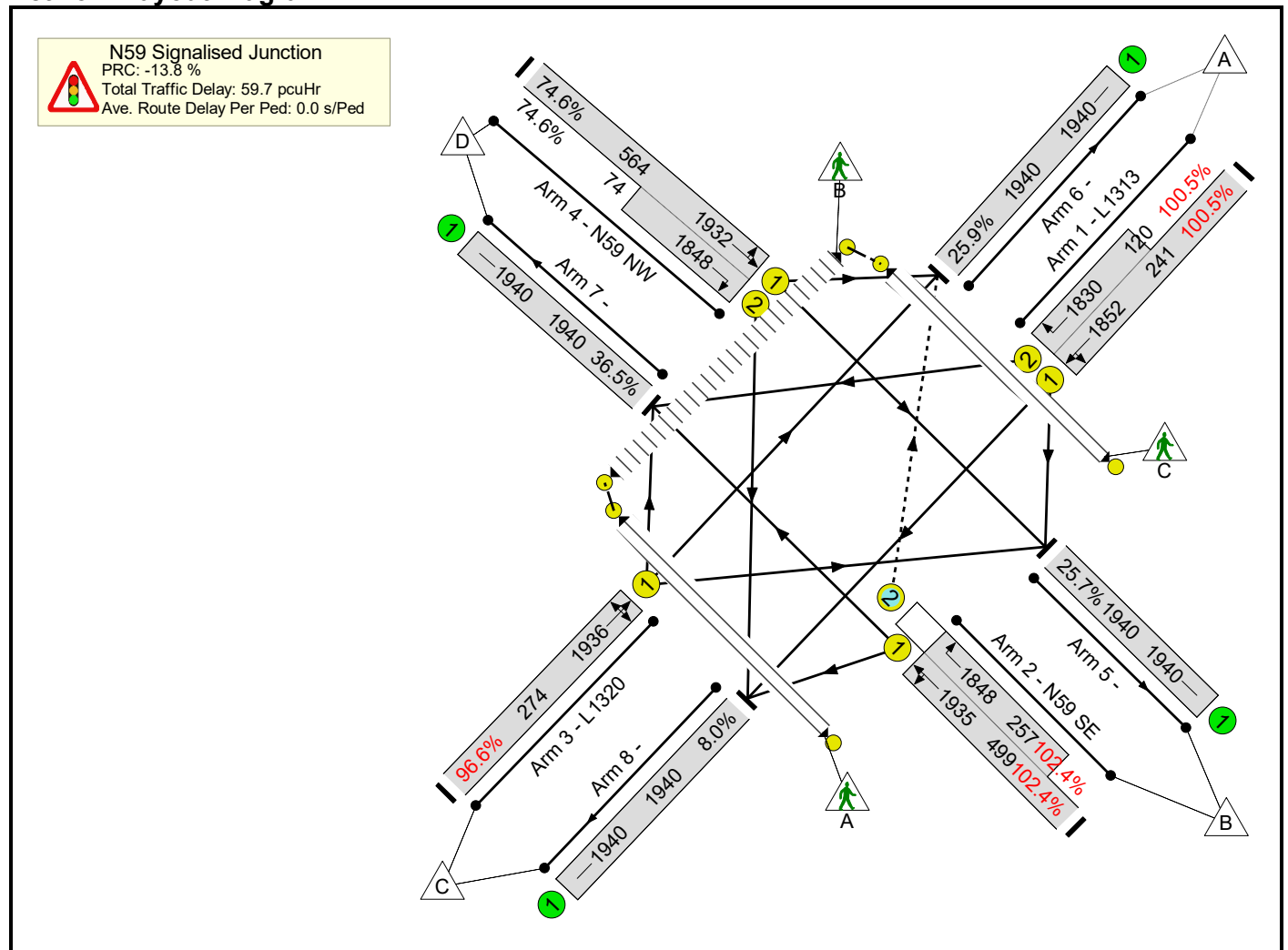


Network Results

Basic Results Summary

Scenario 4: 'PM Peak No Dev 2023' (FG4: 'PM Peak No Dev 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



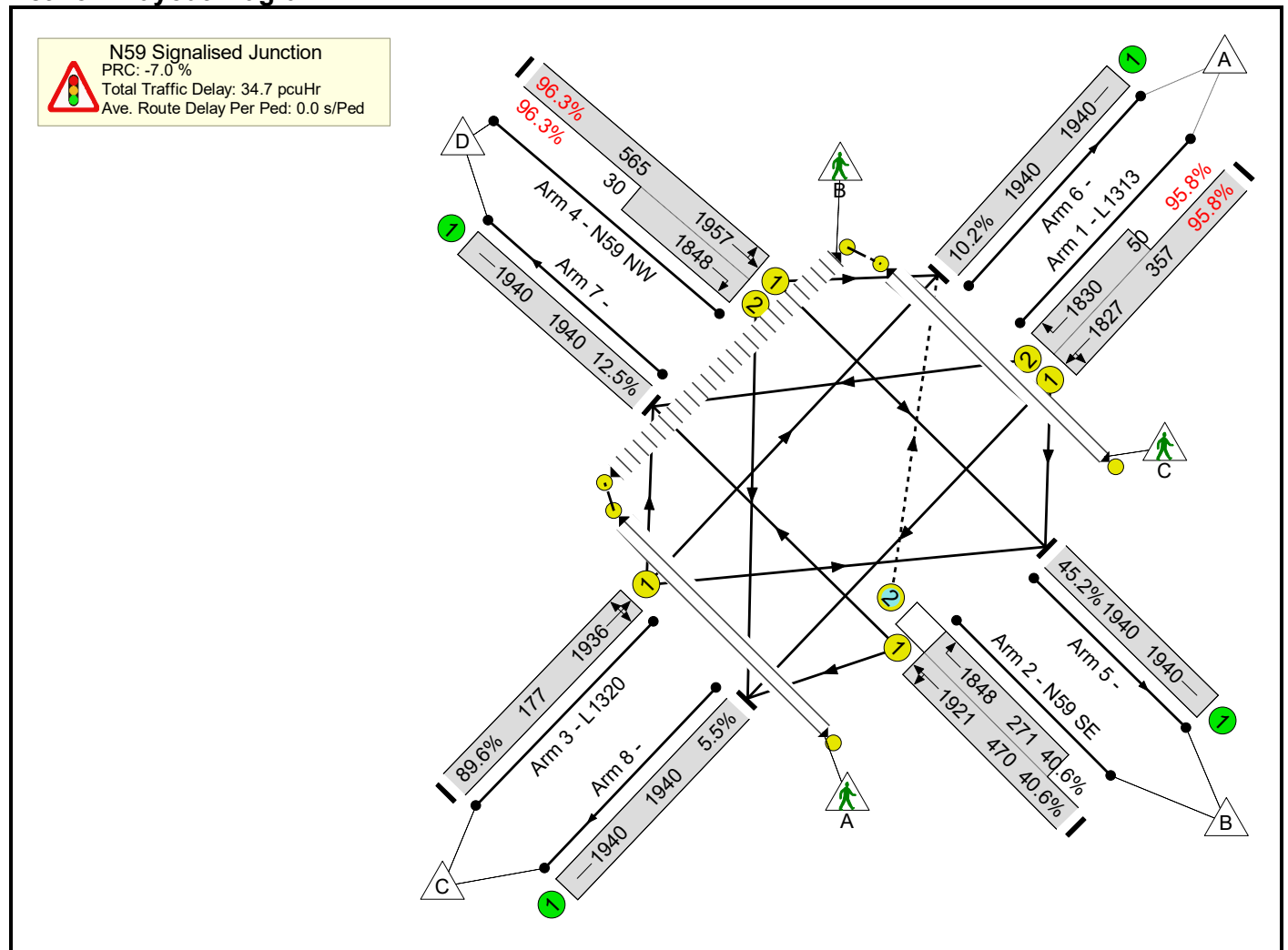
Network Results

59.07 Cycle Time (s): 120

Basic Results Summary

Scenario 5: 'AM Peak With Dev 2023' (FG5: 'AM Peak With Dev (no Bypass) 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



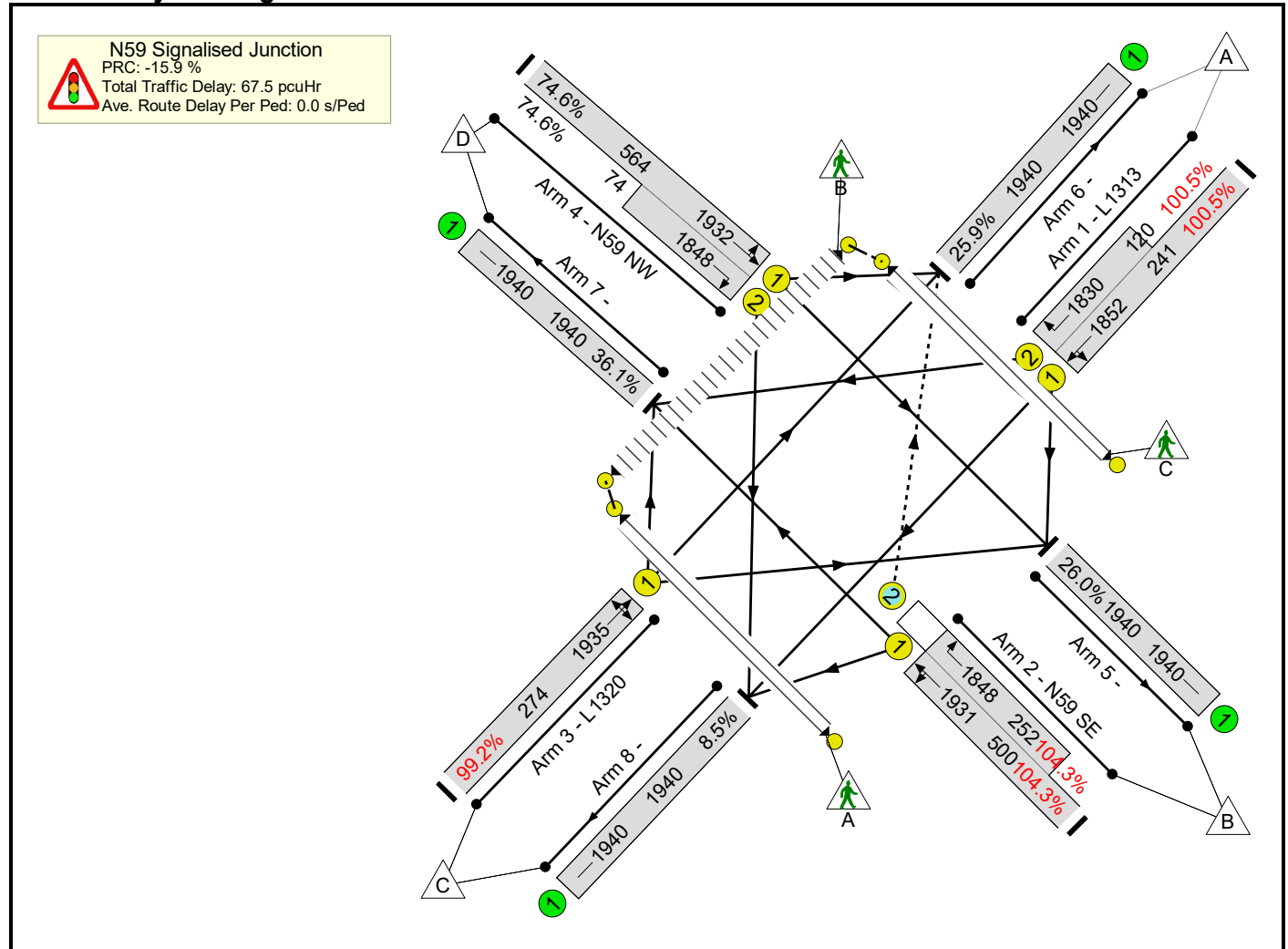
Network Results

[illegible]

