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CONTENTS

14.0 TRAFFIC AND TRANSPORT.....	14-1
14.1 Introduction	14-1
14.2 Legislative and Policy Context	14-2
14.3 Assessment Methodology and Significance Criteria	14-3
14.4 Baseline.....	14-9
14.5 Key Characteristics of the Proposed Development.....	14-15
14.6 Potential Effects.....	14-17
14.7 Mitigation and Management	14-58
14.8 Monitoring.....	14-60
14.9 Residual Effects.....	14-61
14.10 Cumulative Effects	14-61
14.11 Do-Nothing Scenario.....	14-62
14.12 Difficulties Encountered.....	14-62
14.13 References	14-63

TABLES

Table 14.1: Future year traffic growth figures for County Monaghan	14-6
Table 14.2: Future year traffic growth figures for County Monaghan	14-7
Table 14.3: Effects and Descriptions	14-8
Table 14.4: AADT at Junction 1- R179/L4900/L8830 Staggered Crossroads.....	14-12
Table 14.5: AADT at Junction 2 - R179/L4816/L49014 Crossroads	14-12
Table 14.6: AADT at Junction 2A – Community Sports Complex Access.....	14-13
Table 14.7: AADT at Junction 3 – Mine Access.....	14-13
Table 14.8: Traffic Count and Speed Survey Results	14-14
Table 14.9: Community Centre Traffic	14-14

Table 14.10: Summary of traffic analysis (AM peak) at Junction 1 during construction	14-19
Table 14.11: Summary of traffic analysis (PM peak) at Junction 1 during construction	14-21
Table 14.12: Summary of traffic analysis (AM peak) at Junction 2 during construction	14-22
Table 14.13: Summary of traffic analysis (PM peak) at Junction 2 during construction	14-23
Table 14.14: Summary of junction capacity analysis (AM peak) during construction	14-24
Table 14.15: Summary of junction capacity analysis (AM peak) during construction	14-24
Table 14.16: Summary of Predicted Total Trips During Temporary Diversion Construction	14-29
Table 14.17: Summary of Predicted Total Trips During Temporary Diversion Construction	14-32
Table 14.18: Summary of Stage 1 & Stage 2 Road Safety Audit Concerns	14-37
Table 14.19: Operational Traffic for the Community Sports Complex (During Major Events)	14-40
Table 14.20: Summary of traffic analysis (AM peak) at Junction 1 during operations	14-42
Table 14.21: Summary of traffic analysis (PM peak) at junction 1 during operations	14-43
Table 14.22: Summary of traffic analysis (AM peak) at Junction 2 during operations	14-44
Table 14.23: Summary of traffic analysis (PM peak) at Junction 2 during operations	14-45
Table 14.24: Summary of Junction 2A capacity analysis (AM peak) during operations	14-46
Table 14.25: Summary of Junction 2A capacity analysis (PM peak) during operations	14-46
Table 14.26: Summary of Traffic analysis (AM peak) at Junction 3 during operations	14-47
Table 14.27: Summary of traffic analysis (PM peak) at Junction 3 during operations	14-47
Table 14.28: Gross floor area details for the Community Sports Complex Building	14-49
Table 14.29: Operational Traffic for the Community Sports Complex (During Major Events)	14-50
Table 14.30: Residual Parking Capacity for the Community Sports Complex (Phase 2)	14-50
Table 14.31: Exported Mine Material	14-53

FIGURES

Figure 14.1: Site Location	14-2
Figure 14.2: Background Development Traffic as a Percentage of the Background Traffic Volumes	14-5

Figure 14.3: Looking North Along R179 from its Junction with the L4816.....	14-9
Figure 14.4: L4816 Approach to R179	14-10
Figure 14.5: Assignment of Community Centre development traffic on existing road network	14-15
Figure 14.6: Assignment of Construction Traffic for the further development of the Community Sports Complex.....	14-18
Figure 14.7: N2 Ardee to Castleblayney Scheme (Source: TII/MCC/LCC)	14-25
Figure 14.8: N2 Ardee to Castleblayney Preferred Route (Source: TII/MCC/LCC)	14-26
Figure 14.9: Assignment of construction traffic for Knocknacran West Open-Cast Mine during fencing, berm, demolition of buildings on the Knocknacran West site.....	14-28
Figure 14.10: Assignment of construction traffic for the R179 temporary diversion	14-31
Figure 14.11: Assignment of construction traffic for the Cut-and-Cover Tunnel.....	14-33
Figure 14.12: N2 Ardee to Castleblayney Scheme (Source: TII/MCC/LCC)	14-35
Figure 14.13: N2 Ardee to Castleblayney Preferred Route (Source: TII/MCC/LCC)	14-36
Figure 14.14: Assignment of Community Sports Complex (Phase 2) traffic	14-41
Figure 14.15: EV (E) parking provision within the Community Sports Complex site.....	14-51
Figure 14.16: Assignment of operational mine traffic.....	14-54

APPENDICES

Appendix 14.1: Traffic and Transport Assessment (TTA) (including road safety audit)

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14.0 TRAFFIC AND TRANSPORT

14.1 Introduction

PMCE has been commissioned by SLR Consulting (SLR) on behalf of Saint-Gobain Mining (Ireland) Ltd., (SGMI) to examine the traffic implications associated with the proposed Knocknacran West Open-Cast Mine, restoration of existing Knocknacran Open-Cast Mine, development of a Community Sports Complex, and associated works in a site located in Co. Monaghan, located ca. 7 km north of Kingscourt and ca. 7 km south of Carrickmacross, along the R179. The Application Site shown on Figure 14.1 is accessed via a public road (L4816) which runs south-eastwards from the R179.

This chapter determines and quantifies the extent of trips expected to be generated by the Proposed Development (both the Mine Development and the Community Sports Complex), and the impact on performance of such trips on the local road network. It is based on the Traffic and Transport Assessment (TTA) that has been undertaken for the Proposed Development, which is contained in Appendix 14.1.

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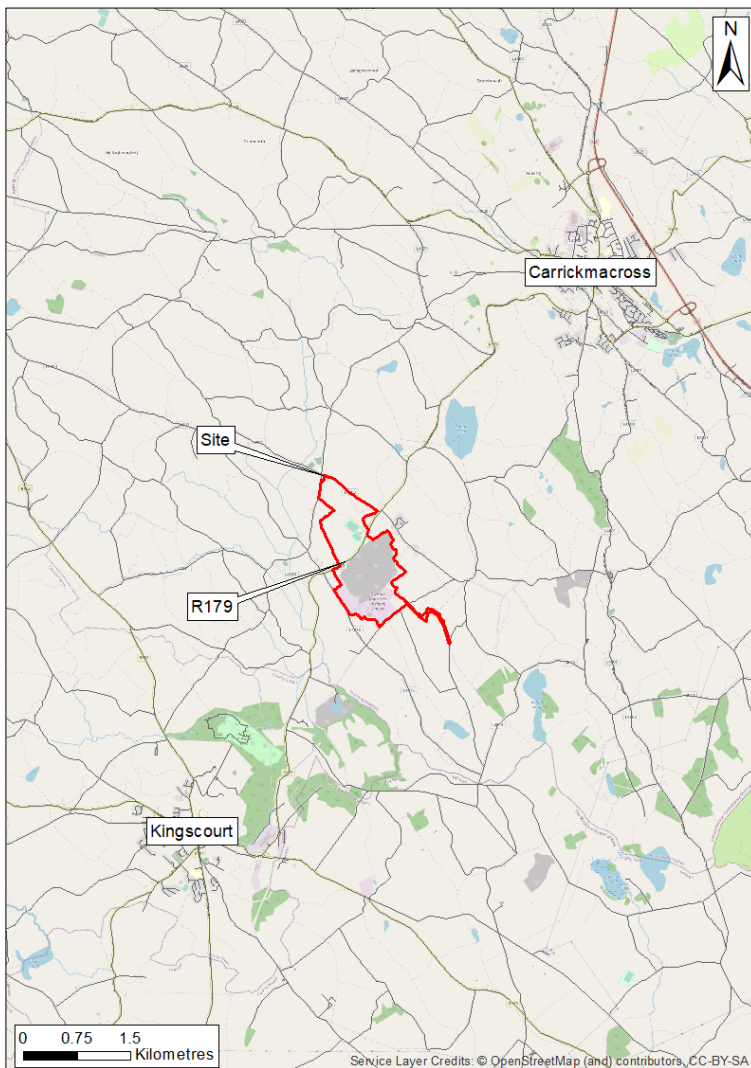


Figure 14.1: Site Location

14.2 Legislative and Policy Context

This EIAR has been prepared with due regard to the following overarching legislation and guidance on EIA as outlined in Chapter 2.0 of this EIAR.

The technical assessment described in this chapter has been undertaken in line with the Transport Infrastructure Ireland (TII) (2014) Traffic and Transport Assessment Guidelines.

Other assessment criteria that have been used to complete this assessment include:

- “Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections” (May 2019) published by Transport Infrastructure Ireland;
- Traffic Count and Speed Survey Data, collected by Traffinomics;
- Topographical Survey Data/Mapping provided by Golder Associates Ireland (WSP);
- “Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts” (October 2016) published by Transport Infrastructure Ireland;

- Monaghan County Development Plan 2019 – 2025 (March 2019);
- TII Publications document DN-GEO-03031, “Rural Road Link Design” (June 2017) published by Transport Infrastructure Ireland (TII); and
- TII Publications document DN-GEO-03060, “Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade-separated and compact grade-separated junctions)” (June 2017) published by Transport Infrastructure Ireland (TII).

14.3 Assessment Methodology and Significance Criteria

14.3.1 Study Methodology

The methodology adopted for this assessment involved:

- A site visit on the 26th July 2022; the weather was dry, and the ground surface was dry;
- 12-hour Traffic Turning Count Surveys undertaken on Tuesday 17th May 2022 and on Wednesday 1st February 2023.
- Vehicle Speed Surveys undertaken between Tuesday 10th September 2019 and Monday 16th September 2019, and on Wednesday 1st February 2023.
- Trip Generation and Trip Assignment: Used to derive trip rates for a 12-hour period and to provide information as to which direction vehicles will travel to/from the Proposed Development;
- Link Capacity Assessment: To obtain an AADT (annual average daily traffic) value for the roads linking the development to the surrounding network;
- Existing Traffic Assessment: The traffic count data was used to develop models for junctions affected by the Proposed Development;
- Future Year Assessments: The estimated future year volumes on the study area network, as a result of the increase in background traffic and any development traffic, is used to assess the future operational performance of the surrounding road network for 2024 (Construction of Mine and Community Sports Complex Phase 2, year 1), 2025 (Construction of Mine and Community Sports Complex Phase 2, year 2), 2026 (year of opening of the developments) and at two future assessment years, the opening year +5 (2031) and the opening year +15 (2041); and
- A review of the ‘N2 Ardee to Castleblayney Preferred Route’, which is a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council.

14.3.2 Temporal Scope

Under the current programme, it is expected that the duration of construction will be of short-term duration, with separate phases of construction being completed between 2024 and 2026. Broadly speaking, Construction Phases include the following:

- 2024 (Construction of Mine and GAA Phase 2, year 1);
- 2025 (Construction of Mine and GAA Phase 2, year 2); and

- 2026 (Year of Opening the Developments).

14.1.3.1 Assessment Years

The “Traffic and Transport Assessment Guidelines” published by Transport Infrastructure Ireland recommend the assessment of traffic in the Opening Year, for the Opening Year +5 years and the Opening Year +15 years.

The assessment years for the impact assessment including each year of construction operations (2024 & 2025), 2026 for the Opening Year, 2031 and 2041 for the Future Assessment Years.

14.3.3 Geographical Scope

Section 2.1 of the ‘Traffic and Transport Assessment Guidelines’ published by Transport Infrastructure Ireland recommends that a traffic assessment should cover all of the roads and junctions where the development traffic exceeds 10% of the existing or background traffic.

Following the assignment of new traffic from the Proposed Development, the development traffic at each local road junction was determined. Figure 14.2 shows the development traffic as a percentage of the background traffic on the adjacent road network.

