Appendix 16-1 - Traffic and Transport Assessment

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SCART MOUNTAIN WIND FARM, CO. WATERFORD

TRAFFIC AND TRANSPORT ASSESSMENT

AUGUST 2024

Document Control Sheet	
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Project Reference	11303 – TTA

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Table of Contents

Appendices

List of Tables

List of Figures

1. NON-TECHNICAL SUMMARY

The Non-Technical Summary is a synopsis of the Traffic and Transport Assessment (TTA) for proposed Scart Mountain Wind Farm (proposed project), a project of 15 no. wind turbines and all associated infrastructure. The proposed wind farm site is located within County Waterford and will be accessed via the L5055 local secondary road.

A scoping document was issued on the 8th of May 2023 to Waterford County Council Roads Department. This document outlined the proposed approach that the Traffic and Transport Assessment would take and identified the junctions which would be included in the analysis.

Two junctions had been previously scoped with Waterford County Council. Traffic counts were planned to be carried out on the N72/L1027 Crossroads and the L5054/L5055 T-Junction, and a speed survey was planned to be undertaken on local road L5054. However, as informed to Waterford County Council on the 30th of May 2023, equipment was vandalised, and it was not possible to collect traffic count data from L5054/L5055 T-Junction and speed data on L5054. For this reason, this Traffic and Transport Assessment considered one location:

- Junction 1: Existing N72/L1027 Crossroads Junction

Traffic counts were carried out and a seasonal adjustment check was undertaken on the traffic count data to determine if the traffic on the date of the traffic count survey is representative of the annual average traffic for the year. Since the traffic count on the day of the survey was higher than the annual average daily traffic (AADT), a seasonal adjustment was not required.

In this project, the construction phase will have the greatest impact in comparison to the operational phase and decommissioning phase. During the construction phase, the proposed project will generate trips of Abnormal Indivisible Load (AIL) (for turbine/transformer delivery) and construction material vehicles (for activities such as: site compounds, site roads, turbine hardstands, turbine foundations, substation construction, grid connection, backfilling and landscaping).

Once the proposed project is operational, most of the traffic generated will be formed by small vehicles for maintenance purposes. When maintenance is required, it is expected that the operational phase will generate a maximum of 6 no. LGV movements per day (i.e., 3 arrivals and 3 departures).

During the decommissioning phase, turbine components will be separated, broken down, and removed off-site. These components will be transported by HGVs. Turbine foundations will be kept on site, the upper sections of the foundations projecting above ground will be removed, and the remainder of the foundations will be covered by soils typical of the surrounding environment and then re-seeded or left to re-vegetate.

The on-site substation and proposed grid connection route (GCR) will not be removed at the end of the useful life of the proposed project as it will form part of the national electricity network.

Therefore, the substation will be retained as a permanent structure and will not be decommissioned.

Considering that turbine foundation, hardstanding areas, and access tracks will be left in situ, and the substation and proposed GCR will not be decommissioned, the traffic volume and traffic impact generated during decommissioning phase will be lower than during the construction phase.

For this reason, assessments were carried out based on the construction phase's traffic impact on the site as per the TII Traffic and Transport Assessment Guidelines.

The assessment has focused on the construction phase as per following:

- Base year: 2023
- Peak construction phase: 2027
- Average construction phase: 2027

The traffic count data was forecasted using the TII Project Appraisal Guidelines Unit 5.3: Travel Demand Projections for central growth rates and scenarios with and without the proposed project were analysed.

1.1 JUNCTION 1 – N72/ L1027 CROSSROADS JUNCTION

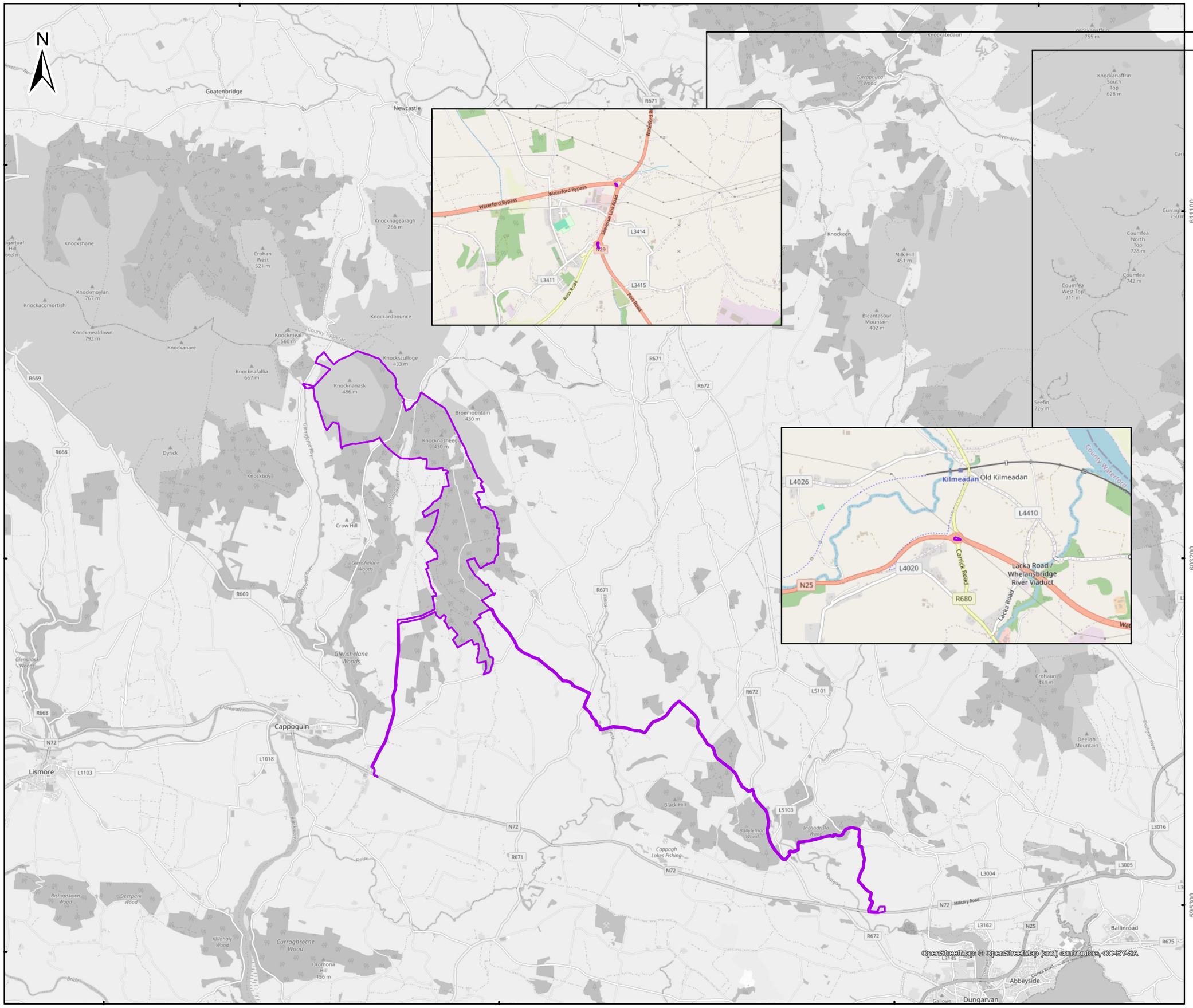
The PICADY analysis results indicate the existing junction will operate within capacity during the construction phase. The maximum RFC of 0.4 encountered at Junction 1 for the peak construction phase is well below the maximum desired RFC of 0.85. The analysis indicates that there will be negligible queues and minimal delays during the AM and PM peak hours for all scenarios analysed (i.e., with and without the proposed project and during peak and average construction works).

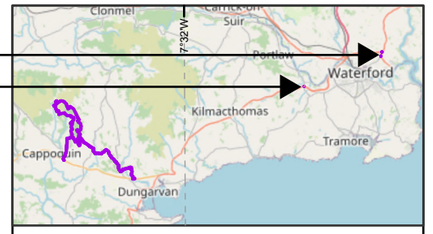
2. INTRODUCTION

TOBIN Consulting Engineers Ltd have been appointed by the applicant, to prepare a Traffic and Transport Assessment Report of the proposed Scart Mountain Wind Farm (proposed project) located in County Waterford.

The proposed project includes a proposal to construct 15 no. wind turbines and all associated infrastructure including turbine foundations, hardstanding areas, borrow pits, access tracks, an on-site 110kV electrical substation and grid connection comprising a tail-fed connection into the Dungarvan Substation. The proposed project will also comprise facilitating works on the public road network and at private properties to accommodate the delivery of turbine components. Construction phase is expected to start in January 2027 with a duration of 24 months. Figure 2.1 presents the proposed project master plan.

This report presents the likely impacts on the road network in the vicinity of the proposed project during the construction phase.





Legend

Proposed project

0 2.5 5
Kilometres

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING\
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE\
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY \ WORK COMMENCES\
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
A	13/12/2024	First issue	S.P	J.S

Client: FuturEnergy Ireland

Project: Scart Mountain Wind Farm

Title: Figure 2-1: Proposed project extent

Scale @ A3:	1:80,000	
Prepared by:	Checked by:	Date:
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Map Ref: 11303-005-TDR-S.BO-TOB-A

Draft: A

2.1 OBJECTIVES

The objective of this report is to assess the impact the proposed project will have on the existing road network. This report presents the expected volume of traffic generated by the proposed project and assesses its impact on the operational capacity of the road network in the vicinity of the proposed project. The Existing N72/L1027 Crossroads Junction has been analysed as part of this report.

2.2 STRUCTURE OF THE REPORT

This report is divided into six chapters:

- Chapter 1 is a non-technical summary,
- Chapter 2 presents this introduction,
- Chapter 3 presents the report method and describes the proposed wind farm site location, existing road network, traffic survey and traffic generated by proposed project,
- Chapter 4 provides an overview of the existing and proposed traffic conditions, explaining how this information was obtained,
- Chapter 5 presents the analysis of baseline traffic and traffic generated by the proposed project on existing traffic conditions (i.e., with and without the proposed project and during peak and average construction works),
- Chapter 6 presents other road issues,
- Chapter 7 presents the conclusions.

3. ASSESSMENT METHODOLOGY

3.1 GUIDANCE AND LEGISLATIVE REVIEW

In preparing the Traffic and Transport Assessment (TTA), the following references were consulted:

- Waterford City and County Development Plan 2022 – 2028,
- Kilkenny City and County Development Plan 2021-2027,
- Traffic and Transport Assessment Guidelines (TII PE-PDV-02045, May 2014),
- Project Appraisal Guidelines Unit 5.2 - Data Collection (TII PE-PAG-02016, Dec 2023),
- Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections (TII PE-PAG-02017, Oct 2021).