Basic Results Summary

Scenario 6: 'PM Peak With Dev 2023' (FG6: 'PM Peak With Dev (no Bypass) 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Network Results

C1 - Moycullen 6 Stage /RLM/ MOVA With out loop	PRC for Signalled Lanes (%): -15.9	Total Delay for Signalled Lanes (pcuHr): 66.79	Cycle Time (s): 120
	PRC Over All Lanes (%): -15.9	Total Delay Over All Lanes(pcuHr): 67.47	

PRC for Signalled Lanes (%):	-15.9
PRC Over All Lanes (%):	-15.9

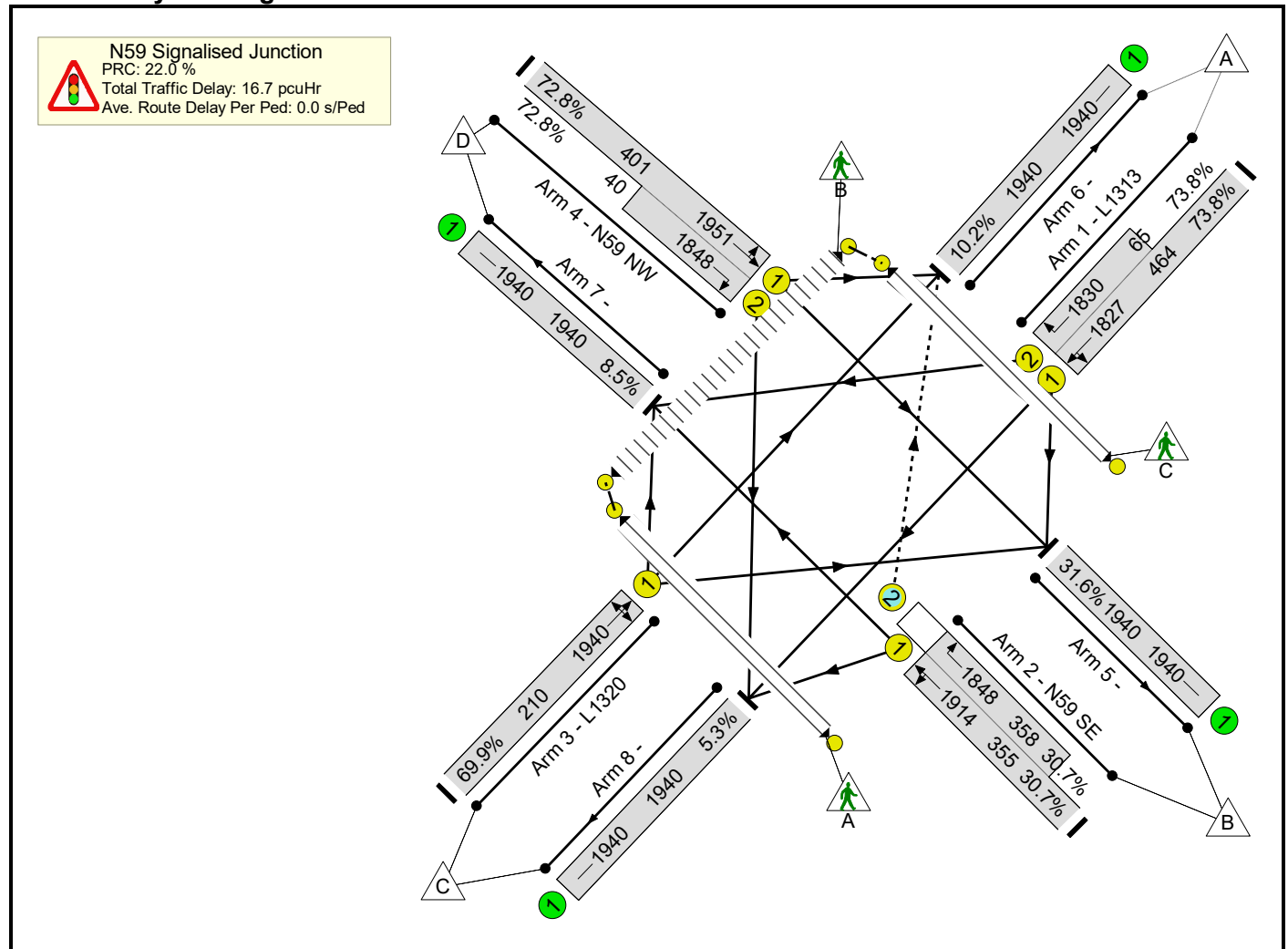
Total Delay for Signalled Lanes (pcuHr):
Total Delay Over All Lanes(pcuHr):

66.79 Cycle Time (s): 120

Basic Results Summary

Scenario 7: 'AM Peak No Dev and Bypass 2023' (FG7: 'AM Peak No Dev and Bypass 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



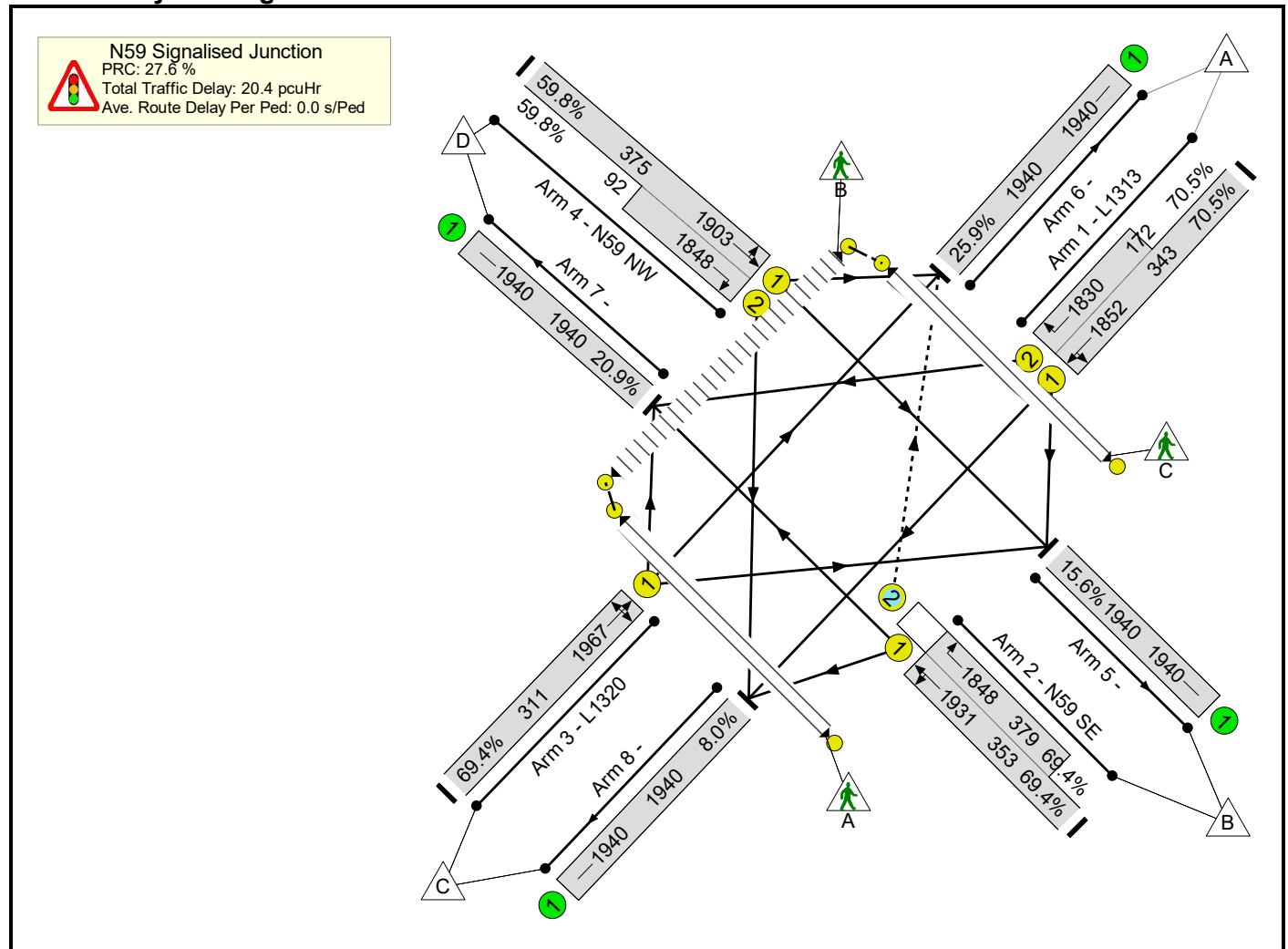
Network Results

C1 - Moycullen 6 Stage /RLM/ MOVA With out loop	PRC for Signalled Lanes (%):	22.0	Total Delay for Signalled Lanes (pcuHr):	16.37	Cycle Time (s): 120
	PRC Over All Lanes (%):	22.0	Total Delay Over All Lanes (pcuHr):	16.73	

Basic Results Summary

Scenario 8: 'PM Peak No Dev and Bypass 2023' (FG8: 'PM Peak No Dev and Bypass 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