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As the development traffic exceeds 10% on the R179, the L49014, the L4816 and at the mine access, the assessment undertakes a junction capacity assessment of the following junctions (as illustrated in Figure 14.2 below):

- Junction 1 - R179/L4900/L8830 Staggered Crossroads;
- Junction 2 - R179/L4816/L49014 Crossroads;
- Junction 3 – Existing Mine Access; and
- Junction 2A - Community Complex Access.

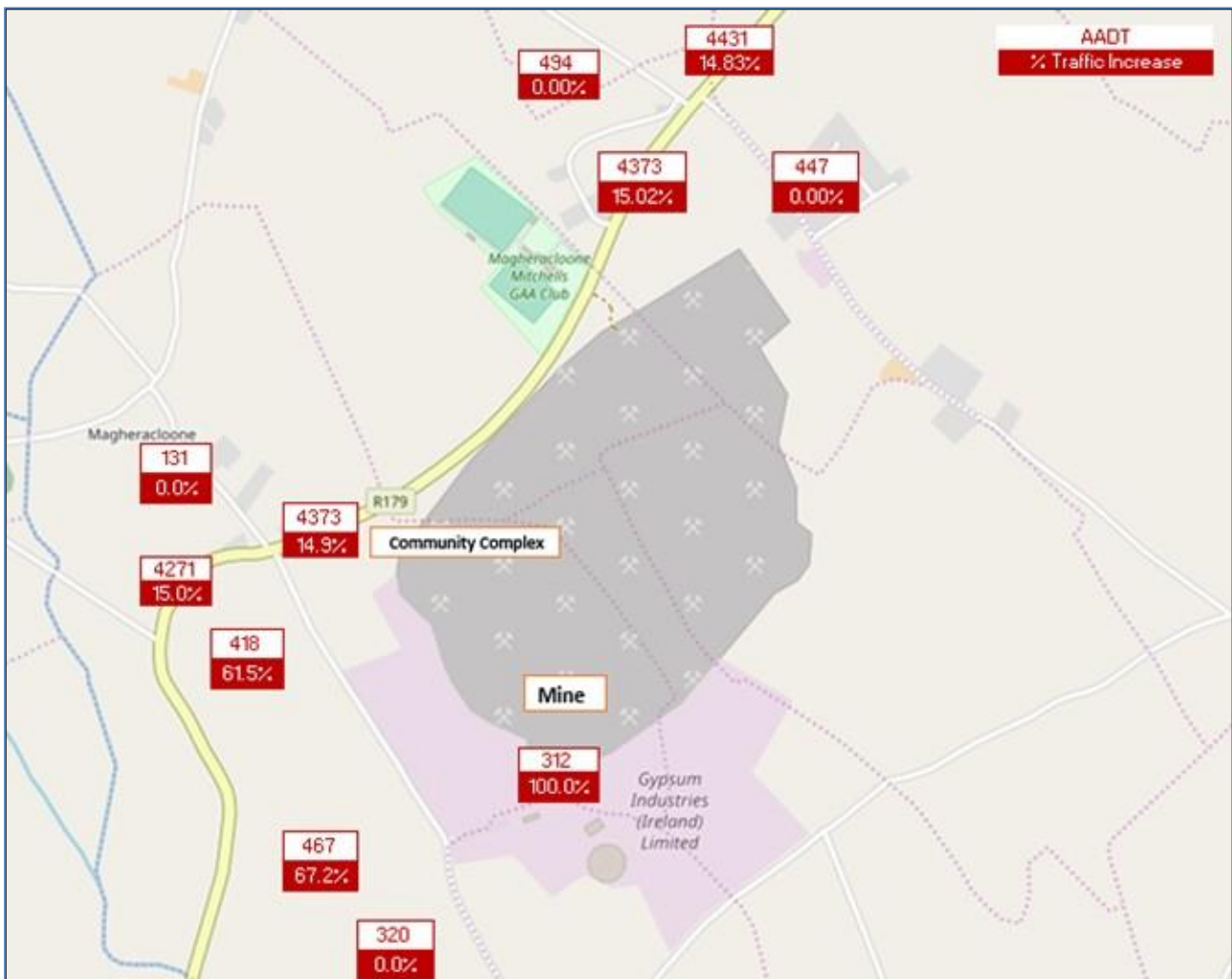


Figure 14.2: Background Development Traffic as a Percentage of the Background Traffic Volumes

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14.3.4 Traffic Modelling

14.3.4.1 Community Sports Complex

Traffic likely to be generated by the proposed Community Sports Complex development has been estimated using trip rates from the Trip Rate Information Computer System (TRICS) database based on the surveyed traffic for similar types of developments in similar locations.

A summary of the sites from the TRICS database used to estimate the traffic generated by the proposed development are given in Appendix A of Appendix 14.1.

For the purposes of a robust, conservative, assessment it has been assumed that all trips to/from the Community Sports Complex development will be by private car and no trip reduction has been applied to take into account trips undertaken using public transport and/or buses. Additionally, for the purposes of a conservative assessment, it has been assumed that on a day with a major fixture all formal and overspill parking areas will be filled and that a maximum of 350 cars would be parked in the site. This is considered a conservative approach in assessing junction and link capacity.

Construction trips (e.g. HGV trips) numbers are estimated based on experience associated with the construction of the Phase 1 development (Reg. Ref. 20/365).

14.3.4.2 Mine Development

Over the course of the extended time period c. 9 million tonnes of gypsum would be extracted over a number of phases, with a maximum annual extraction rate of between 250,000 and 500,000 tonnes. For the purposes of a robust assessment the upper limit of 500,000 tonnes per annum has been analysed. This equates to approximately 67 loads per day based on the following assumptions:

- The facility would operate for 50 weeks per year.
- Material would be transported from the site in 20 tonne and 28 tonne loads (25 tonnes average assumed).
- The facility would operate for six days per week (Monday to Saturday) inclusive.
- The Facility opening times would be 06:00am to 09:00pm on Monday to Saturday.

Table 14.1: Future year traffic growth figures for County Monaghan

Exported Quantities of Gypsum	
Quantity per annum	500,000
Quantity per week (50 operational weeks / year)	10,000
Loads per week (25 tonnes / load)	400
Loads per Day (6 working days / week)	67

For the purposes of the traffic modelling assessment undertaken, a conservatively high value of 70 loads per day has been used.

The proposed Mine Development would continue to employ up to 40 full-time staff members, with a number of additional sub-contractors (up to c. 45 at any one time, including periodic stripping campaigns) depending on operational needs. To support a robust assessment, it has been assumed that all staff members (85 in total during peak times) would arrive at the site during the AM Peak Hour and depart during the PM Peak Hour. It is acknowledged that this scenario would arise infrequently due to the employment of some employees on a seasonal basis. For the purposes of this assessment, staff movements have been assumed to generate a maximum of 170 peak hour trips, 85 inbound trips during the AM Peak Hour and 85 outbound trips during the PM Peak Hour.

A total of 10 visits has been assumed to occur daily to cater for possible miscellaneous trips. These miscellaneous trips allow for operations meetings, site inspections, maintenance operations for plant and machinery, etc. It is not considered that these trips would coincide with either peak hour, however for a robust assessment they have been assessed as arriving during the AM Peak and departing during the PM Peak.

14.3.5 Traffic Growth

The "Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections" (October 2021) published by Transport Infrastructure Ireland has been used to determine future year traffic flows on the adjacent road network from the 2022 and 2023 traffic count data. Table 14.2 contains a summary of the traffic growth factors published in Table 6.2 of Unit 5.3 of the "Project Appraisal Guidelines". For this assessment, a central growth scenario has been adopted (a 'central' growth scenario was assumed given the site location and scale).

Table 14.2: Future year traffic growth figures for County Monaghan

Years	Low Growth		Central Growth		High Growth	
	LV	HV	LV	HV	LV	HV
2026-2030	1.0103	1.0236	1.0115	1.0252	1.0141	1.0285
2030-2040	1.0032	1.0093	1.0047	1.0112	1.0079	1.0147
2040-2050	1.0021	1.0119	1.0041	1.0138	1.0080	1.0234

14.3.6 Link Capacity Assessment

When assessing the link capacity of a road a 'Level of Service D' has been chosen as, according to the TII Publications document DN-GEO-03031 "Rural Road Link Design", it is at this level that *"speeds begin to decline slightly with slight increase of flows and density begins to increase somewhat more quickly. Freedom to manoeuvre within the traffic stream is more noticeably limited, and the driver experiences reduced comfort levels."*

The capacity of the local roads have been assessed by reference to the TII Publications document DN-GEO-03031 "Rural Road Link Design."

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14.3.7 Junction Capacity Analysis

The capacity of the surveyed junctions was assessed using the Transport Research Laboratory's (TRL) computer programme Junctions 9.

Junction performance is measured as a ratio between the flow and capacity (RFC).

14.3.8 Sightlines

Sightlines have been assessed against TII Publications document reference DN-GEO-03060, with reference also to the Section 15.27 of the Monaghan County Development Plan 2019 - 2025.

14.3.9 EIA Significance Terminology

As identified in Chapter 2.0 (Scope and Methodology) of this EIAR, a common framework of assessment criteria and terminology has been used based on the EPA's Guidelines on the Information to be Contained in EIARs (EPA, 2022). This common framework follows a 'matrix approach' to environmental assessment which is based on the characteristics of the impact (magnitude and nature) and the value (sensitivity) of the receptor.

Following the common framework described above, it has been assumed that the value (sensitivity) of the transport assets is no greater than Medium, which equates to 'Medium or high importance and rarity, regional scale, limited potential for substitution' (see Table 2.5 of Chapter 2.0).

A description of the significance categories used is provided in Table 14.3 below. Levels of significance have been assessed based on a combination of the common framework approach of the EIAR in combination with industry standards regarding capacity.

Table 14.3: Effects and Descriptions

Significance Category	Typical Description
Profound	An effect which obliterates sensitive characteristics.
Large	An effect which, by its character, magnitude, duration or intensity alters a significant proportion of a sensitive aspect of the environment.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Imperceptible	An effect capable of measurement but without significant consequences.

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14.4 Baseline

14.4.1 Local Road Network

The following sections describe the roads and junctions assessed as part of this assessment.

14.4.1.1 R179

The R179 is a Regional Road which runs in a north-east to south-west direction, Figure 14.3. The R179 is approximately 10.0m wide with hard strips on both sides of the carriageway. The pavement within the westbound hard strip is in poor condition to the immediate east of the R179/L4816 junction. There is a continuous centreline on the R179 and edge of carriageway road markings on both sides, although these are faded in places. The horizontal alignment of the R179 to the east is relatively straight, however, there is a horizontal curve in the alignment of the R179 approximately 100 m to the west of the R179/L4816 junction. The L49014 local road forms a staggered crossroads with the R179 and the L4816.

The 'Road Type' selected for the R179, which best describes the road layout, is a 'Type 1 Single Carriageway' in accordance with the TII Publications document DN-GEO-03031 "Rural Road Link Design", which represents a 7.3m wide carriageway with 2.5m hard shoulders which minimises the number of direct accesses, incorporates priority junctions with ghost islands where necessary with other local roads and ghost islands, roundabouts or compact grade separated junctions where necessary with major roads. The maximum AADT for a road of this type at Level of Service D is 11,600.



Figure 14.3: Looking North Along R179 from its Junction with the L4816

14.4.1.2 L4816

The existing mine access is located on the L4816 Local Road which is approximately 9.0m wide, with no hard shoulder or hard strip at the edge of the carriageway, Figure 14.4. The existing mine is bounded to the west by the L4816 which runs in a north-west to south-east direction and has a relatively straight horizontal alignment in the vicinity of the Proposed Development. The existing access to the mine is gated. There are no designated pedestrian or cyclist facilities on the L4816. The cross-section of the L4816 to the north of the site access is wide, but narrows gradually towards the south of the access.