Given that the construction phase is expected to cause higher traffic impacts to the proposed wind farm site in comparison with operational and decommissioning phases, this TTA has analysed the junction capacity, including queue lengths and reserve capacity at the following assessments:

- Base year: 2023
- Peak construction phase: 2027
- Average construction phase: 2027

3.2 ASSESSMENT METHODOLOGY

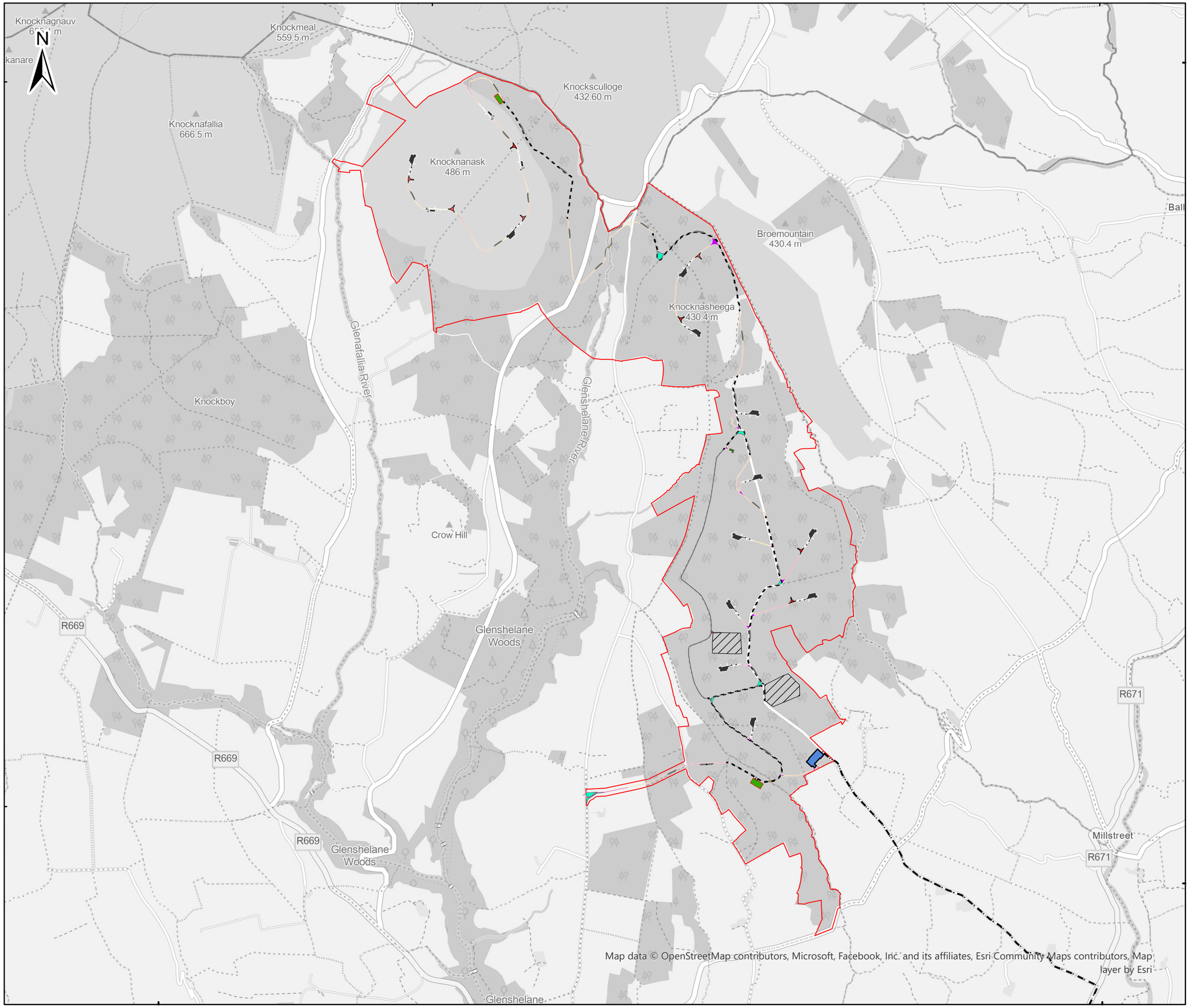
To assess the traffic and transportation impacts associated with the project, the following approach was adopted:

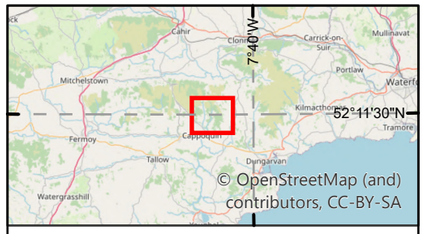
- Data Collection:
  - o Establish the baseline traffic flows of the existing roads,
  - o Adjust traffic count data using standard growth rates to establish a do-nothing scenario,
  - o Establish the traffic volumes generated by the project during the Construction Phase,
- Assessment of Effects:
  - o Determination of impacts on surrounding road network during the Construction Phase.

3.3 PROPOSED WIND FARM SITE LOCATION

The proposed wind farm site is located in County Waterford, adjacent to the County Tipperary border, approximately 4 km northeast of Cappoquin, 11k m northeast of Lismore and 13 km

northwest of Dungarvan. It is proposed that the proposed project will be built within a proposed wind farm site that extends to approximately 970 hectares (ha) of which approximately 826.6 ha is owned by Coillte (mostly commercial forest), and the remaining area is privately owned.





Legend

- Proposed Wind Farm Site
- Proposed Grid Connection Route

Proposed infrastructure footprint within the proposed wind farm site

- Proposed Site Roads
- Bridges
- Construction Compound
- Existing Site Roads
- Hardstands
- Met Mast Location
- Non turbine access roads
- Proposed Passing Bay
- Temporary Overrun Area
- Turning Bays
- Wheelwash
- Proposed Substation
- Borrow Pits

0 0.75 1.5
Kilometres

NOTES

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Rev	Date	Description	By	Chkd.
A	13/12/2024	First issue	S.P	J.S

Client: Ireland FuturEnergy

Project: Scart Mountain Wind Farm

Title: Figure 2-1: Proposed wind farm site layout

Scale @ A3:	1:30,000	
Prepared by:	Checked by:	Date:
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Map Ref: 11303-033-LAY.INFR-S.BO-TOB-A

Draft: A

Access to the proposed wind farm site is via the L5055, continuing onto the L1027 Local Road network from the N72 National Secondary Road, with the condition of these roads generally being good. Within the proposed wind farm site, there are forest roads which provide good coverage around the proposed wind farm site and are well maintained and in good condition. There are also several local roads both within and adjacent to the proposed wind farm site.

3.4 CONSULTATION

In order to ensure the scope of this report was to the satisfaction of Waterford County Council, a scoping document was issued on the 8th of May 2023. This document outlined the proposed approach that the Traffic and Transport Assessment would take and identified the junctions which would be included in the analysis.

Two junctions had been previously scoped with Waterford County Council. Traffic counts were planned to be carried out at the N72/L1027 Crossroads Junction and L5054/L5055 T-Junction (i.e., located southbound and northbound of proposed wind farm site access, respectively), and a speed survey was planned to be undertaken on local road L5054. However, as informed to Waterford County Council on the 30th of May 2023, equipment was vandalised during the traffic counts, and it was not possible to collect traffic count data at L5054/L5055 T-Junction and speed data on L5054. For this reason, one junction was assessed.

Further correspondence was issued on the 25th of September, Waterford County Council was contacted regarding the proposed GCR, construction haul routes, passing bays location, and proposed turbine delivery route (TDR) from Belview port to the wind farm site access.

3.5 EXISTING ROAD NETWORK

The proposed wind farm site is to be accessed via the local road L5055. In the vicinity of the proposed wind farm site access, the local road has a carriageway width of approximately 3.5 m and a speed limit of 80 km/h.

3.6 PROPOSED NETWORK IMPROVEMENTS

Currently, there are no proposed improvements to the road network in the region.

3.7 PROPOSED WIND FARM SITE ACCESS JUNTION

A proposed wind farm site access T-Junction is proposed on Local Road L5055. The proposed wind farm site access is presented in Drawing No. 11303-2020.

3.8 TRAFFIC SURVEY

Nationwide Data Collection carried out a classified Junction Turning Count (JTC) on Wednesday the 24th of May 2023 between 07:00 and 19:00 and an Automatic Traffic Count (ATC) to measure the vehicles speed in the region. JTC survey was undertaken at the following junction:

- Junction 1: Existing N72/L1027 Crossroads Junction

This survey segregated traffic flow between light good vehicles (LGV) and heavy good vehicles (HGV). The results of this survey indicated that the peak traffic through the Junction 1 occurred between AM Peak (08:30 and 09:30) and PM peak (16:30 and 17:30). Traffic count location is presented on Figure 3.2.

Figure 3.2: Traffic Count Location – Junction 1 (Map data ©2023 Google)

3.9 CONSTRUCTION PHASE

Given the nature of the proposed project, the construction phase will generate the greatest impacts on traffic in the vicinity. The proposed project construction is expected to start in January 2027 and finish after a 24-month construction phase.

The construction phase can be broken down into 5 no. main phases as presented on Chapter 2 – Description of the Proposed Project (there will be overlap between these):

- 14 months - Civils (including proposed wind farm site roads, hardstands, turbine foundations, forestry felling, drainage),
- 9 months - Electrical e connection/substation installation and commissioning,
- 12 months - Proposed wind farm site electrical (installing between turbines and substation, pulling cables),
- 4 months - Turbine deliveries and erection,
- 2 months - Commissioning.

There are borrow pits onsite, and it is assumed that material will be provided during the construction phase, reducing the HGV movements required from offsite.

It is important to highlight that the second-largest volume of traffic impact is associated with the concrete pours for the turbine foundations. The works at other areas within the proposed

wind farm site will continue during the concrete pour, but only essential deliveries will be scheduled to occur on these days.

The construction methodology for the concrete turbine foundations occurs over 15 days requiring the foundations to be poured on a single day, resulting in 142 HGVs arriving onsite per day. Considering the working hours, it is expected an average of 12 HGVs arriving onsite per hour during concrete pours.

During construction works, a peak working force of 116 people are expected onsite, during off-peak activities 87 people are expected.

Table 3.1 presents the volume of traffic expected to be generated daily by the construction phase during peak and average works. The table excludes the HGVs for the concrete pours for turbine foundation.

Table 3.1: HGV And LGV Daily Construction Volumes (Excluding Concrete Pours)

	2027												2028											
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Site Health and Safety																								
Site Compounds	6	6	6				6	6	6															
Site Roads	4	4	4	4	4	4	4	4	4	4	4	4	4	4										
Turbine Hardstands					5	5	5	5	5	5	5	5	5	5	5	5	5	5						
Turbine Foundations																								
Substation Construction & Electrical Works										3	3	3	3	3	3	3	3	3	3					
Backfilling & Landscaping																								
Turbine Delivery and Erection																								
Substation Commissioning																								
Turbine Commissioning																								
Total HGV 1-way/day	10	10	10	4	9	9	15	15	15	12	12	12	12	12	8	8	8	8	3	0	0	0	0	0
Total HGV 2-way/day	20	20	20	8	18	18	30	30	30	24	24	24	24	24	16	16	16	16	6	0	0	0	0	0
Average HGV 1-way	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Average HGV 2-way	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
LGV 1-way/day	87	87	87	87	87	87	116	116	116	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
LGV 2-way/day	174	174	174	174	174	174	232	232	232	174	174	174	174	174	174	174	174	174	174	174	174	174	174	174

Notes:

(1) The turbine deliveries for the proposed project will occur during night-time with traffic management and garda escort. As this traffic will be isolated from other daily traffic movements, it has not been added into the daily traffic volumes in this table.
(2) Quantities assume that some materials are obtained from the borrow pits onsite, decreasing the amount of HGV required from offsite.
(3) The works at other areas within the proposed wind farm site will continue during concrete pours, but only essential deliveries will be scheduled to occur on these days.
(4) The construction methodology for the concrete turbine foundations requires them to be poured on a single day.
(5) As worst-case scenario, it is assumed that 1 construction staff will travel to work per light vehicle.
(6) It is assumed that Construction Staff will arrive at AM peak hour and depart at PM peak hour.

In this report, the peak and average construction works have been assessed as any lower volume of traffic will have a smaller impact. Peak activities will take place for three months, and the traffic is associated with the importation of the aggregate for the proposed wind farm site compound, internal haul routes, turbine hardstanding areas, and the steel and blinding for the turbine foundations.

4. TRIP GENERATION AND DISTRIBUTION

4.1 SEASONAL ADJUSTMENT

In order to undertake an analysis of the key junction, it is sometimes necessary to apply a correction factor to convert the traffic count data into seasonally adjusted traffic flows to take account of the seasonal variation that is experienced with traffic volumes. A comparison was undertaken between the TII traffic count information for the day of the survey in May and the annual average daily traffic (AADT) for the previous year. The traffic count on the day of the survey was higher than the average for the year; therefore, a seasonal adjustment was not required.