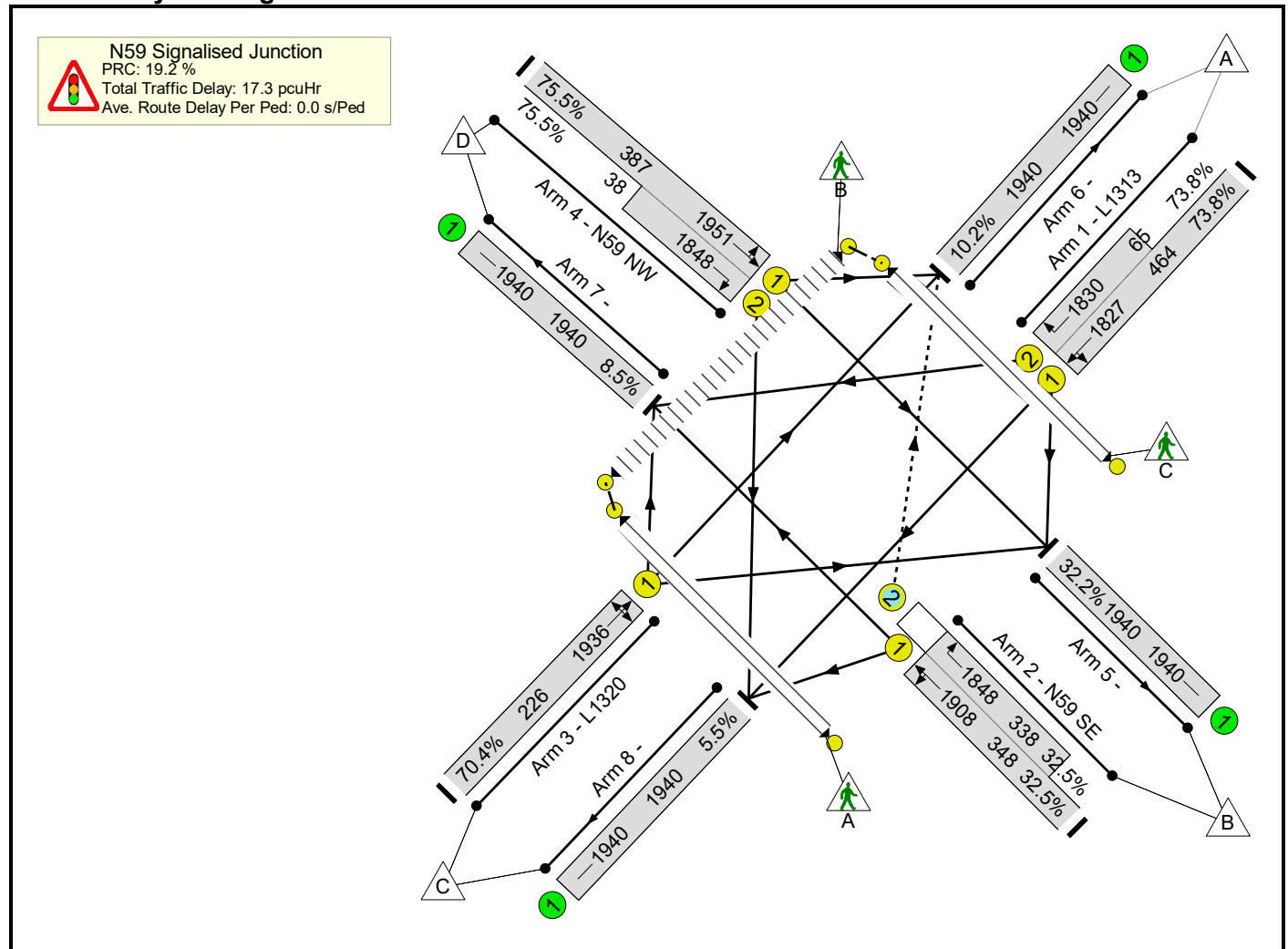


Network Results

Basic Results Summary

Scenario 9: 'AM Peak With Dev and Bypass 2023' (FG9: 'AM Peak With Dev and Bypass 2023 ', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

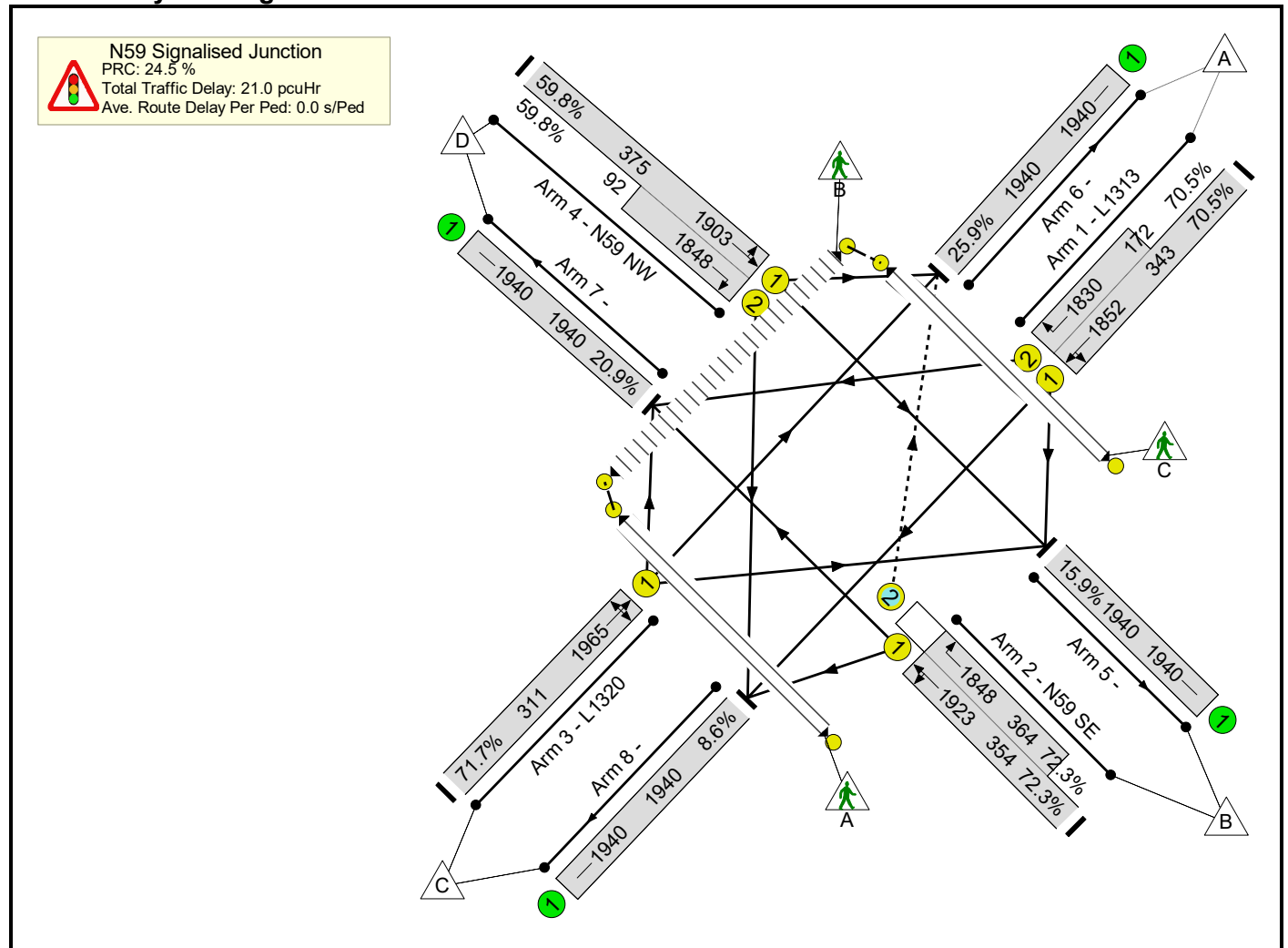


Network Results

Basic Results Summary

Scenario 10: 'PM Peak With Dev and Bypass 2023' (FG10: 'PM Peak With Dev and Bypass 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



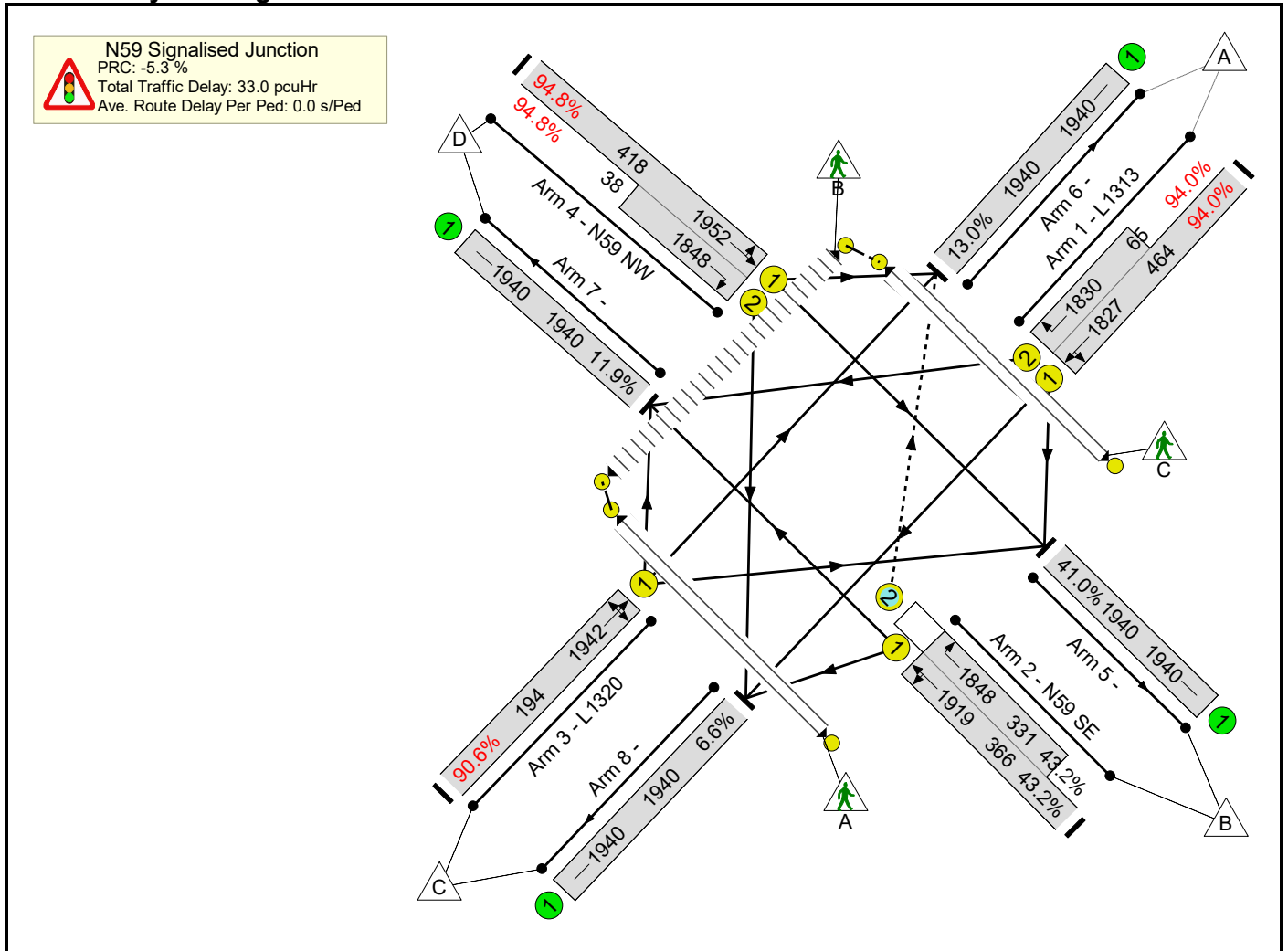
Network Results

Cycle Time (s): 120

Basic Results Summary

Scenario 11: 'AM Peak No Dev 2038' (FG11: 'AM Peak No Dev and Bypass 2038', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