There are approximately 6 residential properties on the L4816 in the vicinity of the site access. The L4816 terminates at its junction with the R179 Regional Road.

The 'Road Type' selected for the L4816, which best describes the road layout, is a 'Type 2 Single Carriageway' as per the TII Publications document DN-GEO-03031 "Rural Road Link Design", which represents a 7.0m wide carriageway with 0.5m hard strips, cycle facilities and footways which minimises the number of direct accesses, incorporates priority junctions with other local roads and roundabouts and compact grade separated junctions with major roads.' The maximum AADT for a road of this type at Level of Service D is 8,600.



Figure 14.4: L4816 Approach to R179

14.4.2 L49014

The proposed Knocknacran West Open-Cast Mine is bounded to the west by the L49014 local Road which runs in a northwest to southeast direction terminating at its junction with the R179 Regional Road. The L49014 is approximately 3.0m - 4.0m wide with no hard strips or hard shoulders at the edge of the carriageway.

The 'Road Type' selected for the L49014 which best describes the road layout, is a 'Type 3 Single Carriageway' in accordance with the TII Publications document DN-GEO-03031 "Rural Road Link Design", which represents a 6.0m wide carriageway with 0.5m hard strips, which minimises the number of direct accesses, incorporates simple priority junctions with other local roads and priority junctions with ghost islands where necessary or roundabouts with major roads.' The maximum AADT for a road of this type at Level of Service D is 5,000.

14.4.3 L4900

The proposed Knocknacran West Open-Cast Mine is bounded to the east by the L4900 local road which is approximately 6.0m wide with no hard shoulder or hard strip at the edge of the carriageway at its junction with the R179. The L4900 runs in a northwest to southeast direction continuing through the town lands of Drumgoosat and Tonaneave.

The 'Road Type' selected for the L4900 which best describes the road layout, is a 'Type 3 Single Carriageway' in accordance with the TII Publications document DN-GEO-03031 "Rural Road Link Design", which represents a 6.0m wide carriageway with 0.5m hard strips, which minimises the number of direct accesses, incorporates simple priority junctions with other local roads and priority junctions with ghost islands where necessary or roundabouts with major roads.' The maximum AADT for a road of this type at Level of Service D is 5,000.

14.4.4 L8830

The L8830 Local Road is located to the east of the existing Knocknacran mine and runs in a northwest to southeast direction terminating at its junction with the R179 Regional Road. The L8830 is approximately 7.0 m wide with no hard strips or hard shoulders at the edge of the carriageway at its junctions with the R179.

The 'Road Type' selected for the L8830 which best describes the road layout, is a 'Type 3 Single Carriageway' which represents a 6.0m wide carriageway with 0.5m hard strips, which minimises the number of direct accesses, incorporates simple priority junctions with other local roads and priority junctions with ghost islands where necessary or roundabouts with major roads.' The maximum AADT for a road of this type at Level of Service D is 5,000.

14.4.5 Traffic Data

14.4.5.1 Traffic Counts

Junction Turning Counts were carried out on Tuesday 17th May 2022 at three junctions, including the existing mine access, the R179/L4816/L49014 Crossroads and the R179/L4900/L8830 Staggered Crossroads, and on Wednesday 1st February 2023 at the Community Sports Complex Access.

The 2022 and 2023 classified turning counts were carried out between the hours of 6:00am & 10:00am and 4:00pm to 9:00pm, these time periods including the opening/closing hours of the mine and the peak hours on the adjacent Regional and County Roads. Surveyed vehicles were broken down into five categories as follows: -

1. Cars
2. LGV's (Light Goods Vehicles)
3. OGV1 (Two and three axle goods vehicles)
4. OGV2 (Four and five axle goods vehicles)
5. Buses

The detailed results of the traffic survey are summarised in Appendix B. The morning and evening peak hours have been established as follows:

- Junction 1 - R179/L4900/L8830 Staggered Crossroads
07:45 – 08:45 (AM Peak) and
16:45 – 17:45 (PM Peak)
- Junction 2 - R179/L4816/L49014 Crossroads
07:45 – 08:45 (AM Peak) and
16:45 – 17:45 (PM Peak)
- Junction 2A - Community Complex Access
07:30 – 08:30 (AM Peak) and
16:30 – 17:30 (PM Peak)
- Junction 3 - Existing Mine Access
07:30 – 08:30 (AM Peak) and
17:00 – 18:00 (PM Peak)

The traffic count data for each site has been converted to Annual Average Daily Traffic (AADT) values using the methodology described in "Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts" (October 2016) published by Transport Infrastructure Ireland. Annexes A to C of the above document were used in the expansion of traffic counts to AADTs.

The AADTs at the junction, both existing and future, were calculated to determine the percentage increase in traffic volumes on the road network as a result of the trips generated by the proposed development.

A combined factor of 0.543 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was then converted to a Weekly Average Daily Traffic (WADT) using an index of 0.99 and 0.97 for the Tuesday and Wednesday traffic count respectively. Finally, this was converted to AADT using an index of 0.98 and 1.03 for the month of May and February respectively. These factors were used to calculate the AADTs for each arm of the junctions (Table 14.4 to Table 14.7).

Table 14.4: AADT at Junction 1- R179/L4900/L8830 Staggered Crossroads

Hour Ending	R179 (N)	L8830	R179 (S)	L4900
07:00	143	11	136	18
08:00	349	32	369	22
09:00	464	34	451	43
10:00	325	36	304	87
17:00	466	33	439	44
18:00	489	50	481	48
19:00	346	61	363	28
20:00	217	51	227	17
21:00	174	21	172	17
Period Total	2,439	246	2,407	272
Period Total HGVs	193	6	190	9
% HGVs	8%	2%	8%	3%
Total AADT	4,431	447	4,373	494

Table 14.5: AADT at Junction 2 - R179/L4816/L49014 Crossroads

Hour Ending	R179 (N)	L4816	R179 (S)	L9014
07:00	136	10	136	4
08:00	369	44	373	10
09:00	451	38	437	12
10:00	304	37	296	15
17:00	439	31	432	14
18:00	481	47	472	14
19:00	363	33	341	7
20:00	227	16	224	7
21:00	172	11	166	5
Period Total	2,407	230	2,351	72
Period Total HGVs	190	39	215	6
% HGVs	8%	17%	9%	8%
Total AADT	4,373	418	4,271	131

Table 14.6: AADT at Junction 2A – Community Sports Complex Access

Hour Ending	R179 (E)	GAA Access	R179 (W)
07:00	111	0	111
08:00	369	0	369
09:00	444	0	444
10:00	335	0	335
17:00	443	1	444
18:00	461	0	461
19:00	356	41	351
20:00	244	60	234
21:00	182	58	174
Period Total	2,408	42	2,404
Period Total HGVs	145	1	146
% HGVs	6%	2%	6%
Total AADT	4,505	79	4,498

Table 14.7: AADT at Junction 3 – Mine Access

Hour Ending	L4816 (N)	Mine Access	L4816 (S)
07:00	10	22	7
08:00	44	26	22
09:00	38	17	25
10:00	37	14	25
17:00	31	12	19
18:00	47	24	31
19:00	33	4	29
20:00	16	2	14
21:00	11	0	11
Period Total	257	97	176
Period Total HGVs	39	30	11
% HGVs	15%	31%	6%
Total AADT	467	180	320

14.4.5.2 Traffic Speeds

In addition to the junction turning counts conducted, Vehicle Speed Surveys were undertaken between Tuesday 10th September 2019 and Monday 16th September 2019, and on Wednesday 1st February 2023 to assess vehicle speeds on the L4816 to the north of the mine access (Table 14.8).

Table 14.8: Traffic Count and Speed Survey Results

ATC Location	Direction	Speed Limit (km/h)	Number of Vehicles	No. of Vehicles Exceeding Speed Limit	% of Vehicles Exceeding Speed Limit	Mean Speed (km/h)	85 th ile Speed (km/h)
L4816 south of Mine Access	Northbound	80	1,512	2	0.1%	53.7	63.99
	Southbound	80	1,600	10	0.7%	52.6	62.90

14.4.6 Adjacent Developments

A search of planned future developments which may have an impact on future traffic flows in the vicinity of the proposed developments was undertaken.

Phase 1 of the proposed Community Sports Complex (Reg. Ref. 20/365) has been recently constructed. A traffic count has been undertaken at the entrance to the Community Sports Complex on the R179, and this traffic has been added to the background traffic for this traffic assessment for all assessment years.

A proposed new Community Centre at Drumgoosat, Co. Monaghan has received planning permission and the forecast traffic for this Community Centre are shown in Table 14.9 and have been added to the background traffic for this traffic assessment for all assessment years. This is considered a conservative approach as the traffic growth factors used in the analysis are based on the forecast of future developments such as these adjacent developments.

Table 14.9: Community Centre Traffic

Time Range	Gross Floor Area (sqm)	Arrivals		Departures	
		Trip Rate Factor (Per sqm)	Trips	Trip Rate Factor (Per sqm)	Trips
07:00 - 08:00	1,154	0.0	0	0.0	0
08:00 - 09:00		1.902	22	1.057	13
09:00 - 10:00		1.606	19	1.014	12
10:00 - 11:00		0.296	4	1.057	13
11:00 - 12:00		0.254	3	0.634	8
12:00 - 13:00		1.479	17	1.606	19
13:00 - 14:00		0.254	3	0.803	10
14:00 - 15:00		0.761	9	0.127	2
15:00 - 16:00		1.648	19	0.972	12
16:00 - 17:00		0.93	11	0.803	10
17:00 - 18:00		0.845	10	1.606	19
18:00 - 19:00		1.31	15	0.507	6
Totals			130		118

The assignment of the forecast development traffic from the Community Centre onto the adjacent road network, as part of baseline considerations, is illustrated in Figure 14.5.



Figure 14.5: Assignment of Community Centre development traffic on existing road network

14.5 Key Characteristics of the Proposed Development

14.5.1 Key Characteristics: Construction Phase: Community Sports Complex

The construction phase traffic considerations for the Community Sports Complex development includes details for the following:

- The further development of a Community Sports Complex. The initial phase of this development has received planning permission (Reg. Ref.: 20/365) and has been constructed. The next phase (Phase 2) will involve extending the Community Sports Complex by the construction of two further playing pitches, one with a perimeter running track, an all-weather pitch, a new club building, including a sports hall, a handball alley, changing rooms & toilets, a viewing gallery, a part-covered grandstand, additional parking and associated siteworks; and
- During the construction of the extended Community Sports Complex development, the pitch, changing facilities and carpark constructed during Phase 1 will be in use. Access to the Community Sports Complex will be directly from the R179 Regional Road.

14.5.2 Key Characteristics: Construction Phase: Mine Development

The construction phase traffic considerations for the Mine Development includes the following:

- The construction of screening berms and planting, perimeter fencing and the demolition of one residential house and three unoccupied houses and sheds on the Knocknacran West site;
- The construction of a temporary diversion of the R179 and a Cut-and-Cover Tunnel under the R179 for the transport of gypsum to the existing processing plant at the existing Knocknacran Mine, and for the transport of overburden and interburden to the existing Knocknacran Mine for restoration purposes;
- The construction of a new vehicular access to the existing Knocknacran Mine site from the L4816; and
- During construction, a temporary construction access to the site of the proposed Knocknacran West Open-Cast Mine will be provided via an existing emergency access on the L4900, ca. 240m north-west from the junction with the R179.

14.5.3 Key Characteristics: Operational Phase: Community Sports Complex

The operational phase traffic and transport considerations for the Community Sports Complex includes details for the following:

- Operation of the Community Sports Complex.