4.2 TRAFFIC GROWTH

The TII Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections presents annual growth rates for County Waterford.

A Link-based Central Sensitivity Growth Rates were applied to 2023 traffic flows to estimate traffic flows for the future assessment year. Table 4.1 shows the growth rates for Waterford County, split into light good vehicles (LGV) and heavy good vehicles (HGV) for the construction year analysed (2027). The derived growth factors were applied to 2023 traffic flows to determine background traffic flows for the assessment year.

Table 4.1: Growth Factors for Light Good Vehicle (LGV) and Heavy Good Vehicle (HGV)

Vehicle	2027
LGV	1.0702
HGV	1.1511

4.3 TRIP GENERATION

4.3.1 TRIP GENERATION OF PROPOSED PROJECT

A summary of the predicted traffic movements during peak activity and average construction phase is provided in Table 4.2.

Table 4.2: Traffic Volumes During the Construction Phase – Peak and Average Works

Trips	AM Peak (08:30 - 09:30)		PM Peak (16:30 - 17:30)	
	Arrivals	Departures	Arrivals	Departures
Peak construction phase				
LGV	116	0	0	116
HGV	15	15	15	15
Average construction phase				
LGV	87	0	0	87
HGV	10	10	10	10

The following assumptions have been made in the construction phase's generated traffic:

- It is assumed that 1 construction staff will travel to work per LGV,
- LGV will arrive during the AM peak hour and depart during the PM peak hour,
- LGV distribution follows the existing distribution,
- HGV will be in operation within construction working hours,
- All HGVs enter full and depart empty, and
- A worst-case scenario of all HGVs arriving and departing during AM peak or PM peak hours.

4.4 TRIP DISTRIBUTION

4.4.1 TRIP DISTRIBUTION – DO-NOTHING SCENARIO

With the results of the traffic survey, it was possible to determine origin-destination matrices during morning and evening peak hours at Junction 1. Origin-Destination matrices are provided in Appendix A. Figure 4.1 and

Figure 4.2 show the baseline traffic distribution during peak hours.

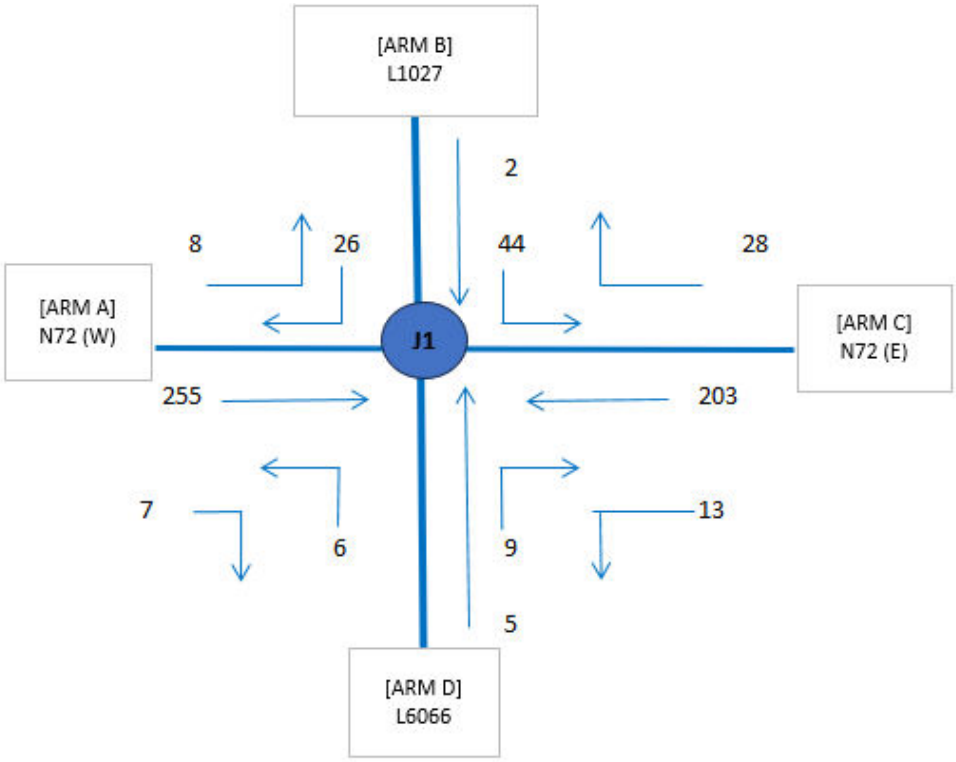


Figure 4.1: Traffic Distribution 2023 AM Peak at Junction 1

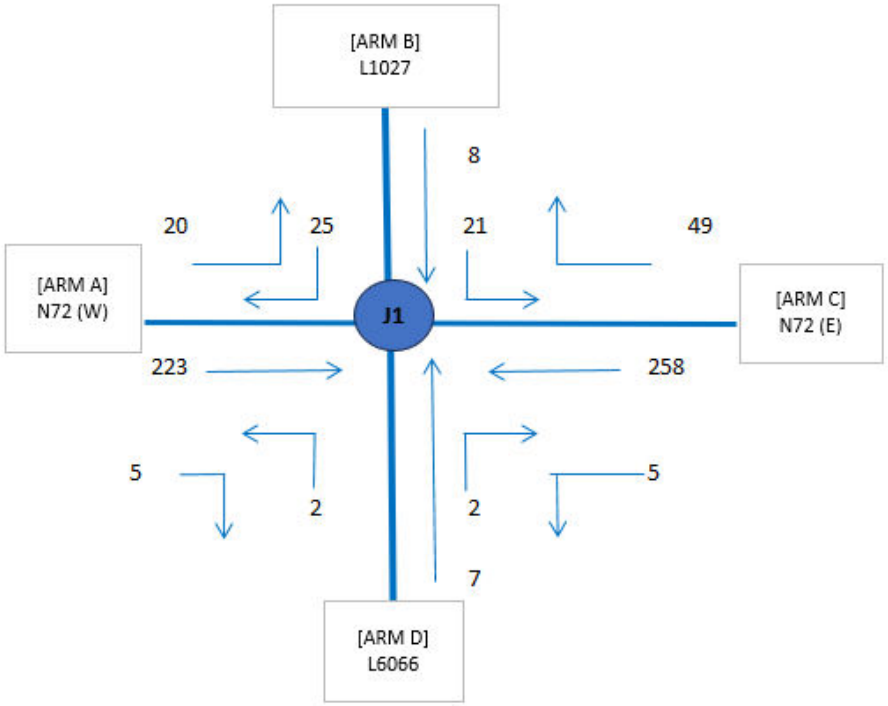


Figure 4.2: Traffic Distribution 2023 PM Peak at Junction 1

Growth factors for light and heavy vehicles presented in Table 4.1 were applied in order to estimate traffic distribution on future assessment year. Figures below illustrate these traffic flows.

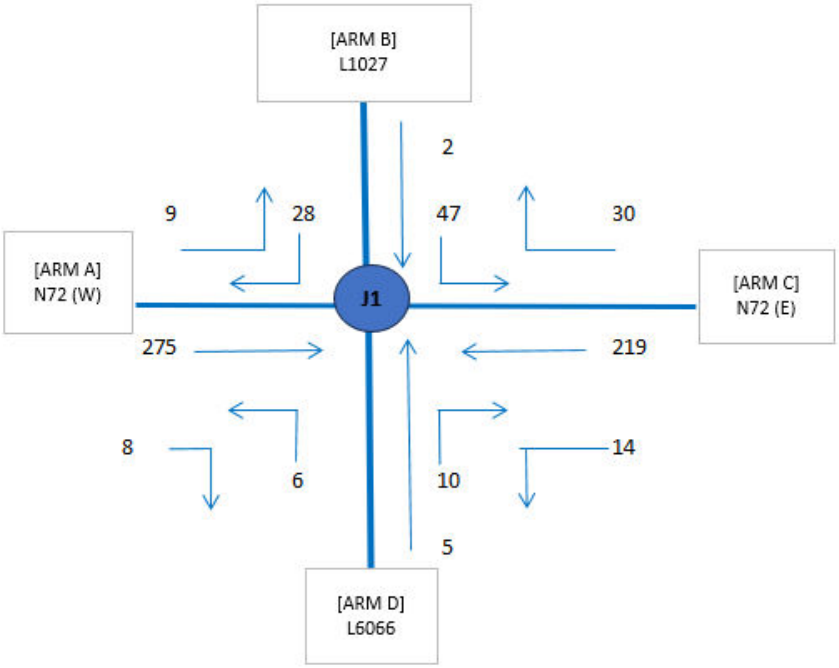


Figure 4.3: Traffic Flows 2027 AM Peak at Junction 1

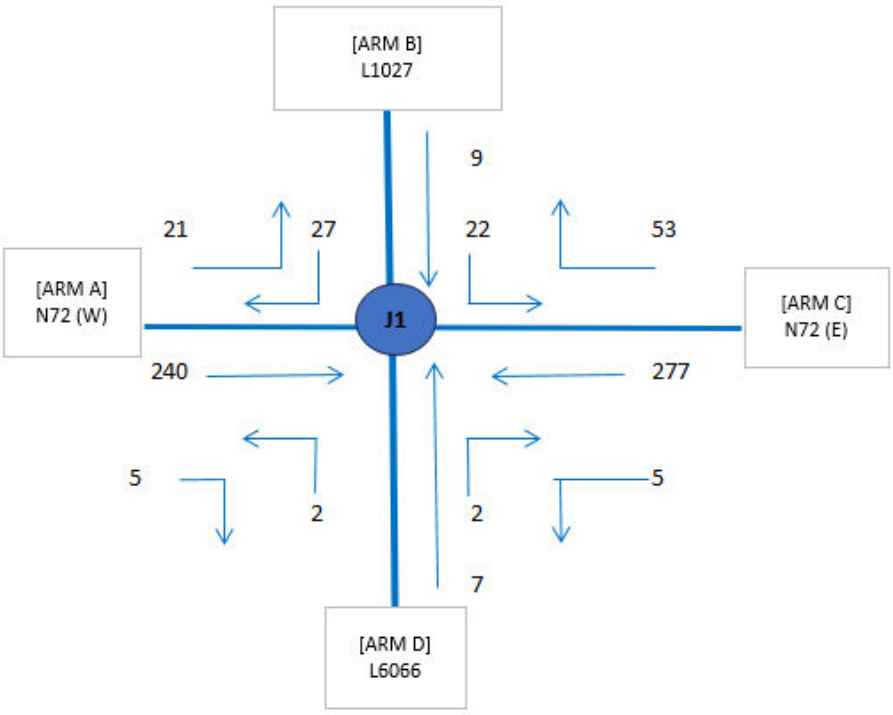


Figure 4.4: Traffic Flows 2027 PM Peak at Junction 1

4.4.2 TRIP DISTRIBUTION – WITH PROPOSED PROJECT

The proposed project will generate traffic movements in and out of the proposed wind farm site during peak hours. In this analysis, the worst-case scenario was considered. HGV in-site and out-site movements would occur during AM and PM peak hours, and LGVs would arrive during AM peak and depart during PM peak hour.

Light vehicle distribution to the proposed wind farm site was determined according to the distribution observed on the traffic counts. Regarding the HGV distribution, the construction haul routes were agreed upon with the client, and HGV movements to access and egress the proposed wind farm site would occur through N72 eastbound to L1027.