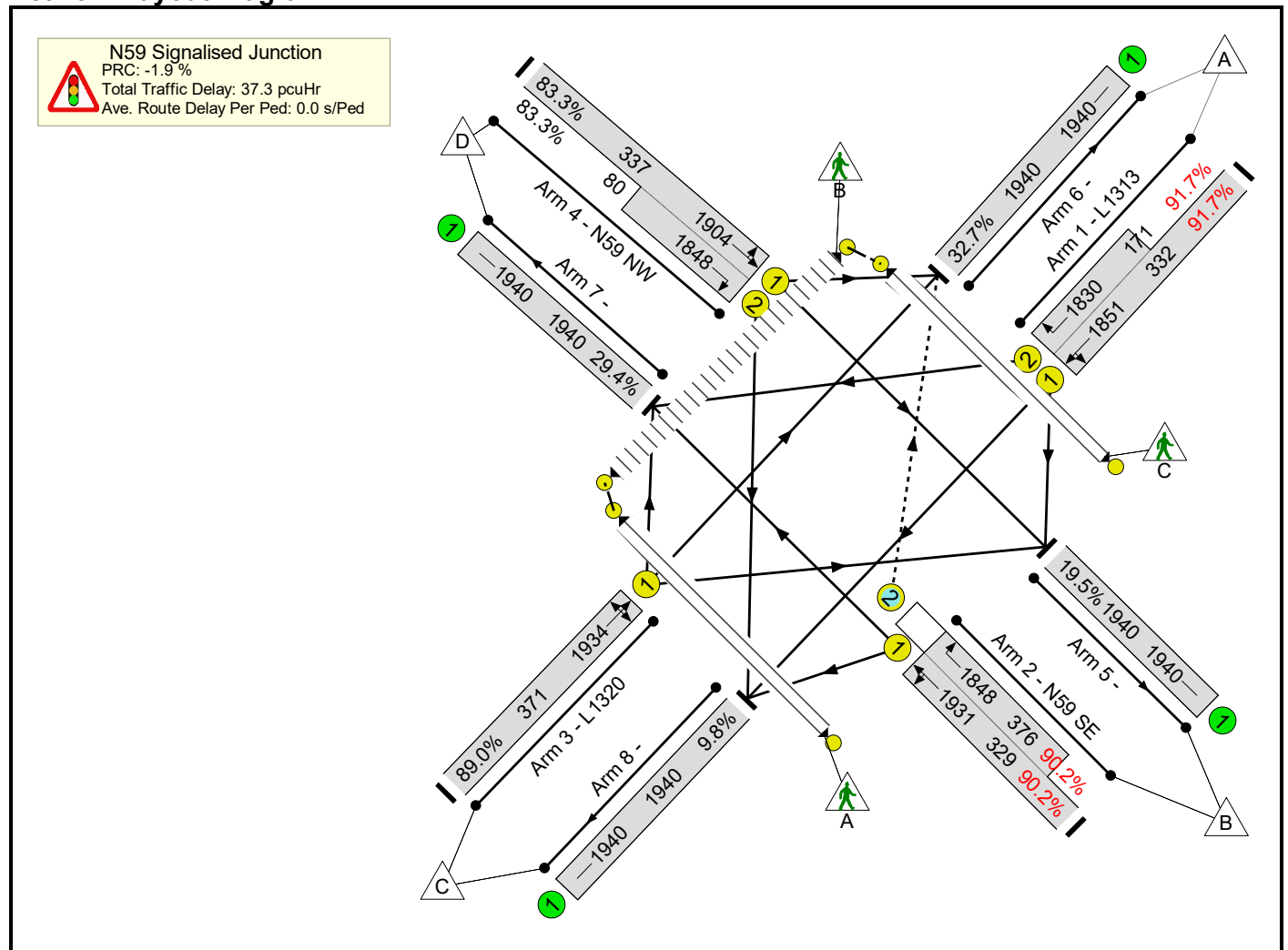
Network Results

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

Basic Results Summary

Scenario 12: 'PM Peak No Dev 2038' (FG12: 'PM Peak No Dev and Bypass 2038', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

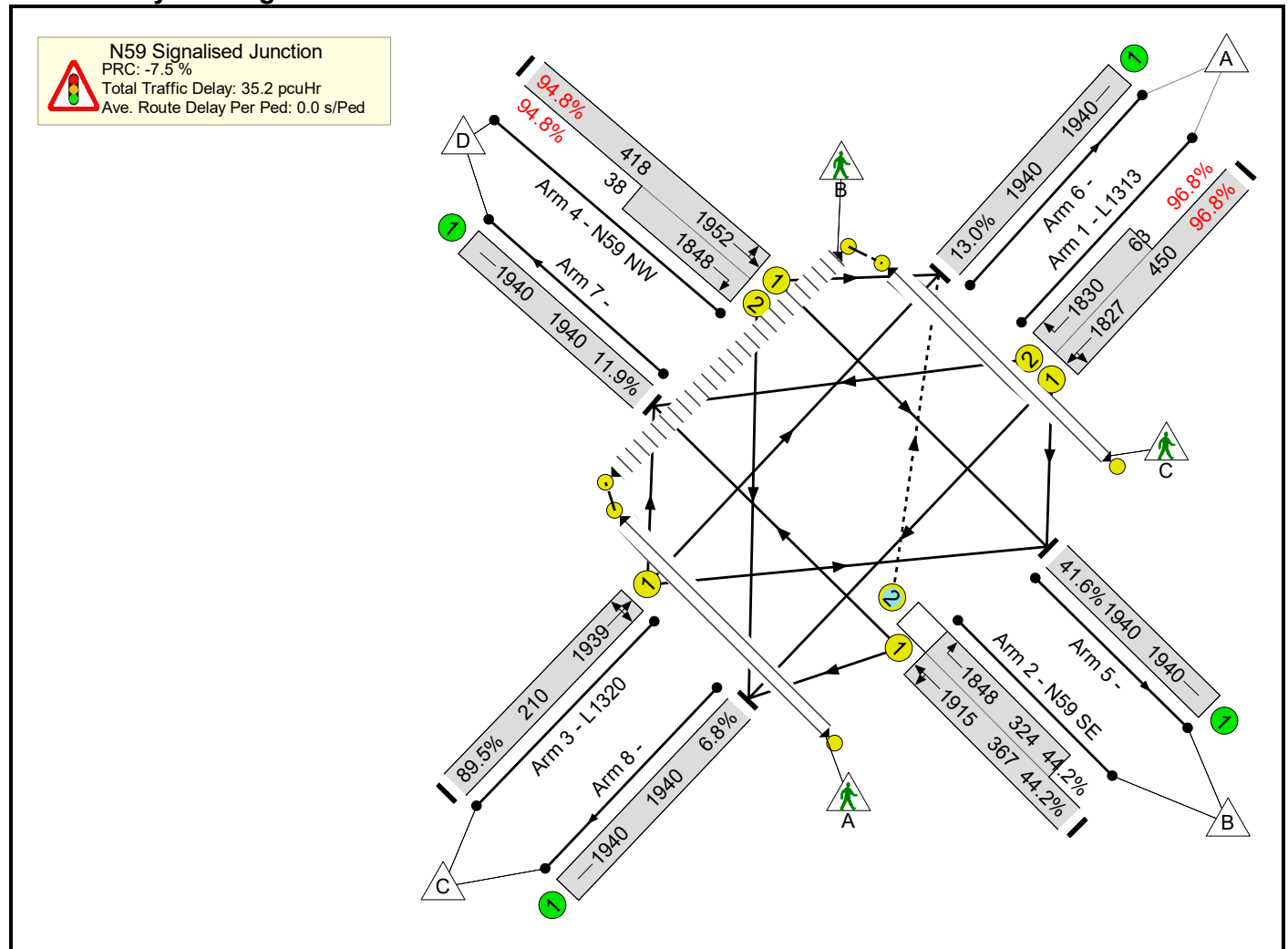
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: N59 Moycullen Signalised Junction	-	-	-		-	-	-	-	-	-	91.7%	276	58	6	37.3	-	-
N59 Signalised Junction	-	-	-		-	-	-	-	-	-	91.7%	276	58	6	37.3	-	-
1/1+1/2	L1313 Left Right Ahead	U	E		1	25	-	461	1851:1830	332+171	91.7 : 91.7%	-	-	-	10.1	79.1	15.8
2/1+2/2	N59 SE Right Ahead Left	U+O	B C		1	22:34	-	636	1931:1848	329+376	90.2 : 90.2%	276	58	6	11.6	65.8	14.2
3/1	L1320 Right Ahead Left	U	D		1	22	-	330	1934	371	89.0%	-	-	-	7.8	85.1	14.1
4/1+4/2	N59 NW Ahead Left Right	U	A G		1	22:7	-	348	1904:1848	337+80	83.3 : 83.3%	-	-	-	6.9	71.8	11.7
5/1		U	-		-	-	-	378	1940	1940	19.5%	-	-	-	0.1	1.2	0.1
6/1		U	-		-	-	-	635	1940	1940	32.7%	-	-	-	0.4	2.5	14.4
7/1		U	-		-	-	-	571	1940	1940	29.4%	-	-	-	0.2	1.3	0.2
8/1		U	-		-	-	-	191	1940	1940	9.8%	-	-	-	0.1	1.0	0.1
Ped Link: P1	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
C1 - Moycullen 6 Stage /RLM/ MOVA With out loop				PRC for Signalised Lanes (%):		-1.9		Total Delay for Signalised Lanes (pcuHr):				36.50		Cycle Time (s): 120			
				PRC Over All Lanes (%):		-1.9		Total Delay Over All Lanes(pcuHr):				37.33					

Basic Results Summary

Scenario 13: 'AM Peak With Dev and Bypass 2038' (FG13: 'AM Peak With Dev and Bypass 2038', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