14.5.4 Key Characteristics: Operational Phase: Mine Development

The operational phase traffic and transport considerations for the Mine Development includes details for the following:

- The extraction of gypsum from the former (Drumgoosat) underground mine at Knocknacran West by open-cast mining methods.
- Production rates will be the same as the existing Mine Development (i.e. production rates between ca. 250,000 and 500,000 tonnes of gypsum per annum, depending on market conditions). Gypsum will be hauled to the existing factory site outside of Kingscourt on road haulage trucks;
- The continued restoration of the existing Knocknacran Mine to modify the currently permitted restoration plan and return the existing Knocknacran Mine to near original ground levels. The restoration material will be moved within the Knocknacran West and Knocknacran mine sites using the Cut-and-Cover Tunnel. These are internal site haul truck movements and therefore are not considered in the traffic assessment further as they do not enter the public road network and have no effect on it; and
- The continuation of use and refurbishment of the existing processing plant, water treatment facilities and associated infrastructure on the existing Knocknacran Mine site. Gypsum road haulage trucks exit and enter this part of the development.

14.5.5 Key Characteristics: Restoration/Closure Phase: Community Sports Complex

There is no proposal to close the Community Sports Complex development and this phase is non-applicable.

14.5.6 Key Characteristics: Restoration/Closure Phase: Mine Development

During the final restoration and closure phase, the Knocknacran West site will be returned to grassland and a waterbody. The Knocknacran site will be returned to near original ground levels (i.e. grassland) and the Knocknacran Plant site will be partially dismantled whereby mine plant is removed. However, it is presented that here that a suitable developer would be sought towards closure to utilise the non-mining plant (such as the office) for a light industrial usage into the future. This would be subject to a future developer seeking the necessary permission such as gaining planning permission for continuation of use and/or change of use from mining to a non-mining use for relevant onsite plant.

14.6 Potential Effects

As the Community Sports Complex and Mine Developments will inherently overlap during their relevant phases, the data presented below incorporates both the Mine Development and Community Sports Complex traffic data. For example, if the topic is considering the effect of the construction of the Community Sports Complex on the existing road network capacity, traffic data from the Mine Development is inherently incorporated as well as it will be an existing development contributing to the road network at the time and part of the future baseline.

14.6.1 Potential Effects: Construction Phase: Community Sports Complex

The following sections assess the potential effects of the construction phase of the Community Sports Complex under each of the four headings. Trip and traffic details applicable to this phase and development are considered in Sections 14.6.1.1 and 14.6.1.2.

- **Link Capacity:** Link capacity is defined as the probability that the road network can accommodate a certain level of traffic demand and is built on the concept of network reserve capacity. Refer to Sections 14.6.1.3 and 14.6.1.4.
- **Junction Capacity:** Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for both the AM and PM Peaks for each of the construction and operational assessment years (2024, 2025, 2026 for the Opening Year, 2031 and 2041 for the Future Assessment Years). A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicates a junction operating at capacity. Refer to Section 14.6.1.5.
- **Road Infrastructure:** Impacts upon the 'N2 Ardee to Castleblayney Preferred Route', a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council, have been assessed. Refer to Section 14.6.1.6.
- **Road Safety:** The continued use of the Knocknacran West Open-Cast Mine access may give rise to road safety problems if the access layout does not provide sufficient visibility, signage, and road markings. Refer to Section 14.6.1.7.

14.6.1.1 Potential Effects: Community Sports Complex: Construction Phase: Derived Trips

Subject to planning permission, the construction of the proposed pitches & facilities within the Community Sports Complex is intended to commence in 2024. The construction period for the pitches is estimated to be six months, with a subsequent establishment period of one year before the pitches are playable.

The construction of the building and ancillary works would be undertaken during the pitch's establishment period, with all construction expected to be completed in 2026.

During the construction of the GAA pitch it is conservatively assumed that 30 to 50 people will be employed on the site, with normal working hours assumed to be between 8.00am and 6.00pm. Assuming each of the construction workers arrive to work by car, and assuming 50 people are employed on the site, a maximum of 50 cars will arrive at the site between 7.00am and 8.00am with the same number leaving the site between 5.30pm and 6.30pm. An additional 20 trips (10 loads) per day would be associated with the delivery of materials to site.

14.6.1.2 Potential Effects: Community Sports Complex: Construction Phase: Trip Assessment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts and projected haul routes, and is illustrated in Figure 14.6, below.



Figure 14.6: Assignment of Construction Traffic for the further development of the Community Sports Complex

14.6.1.3 Potential Effects: Community Sports Complex: Construction Phase: Link Capacity Assessment: Local Roads

The L4816 has a paved width of approximately 9.0m, however, it is noted that there are no footpath or cycle facilities on this road. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D.

The L8830 and the L4900 have paved carriageway widths of 6.00m, with no footpaths or cycle facilities on these roads. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D (5,000).

The L49014 has a paved carriageway width of 3.0m to 4.0m along its length and a footpath along its eastern side. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D (5,000).

It is concluded that the L49014, L8830, proposed Community Sports Complex. The effect on link capacity will therefore be **Imperceptible**.

14.6.1.4 Potential Effects: Community Sports Complex: Construction Phase: Link Capacity Assessment: R179 Regional Road

The R719 has a paved carriageway width of 10m and no pedestrian or cycle facilities on either side. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D.

It is consequently concluded that the R179 will have sufficient link capacity for each of the future assessment years with, and without, the proposed Community Sports Complex when designated as a Rural Link Road. The effect on link capacity will therefore be **Imperceptible**.

14.6.1.5 Potential Effects: Community Sports Complex: Construction Phase: Junction Capacity Analysis

Potential Effects: Community Sports Complex: Construction Phase: Location: Junction 1 – R179/L4900/L8830 Staggered Crossroads

A summary of the junction capacity analysis results for Junction 1 – R179/L4900/L8830 Staggered Crossroads are shown in Table 14.10 and Table 14.11. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.10: Summary of traffic analysis (AM peak) at Junction 1 during construction

Stream	AM Peak Hour (07:45-08:45)		
	Queue (Veh)	Delay (s)	RFC
	2024 Do Nothing		
L8830 - R179 (West/East)	0.1	6.12	0.05
L8830 - R179 (East)	0.0	8.38	0.03
R179 (East)/L8830 - R179 (West)/L4900	0.0	13.67	0.03
L4900 - R179 (East)/L8830	0.0	5.65	0.04

TRAFFIC AND TRANSPORT 14.0

L4900 - R179 (East)	0.0	7.22	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.83	0.04
Stream		2025 Do Nothing	
L8830 - R179 (West/East)	0.1	6.13	0.05
L8830 - R179 (East)	0.0	8.41	0.03
R179 (East)/L8830 - R179 (West)/L4900	0.0	13.70	0.03
L4900 - R179 (East)/L8830	0.0	5.67	0.04
L4900 - R179 (East)	0.0	7.25	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.84	0.04
Stream		2024 Do Something	
L8830 - R179 (West/East)	0.1	6.49	0.05
L8830 - R179 (East)	0.0	8.73	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.3	16.58	0.22
L4900 - R179 (East)/L8830	0.1	5.74	0.06
L4900 - R179 (East)	0.0	8.33	0.04
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.25	0.04
Stream		2025 Do Something	
L8830 - R179 (West/East)	0.1	6.44	0.05
L8830 - R179 (East)	0.0	8.66	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.2	15.48	0.15
L4900 - R179 (East)/L8830	0.1	5.97	0.06
L4900 - R179 (East)	0.0	8.11	0.04
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.19	0.04

Table 14.11: Summary of traffic analysis (PM peak) at Junction 1 during construction

PM Peak Hour (16:45 – 17:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2024 Do Nothing			
L8830 - R179 (West/East)	0.1	5.94	0.05
L8830 - R179 (East)	0.0	8.47	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.02	0.06
L4900 - R179 (East)/L8830	0.0	5.77	0.02
L4900 - R179 (East)	0.0	7.24	0.02
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.84	0.04
2025 Do Nothing			
L8830 - R179 (West/East)	0.1	5.95	0.05
L8830 - R179 (East)	0.0	8.49	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.04	0.06
L4900 - R179 (East)/L8830	0.0	5.78	0.02
L4900 - R179 (East)	0.0	7.27	0.02
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.86	0.04
2024 Do Something			
L8830 - R179 (West/East)	0.1	5.98	0.05
L8830 - R179 (East)	0.0	8.79	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.33	0.08
L4900 - R179 (East)/L8830	0.1	8.17	0.12
L4900 - R179 (East)	0.1	10.27	0.13
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.87	0.04
2025 Do Something			
L8830 - R179 (West/East)	0.1	5.98	0.05
L8830 - R179 (East)	0.0	8.78	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.41	0.08
L4900 - R179 (East)/L8830	0.1	6.59	0.07
L4900 - R179 (East)	0.1	8.16	0.09
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.89	0.04

Potential Effects: Community Sports Complex: Construction Phase: Location: Junction 2 – R179/L4816/L49014 Crossroads

A summary of the junction capacity analysis results for Junction 2 – R179/L4816/L49014 Crossroads are shown in Table 14.12 and Table 14.13. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.12: Summary of traffic analysis (AM peak) at Junction 2 during construction

AM Peak Hour (07:45 – 08:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2024 Do Nothing			
L4816 - R179 (West)/L49014	0.0	10.08	0.04
L4816 -R179 (East)/L49014	0.1	9.50	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.26	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.05	0.03
L49014 - L4816/R179 (West)	0.0	12.94	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	7.50	0.06
2025 Do Nothing			
L4816 - R179 (West)/L49014	0.0	10.12	0.04
L4816 -R179 (East)/L49014	0.1	9.56	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.25	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.09	0.03
L49014 - L4816/R179 (West)	0.0	12.99	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	7.48	0.06
2024 Do Something			
L4816 - R179 (West)/L49014	0.0	10.08	0.04
L4816 -R179 (East)/L49014	0.1	9.88	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.32	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.41	0.03
L49014 - L4816/R179 (West)	0.0	13.65	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.70	0.07
2025 Do Something			
L4816 - R179 (West)/L49014	0.0	10.12	0.04
L4816 -R179 (East)/L49014	0.1	9.93	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.31	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.45	0.04
L49014 - L4816/R179 (West)	0.0	13.68	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.70	0.07

Table 14.13: Summary of traffic analysis (PM peak) at Junction 2 during construction

PM Peak Hour (16:45 – 17:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2024 Do Nothing			
L4816 - R179 (West)/L49014	0.0	8.19	0.03
L4816 - R179 (East)/L49014	0.0	9.11	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.34	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.63	0.02
L49014 - L4816/R179 (West)	0.0	13.60	0.02
R179 (West) - R179(East)/L1816/L49014	0.1	6.32	0.04
2025 Do Nothing			
L4816 -R179 (West)/L49014	0.0	8.20	0.04
L4816 -R179 (East)/L49014	0.0	9.14	0.03
R179 (East)- R179 (West)/L1816/L49014	0.0	5.33	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.71	0.02
L49014 - L4816/R179 (West)	0.0	13.68	0.02
R179 (West) - R179(East)/L1816/L49014	0.1	6.32	0.04
2024 Do Something			
L4816 - R179 (West)/L49014	0.0	8.36	0.04
L4816 -R179 (East)/L49014	0.0	9.40	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.17	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.80	0.02
L49014 - L4816/R179 (West)	0.0	13.89	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.32	0.04
2025 Do Something			
L4816 - R179 (West)/L49014	0.0	8.37	0.04
L4816 -R179 (East)/L49014	0.0	9.42	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.16	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.87	0.02
L49014 - L4816/R179 (West)	0.0	13.96	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.31	0.04

Potential Effects: Community Sports Complex: Construction Phase: Location: Junction 2A – Community Sports Complex Proposed Access

A summary of the junction capacity analysis results for the GAA access junction during the Construction of the Mine and GAA Phase 2 is given in Table 14.14 and below Table 14.15. The results indicate that the junction will operate within capacity for the construction year 2024 and 2025 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.14: Summary of junction capacity analysis (AM peak) during construction

AM Peak hour (07:30-08:30)			
Stream	Queue (Veh)	Delay (s)	RFC
2024			
Development Access - R179 (West)	0.0	0.00	0.00
Development Access - R179 (East)	0.0	0.00	0.00
R179 – Development Access	0.0	6.62	0.05
2025			
Development Access - R179 (West)	0.0	0.00	0.00
Development Access - R179 (East)	0.0	0.00	0.00
R179 – Development Access	0.0	6.63	0.05

Table 14.15: Summary of junction capacity analysis (AM peak) during construction

PM Peak hour (16:30 – 17:30)			
Stream	Queue (Veh)	Delay (s)	RFC
2024			
Development Access - R179 (West)	0.1	7.69	0.07
Development Access - R179 (East)	0.1	11.91	0.10
R179 – Development Access	0.0	0.00	0.00
2025			
Development Access - R179 (West)	0.1	7.69	0.07
Development Access - R179 (East)	0.1	11.95	0.10
R179 – Development Access	0.0	0.00	0.00

14.6.1.6 Potential Effects: Community Sports Complex: Construction Phase: Road Infrastructure

Potential Effects: N2 Ardee to Castleblayney Scheme

Monaghan County Council is working in partnership with Louth County Council and in association with Transport Infrastructure Ireland (TII) to develop a scheme to upgrade a 32 km section of the N2/A5 Dublin-Derry Road. The proposed Community Sports Complex is located in Counties Monaghan and Louth, between Ardee and Castleblayney and is called the “N2 Ardee to Castleblayney Road Scheme” (Figure 14.7).