Traffic generated distribution during construction peak activity is presented in Figure 4.5 and

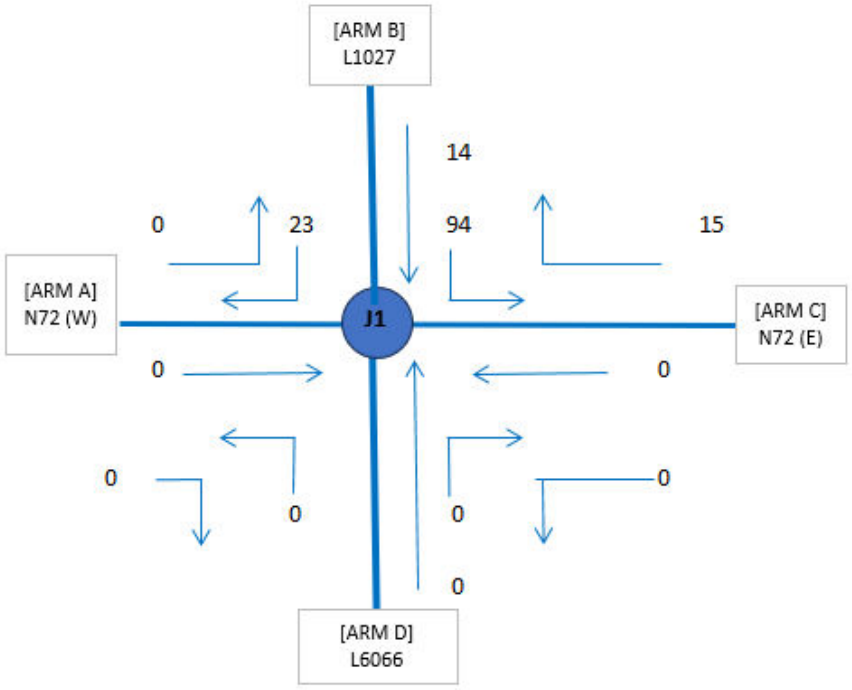


Figure 4.6, and traffic distribution during average construction phase is presented in Figure 4.7 and Figure 4.8.

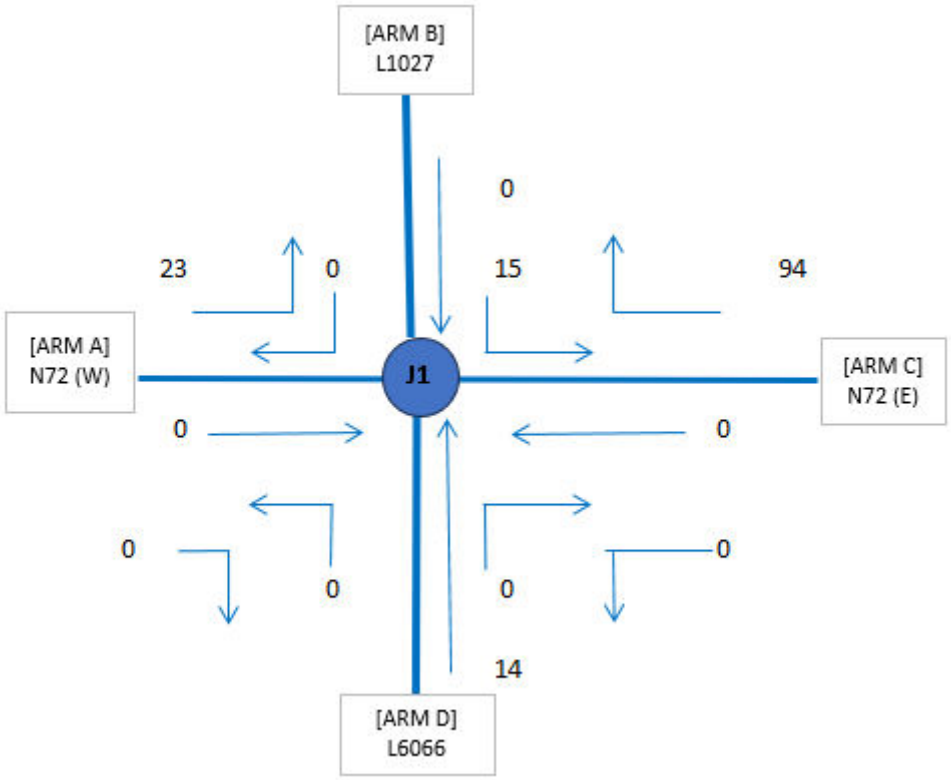


Figure 4.5: Generated Traffic Distribution During Construction Peak Activity - AM Peak

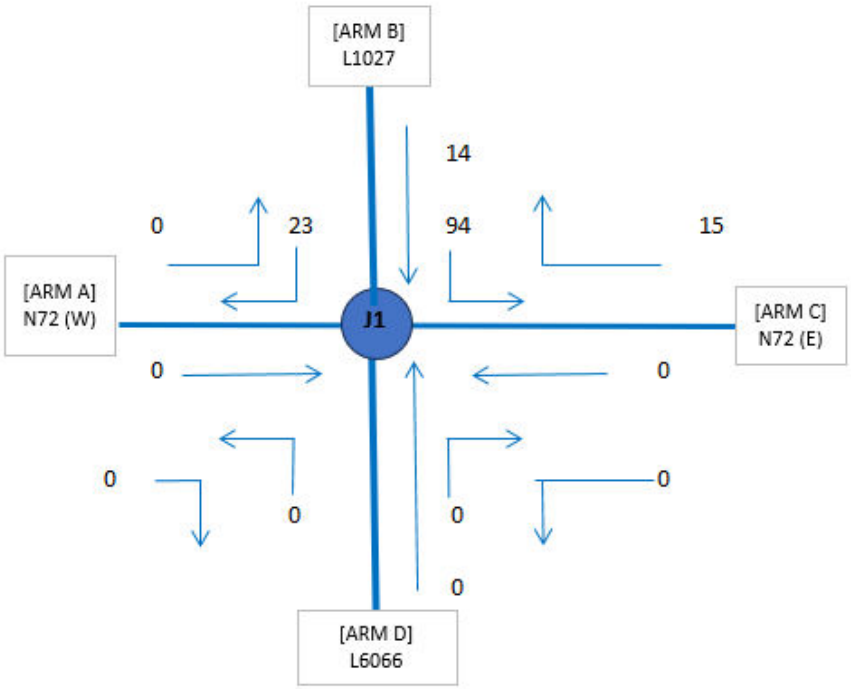


Figure 4.6: Generated Traffic Distribution During Construction Peak Activity - PM Peak

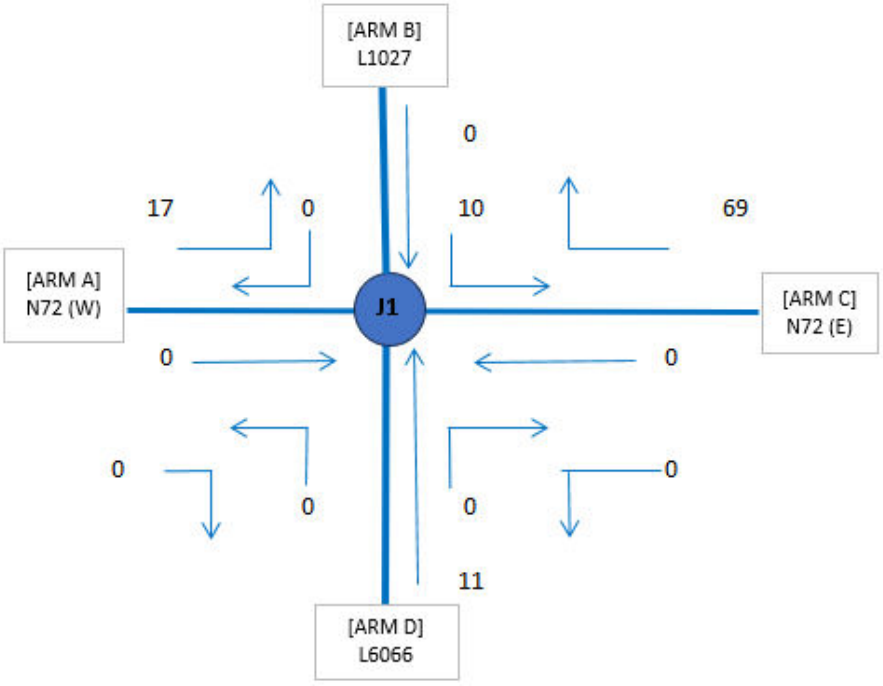


Figure 4.7: Generated Traffic Distribution During Average Construction Phase - AM Peak

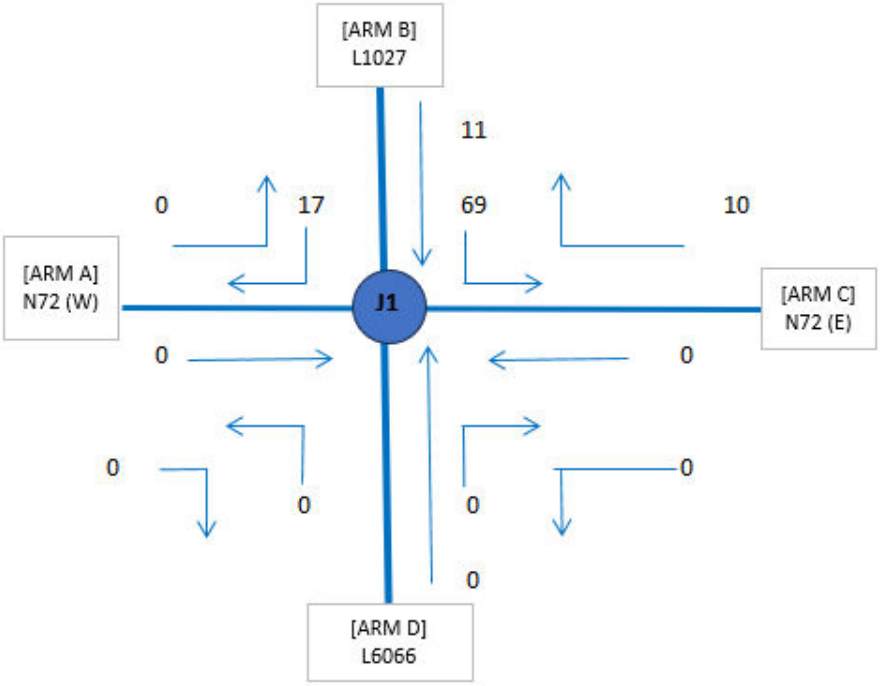


Figure 4.8: Generated Traffic Distribution During Average Construction Phase - PM Peak

The trip distribution for the baseline traffic plus generated traffic for the construction peak in 2027, for both the AM and PM peak hours are shown in the Figures below.