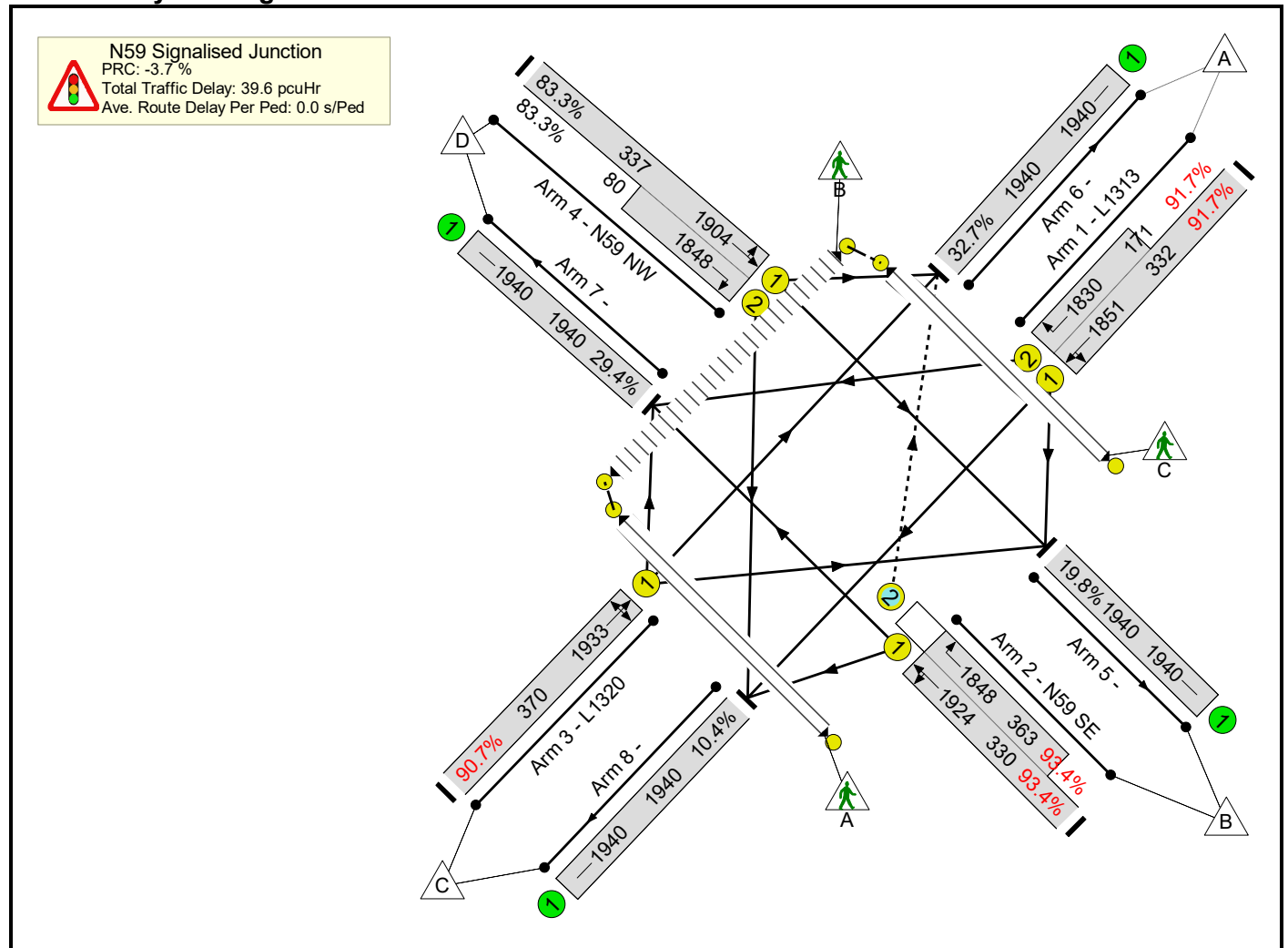
Network Results

35.17

Basic Results Summary

Scenario 14: 'PM Peak With Dev and Bypass 2038' (FG14: 'PM Peak With Dev and Bypass 2038', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

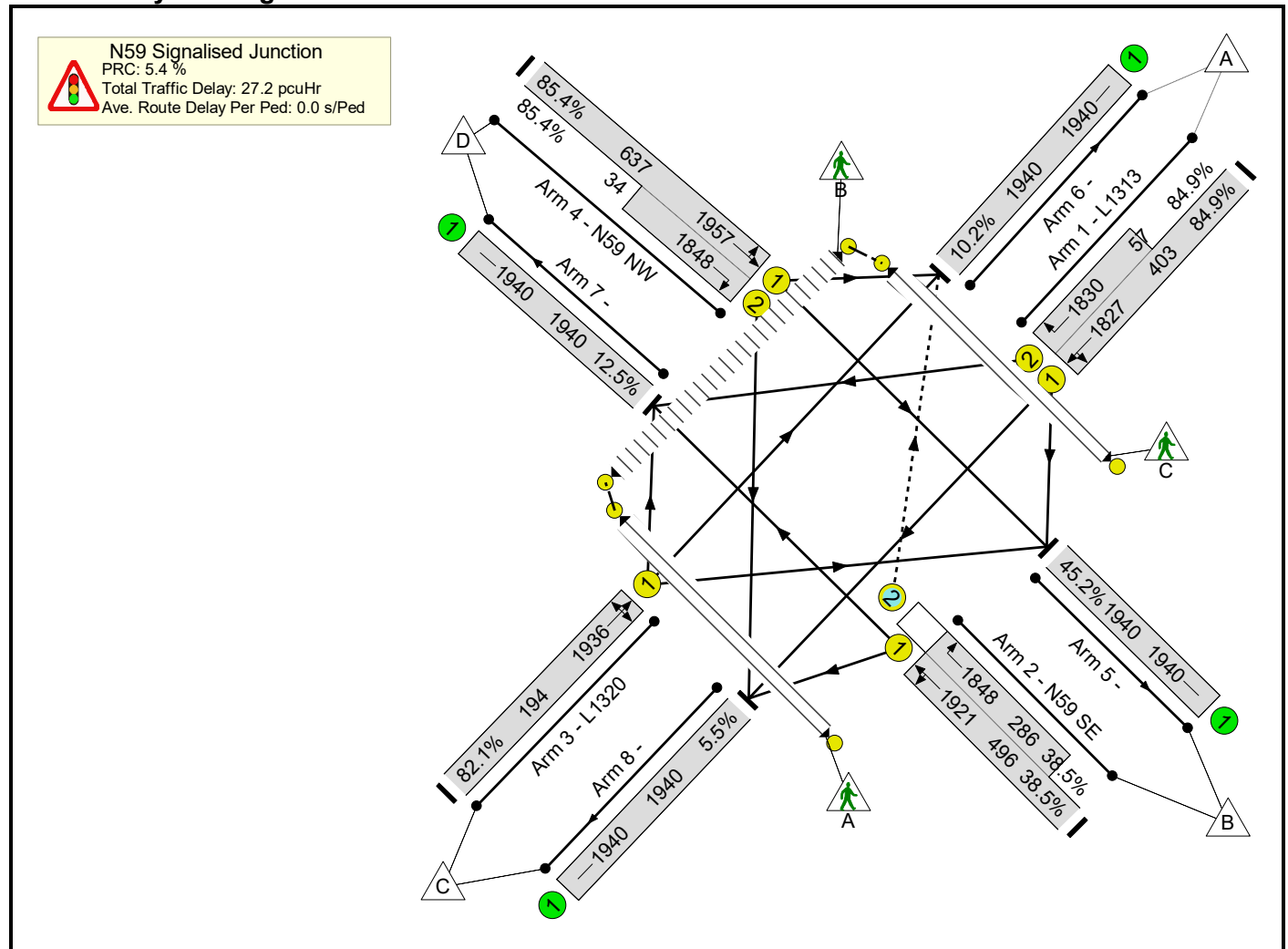
Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: N59 Moycullen Signalised Junction	-	-	-		-	-	-	-	-	-	93.4%	276	58	6	39.6	-	-
N59 Signalised Junction	-	-	-		-	-	-	-	-	-	93.4%	276	58	6	39.6	-	-
1/1+1/2	L1313 Left Right Ahead	U	E		1	25	-	461	1851:1830	332+171	91.7 : 91.7%	-	-	-	10.1	79.1	15.8
2/1+2/2	N59 SE Right Ahead Left	U+O	B C		1	22:34	-	647	1924:1848	330+363	93.4 : 93.4%	276	58	6	13.3	74.3	15.7
3/1	L1320 Right Ahead Left	U	D		1	22	-	336	1933	370	90.7%	-	-	-	8.4	89.9	14.9
4/1+4/2	N59 NW Ahead Left Right	U	A G		1	22:7	-	348	1904:1848	337+80	83.3 : 83.3%	-	-	-	6.9	71.8	11.7
5/1		U	-		-	-	-	384	1940	1940	19.8%	-	-	-	0.1	1.2	0.1
6/1		U	-		-	-	-	635	1940	1940	32.7%	-	-	-	0.4	2.5	14.4
7/1		U	-		-	-	-	571	1940	1940	29.4%	-	-	-	0.2	1.3	0.2
8/1		U	-		-	-	-	202	1940	1940	10.4%	-	-	-	0.1	1.0	0.1
Ped Link: P1	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P2	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
Ped Link: P3	Unnamed Ped Link	-	F		1	8	-	0	-	4800	0.0%	-	-	-	0.0	0.0	0.0
C1 - Moycullen 6 Stage /RLM/ MOVA With out loop				PRC for Signalised Lanes (%):		-3.7		Total Delay for Signalised Lanes (pcuHr):				38.81		Cycle Time (s): 120			
				PRC Over All Lanes (%):		-3.7		Total Delay Over All Lanes(pcuHr):				39.65					

Basic Results Summary

Scenario 15: 'Copy of AM Peak With Dev 2023' (FG5: 'AM Peak With Dev (no Bypass) 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