Figure 14.7: N2 Ardee to Castleblayney Scheme (Source: TII/MCC/LCC)

At the time of writing a Preferred Route Corridor has been identified, following public consultation, and is being progressed in accordance with TII's Project Management Guidelines. The preferred route is illustrated in Figure 14.8 (indicated by the yellow line).

The location of the Community Sports Complex is shown in Figure 14.8. The proposed Community Sports Complex is located outside the N2 Ardee to Castleblayney Route Study Area, and no closer than 5 km to the preferred route corridor.

Link and Junction capacity analysis has demonstrated that the development will have an **Imperceptible** effect on the local road network, and thus can be expected to have no impact or effect on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

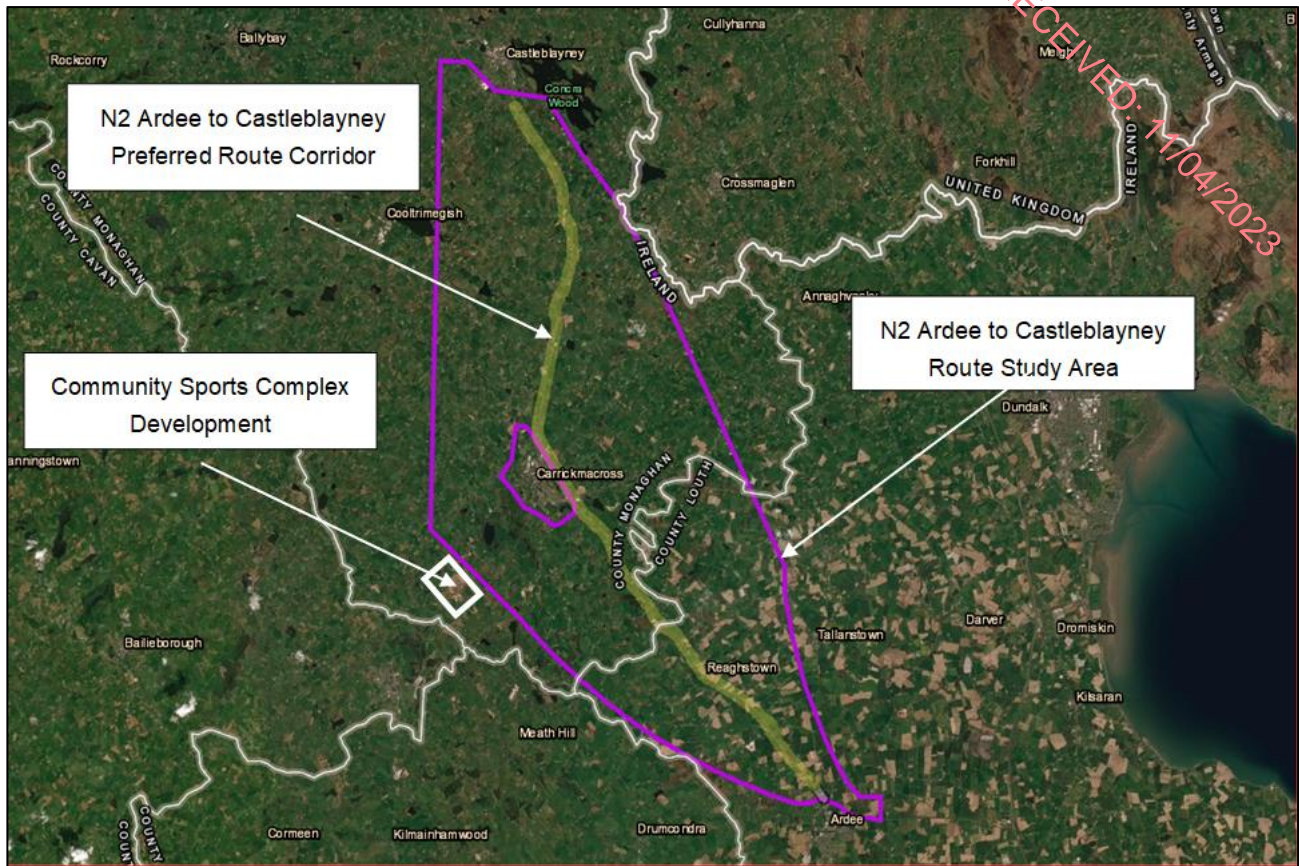


Figure 14.8: N2 Ardee to Castleblayney Preferred Route (Source: TII/MCC/LCC)

14.6.1.7 Potential Effects: Community Sports Complex: Construction Phase: Road Safety

Potential Effects: Community Sports Complex: Construction Phase: Road Safety: Site Access

During the construction phase of the Community Sports Complex, the existing entrance off the R179 will continue to be used. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Construction Phase: Road Safety: Sightlines

During the construction phase of the Community Sports Complex, the existing entrance off the R179 will continue to be used. Sightlines associated with this entrance are permitted under Reg. Ref. 20/365 are in compliance with the necessary visibility splays. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Construction Phase: Road Safety: Public Transport

There are no public transport provisions in the vicinity of the Community Sports Complex. This is not considered further.

Potential Effects: Community Sports Complex: Construction Phase: Road Safety: Parking

During the construction phase, parking will be accommodated within the existing Community Sports Complex site, either in the designated parking area or within the works areas for heavy vehicles. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Construction Phase: Road Safety: Pedestrians and Cyclists

There are no designated cycle or pedestrian facilities on the R179 national road or on the L4816 and L49014 local roads. There are hard strips at the edge of the carriageway on the R179 should vulnerable road users wish to travel along the R179. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Construction Phase: Road Safety Summary

A review of the local road network in terms of Road Safety has not identified any existing or potential safety issues that may give rise to road collisions or an exacerbation of the existing collision record. The construction of the Community Sports Complex will therefore have an **Imperceptible** effect on road safety.

14.6.2 Potential Effects: Construction Phase: Mine Development

Normal working hours for all construction activities have been assumed to be between 8.00am and 6.00pm. Trip and traffic details applicable to this phase and development are considered in Sections 14.6.2.1, 14.6.2.2 and 14.6.2.3.

The following sections assess the potential effects of the construction phase of the Mine Development under each of the four headings:

- **Link Capacity:** Link capacity is defined as the probability that the road network can accommodate a certain level of traffic demand and is built on the concept of network reserve capacity. Refer to Sections 14.6.2.4 and 14.6.2.5;
- **Junction Capacity:** Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for both the AM and PM Peaks for each of the construction and operational assessment years (2024, 2025, 2026 for the Opening Year, 2031 and 2041 for the Future Assessment Years). A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicates a junction operating at capacity. Refer to Section 14.6.2.6;
- **Road Infrastructure:** Impacts upon the 'N2 Ardee to Castleblayney Preferred Route', a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council, have been assessed. Refer to Section 14.6.2.7; and
- **Road Safety:** The increased use of the Knocknacran West Open-Cast Mine access may give rise to road safety problems if the access layout does not provide sufficient visibility, signage, and road markings. Refer to Section 14.6.2.8.

14.6.2.1 Potential Effects: Construction Phase: Mine Development: Perimeter Fencing, Screening Berms, Demolition of Buildings and Other Preparatory Work on the Knocknacran West Site: Derived Trips

Construction works for the Knocknacran West Mine are scheduled to commence in 2024, expected to be complete in 2025, with the opening year of the full development in 2026.

Construction traffic in relation to the works associated with the Knocknacran West site is forecast to be 30 trips (15 arrivals and 15 departures) per day associated with construction staff/operatives travelling to/from the Site, and approximately 6 trips (3 loads) per day associated with the delivery of materials to site.

Potential Effects: Construction Phase: Mine Development: Perimeter Fencing, Screening Berms, Demolition of Buildings and Other Preparatory Work on the Knocknacran West Site Traffic Trip Assessment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts and projected haul routes, and is illustrated in Figure 14.9.



Figure 14.9: Assignment of construction traffic for Knocknacran West Open-Cast Mine during Construction Phase: Mine Development: Perimeter Fencing, Screening Berms, Demolition of Buildings and Other Preparatory Work on the Knocknacran West Site

14.6.2.2 Potential Effects: Construction Phase: Mine Development: R179 Temporary Diversion: Derived Trips

To facilitate the construction of the new tunnel under the R179 Regional Road a temporary diversion of the R179 is proposed. The construction of the temporary road diversion is predicted to take between three to six months. Table 14.16, below outlines the deliveries forecast for construction of the temporary diversion.

The total number of deliveries forecast for the construction of the temporary diversion is 1,139 trips, which includes for the delivery of all materials required for constructing the temporary diversion including tarmacadam, sub-base, capping, safety barrier, geotextile etc.

It is estimated that the peak number of daily deliveries would be 20 loads (40 trips) associated with surfacing of the temporary carriageway. Consequently, 40 trips per day have been used in the capacity assessment relating to the delivery of materials to the site during this phase.

Table 14.16: Summary of Predicted Total Trips During Temporary Diversion Construction

Activity Area	Activity	Inbound Loads	Outbound Loads	Trips	Remarks
Site Clearance	General Site Clearance	-	8	16	-
	Transport of Asphalt off site to licenced waste facility	-	2	4	-
	Fencing and Safety Barriers	-	15	30	-
	Demolition of buildings or structures and removal of waste such as bulky/wood/asbestos to licenced facilities	-	4	8	-
Fencing and Environmental Noise Barriers	Temporary Fencing and Guardrails	2	2	8	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
	TTM Barriers & Equipment	2	2	8	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
Earthworks	Topsoil Strip	Stockpiled on-site			
	Excavation of Sub-soil	Stockpiled on-site			
	Excavation of Class U1 Soil (Contingency)	-	2	4	-
	Excavation of Hard Material (Contingency)	-	2	4	-
	Imported Topsoil	From Stockpile			
	Imported acceptable material fill	From Stockpile			
	Capping: Class 6F1/6F2	139	-	278	Either Left in Place or Removed to Stockpile upon removal of diversion
	Import of Geotextile	2	2	8	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
Drainage and Service Ducts	Pipes, Manholes, Gullies	2	-	4	Either Left in Place or Removed to Stockpile upon removal of diversion
	Headwalls	1	-	2	Either Left in Place or Removed to Stockpile upon removal of diversion
Pavements	Tarmacadam	111	111	444	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
	Sub-Base: Clause 804	83	-	166	Either Left in Place or Removed to Stockpile upon removal of diversion
	Filter Rock Fill: Class 6H	62	-	124	Either Left in Place or Removed to Stockpile upon removal of diversion
	Temporary Traffic	1	1	4	-

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Activity Area	Activity	Inbound Loads	Outbound Loads	Trips	Remarks
Traffic Signs and Road Markings	Signs				
	Temporary Road Markings	2	-	4	-
Miscellaneous (Assumed 5%)	Miscellaneous	-	-	23	-
Total Forecast Trips				1,139	

Potential Effects: Construction Phase: Mine Development: R179 Temporary Diversion Trip Assessment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts and projected haul routes, and is illustrated in Figure 14.10.