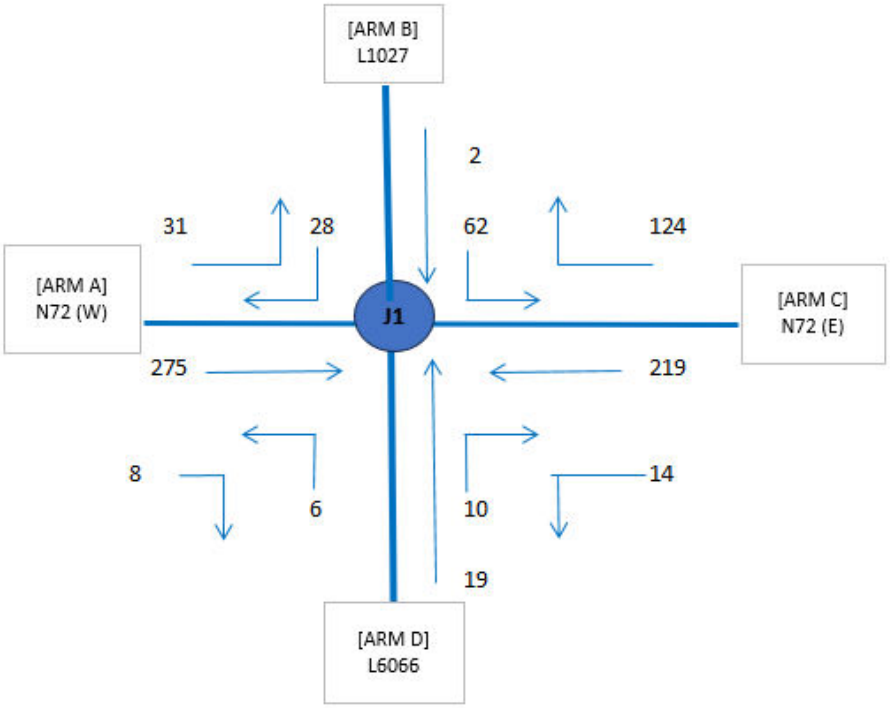


Figure 4.9: Baseflow Plus Generated Traffic During Construction Peak Activity - AM Peak

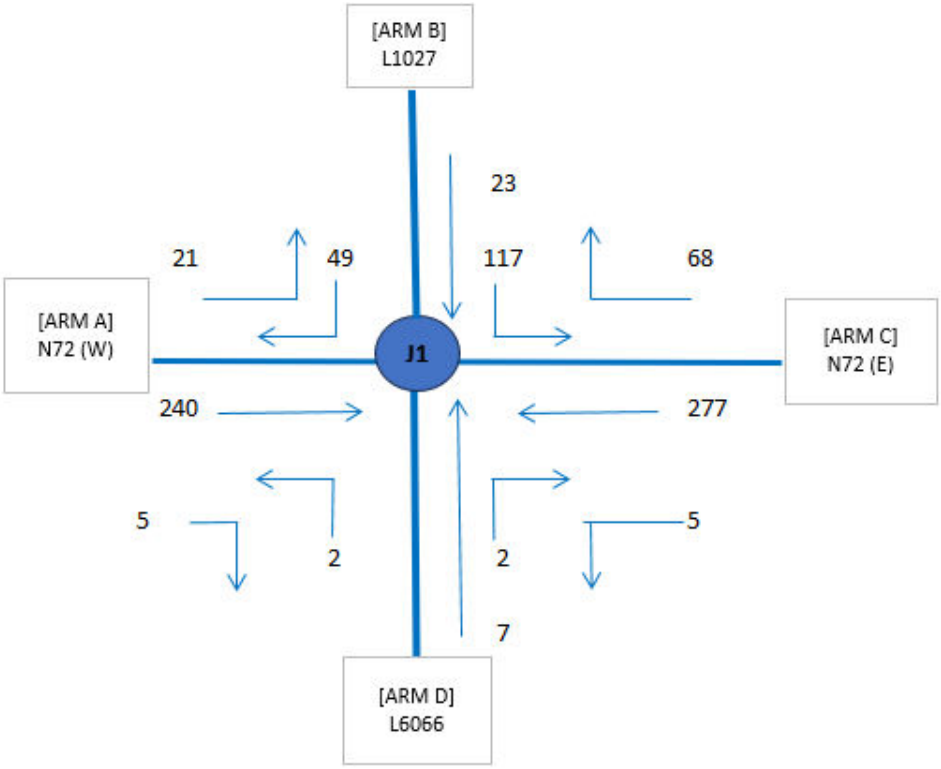


Figure 4.10: Baseflow Plus Generated Traffic During Construction Peak Activity - PM Peak

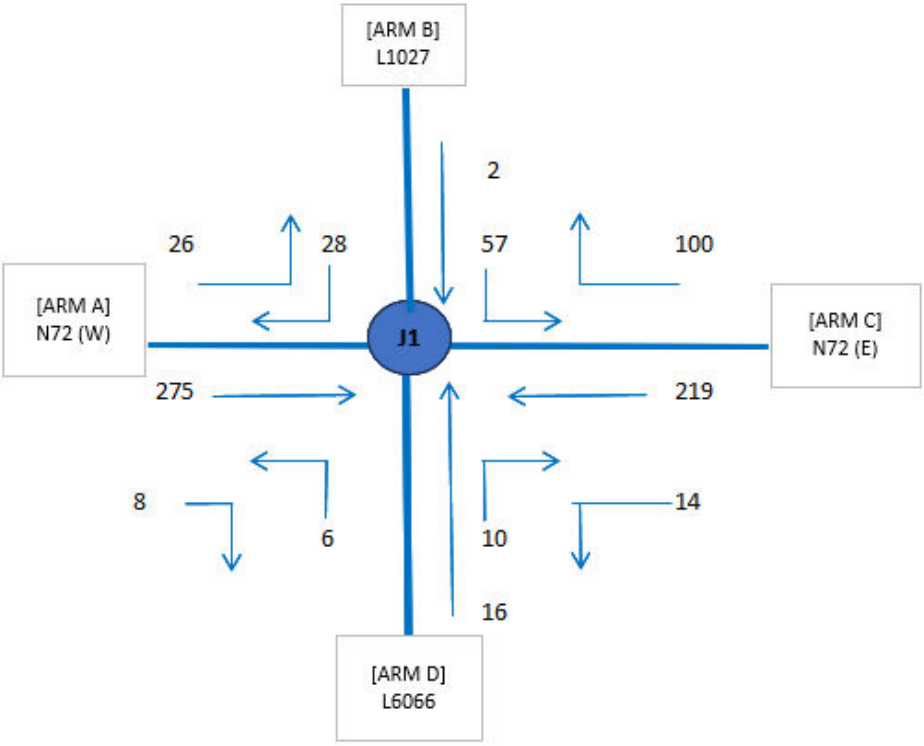


Figure 4.11: Baseflow Plus Generated Traffic During Average Construction Phase - AM Peak

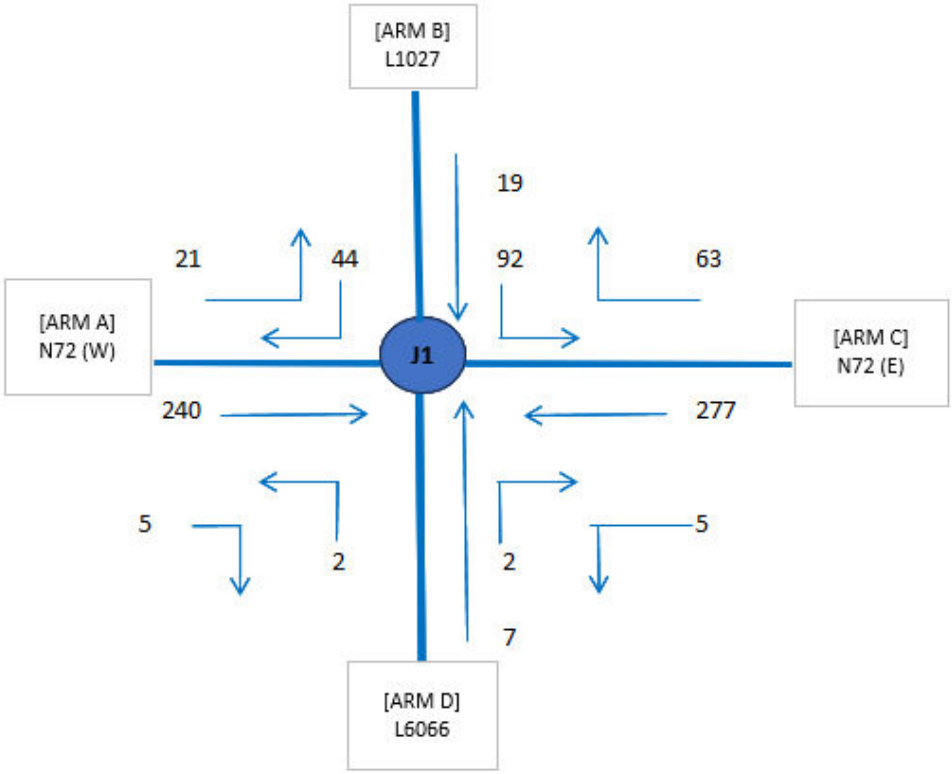


Figure 4.12: Baseflow Plus Generated Traffic During Average Construction Phase - PM Peak

5. TRAFFIC ANALYSIS

5.1 JUNCTION ANALYSIS

Junction 1 has been analysed using the Transport Research Laboratory (TRL) computer program JUNCTION 10 PICADY, a widely accepted tool used for the analysis of priority junctions.

The key parameters examined in the results of the analysis are the Ratio of Flow to Capacity (RFC - desirable value for PICADY should be no greater than 0.85 – values over 1.00 indicate the approach arm is over capacity), the maximum queue length on any approach to the junction, and the average delay for each vehicle passing through the junction during the modelled period.

PICADY 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 matrix with composition of heavy goods vehicles input).

For the TTA, the vehicle types have been segregated into light good vehicles (LGV) and heavy good vehicles (HGV) prior to input. Traffic volumes input into PICADY were in vehicles and, accordingly, commercial vehicle composition was set to the percentage of that arm.

The performance of the Junction 1 has been analysed for the critical AM peak hour (08:30 - 09:30) and PM peak hour (16:30 - 17:30). These analyses were carried out for the current year and the construction peak activity year.

5.2 ANALYSIS RESULTS

A summary of the analyses results for the Junction 1 - N72/ L1027 for the AM and PM peak hours are provided below in Table 5.1. Full outputs from JUNCTION 10 PICADY are included in Appendix B.

5.2.1 JUNCTION 1 – N72/ L1027 CROSSROADS JUNCTION

Table 5.1: Junction 1 Results AM & PM Peak Hours

	AM						PM					
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS
	Base Year 2023											
Stream B-ACD	0.2	7.58	0.14	A	1.55	A	0.1	7.79	0.11	A	1.4	A
Stream A-BCD	0	5.6	0.02	A			0	4.76	0.01	A		
Stream D-ABC	0	7.92	0.05	A			0	8.16	0.03	A		
Stream C-ABD	0.1	5.23	0.06	A			0.2	4.96	0.1	A		
	No Development - Construction Phase (2027)											
Stream B-ACD	0.2	7.84	0.16	A	1.59	A	0.1	8.09	0.13	A	1.43	A
Stream A-BCD	0	5.57	0.02	A			0	4.74	0.01	A		
Stream D-ABC	0.1	8.18	0.05	A			0	8.36	0.03	A		
Stream C-ABD	0.1	5.26	0.07	A			0.2	4.96	0.11	A		
	With Proposed Development - Peak Construction Phase (2027)											
Stream B-ACD	0.3	9.81	0.22	A	3.37	A	0.7	11.45	0.4	B	3.69	A
Stream A-BCD	0	5.66	0.02	A			0	4.79	0.01	A		
Stream D-ABC	0.1	9.58	0.09	A			0	8.69	0.03	A		
Stream C-ABD	0.6	7.22	0.3	A			0.3	6.03	0.18	A		
	With Proposed Development - Average Construction Phase (2027)											
Stream B-ACD	0.2	9.21	0.2	A	2.84	A	0.5	10.16	0.33	B	2.96	A
Stream A-BCD	0	5.63	0.02	A			0	4.77	0.01	A		
Stream D-ABC	0.1	9.23	0.08	A			0	8.58	0.03	A		
Stream C-ABD	0.4	6.57	0.24	A			0.3	5.7	0.16	A		

Table 5.1 is the summary of Junction 1 performance analysis and indicates that the junction will operate within capacity, with a maximum RFC of 0.4 encountered at the junction, which is well below the maximum desired RFC of 0.85. The summary indicates that there will be no queues and a maximum delay of 3.69 seconds during the peak construction phase at the PM peak.

6. OTHER ROAD ISSUES

6.1 ROAD SAFETY

The existing access on L5055 is designed in accordance with the TII Geometric Design of Junctions - DN-GEO-03060 (May 2023) and will ensure visibility splays of 4.5 x 160 metres are met. L5055 is within an 80 km/h speed limit.