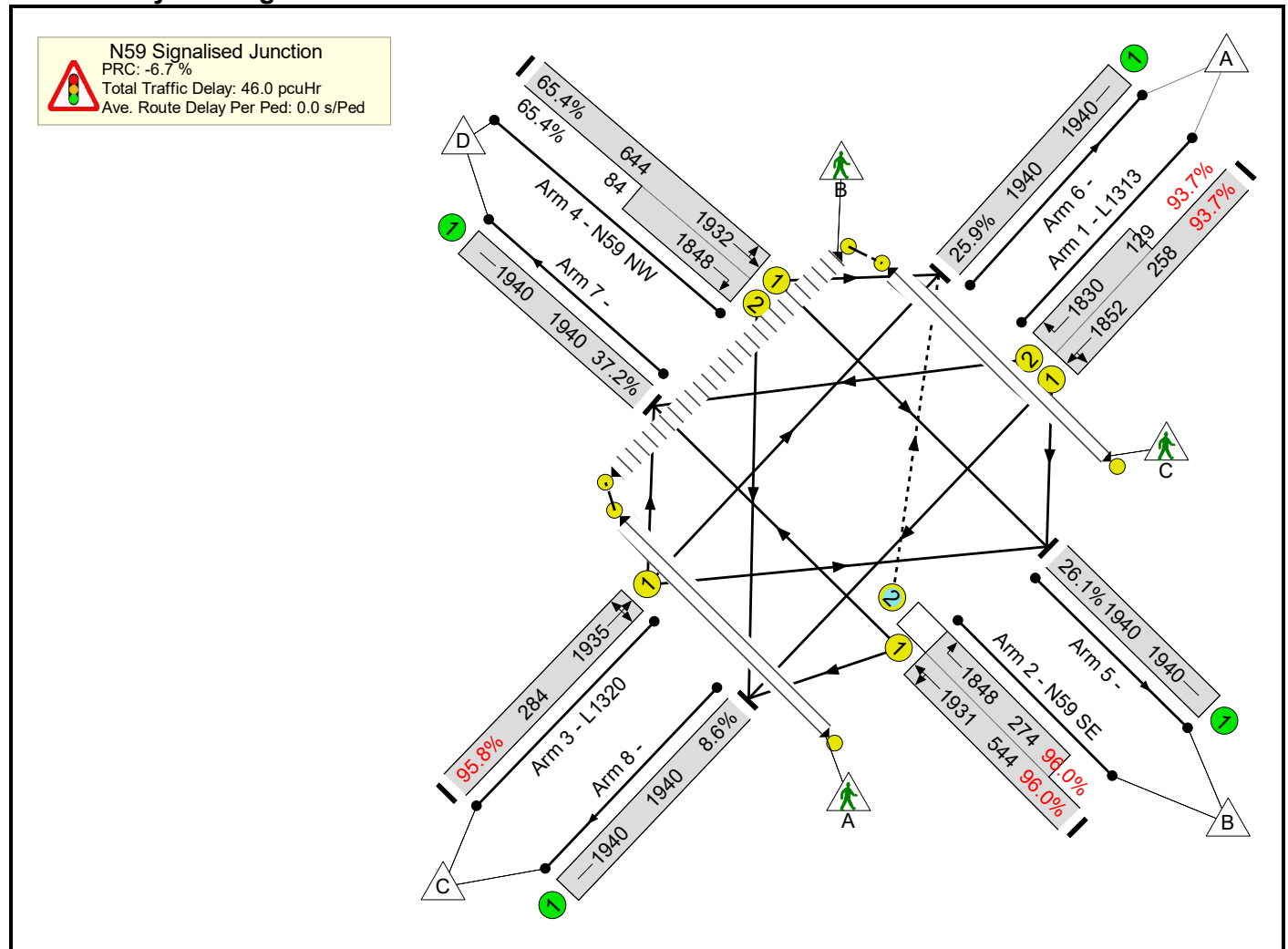


Network Results

Basic Results Summary

Scenario 16: 'Copy of PM Peak With Dev 2023' (FG6: 'PM Peak With Dev (no Bypass) 2023', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



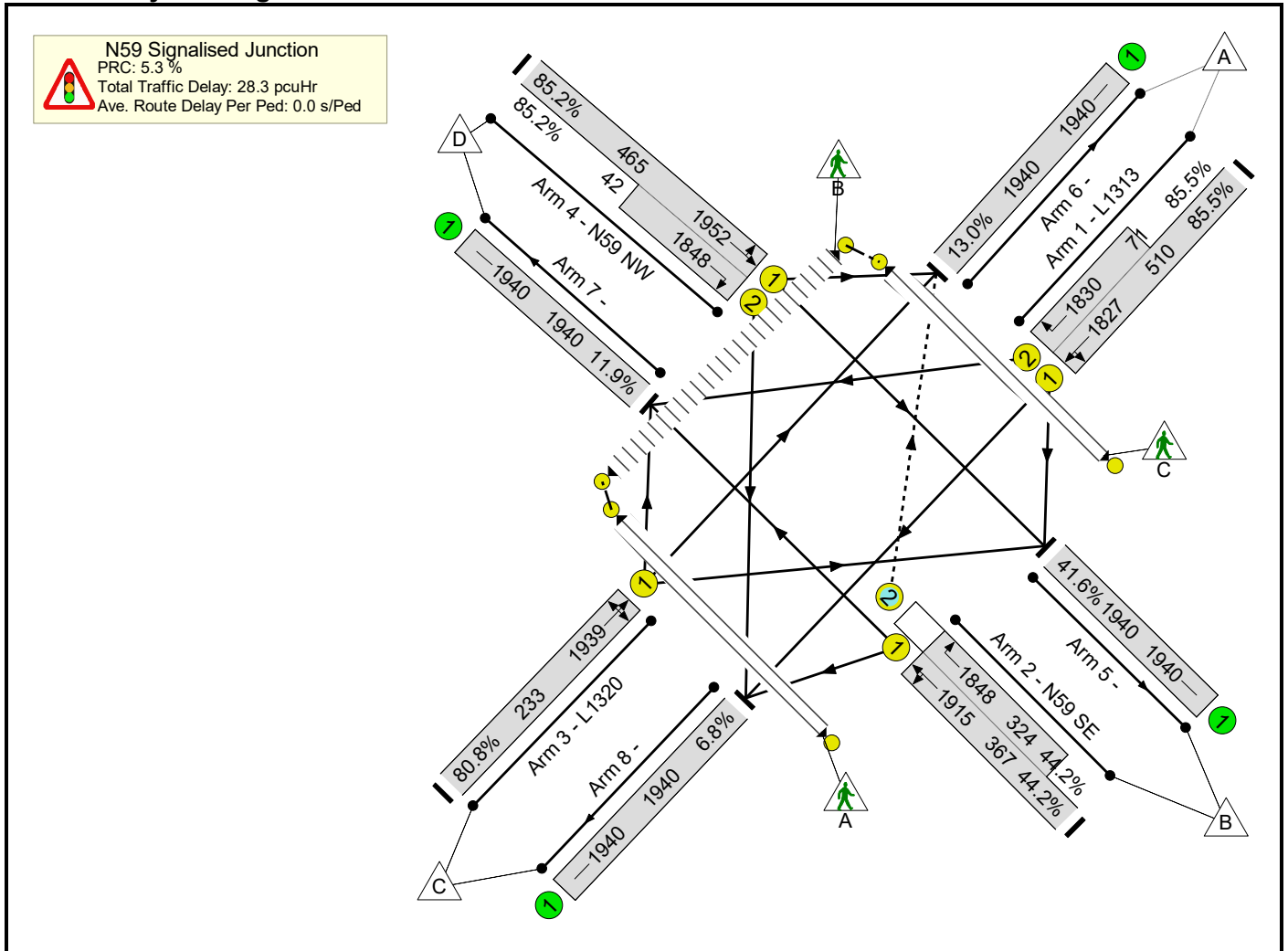
Network Results

45.98

Basic Results Summary

Scenario 17: 'Copy of AM Peak With Dev and Bypass 2038' (FG13: 'AM Peak With Dev and Bypass 2038', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



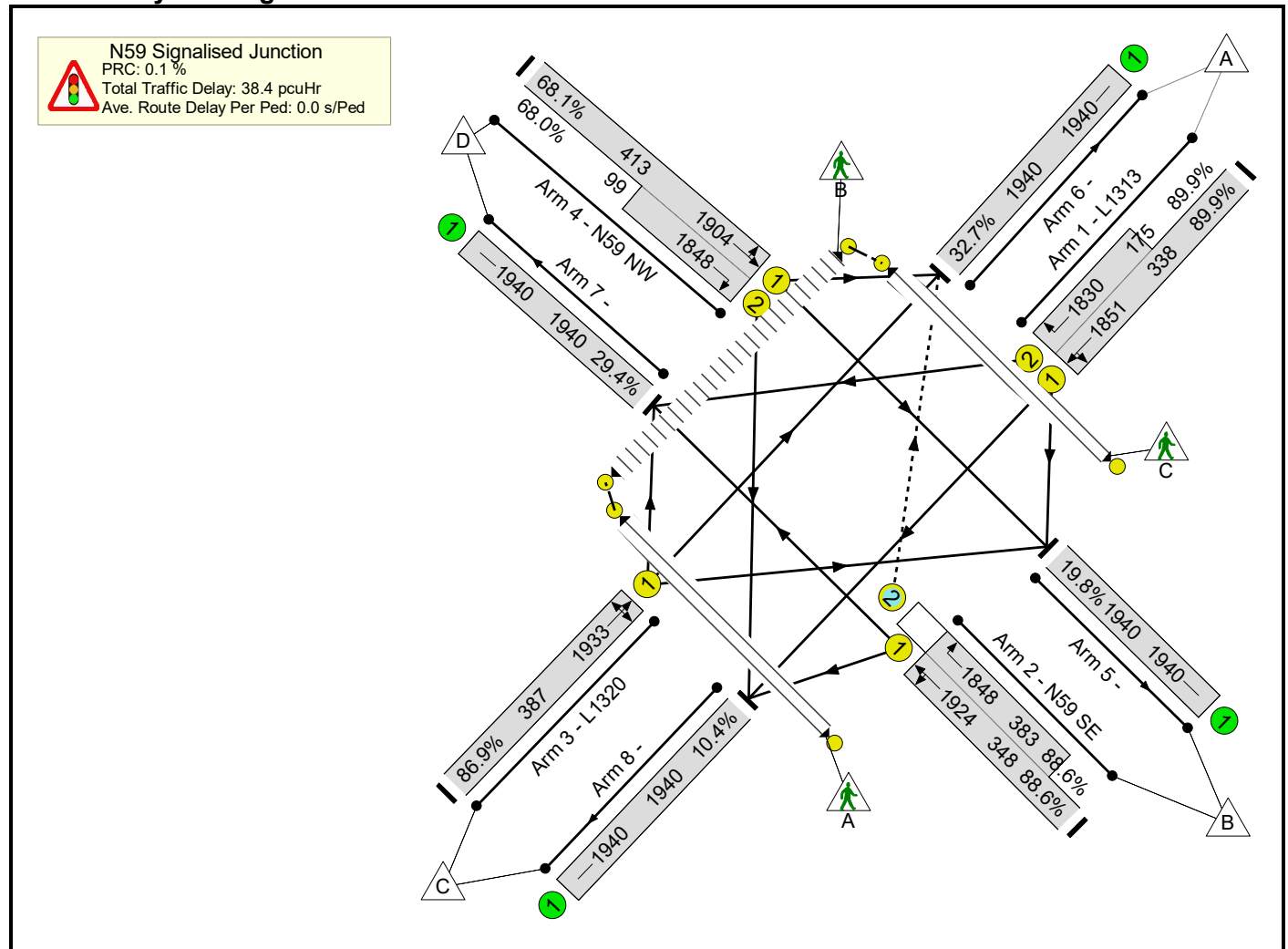
Network Results

C1 - Moycullen 6 Stage /RLM/ MOVA With out loop	PRC for Signalled Lanes (%):	5.3	Total Delay for Signalled Lanes (pcuHr):	27.79	Cycle Time (s): 150
	PRC Over All Lanes (%):	5.3	Total Delay Over All Lanes (pcuHr):	28.32	

Basic Results Summary

Scenario 18: 'Copy of PM Peak With Dev and Bypass 2038' (FG14: 'PM Peak With Dev and Bypass 2038', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Network Results