14.6.2.3 Potential Effects: Construction Phase: Mine Development: Cut-and-Cover Tunnel: Derived Trips

The construction of the tunnel is expected to take approximately six months, during which time a temporary “Road Works” speed limit of 60 kph would apply to the temporary diversion.

Table 14.7, below, indicates the total trips generated by the cut-and-cover tunnel construction. The total number of deliveries forecast for the construction of the cut-and-cover tunnel is c. 1,120, which includes for the delivery of all materials required for constructing the cut-and-cover tunnel including precast cut-and-cover tunnel segments, concrete, waterproofing, safety barrier, tarmacadam, sub-base, capping, safety barrier, geotextile, pipes, headwalls, etc.

It is estimated that the maximum number of deliveries in a day would be 18 loads (36 trips) associated with the import of Capping material. Consequently, 36 trips (18 loads) per day have been used in the capacity assessment relating to the delivery of materials to the site during the construction of the cut-and-cover tunnel.

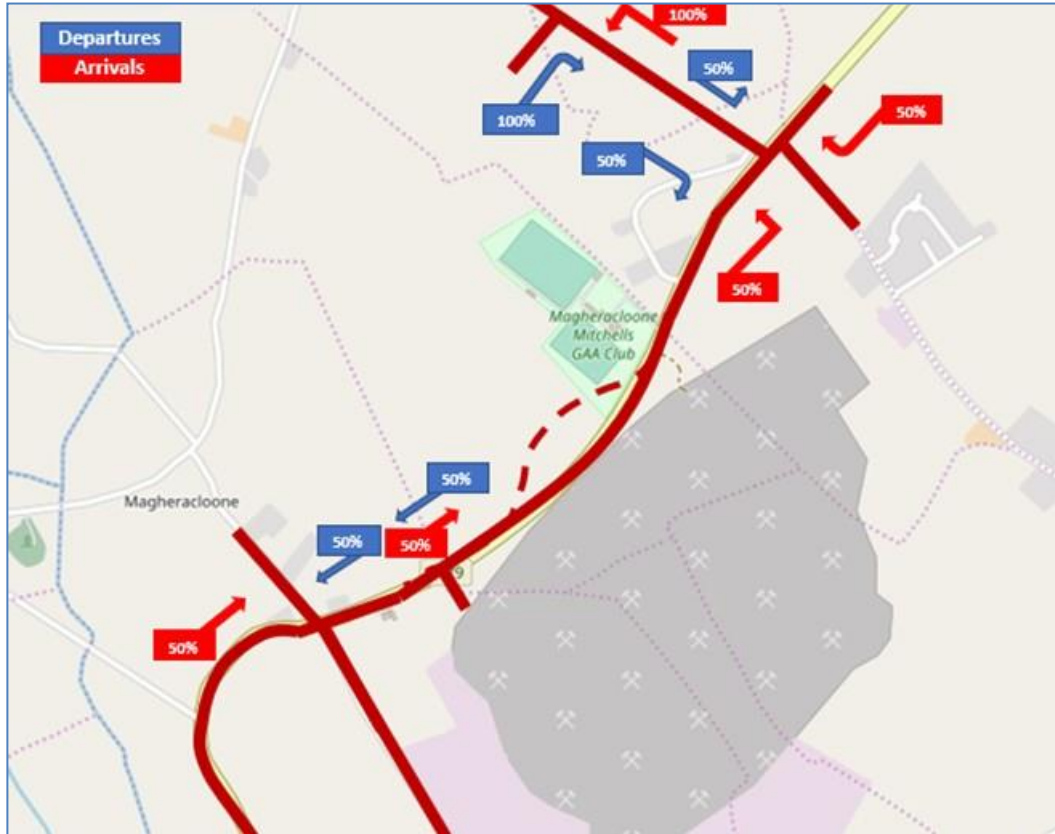


Figure 14.10: Assignment of construction traffic for the R179 temporary diversion

The arrival and departure of construction related vehicles to the site is expected to be spread throughout the day, although for the purpose of a conservative assessment it has been assumed that staff & materials delivery will arrive at, and depart from, the site during the AM and PM Peak Hours respectively.

Table 14.17: Summary of Predicted Total Trips During Temporary Diversion Construction

		Inbound Loads	Outbound Loads	Trips	Remarks
Site Clearance	General Site Clearance	-	3	6	
	Fencing and Safety Barriers	1	1	4	Inbound at commencement of construction and outbound upon completion
Fencing and Environmental Noise Barriers	Temporary Fencing and Guardrails	2	2	8	Inbound at commencement of construction and outbound upon completion
Earthworks	Topsoil Strip	Stockpiled on-site			
	Excavation of Sub-soil	Stockpiled on-site			
	Excavation of Class U1 Soil (Contingency)	-	2	4	-
	Excavation of Hard Material (Contingency)	-	2	4	-
	Imported Topsoil	From Stockpile			
	Imported acceptable material fill	From Stockpile			
	Capping: Class 6F1/6F2	380	-	-	-
	Import of Geotextile	1	-	-	-
Drainage and Service Ducts	Pipes, Manholes, Gullies	2	-	4	-
	Headwalls	1	-	2	-
Pavements	Tarmacadam	17	-	34	-
	Sub-Base: Clause 804	13	-	26	--
	Fill: Class 6N1	418	-	836	-
Structure	Tunnel: L-Type Segments	9	-	18	-
	Tunnel: S-Type Segments	6	-	12	-
	Crane Trips	8	-	16	-
	Concrete: Wing Walls x 4	5	-	10	-
	Concrete: Binding	9	-	18	-
	Concrete: Decking	8	-	16	--
Miscellaneous	Miscellaneous			102	-
Total Forecast Trips				1,120	

Potential Effects: Construction Phase: Mine Development: Cut-and-Cover Trip Assessment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts and projected haul routes, and is illustrated in Figure 14.11.

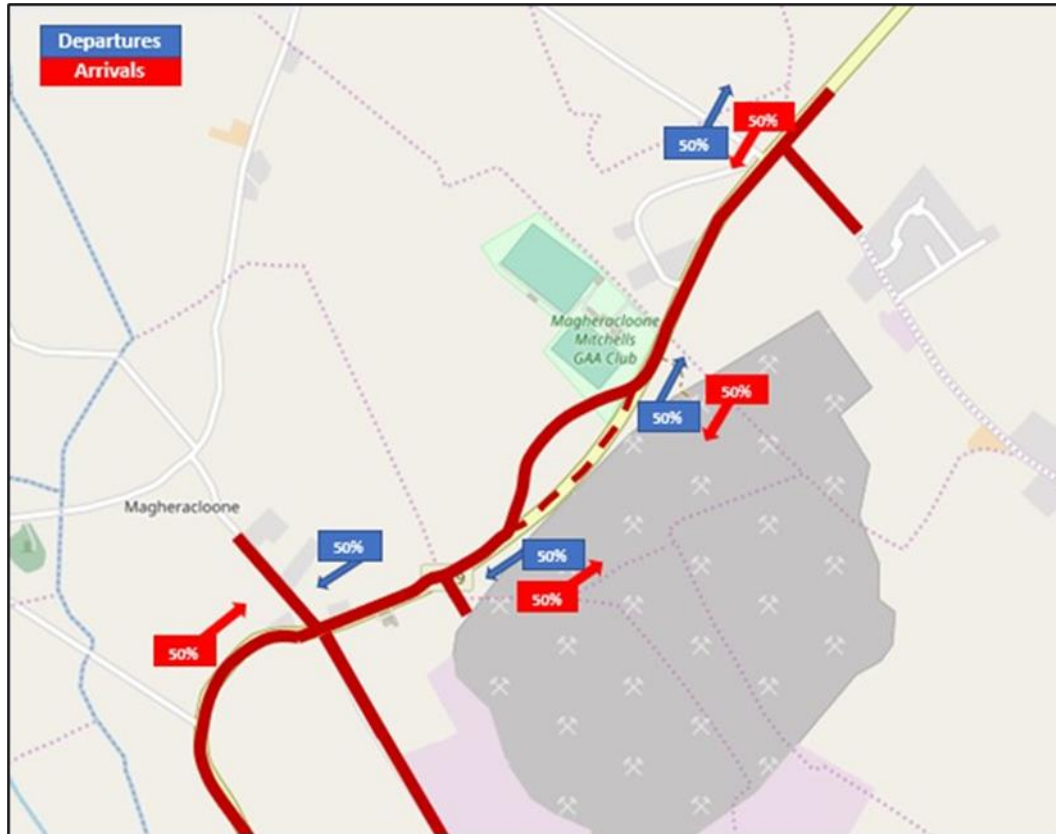


Figure 14.11: Assignment of construction traffic for the Cut-and-Cover Tunnel

14.6.2.4 Potential Effects: Construction Phase: Mine Development: Link Capacity Assessment Local Roads

This section considers the collective link capacity assessment from the overall Mine Development construction phase (including temporary diversion, Cut-and-Cover tunnel and Knocknacran West site works).

The L4816 has a paved width of approximately 9.0m, however, it is noted that there are no footpath or cycle facilities on this road. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D.

The L8830 and the L4900 have paved carriageway widths of 6.00m, with no footpaths or cycle facilities on these roads. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D (5,000).

The L49014 has a paved carriageway width of 3.0m to 4.0m along its length and a footpath along its eastern side. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D (5,000).

It is concluded that the L49014, L8830, L4900, and L4816 will have sufficient link capacity for each of the future assessment years with, and without, the Mine Development. The impact on link capacity will therefore be **Imperceptible**.

14.6.2.5 Potential Effects: Construction Phase: Mine Development: Link Capacity Assessment R179 Regional Road

This section considers the collective link capacity assessment from the overall Mine Development construction phase.

The R719 has a paved carriageway width of 10m and no pedestrian or cycle facilities on either side. The forecast two-way AADT for the final future forecast year is less than the maximum AADT for a road of this type at Level of Service D.

It is consequently concluded that the R179 will have sufficient link capacity for each of the future assessment years with, and without, the Mine Development when designated as a Rural Link Road. The impact on link capacity will therefore be **Imperceptible**.

14.6.2.6 Potential Effects: Construction Phase: Mine Development: Junction Analysis

As previously stated under Section 14.6, the proposed Community Sports Complex traffic is inherently part of the future baseline when considering the Mine Development. Therefore, when considering the effect of the proposed Mine Development on junctions, the traffic analysis presented in Section 14.6.1.5 (including Tables 14.8, 14.9, 14.10, 14.11, 14.12 and 14.13) above, is valid for the Mine Development also.

Potential Effects: Mine Development: Construction Phase: Location: Junction 1 – R179/L4900/L8830 Staggered Crossroads

A summary of the junction capacity analysis results for Junction 1 – R179/L4900/L8830 Staggered Crossroads are shown in Table 14.8 and Table 14.9, above. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods. The impact on the local road network is therefore **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Location: Junction 2 – R179/L4816/L49014 Crossroads

A summary of the junction capacity analysis results for Junction 2 – R179/L4816/L49014 Crossroads are shown in Table 14.10 and Table 14.11, above. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods. The impact on the local road network is therefore **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Location: Junction 2A – Community Sports Complex proposed access

A summary of the junction capacity analysis results for the GAA access junction during the Construction of the Mine and GAA Phase 2 is given in Table 14.12 and below Table 14.13, above. The results indicate that the junction will operate within capacity for the construction year 2024 and 2025 for both AM and PM peak periods. The impact on the local road network is therefore **Imperceptible**.

14.6.2.7 Potential Effects: Mine Development: Construction Phase: Road Infrastructure

Potential Effects: N2 Ardee to Castleblayney Scheme

Monaghan County Council is working in partnership with Louth County Council and in association with Transport Infrastructure Ireland (TII) to develop a scheme to upgrade a 32 km section of the N2/A5 Dublin-Derry Road. The proposed Community Sports Complex is located in Counties Monaghan and Louth, between Ardee and Castleblayney and is called the “N2 Ardee to Castleblayney Road Scheme” (Figure 14.12).