A Stage 1 Road Safety Audit was carried out on the proposed project design and its recommendations were incorporated into the final scheme design. Road Safety Audit report is provided in Chapter 16 of the EIAR (Traffic & Transportation).

6.2 PARKING PROVISION

The proposed project will provide car parking facilities during the construction and operational phases.

6.3 SWEPT PATH ANALYSIS

A Vehicle Swept Path Analysis has been completed for the proposed wind farm site layout and the proposed wind farm site access. The purpose of the Swept Path Analysis is to identify and resolve potential issues and conflict points during the design stage. Details of this analysis on the final layout are shown on Drawing No. 11303-2020.

6.4 PEDESTRIANS AND CYCLISTS

Pedestrian facilities will be provided where required within the proposed project to facilitate safe pedestrian movements in accordance with the Health and Safety Plan. No specific provision has been made to accommodate cyclists.

6.5 PUBLIC TRANSPORT

There is no regular public transport service in operation in the immediate vicinity of the proposed project. Therefore, it is not expected that the staff working at the proposed wind farm site will utilise such services.

7. CONCLUSIONS

The existing junction in the vicinity of the proposed project was analysed to ascertain the potential impact of the proposed project on the surrounding road network. The resulting assessment is summarised as follows:

7.1 JUNCTION 1 – N72/ L1027 CROSSROADS JUNCTION

The junction assessment indicates Junction 1 - N72/ L1027 will operate within capacity during the construction phase. The maximum RFC of 0.4 encountered at Junction 1 is well below the maximum desired RFC of 0.85.

The analysis indicates that there will be no queues and minimal delays during the peak hours for both scenarios, no proposed project and with proposed project.

A comparison of the assessment result with no project and with project scenarios indicates a negligible impact by the addition of the proposed project traffic on the junction i.e., a maximum delay of 3.69 seconds during the PM peak hour.

Appendix A ORIGIN/ DESTINATION MATRICES

Traffic Calculations for Scart Mountain Wind Farm

Site 1 - N72 / L1027

AM Peak (08:30 - 09:30)

Seasonally Adjusted ***2023*** ***2027*** ***Construction Phase***

	Waterford	***LGV***	***HGV***
	2016 - 2030 index	*1.0171*	*1.0358*
	Years	*4*	*4*
High Growth Factor		***1.0702***	***1.1511***

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	7	1	235	20	5	2
B	25	1	0	0	43	1	2	0
C	181	22	26	2	0	0	13	0
D	6	0	5	0	9	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	7	1	251	23	5	2
B	27	1	0	0	46	1	2	0
C	194	25	28	2	0	0	14	0
D	6	0	5	0	10	0	0	0

AM PEAK GENERATED TRAFFIC

CONSTRUCTION PHASE - PEAK

Generated Traffic

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	23	0	0	0	0	0
B	0	0	0	0	0	15	0	0
C	0	0	79	15	0	0	0	0
D	0	0	14	0	0	0	0	0

2027 Construction Phase - Peak

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	30	1	251	23	5	2
B	27	1	0	0	46	16	2	0
C	194	25	107	17	0	0	14	0
D	6	0	19	0	10	0	0	0

AM PEAK GENERATED TRAFFIC

CONSTRUCTION PHASE - AVERAGE

Generated Traffic

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	17	0	0	0	0	0
B	0	0	0	0	0	10	0	0
C	0	0	59	10	0	0	0	0
D	0	0	11	0	0	0	0	0

2027 Construction Phase - Average

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	1	251	23	5	2
B	27	1	0	0	46	11	2	0
C	194	25	87	12	0	0	14	0
D	6	0	16	0	10	0	0	0

Traffic Calculations for Scart Mountain Wind Farm

Site 1 - N72 / L1027

PM Peak (16:30 - 17:30)

Seasonally Adjusted ***2023*** ***2027*** ***Construction Phase***

	Waterford	***LGV***	***HGV***
	2016 - 2030 index	*1.0171*	*1.0358*
	Years	*4*	*4*
High Growth Factor		***1.0702***	***1.1511***

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	19	1	209	14	5	0
B	25	0	0	0	21	0	8	0
C	248	10	48	1	0	0	5	0
D	2	0	7	0	2	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	20	1	224	16	5	0
B	27	0	0	0	22	0	9	0
C	265	12	51	1	0	0	5	0
D	2	0	7	0	2	0	0	0

PM PEAK GENERATED TRAFFIC

CONSTRUCTION PHASE - PEAK

Generated Traffic

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	0	0	0	0
B	23	0	0	0	79	15	14	0
C	0	0	0	15	0	0	0	0
D	0	0	0	0	0	0	0	0

2027 Construction Phase - Peak

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	20	1	224	16	5	0
B	49	0	0	0	102	15	23	0
C	265	12	51	16	0	0	5	0
D	2	0	7	0	2	0	0	0

PM PEAK GENERATED TRAFFIC

CONSTRUCTION PHASE - AVERAGE

Generated Traffic

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	0	0	0	0
B	17	0	0	0	59	10	11	0
C	0	0	0	10	0	0	0	0
D	0	0	0	0	0	0	0	0

2027 Construction Phase - Average

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	20	1	224	16	5	0
B	44	0	0	0	82	10	19	0
C	265	12	51	11	0	0	5	0
D	2	0	7	0	2	0	0	0

Appendix B JUNCTION 10 PICADY

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.0.4.1693

Filename: Site 1.j10
Path: \\fserver5-dub\tobin\Projects\11303 – Coillte Broemountain Wind Farm\05-Design\01-Calculations\Traffic
Report generation date: 16/05/2024 09:41:01

Summary of junction performance

	AM						PM					
	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS
	Base Year 2023											
Stream B-ACD	0.2	7.58	0.14	A	1.55	A	0.1	7.79	0.11	A	1.40	A
Stream A-BCD	0.0	5.60	0.02	A			0.0	4.76	0.01	A		
Stream D-ABC	0.0	7.92	0.05	A			0.0	8.16	0.03	A		
Stream C-ABD	0.1	5.23	0.06	A			0.2	4.96	0.10	A		
	No Development - Construction Phase (2027)											
Stream B-ACD	0.2	7.84	0.16	A	1.59	A	0.1	8.09	0.13	A	1.43	A
Stream A-BCD	0.0	5.57	0.02	A			0.0	4.74	0.01	A		
Stream D-ABC	0.1	8.18	0.05	A			0.0	8.36	0.03	A		
Stream C-ABD	0.1	5.26	0.07	A			0.2	4.96	0.11	A		
	With Proposed Development - Peak Construction Phase (2027)											
Stream B-ACD	0.3	9.81	0.22	A	3.37	A	0.7	11.45	0.40	B	3.69	A
Stream A-BCD	0.0	5.66	0.02	A			0.0	4.79	0.01	A		
Stream D-ABC	0.1	9.58	0.09	A			0.0	8.69	0.03	A		
Stream C-ABD	0.6	7.22	0.30	A			0.3	6.03	0.18	A		
	With Proposed Development - Average Construction Phase (2027)											
Stream B-ACD	0.2	9.21	0.20	A	2.84	A	0.5	10.16	0.33	B	2.96	A
Stream A-BCD	0.0	5.63	0.02	A			0.0	4.77	0.01	A		
Stream D-ABC	0.1	9.23	0.08	A			0.0	8.58	0.03	A		
Stream C-ABD	0.4	6.57	0.24	A			0.3	5.70	0.16	A		

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

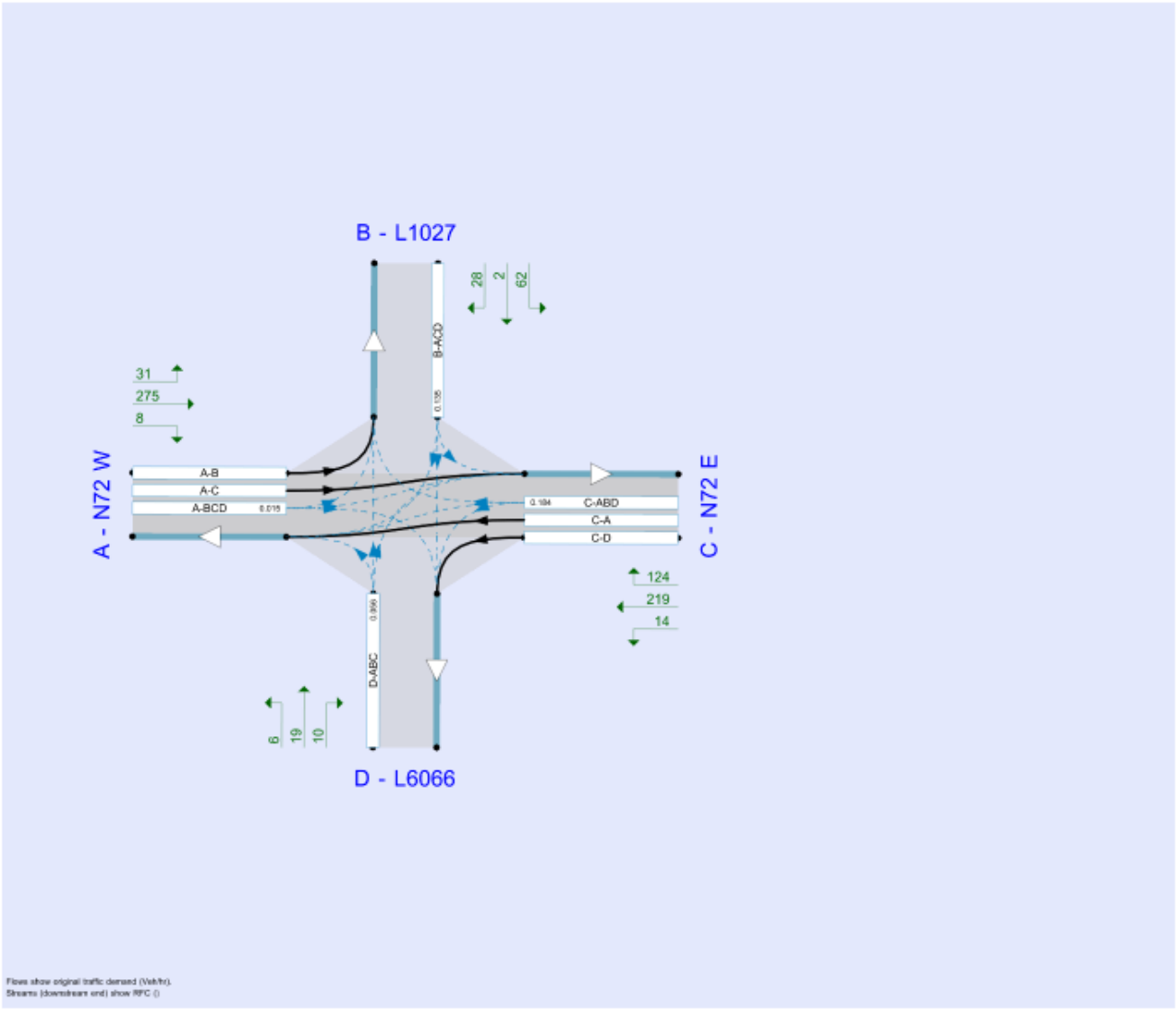
File summary

File Description

Title	Scart Mountain Wind Farm
Location	Waterford
Site number	
Date	16/05/2024
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	TOBIN\Juliana.Cardoso
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base Year 2023	AM	ONE HOUR	08:15	09:45	15
D2	Base Year 2023	PM	ONE HOUR	16:15	17:45	15
D3	No Development - Construction Phase (2027)	AM	ONE HOUR	08:15	09:45	15
D4	No Development - Construction Phase (2027)	PM	ONE HOUR	16:15	17:45	15
D5	With Proposed Development - Peak Construction Phase (2027)	AM	ONE HOUR	08:15	09:45	15
D6	With Proposed Development - Peak Construction Phase (2027)	PM	ONE HOUR	16:15	17:45	15
D7	With Proposed Development - Average Construction Phase (2027)	AM	ONE HOUR	08:15	09:45	15
D8	With Proposed Development - Average Construction Phase (2027)	PM	ONE HOUR	16:15	17:45	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Base Year 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		1.55	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.55	A