C1 - Moycullen 6 Stage /RLM/ MOVA With out loop	PRC for Signalled Lanes (%):	0.1	Total Delay for Signalled Lanes (pcuHr):	37.47	Cycle Time (s): 150
	PRC Over All Lanes (%):	0.1	Total Delay Over All Lanes (pcuHr):	38.35	

Appendix C – Road Safety Audit



Vincent Hannon Architects

Housing Development
Gort Uí Lochlainn & Coill Bhruchláin,
Moycullen, Co. Galway
Road Safety Audit Stage 1/2

PROJECT NAME: Housing Development Gort Uí Lochlainn & Coill Bhrucláin,
Moycullen, Co. Galway

REPORT NAME: Road Safety Audit Stage 1/2

Document Control Sheet	
Document Reference	TR01
Report Status	Rev A
Report Date	September 2019
Current Revision	A
Client:	Vincent Hannon Architects
Client Address:	Unit 10, Liosban Office Space, Tuam Road, Galway, Galway County, H91 A 008
Project Number	10578

Galway Office Fairgreen House, Fairgreen Road, Galway, H91 AXK8, Ireland. Tel: +353 (0)91 565 211	Dublin Office Block 10-4, Blanchardstown Corporate Park, Dublin 15, D15 X98N, Ireland. Tel: +353 (0)1 803 0406	Castlebar Office Market Square, Castlebar, Mayo, F23 Y427, Ireland. Tel: +353 (0)94 902 1401
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Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
D01	Draft Issue	L.G	24/09/2020	F.F.	25/09/2020	F.F.	25/09/2020
A	Rev A	L.G	06/11/2020	F.F.	06/11/2020	F.F.	06/11/2020

TOBIN Consulting Engineers

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Appendices

Appendix A – List of Documents Examined

Appendix B – Photographs / Plates

Appendix C – Road Safety Audit Feedback Form



1.0 INTRODUCTION

This report describes a Stage 1/2 Road Safety Audit carried out for a proposed housing development at Moycullen Town, approximately 12km northwest of Galway City. The site has a priority junction onto the L1320 (see Figure 1-1).



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Figure 1-1 Site Location

1.1 Existing Environment

The existing site is a combination of a greenfield site with scrub and trees to the rear and harstanding area with bottle bank storage adjacent to the carriageway. The site is bounded to the northeast (Páirc Na gCaor) and southwest (Cnocan Rua) by residential developments. Adjacent to the site on the other side of the L1320 is a commercially developed area (An Fuarán) with car parking facilities. Additional town centre facilities are located to the north and northeast of the proposed development.

The site is located on L1320 local road within an urban speed limit of 50km/h. The site is approximately 160m southwest of the 4-arm signalised junction of the N59 / L1313 / L1320. On approach to the signalised junction, the carriageway cross section of the L1320 reduces in width and the southern footway is suspended. The STOP priority junction between An Fuarán and the L1320 is approximately 30m from the proposed development entrance, and links to the N59.

The L1320 is an urban street with footways on both sides of the carriageway and both uncontrolled and controlled pedestrian crossings within the urban environment. Multiple direct access to houses and housing development access roads are located along the L1320.

The L1320 (Mountain Road) has a carriageway cross section comprising:

- 2 No. approximate 4.0m wide traffic lanes with a total carriageway width of approximately 8.0m
- 1.8m-2.0m wide kerbed footways are available on both sides of the carriageway
- Street Lighting is present
- Road Markings are present
- The existing carriageway pavement is in good condition
- Surface water drainage is predominantly by piped gullies

1.2 Proposed Development

Galway County Council intend to develop a new residential development at their lands located on the L1320 Mountain Road at Moycullen, Co Galway. The development will consist of the clearance of the existing greenfield site and construction of 30 No. number two-storey housing units including access roads, parking spaces, bin store, landscaping, open space, and all ancillary site development works. Refer to Figure 1-2 and Appendix A.



Figure 1-2 Proposed Road Layout (Extract Dwg No. 10578-2106)

1.3 Audit Details

The audit took place at the Galway office of TOBIN Consulting Engineers and Sligo office of CST Group in September 2020. The audit comprised an examination of the documents provided by the Design Team and listed in Appendix A. A site visit has since taken place on the 21st of September 2020. During the site visit the weather was overcast and dry.

The audit team members were as follows:

Audit Team Leader

Francis Fidgeon– BE, CEng, MIEI. Partner and Director of CST Group – TII Reference FF74289.

Audit Team Members

Laura Gaffney - MSc. Env. Eng., BEng (Hons) Civil Eng., CEng., MIEI. Senior Engineer for Roads & Transportation, TOBIN Consulting Engineers. – TII Reference LG3386505

This Stage 1/2 Audit has been carried out in accordance with the relevant sections of Transport Infrastructure Ireland Publication (Standards) “Road Safety Audit” GE-STY-01024 (December 2017). The team has examined and reported only on the road safety implications of the design submitted and has not examined or verified the compliance of the design to any other criteria. However, to clearly explain a problem or a recommendation, it may be necessary to refer to another Standard or Advice Note, but such reference will not conflict with the requirements of the above Terms of Reference.

Road Collision Data available on the Road Safety Authority Database, within the period 2005 to 2016, in proximity to the proposed development recorded 2 No. minor collisions on the L1320 as shown in Figure 1-3. These collisions occurred in 2008 and 2009 on Fridays between the hours of 16:00-19:00 and involved cars. 7 No. minor and 1 no. serious collision occurred on N59.

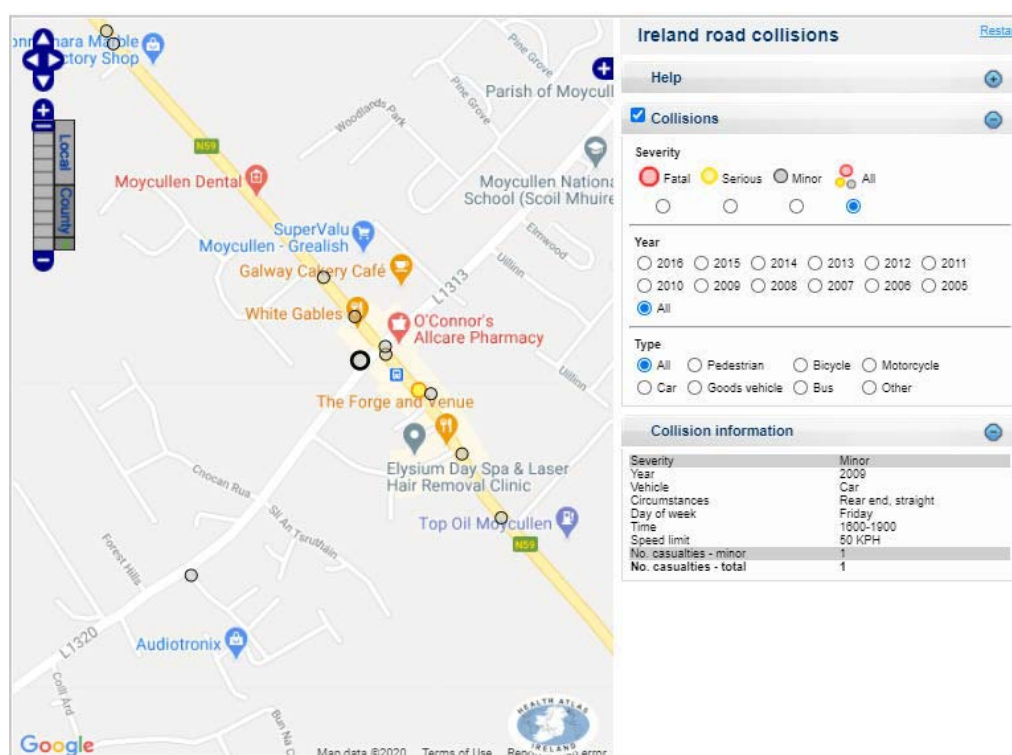


Figure 1-3 Road Collision Data 2005 – 2016 (source Road Safety Authority)

Note - the RSA database is not a comprehensive record of collisions and should be reviewed in conjunction with the Local Authority / Gardaí records for the site.

The Design Team and Employer (Client) is reminded that the Road Safety Audit Feedback Form, in Appendix C, shall be completed and returned to the Road Safety Audit Team Leader for sign off.

2.0 ITEMS RESULTING FROM THIS ROAD SAFETY AUDIT

2.1 Problem

Proposed Junction - Visibility Splay

The design team made available visibility splays on the proposed road layout drawing 10578-2106. The Audit Team note that the existing onstreet car parking spaces (with the exception of the disabled space) have been replaced by the proposed widened footway in proximity to the proposed junction. The Audit Team are concerned that vehicles may park adjacent to the proposed footway in proximity to the junction and obstruct the visibility splay.

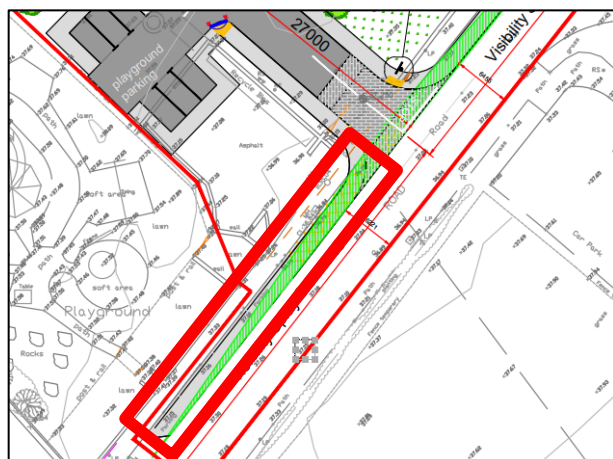


Figure 2-1 Proposed Junction – Visibility Splays



Plate 2-1 Visibility southwest from proposed junction (2.0m setback)

Recommendation

The design team shall revise the design to prevent parking in proximity to the junction.

2.2 Problem

Proposed Junction Kerb Buildout - Onstreet Parking

The proposed junction design includes for built out footways. This will reduce the L1320 road width to 6.2m-6.4m in the vicinity of the proposed development. There is the potential for vehicles to park on both sides of the carriageway adjacent to this location. This may result in blocking of two-way traffic by parked vehicles on both sides of the carriageway.



Figure 2-2 Proposed Junction – Visibility Splays



Plate 2-2 View from adjacent to site in southwest bound direction on L1320

Recommendation

The design team shall revise the design to prevent blocking of the L1320.

2.3 Problem

Proposed Junction – Raised Table

The design team proposed a raised table at the proposed junction from the L1320. The proximity of the raised table to the junction may result in loss of control of single-track vehicles (i.e. motorbikes) and cyclists.