Figure 14.12: N2 Ardee to Castleblayney Scheme (Source: TII/MCC/LCC)

At the time of writing a Preferred Route Corridor has been identified, following public consultation, and is being progressed in accordance with TII’s Project Management Guidelines. The preferred route is illustrated in Figure 14.13 (indicated by the yellow line).

The location of the Mine Development is shown in Figure 14.13. The Mine Development is located outside the N2 Ardee to Castleblayney Route Study Area, and no closer than 5 km to the preferred route corridor.

Link and Junction capacity analysis has demonstrated that the development will have an **Imperceptible** effect on the local road network, and thus can be expected to have no impact or effect on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

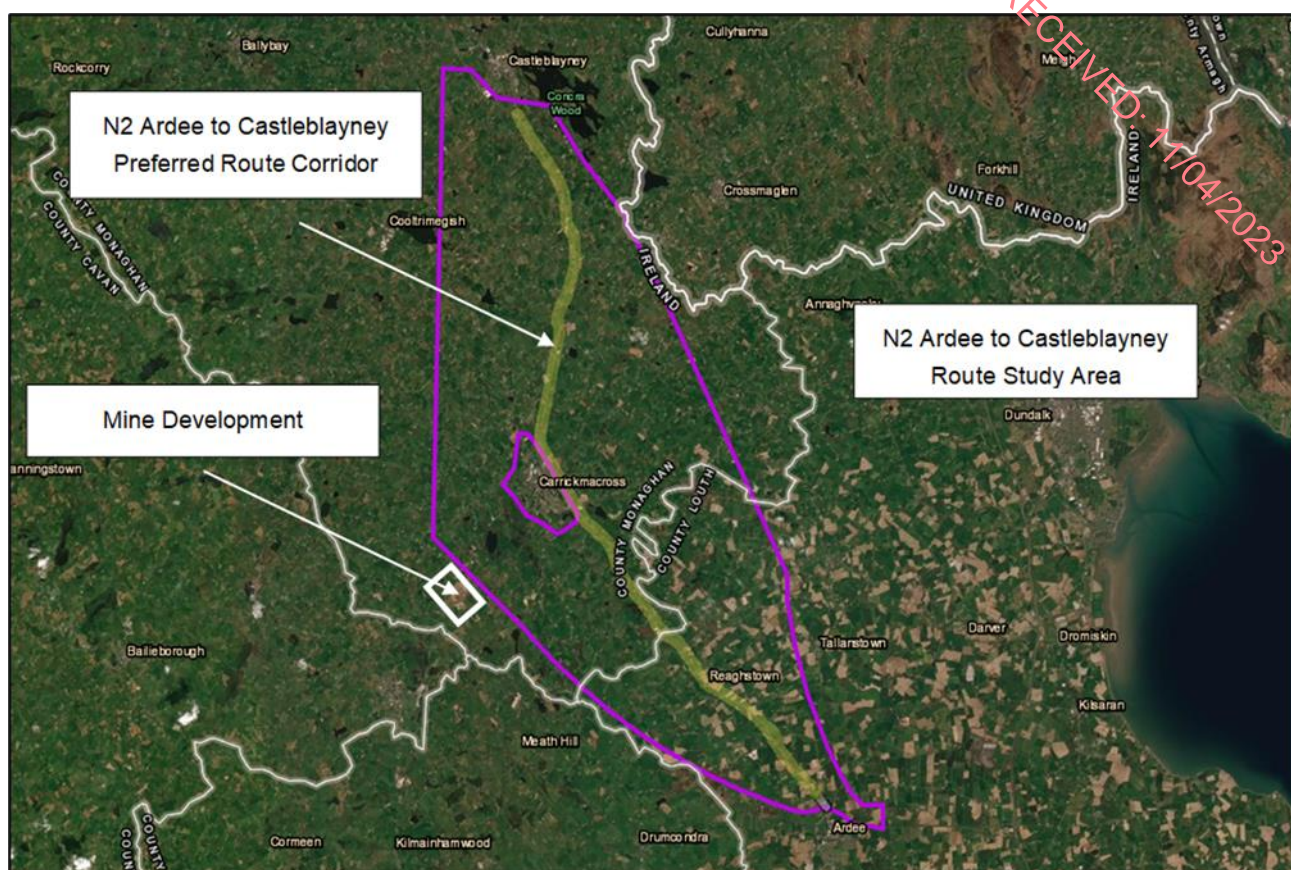


Figure 14.13: N2 Ardee to Castleblayney Preferred Route (Source: TII/MCC/LCC)

14.6.2.8 Potential Effects: Mine Development: Construction Phase: Road Safety

Potential Effects: Mine Development: Construction Phase: Road Safety: Road Safety Audit

A Stage 1 Road Safety Audit and a Stage 2 Road Safety Audit has been carried out on the proposed temporary diversion and the permanent reinstatement of the R179 (Ref. Appendices G and H of Appendix 14.1).

The Audit Team also reviewed the proposed new Mine Access Layout on the L4816, the visibility to the stop sign on the L4816 approaching the R179 and the existing junction between the R179/L4900/L8830. All of the Recommendations arising from the Audits have been accepted and the drawings have been amended to reflect these changes.

The effect on the local road network is considered to be **Imperceptible** in terms of road safety.

Table 14.18, below, summarises the findings and recommendations of the Stage 1 & Stage 2 Road Safety Audits

All of the Recommendations arising from the Audits have been accepted and the drawings have been amended to reflect these changes.

The effect on the local road network is considered to be **Imperceptible** in terms of road safety.

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Table 14.18: Summary of Stage 1 & Stage 2 Road Safety Audit Concerns

Stage 1 Road Safety Audit		
Location	Problem	Recommendation
Proposed Temporary Diversion of the R179	<ul style="list-style-type: none"> The construction and finish of the temporary alignment will appear like a permanent alignment which might lead to high speeds. The change in cross fall at the superelevated sections of the temporary alignment occurs over short distances which may lead to overturning of high sided vehicles. It is unclear how far the VRS will be from the interceptor ditch for the tunnel and if the proposed working width of W4 will be accommodated. 	<ul style="list-style-type: none"> Additional measures should be provided to indicate to drivers of the temporary nature of the diversion and the need to slow. This may include narrow widths. The rate of change of crossfall should be suitable for the anticipated operating speed of the temporary diversion. Sufficient space should be provided to allow the proposed VRS to function as intended.
Permanent Reinstatement of the R179	No safety issues identified.	-
Proposed New Mine Access	<ul style="list-style-type: none"> The type of the proposed fencing at the realigned access has not been provided. 	<ul style="list-style-type: none"> Rail-less fencing with passively safe posts should be provided.
Existing L4816/R179 Sign	No safety issues identified.	-
Stage 2 Road Safety Audit		
Location	Problem	Recommendation
Proposed Temporary Diversion of the R179	<ul style="list-style-type: none"> The horizontal curves on the temporary alignment are relatively tight which may lead to loss of control incidents 	<ul style="list-style-type: none"> Sharp bend and chevron signs should be provided.
Permanent Reinstatement of the R179	No safety issues identified.	-
Proposed New Mine Access	<ul style="list-style-type: none"> Road markings and signage at the realigned mine access have not been provided. No access point is provided to the footpath along the access road. 	<ul style="list-style-type: none"> Stop road markings and signage should be provided at the new access. A section of dropped kerb should be provided.
Existing L4816/R179 Sign	<ul style="list-style-type: none"> No safety issues identified. 	-

Potential Effects: Mine Development: Construction Phase: Road Safety: Site Access

It is proposed to move the existing Knocknacran /Drummond Mine access to facilitate improved sightlines (see Sightlines subsection below).

Currently, there are no road markings or signage at the site access (off the L4816) which advise drivers of the Stop controlled junction. A Stop sign and associated road markings will be provided to indicate to drivers where they must stop before entering the L4816 carriageway. Additionally, the kerb line along the northern verge of the mine access will be reinstated to provide better junction definition.

Improvements at the L4816/R179 junction, in conjunction with Monaghan County Council, shall also be proposed to ensure the existing tree canopy does not block visibility to the existing Stop sign at the R179 T-junction, and that the road markings at the junction are refreshed.

The proposed access layout, including sightlines for exiting drivers, are shown on the drawings in Appendix C, D and E of Appendix 14.1. It is envisaged that the construction of the new site access will be completed in ca. 1 month.

The effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Road Safety: Sightlines

The existing entrance to the mine is located on the L4816. The L4816 continues south of the mine access in one direction and north of the mine access towards the R179 regional road in the other direction. Vehicles travelling on the L4816 have priority over vehicles entering/leaving the mine. The posted speed limit on this road is 80kph.

Sightlines have been assessed against TII Publications document reference DN-GEO-03060, with reference also to the Section 15.27 of the Monaghan County Development Plan 2019 - 2025.

- **Sightline to the North from the Mine Access:** Visibility to the right (north) for the drivers exiting the mine towards the R179 is good and a visibility splay of in excess of 160m is available.
- **Sightline to the South from the Mine Access:** Visibility to the left (south) along the L4816 is constrained by a combination of the horizontal alignment and the boundary hedge of adjacent lands. The existing sightline to the south is 79 m.

The 85th percentile speed at this location is between 62.9 and 64 kph. For a design speed of 60 kph the required visibility is 90 m. In adopting this design speed, the required visibility to the south along the L4816 from the mine access remains below that required. To mitigate this the existing Mine Access is proposed to be modified to achieve a 90m sightline in this direction. Given the low volume of traffic using the L4816 to the south of the access, the absence of any collisions at this location, and the low 85th percentile speeds, the provision of a 90m sightline to the south is considered to be appropriate in this location.

The proposed access improvements, including sightlines and swept path analysis at the Mine Access, are shown on the drawings in Appendices C, D and E to Appendix 14.1 of this report.

With the relocation of the site access, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Road Safety: Public Transport

There are no public transport provisions in the vicinity of the Mine Development. This is not considered further.

Potential Effects: Mine Development: Construction Phase: Road Safety: Parking

There are approximately 50 existing car parking spaces within the mine site. The mine employs 40 full-time staff, of which approximately 12 work shifts in the evening/night in Drummond.

During the site visit, which took place between 09:30 and 12:00 hours, the car park did not exceed capacity.

The proposed extension of operations will not generate any further staff traffic movements during construction. The work areas for the temporary diversion, Cut-and-Cover tunnel and screening berms will have parking within the associated site compounds. Therefore, the car parking provision is considered to be adequate.

Therefore, the effect from the Mine Development is considered to be **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Road Safety: Pedestrians and Cyclists

There are no designated cycle or pedestrian facilities on the R179 national road or on the L4816 and L49014 local roads. There are hard strips at the edge of the carriageway on the R179 should vulnerable road users wish to travel along the R179. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Road Safety Summary

A review of the local road network in terms of Road Safety has not identified any existing or potential safety issues that may give rise to road collisions or an exacerbation of the existing collision record. The construction of the Mine Development will therefore have an **Imperceptible** effect on road safety.

14.6.3 Potential Effects: Operational Phase: Community Sports Complex

The following sections assess the potential effects of the construction phase of the Community Sports Complex under each of the four headings. Trip and traffic details applicable to this phase and development are considered in Sections 14.6.3.1 and 14.6.3.2.

- **Link Capacity:** Link capacity is defined as the probability that the road network can accommodate a certain level of traffic demand, and is built on the concept of network reserve capacity. Refer to Sections 14.6.3.3 and 14.6.3.4;
- **Junction Capacity:** Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for both the AM and PM Peaks for each of the construction and operational assessment years (2024, 2025, 2026 for the Opening Year, 2031 and 2041 for the Future Assessment Years). A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicates a junction operating at capacity. Refer to Section 14.6.3.5;
- **Road Infrastructure:** Impacts upon the 'N2 Ardee to Castleblayney Preferred Route', a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council, have been assessed. Refer to Section 14.6.3.6; and
- **Road Safety:** The increased use of the Knocknacran West Open-Cast Mine access may give rise to road safety problems if the access layout does not provide sufficient visibility, signage, and road markings. Refer to Section 14.6.3.7.