Arms

Arms

Arm	Name	Description	Arm type
A	N72 W		Major
B	L1027		Minor
C	N72 E		Major
D	L6066		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - N72 W	7.00			250.0	✓	0.00
C - N72 E	7.00			250.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - L1027	One lane	5.00	25	22
D - L6066	One lane	4.20	24	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
A-D	719	-	-	-	-	-	-	0.266	0.381	0.266	-	-	-
B-A	596	0.104	0.262	0.262	-	-	-	0.165	0.375	-	0.262	0.262	0.131
B-C	765	0.112	0.284	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	596	0.104	0.262	0.262	-	-	-	0.165	0.375	0.165	-	-	-
B-D, offside lane	596	0.104	0.262	0.262	-	-	-	0.165	0.375	0.165	-	-	-
C-B	719	0.266	0.266	0.381	-	-	-	-	-	-	-	-	-
D-A	720	-	-	-	-	-	-	0.267	-	0.106	-	-	-
D-B, nearside lane	560	0.155	0.155	0.352	-	-	-	0.247	0.247	0.098	-	-	-
D-B, offside lane	560	0.155	0.155	0.352	-	-	-	0.247	0.247	0.098	-	-	-
D-C	560	-	0.155	0.352	0.123	0.247	0.247	0.247	0.247	0.098	-	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Base Year 2023	AM	ONE HOUR	08:15	09:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	270	100.000
B - L1027		✓	72	100.000
C - N72 E		✓	244	100.000
D - L6066		✓	20	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	8	255	7
	B - L1027	26	0	44	2
	C - N72 E	203	28	0	13
	D - L6066	6	5	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	13	8	29
	B - L1027	4	0	2	0
	C - N72 E	11	7	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.14	7.58	0.2	A
A-BCD	0.02	5.60	0.0	A
A-B				
A-C				
D-ABC	0.05	7.92	0.0	A
C-ABD	0.06	5.23	0.1	A
C-D				
C-A				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	54	592	0.092	54	0.1	6.690	A
A-BCD	8	650	0.012	8	0.0	5.599	A
A-B	6			6			
A-C	190			190			
D-ABC	15	517	0.029	15	0.0	7.174	A
C-ABD	27	717	0.038	27	0.1	5.215	A
C-D	9			9			
C-A	147			147			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	65	576	0.112	65	0.1	7.039	A
A-BCD	10	670	0.015	10	0.0	5.474	A
A-B	7			7			
A-C	226			226			
D-ABC	18	500	0.036	18	0.0	7.468	A
C-ABD	34	727	0.047	34	0.1	5.194	A
C-D	11			11			
C-A	174			174			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	79	554	0.143	79	0.2	7.581	A
A-BCD	13	697	0.019	13	0.0	5.288	A
A-B	9			9			
A-C	275			275			
D-ABC	22	477	0.046	22	0.0	7.913	A
C-ABD	45	742	0.061	45	0.1	5.166	A
C-D	13			13			
C-A	210			210			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	79	554	0.143	79	0.2	7.585	A
A-BCD	13	697	0.019	13	0.0	5.263	A
A-B	9			9			
A-C	275			275			
D-ABC	22	477	0.046	22	0.0	7.916	A
C-ABD	46	742	0.061	45	0.1	5.172	A
C-D	13			13			
C-A	210			210			

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	65	576	0.112	65	0.1	7.047	A
A-BCD	10	670	0.015	10	0.0	5.420	A
A-B	7			7			
A-C	226			226			
D-ABC	18	500	0.036	18	0.0	7.474	A
C-ABD	34	727	0.047	35	0.1	5.203	A
C-D	11			11			
C-A	174			174			

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	54	592	0.092	54	0.1	6.701	A
A-BCD	8	651	0.012	8	0.0	5.572	A
A-B	6			6			
A-C	190			190			
D-ABC	15	516	0.029	15	0.0	7.183	A
C-ABD	27	717	0.038	27	0.1	5.225	A
C-D	9			9			
C-A	147			147			

Base Year 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		1.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.40	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	Base Year 2023	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	248	100.000
B - L1027		✓	54	100.000
C - N72 E		✓	312	100.000
D - L6066		✓	11	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	20	223	5
	B - L1027	25	0	21	8
	C - N72 E	258	49	0	5
	D - L6066	2	7	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	5	6	0
	B - L1027	0	0	0	0
	C - N72 E	4	2	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.11	7.79	0.1	A
A-BCD	0.01	4.76	0.0	A
A-B				
A-C				
D-ABC	0.03	8.16	0.0	A
C-ABD	0.10	4.96	0.2	A
C-D				
C-A				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	564	0.072	40	0.1	6.874	A
A-BCD	5	763	0.006	5	0.0	4.750	A
A-B	15			15			
A-C	167			167			
D-ABC	8	495	0.017	8	0.0	7.397	A
C-ABD	50	776	0.064	49	0.1	4.952	A
C-D	4			4			
C-A	182			182			

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	49	546	0.089	48	0.1	7.233	A
A-BCD	6	773	0.008	6	0.0	4.691	A
A-B	18			18			
A-C	199			199			
D-ABC	10	477	0.021	10	0.0	7.701	A
C-ABD	63	791	0.080	63	0.1	4.940	A
C-D	4			4			
C-A	213			213			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	59	522	0.114	59	0.1	7.785	A
A-BCD	8	788	0.011	8	0.0	4.611	A
A-B	22			22			
A-C	243			243			
D-ABC	12	453	0.027	12	0.0	8.163	A
C-ABD	84	813	0.103	84	0.2	4.935	A
C-D	5			5			
C-A	255			255			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	59	522	0.114	59	0.1	7.789	A
A-BCD	8	788	0.011	8	0.0	4.618	A
A-B	22			22			
A-C	243			243			
D-ABC	12	453	0.027	12	0.0	8.164	A
C-ABD	84	813	0.103	84	0.2	4.940	A
C-D	5			5			
C-A	255			255			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	49	546	0.089	49	0.1	7.238	A
A-BCD	6	773	0.008	6	0.0	4.706	A
A-B	18			18			
A-C	199			199			
D-ABC	10	477	0.021	10	0.0	7.705	A
C-ABD	63	791	0.080	63	0.1	4.950	A
C-D	4			4			
C-A	213			213			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	41	564	0.072	41	0.1	6.884	A
A-BCD	5	762	0.007	5	0.0	4.761	A
A-B	15			15			
A-C	167			167			
D-ABC	8	495	0.017	8	0.0	7.400	A
C-ABD	50	776	0.064	50	0.1	4.961	A
C-D	4			4			
C-A	182			182			

No Development - Construction Phase (2027), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		1.59	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.59	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	No Development - Construction Phase (2027)	AM	ONE HOUR	08:15	09:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	292	100.000
B - L1027		✓	77	100.000
C - N72 E		✓	283	100.000
D - L6066		✓	21	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	9	275	8
	B - L1027	28	0	47	2
	C - N72 E	219	30	0	14
	D - L6066	6	5	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	13	8	30
	B - L1027	4	0	2	0
	C - N72 E	12	8	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.16	7.84	0.2	A
A-BCD	0.02	5.57	0.0	A
A-B				
A-C				
D-ABC	0.05	8.18	0.1	A
C-ABD	0.07	5.26	0.1	A
C-D				
C-A				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	58	585	0.099	58	0.1	6.821	A
A-BCD	9	655	0.014	9	0.0	5.575	A
A-B	7			7			
A-C	204			204			
D-ABC	16	507	0.031	16	0.0	7.330	A
C-ABD	30	715	0.042	30	0.1	5.248	A
C-D	10			10			
C-A	158			158			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	69	568	0.122	69	0.1	7.217	A
A-BCD	12	676	0.017	12	0.0	5.441	A
A-B	8			8			
A-C	243			243			
D-ABC	19	488	0.039	19	0.0	7.666	A
C-ABD	38	727	0.052	38	0.1	5.224	A
C-D	12			12			
C-A	187			187			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	85	544	0.156	85	0.2	7.836	A
A-BCD	16	706	0.022	16	0.0	5.243	A
A-B	10			10			
A-C	296			296			
D-ABC	23	463	0.050	23	0.1	8.180	A
C-ABD	51	743	0.068	50	0.1	5.195	A
C-D	14			14			
C-A	225			225			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	85	544	0.156	85	0.2	7.842	A
A-BCD	16	706	0.022	16	0.0	5.217	A
A-B	10			10			
A-C	296			296			
D-ABC	23	463	0.050	23	0.1	8.183	A
C-ABD	51	743	0.068	51	0.1	5.203	A
C-D	14			14			
C-A	225			225			

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	69	568	0.122	69	0.1	7.226	A
A-BCD	12	676	0.017	12	0.0	5.384	A
A-B	8			8			
A-C	243			243			
D-ABC	19	488	0.039	19	0.0	7.669	A
C-ABD	38	727	0.052	38	0.1	5.236	A
C-D	12			12			
C-A	186			186			

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	58	585	0.099	58	0.1	6.838	A
A-BCD	9	655	0.014	9	0.0	5.547	A
A-B	7			7			
A-C	204			204			
D-ABC	16	506	0.031	16	0.0	7.336	A
C-ABD	30	715	0.042	30	0.1	5.260	A
C-D	10			10			
C-A	158			158			

No Development - Construction Phase (2027), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		1.43	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.43	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	No Development - Construction Phase (2027)	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	266	100.000
B - L1027		✓	58	100.000
C - N72 E		✓	335	100.000
D - L6066		✓	11	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	21	240	5
	B - L1027	27	0	22	9
	C - N72 E	277	53	0	5
	D - L6066	2	7	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	5	7	0
	B - L1027	0	0	0	0
	C - N72 E	4	2	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.13	8.09	0.1	A
A-BCD	0.01	4.74	0.0	A
A-B				
A-C				
D-ABC	0.03	8.36	0.0	A
C-ABD	0.11	4.96	0.2	A
C-D				
C-A				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	44	555	0.079	43	0.1	7.033	A
A-BCD	5	766	0.007	5	0.0	4.731	A
A-B	16			16			
A-C	179			179			
D-ABC	8	488	0.017	8	0.0	7.503	A
C-ABD	55	781	0.070	54	0.1	4.951	A
C-D	4			4			
C-A	194			194			

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	52	536	0.097	52	0.1	7.445	A
A-BCD	6	777	0.008	6	0.0	4.666	A
A-B	19			19			
A-C	214			214			
D-ABC	10	469	0.021	10	0.0	7.839	A
C-ABD	70	798	0.088	70	0.1	4.946	A
C-D	4			4			
C-A	227			227			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	64	509	0.125	64	0.1	8.083	A
A-BCD	9	793	0.011	9	0.0	4.580	A
A-B	23			23			
A-C	261			261			
D-ABC	12	443	0.027	12	0.0	8.355	A
C-ABD	94	821	0.115	94	0.2	4.949	A
C-D	5			5			
C-A	270			270			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	64	509	0.125	64	0.1	8.088	A
A-BCD	9	793	0.011	9	0.0	4.590	A
A-B	23			23			
A-C	261			261			
D-ABC	12	443	0.027	12	0.0	8.356	A
C-ABD	94	821	0.115	94	0.2	4.953	A
C-D	5			5			
C-A	270			270			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	52	536	0.097	52	0.1	7.450	A
A-BCD	6	777	0.008	6	0.0	4.684	A
A-B	19			19			
A-C	214			214			
D-ABC	10	469	0.021	10	0.0	7.842	A
C-ABD	70	798	0.088	70	0.2	4.955	A
C-D	4			4			
C-A	227			227			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	44	555	0.079	44	0.1	7.049	A
A-BCD	5	766	0.007	5	0.0	4.741	A
A-B	16			16			
A-C	179			179			
D-ABC	8	488	0.017	8	0.0	7.506	A
C-ABD	55	781	0.070	55	0.1	4.964	A
C-D	3			3			
C-A	194			194			