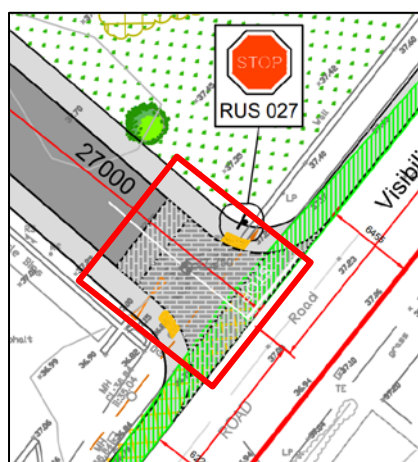


Figure 2-3 Proposed Junction – Raised Table

Recommendation

The design team shall position the raised table at a sufficient distance from the junction to facilitate straightening of a single-track vehicle / cyclists before a change in gradient.

2.4 Problem

Proposed Junction – Gullies upstream of raised table

The drainage drawing provided by the design team shows a gradient falling from the internal road towards the raised table at the site entrance. The gullies are not proposed at the low point. There is the potential for ponding of water upstream of the raised table which may result in a vehicle skidding.

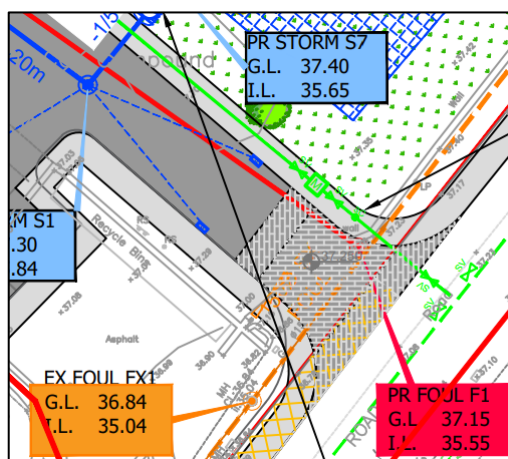


Figure 2-4 Proposed Junction Raised Table

Recommendation

The design team shall position the gullies at the low point within the development.

2.5 Problem

Proposed Junction – Pedestrian Desire Line

The drawings show an uncontrolled pedestrian crossing setback from the junction radius. The Audit Team are concerned that the proposed location of the uncontrolled crossing is away from the pedestrian desire line and will result in pedestrians entering the carriageway away from the crossing.



Figure 2-5 Proposed Junction – Raised Table

Recommendation

The design team shall position the uncontrolled crossing along pedestrian desire lines.

2.6 Problem

Proposed Playground Parking – STOP Sign

The proposed road layout does not show a STOP sign at the exit from the proposed playground parking area. There is the potential for vehicles to drive out of the parking area without stopping for vehicles with priority which may result in a collision.



Figure 2-6 Proposed Playground Parking – No Stop Sign

Recommendation

The design team shall provide the associated road sign to accompany the STOP road marking.

2.7 Problem

Proposed Home Zone Area – No Signage

The proposed road layout indicates Home Zone Areas by a hatched area. The design team are concerned that motorists will not be forewarned of the shared surface. This may result in higher speeds and potential for collisions with vulnerable road users.



PROPOSED PAVING/HOMEZONE AREA



Figure 2-7 Proposed Road Layout – Home Zone Areas

Recommendation

The design team shall provide warning signs at the Home Zone Areas to inform road users of the potential presence of pedestrians on the shared surface.

2.8 Problem

Drainage – Chamber Covers

The drainage drawings indicate that the footway chambers will have anti-skid covers. A number of the chambers are shown within the carriageway within the wheel track of single-track vehicles. This may result in skidding of these vehicles leading to potential collisions.

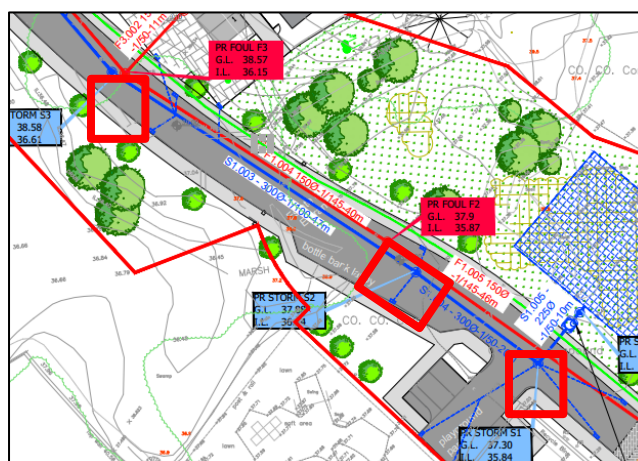


Figure 2-8 Drainage Chambers

Recommendation

The design team shall provide anti-skid covers to chambers within the carriageway.

2.9 Problem

Junction and Internal Site Layout - Swept Path Analysis

No information was provided to the Audit Team of typical vehicles manoeuvring within the proposed development. In addition, the Audit Team noted that the existing bottle bank has been relocated to within the development. Manoeuvres having to cross into the opposing lane, etc may cause collisions.

Recommendation

The design team shall provide swept path analysis of the typical vehicles (i.e. large car, refuse vehicle, fire tender and bottle bank collection vehicle) that will manoeuvre to and from the proposed development from the L1320, circulate within the proposed internal road network and access car parking within the proposed development and ensure the layout doesn't lead to unsafe potential manoeuvres.

2.10 Problem

Internal Site Layout - Street Lighting

No information was provided to the Audit Team of the street lighting proposed within the proposed development.

Recommendation

The design team shall provide street lighting.

2.11 Problem

Pedestrian Link to Páirc Na gCaor – Visibility Splay

To the north of the proposed development there is a pedestrian link with steps up to the adjoining residential development, Páirc Na gCaor. The Audit Team are concerned that suitable visibility is not available from the northern footway to the west to oncoming vehicles.

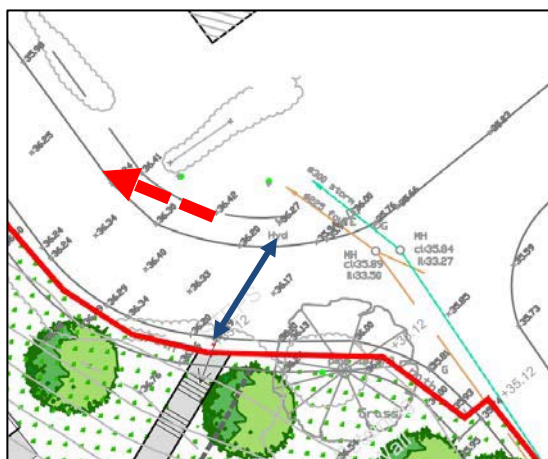


Figure 2-9 Proposed Pedestrian Link



Plate 2-3 Visibility West from Northern Footway within Páirc Na gCaor

Recommendation

The design team shall move the pedestrian link further west where pedestrians crossing to it from the northern path will have increased visibility.

2.12 Problem

Proposed Junction on the L1320 – No External Drainage is Proposed at Kerb Buildout

On the drainage drawing 10578-2100, the design team have not indicated any proposed gullies on the L1320 road edge alongside the new proposed built out footway. The Audit Team noticed on site an existing gully located within the footway and gullies adjacent to the existing footway, see Plate 2-4 . Absence of gullies along the kerb edge may result in ponding which may lead to loss of control of vehicles / swerving of road users.

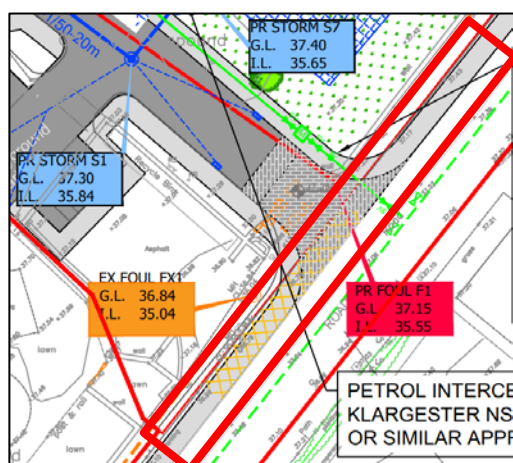


Figure 2-10 L1320 Junction – Road Drainage



Plate 2-4 L1320 Existing Drainage

Recommendation

The design team shall include for the displaced gullies on the L1320 within their design.

2.13 Problem

External L1320 – Pedestrian Guardrail

An existing pedestrian guardrail is located adjacent to the entrance of the playground immediately southwest of the development. At this location, the proposed design is to build out the footway. The pedestrian guardrail will become a hazard within the centre of the proposed footway.



Plate 2-5 L1320 Pedestrian Guardrail adjacent to Playground

Recommendation

The design team shall relocate the guardrail to remove the hazard it presents within the proposed footway.

3.0 AUDIT TEAM STATEMENT

We certify that we have examined the drawings and other information listed in Appendix A and visited the site during the day of the 21st of September 2020. We further certify that we are independent from the design team for the scheme. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for improvement that in our opinion should be studied for implementation.

AUDIT TEAM LEADER

Name: Francis Fidgeon

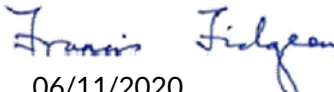
TII FF74289

Reference:

Position: Partner

Organisation: CST Group

Address: 1 O'Connell Street,
Sligo

Signed: 
Date: 06/11/2020

AUDIT TEAM MEMBERS

Name: Laura Gaffney - MSc. BEng (Hons), CEng., MIEI

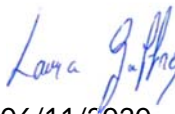
TII LG3386505

Reference:

Position: Senior Engineer

Organisation: TOBIN Consulting Engineers

Address: Fairgreen House,
Fairgreen Road,
Galway.

Signed: 
Date: 06/11/2020

Appendix A – List of Documents Examined

10578 – 2100_D04 Proposed Services

10578 – 2106_D02 Proposed Roads Layout

Appendix B – Photographs / Plates





Appendix C – Road Safety Audit Feedback Form

Road Safety Audit Feedback Form		
Scheme: Housing Development Gort Uí Lochlainn & Coill Bhruhláin, Moycullen, Co. Galway		
Audit Stage: 1-2	Route No.: L1320 Mountain Road	Date of Audit: 21/09/2020

To be Completed by Designer				To Be Completed by Audit Team Leader	
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended Measures Accepted (yes/no)	Alternative Measures (describe). Give reason for not accepting recommended measure	Alternative Measures or reasons accepted by auditors (yes/no)	
2.1	Y	Y			
2.2	Y	Y			
2.3	Y	Y			
2.4	Y	Y			
2.5	Y	Y			
2.6	Y	Y			
2.7	Y	Y			
2.8	Y	Y			
2.9	Y	Y			
2.10	Y	Y			
2.11	Y	Y			
2.12	Y	Y			
2.13	Y	Y			

Signed:	<i>Micheál Geraghty</i>	Designer	Micheál Geraghty	Date:	04.11.2020
Signed:	<i>Francis Fidgeon</i>	Client	<i>Francis Fidgeon</i> c/o <i>Galway 10.10</i>	Date:	05/11/2020
Signed:	<i>Francis Fidgeon</i>	Audit Team Leader	Francis Fidgeon, CST Group	Date:	06/11/2020

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