With Proposed Development - Peak Construction Phase (2027), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		3.37	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.37	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	With Proposed Development - Peak Construction Phase (2027)	AM	ONE HOUR	08:15	09:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	314	100.000
B - L1027		✓	92	100.000
C - N72 E		✓	357	100.000
D - L6066		✓	35	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	31	275	8
	B - L1027	28	0	62	2
	C - N72 E	219	124	0	14
	D - L6066	6	19	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	4	8	30
	B - L1027	4	0	26	0
	C - N72 E	12	14	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.22	9.81	0.3	A
A-BCD	0.02	5.66	0.0	A
A-B				
A-C				
D-ABC	0.09	9.58	0.1	A
C-ABD	0.30	7.22	0.6	A
C-D				
C-A				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	69	511	0.135	69	0.2	8.123	A
A-BCD	9	645	0.015	9	0.0	5.659	A
A-B	23			23			
A-C	204			204			
D-ABC	26	469	0.056	26	0.1	8.129	A
C-ABD	126	684	0.184	124	0.3	6.424	A
C-D	9			9			
C-A	135			135			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	83	493	0.168	83	0.2	8.757	A
A-BCD	12	666	0.018	12	0.0	5.535	A
A-B	27			27			
A-C	243			243			
D-ABC	31	446	0.071	31	0.1	8.684	A
C-ABD	160	696	0.230	159	0.4	6.717	A
C-D	10			10			
C-A	151			151			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	101	468	0.216	101	0.3	9.792	A
A-BCD	17	695	0.025	17	0.0	5.342	A
A-B	33			33			
A-C	295			295			
D-ABC	39	414	0.093	38	0.1	9.574	A
C-ABD	214	713	0.300	213	0.6	7.211	A
C-D	11			11			
C-A	168			168			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	101	468	0.216	101	0.3	9.811	A
A-BCD	17	695	0.025	17	0.0	5.315	A
A-B	33			33			
A-C	295			295			
D-ABC	39	414	0.093	39	0.1	9.584	A
C-ABD	214	714	0.300	214	0.6	7.224	A
C-D	11			11			
C-A	168			168			

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	83	493	0.168	83	0.2	8.780	A
A-BCD	12	666	0.019	12	0.0	5.469	A
A-B	27			27			
A-C	243			243			
D-ABC	31	446	0.071	32	0.1	8.698	A
C-ABD	160	696	0.230	161	0.4	6.735	A
C-D	10			10			
C-A	151			151			

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	69	511	0.136	69	0.2	8.157	A
A-BCD	9	645	0.015	9	0.0	5.630	A
A-B	23			23			
A-C	204			204			
D-ABC	26	468	0.056	26	0.1	8.149	A
C-ABD	126	684	0.184	126	0.3	6.459	A
C-D	9			9			
C-A	134			134			

With Proposed Development - Peak Construction Phase (2027), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		3.69	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.69	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	With Proposed Development - Peak Construction Phase (2027)	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	266	100.000
B - L1027		✓	189	100.000
C - N72 E		✓	350	100.000
D - L6066		✓	11	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	21	240	5
	B - L1027	49	0	117	23
	C - N72 E	277	68	0	5
	D - L6066	2	7	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	5	7	0
	B - L1027	0	0	13	0
	C - N72 E	4	24	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.40	11.45	0.7	B
A-BCD	0.01	4.79	0.0	A
A-B				
A-C				
D-ABC	0.03	8.69	0.0	A
C-ABD	0.18	6.03	0.3	A
C-D				
C-A				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	142	563	0.253	141	0.3	8.536	A
A-BCD	5	758	0.007	5	0.0	4.779	A
A-B	16			16			
A-C	179			179			
D-ABC	8	477	0.017	8	0.0	7.673	A
C-ABD	74	681	0.109	74	0.2	5.928	A
C-D	3			3			
C-A	186			186			

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	170	546	0.311	169	0.4	9.548	A
A-BCD	6	768	0.008	6	0.0	4.721	A
A-B	19			19			
A-C	214			214			
D-ABC	10	456	0.022	10	0.0	8.068	A
C-ABD	96	702	0.137	96	0.2	5.968	A
C-D	4			4			
C-A	215			215			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	208	523	0.398	207	0.6	11.387	B
A-BCD	9	783	0.011	9	0.0	4.642	A
A-B	23			23			
A-C	261			261			
D-ABC	12	427	0.028	12	0.0	8.686	A
C-ABD	131	731	0.179	130	0.3	6.027	A
C-D	5			5			
C-A	250			250			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	208	523	0.398	208	0.7	11.445	B
A-BCD	9	783	0.011	9	0.0	4.653	A
A-B	23			23			
A-C	261			261			
D-ABC	12	426	0.028	12	0.0	8.689	A
C-ABD	131	732	0.179	131	0.3	6.001	A
C-D	5			5			
C-A	250			250			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	170	546	0.311	171	0.5	9.614	A
A-BCD	6	768	0.008	6	0.0	4.740	A
A-B	19			19			
A-C	214			214			
D-ABC	10	456	0.022	10	0.0	8.074	A
C-ABD	96	702	0.137	97	0.2	5.910	A
C-D	4			4			
C-A	215			215			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	142	563	0.253	143	0.3	8.587	A
A-BCD	5	758	0.007	5	0.0	4.790	A
A-B	16			16			
A-C	179			179			
D-ABC	8	477	0.017	8	0.0	7.682	A
C-ABD	75	681	0.110	75	0.2	5.914	A
C-D	3			3			
C-A	185			185			

With Proposed Development - Average Construction Phase (2027), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		2.84	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.84	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	With Proposed Development - Average Construction Phase (2027)	AM	ONE HOUR	08:15	09:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	309	100.000
B - L1027		✓	87	100.000
C - N72 E		✓	333	100.000
D - L6066		✓	32	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	26	275	8
	B - L1027	28	0	57	2
	C - N72 E	219	100	0	14
	D - L6066	6	16	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	5	8	30
	B - L1027	4	0	20	0
	C - N72 E	12	12	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.20	9.21	0.2	A
A-BCD	0.02	5.63	0.0	A
A-B				
A-C				
D-ABC	0.08	9.23	0.1	A
C-ABD	0.24	6.57	0.4	A
C-D				
C-A				

Main Results for each time segment

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	65	530	0.124	65	0.1	7.737	A
A-BCD	9	648	0.014	9	0.0	5.634	A
A-B	19			19			
A-C	204			204			
D-ABC	24	477	0.051	24	0.1	7.943	A
C-ABD	101	692	0.146	100	0.2	6.081	A
C-D	9			9			
C-A	141			141			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	78	512	0.153	78	0.2	8.297	A
A-BCD	12	669	0.018	12	0.0	5.507	A
A-B	23			23			
A-C	243			243			
D-ABC	29	455	0.063	29	0.1	8.437	A
C-ABD	128	703	0.182	128	0.3	6.261	A
C-D	10			10			
C-A	161			161			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	96	487	0.197	96	0.2	9.197	A
A-BCD	17	698	0.024	17	0.0	5.312	A
A-B	28			28			
A-C	295			295			
D-ABC	35	426	0.083	35	0.1	9.218	A
C-ABD	172	720	0.238	171	0.4	6.560	A
C-D	12			12			
C-A	183			183			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	96	487	0.197	96	0.2	9.210	A
A-BCD	17	698	0.024	17	0.0	5.283	A
A-B	28			28			
A-C	295			295			
D-ABC	35	425	0.083	35	0.1	9.226	A
C-ABD	172	721	0.238	172	0.4	6.571	A
C-D	12			12			
C-A	183			183			

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	78	512	0.153	78	0.2	8.314	A
A-BCD	12	669	0.018	12	0.0	5.443	A
A-B	23			23			
A-C	243			243			
D-ABC	29	455	0.063	29	0.1	8.449	A
C-ABD	129	704	0.183	129	0.3	6.276	A
C-D	10			10			
C-A	161			161			

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	65	529	0.124	66	0.1	7.766	A
A-BCD	9	648	0.014	9	0.0	5.603	A
A-B	19			19			
A-C	204			204			
D-ABC	24	477	0.051	24	0.1	7.958	A
C-ABD	101	692	0.146	101	0.2	6.104	A
C-D	9			9			
C-A	141			141			

With Proposed Development - Average Construction Phase (2027), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	N72/L027/L6066	Crossroads	Two-way	Two-way	Two-way	Two-way		2.96	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.96	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	With Proposed Development - Average Construction Phase (2027)	PM	ONE HOUR	16:15	17:45	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - N72 W		✓	266	100.000
B - L1027		✓	155	100.000
C - N72 E		✓	345	100.000
D - L6066		✓	11	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	21	240	5
	B - L1027	44	0	92	19
	C - N72 E	277	63	0	5
	D - L6066	2	7	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - N72 W	B - L1027	C - N72 E	D - L6066
From	A - N72 W	0	5	7	0
	B - L1027	0	0	11	0
	C - N72 E	4	18	0	0
	D - L6066	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.33	10.16	0.5	B
A-BCD	0.01	4.77	0.0	A
A-B				
A-C				
D-ABC	0.03	8.58	0.0	A
C-ABD	0.16	5.70	0.3	A
C-D				
C-A				

Main Results for each time segment

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	117	566	0.206	116	0.3	7.982	A
A-BCD	5	761	0.007	5	0.0	4.763	A
A-B	16			16			
A-C	179			179			
D-ABC	8	481	0.017	8	0.0	7.620	A
C-ABD	68	705	0.096	67	0.2	5.644	A
C-D	3			3			
C-A	188			188			

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	139	549	0.254	139	0.3	8.778	A
A-BCD	6	771	0.008	6	0.0	4.702	A
A-B	19			19			
A-C	214			214			
D-ABC	10	460	0.022	10	0.0	7.997	A
C-ABD	87	725	0.120	87	0.2	5.665	A
C-D	4			4			
C-A	219			219			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	171	525	0.325	170	0.5	10.124	B
A-BCD	9	786	0.011	9	0.0	4.621	A
A-B	23			23			
A-C	261			261			
D-ABC	12	432	0.028	12	0.0	8.581	A
C-ABD	118	753	0.157	118	0.3	5.696	A
C-D	5			5			
C-A	257			257			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	171	525	0.325	171	0.5	10.157	B
A-BCD	9	786	0.011	9	0.0	4.632	A
A-B	23			23			
A-C	261			261			
D-ABC	12	431	0.028	12	0.0	8.583	A
C-ABD	119	753	0.157	119	0.3	5.678	A
C-D	5			5			
C-A	257			257			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	139	549	0.254	140	0.3	8.817	A
A-BCD	6	771	0.008	6	0.0	4.723	A
A-B	19			19			
A-C	214			214			
D-ABC	10	460	0.022	10	0.0	8.001	A
C-ABD	87	725	0.121	88	0.2	5.627	A
C-D	4			4			
C-A	219			219			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-ACD	117	565	0.206	117	0.3	8.034	A
A-BCD	5	760	0.007	5	0.0	4.773	A
A-B	16			16			
A-C	179			179			
D-ABC	8	480	0.017	8	0.0	7.629	A
C-ABD	68	705	0.097	68	0.2	5.635	A
C-D	3			3			
C-A	188			188			

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