14.6.3.1 Potential Effects: Operational Phase: Community Sports Complex: Derived Trips

Traffic likely to be generated by the proposed Community Sports Complex development has been estimated using trip rates from the Trip Rate Information Computer System (TRICS) database based on the surveyed traffic for similar types of developments in similar locations.

A summary of the sites from the TRICS database used to estimate the traffic generated by the proposed Community Sports Complex are given in Appendix A, and the estimated number of vehicles arriving to, and departing from, the proposed Community Sports Complex between 7am and 7pm is summarised in Table 14.19.

For the purposes of a robust, conservative, assessment it has been assumed that all trips to/from the Community Sports Complex development will be by private car and no trip reduction has been applied to take into account trips undertaken using public transport and/or buses. Additionally, for the purposes of this conservative assessment, it has been assumed that on a day with a major fixture all formal and overspill parking areas will be filled and that a maximum of 350 cars would be parked in the site. This is considered a conservative approach in assessing junction and link capacity.

Table 14.19: Operational Traffic for the Community Sports Complex (During Major Events)

Time Range	No. of parked vehicles	Arrivals		Departures	
		Trip Rate Factor (Per Unit)	Trips	Trip Rate Factor (Per Unit)	Trips
07:00 - 08:00	350	0.107	37	0.007	2
08:00 - 09:00		0.180	63	0.024	9
09:00 - 10:00		0.193	68	0.057	20
10:00 - 11:00		0.225	79	0.135	47
11:00 - 12:00		0.115	40	0.119	42
12:00 - 13:00		0.126	44	0.199	70
13:00 - 14:00		0.133	47	0.126	44
14:00 - 15:00		0.162	57	0.228	80
15:00 - 16:00		0.136	47	0.129	45
16:00 - 17:00		0.060	21	0.139	49
17:00 - 18:00		0.041	14	0.148	52
18:00 - 19:00		0.085	30	0.112	39
Totals			547	499	

14.6.3.2 Potential Effects: Operational Phase: Community Sports Complex: Trip Assessment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts, and is illustrated in Figure 14.14.

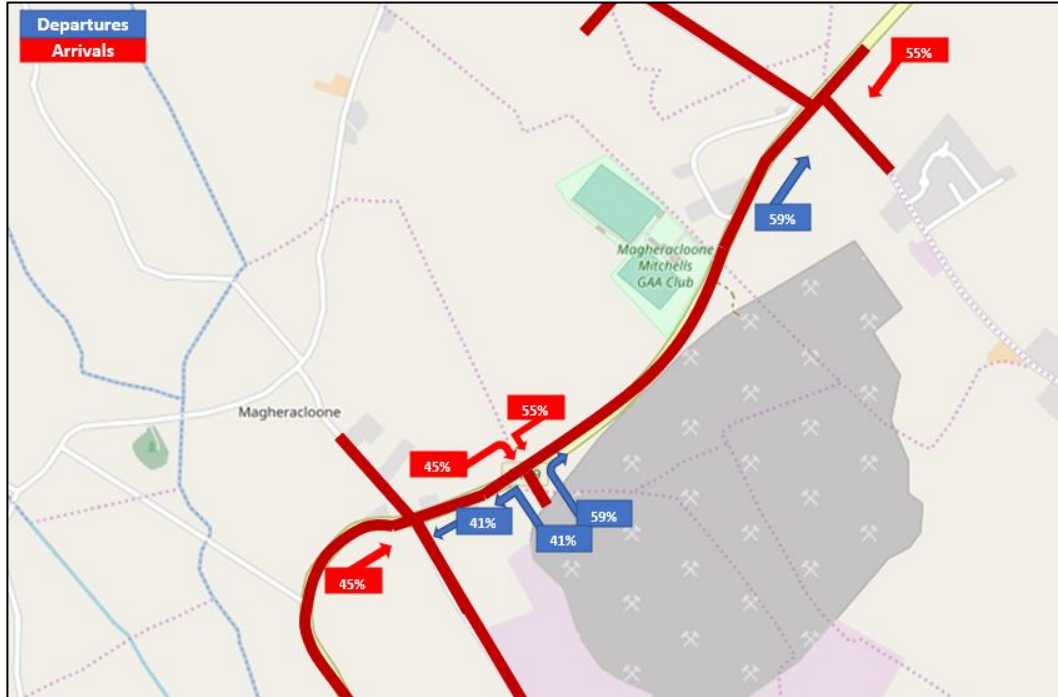


Figure 14.14: Assignment of Community Sports Complex (Phase 2) traffic

14.6.3.3 Potential Effects: Community Sports Complex: Operational Phase: Link Capacity Assessment: Local Roads

The L4816 has a paved width of approximately 9.0m, however, it is noted that there are no footpath or cycle facilities on this road. The forecast two-way AADT for the final future forecast year is 1,088 which is less than the maximum AADT for a road of this type at Level of Service D.

The L8830 and the L4900 have paved carriageway widths of 6.00m, with no footpaths or cycle facilities on these roads. The forecast two-way AADT for the final future forecast year is 563 and 760 respectively which is less than the maximum AADT for a road of this type at Level of Service D (5,000).

The L49014 has a paved carriageway width of 3.0m to 4.0m along its length and a footpath along its eastern side. The forecast two-way AADT for the final future forecast year is 206 which is less than the maximum AADT for a road of this type at Level of Service D (5,000).

It is concluded that the L49014, L8830, L4900, and L4816 will have sufficient link capacity for each of the future assessment years with, and without, the proposed Community Sports Complex. The effect on link capacity will therefore be **Imperceptible**.

14.6.3.4 Potential Effects: Community Sports Complex: Operational Phase: Link Capacity Assessment: R179 Regional Road

The R719 has a paved carriageway width of 10m and no pedestrian or cycle facilities on either side. The forecast two-way AADT for the final future forecast year is 7,460 which is less than the maximum AADT for a road of this type at Level of Service D.

It is consequently concluded that the R179 will have sufficient link capacity for each of the future assessment years with, and without, the proposed Community Sports Complex when designated as a Rural Link Road. The effect on link capacity will therefore be **Imperceptible**.

14.6.3.5 Potential Effects: Community Sports Complex: Operational Phase: Junction Capacity Analysis

Potential Effects: Community Sports Complex: Operational Phase: Location: Junction 1 – R179/L4900/L8830 Staggered Crossroads

A summary of the junction capacity analysis results for Junction 1 – R179/L4900/L8830 Staggered Crossroads are shown in Table 14.20 and Table 14.21. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2026, 2031 and 2041 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.20: Summary of traffic analysis (AM peak) at Junction 1 during operations

AM Peak Hour (07:45 – 08:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2026 With Development (Opening Year)			
L8830 - R179 (West/East)	0.1	6.45	0.05
L8830 - R179 (East)	0.0	8.81	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.1	14.39	0.07
L4900 - R179 (East)/L8830	0.1	5.86	0.05
L4900 - R179 (East)	0.0	7.97	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.20	0.04
2031 With Development			
L8830 - R179 (West/East)	0.1	6.49	0.06
L8830 - R179 (East)	0.0	8.93	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.1	14.52	0.07
L4900 - R179 (East)/L8830	0.1	5.91	0.06
L4900 - R179 (East)	0.0	8.11	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.26	0.04
2041 With Development			
L8830 - R179 (West/East)	0.1	6.55	0.06
L8830 - R179 (East)	0.0	9.08	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.1	14.68	0.08
L4900 - R179 (East)/L8830	0.1	5.98	0.06
L4900 - R179 (East)	0.0	8.27	0.04
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.34	0.04

Table 14.21: Summary of traffic analysis (PM peak) at junction 1 during operations

PM Peak Hour (16:45 – 17:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2026 With Development (Opening Year)			
L8830 - R179 (West/East)	0.1	6.01	0.05
L8830 - R179 (East)	0.0	8.86	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.42	0.07
L4900 - R179 (East)/L8830	0.0	6.00	0.03
L4900 - R179 (East)	0.0	7.68	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.92	0.04
2031 With Development			
L8830 - R179 (West/East)	0.1	6.05	0.06
L8830 - R179 (East)	0.0	8.98	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.49	0.08
L4900 - R179 (East)/L8830	0.0	6.04	0.04
L4900 - R179 (East)	0.0	7.80	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.98	0.04
2041 With Development			
L8830 - R179 (West/East)	0.1	6.11	0.06
L8830 - R179 (East)	0.0	9.12	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.58	0.08
L4900 - R179 (East)/L8830	0.0	6.10	0.04
L4900 - R179 (East)	0.0	7.94	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.04	0.04

Potential Effects: Community Sports Complex: Operational Phase: Location: Junction 2 – R179/L4816/L49014 Crossroads

A summary of the junction capacity analysis results for Junction 2 – R179/L4816/L49014 Crossroads are shown in Table 14.22 and Table 14.23. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2026, 2031 and 2041 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.22: Summary of traffic analysis (AM peak) at Junction 2 during operations

AM Peak Hour (07:45 – 08:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2026 With Development (Opening Year)			
L4816 - R179 (West)/L49014	0.1	11.66	0.05
L4816 -R179 (East)/L49014	0.1	13.07	0.07
R179 (East) - R179 (West)/L1816/L49014	0.0	5.06	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	7.45	0.03
L49014 - L4816/R179 (West)	0.0	12.05	0.03
R179 (West) - R179 (East)/L1816/L49014	0.3	6.82	0.16
2031 With Development			
L4816 - R179 (West)/L49014	0.1	11.78	0.05
L4816 -R179 (East)/L49014	0.1	13.34	0.07
R179 (East) - R179 (West)/L1816/L49014	0.0	5.02	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	7.55	0.03
L49014 - L4816/R179 (West)	0.0	12.14	0.04
R179 (West) - R179 (East)/L1816/L49014	0.3	6.81	0.17
2041 With Development			
L4816 - R179 (West)/L49014	0.1	11.94	0.06
L4816 -R179 (East)/L49014	0.1	13.70	0.08
R179 (East) - R179 (West)/L1816/L49014	0.0	4.98	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	7.68	0.03
L49014 - L4816/R179 (West)	0.0	12.25	0.04
R179 (West) - R179 (East)/L1816/L49014	0.3	6.79	0.17

Table 14.23: Summary of traffic analysis (PM peak) at Junction 2 during operations

PM Peak Hour (16:45 – 17:45)			
Stream	Queue (Veh)	Delay (s)	RFC
2026 With Development (Opening Year)			
L4816 - R179 (West)/L49014	0.1	7.28	0.13
L4816 - R179 (East)/L49014	0.2	9.81	0.15
R179 (East) - R179 (West)/L1816/L49014	0.0	5.14	0.03
L49014 - R179 (East)/L4816	0.0	11.99	0.02
L49014 - L4816/R179 (West)	0.0	14.39	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.46	0.05
2031 With Development			
L4816 - R179 (West)/L49014	0.1	7.36	0.13
L4816 - R179 (East)/L49014	0.2	9.97	0.15
R179 (East) - R179 (West)/L1816/L49014	0.0	5.11	0.03
L49014 - R179 (East)/L4816	0.0	12.31	0.02
L49014 - L4816/R179 (West)	0.0	14.74	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.42	0.05
2041 With Development			
L4816 - R179 (West)/L49014	0.1	7.45	0.13
L4816 - R179 (East)/L49014	0.2	10.17	0.15
R179 (East) - R179 (West)/L1816/L49014	0.0	5.08	0.03
L49014 - R179 (East)/L4816	0.0	12.74	0.03
L49014 - L4816/R179 (West)	0.0	15.18	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.37	0.06

Potential Effects: Community Sports Complex: Operational Phase: Location: Junction 2A – Community Sports Complex Proposed Access

A summary of the junction capacity analysis results for the Community Sports Complex access junction during full development operations is given in Table 14.24 and Table 14.25, below. The results indicate that the junction will operate within capacity for the construction year 2026, 2031 and 2041 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.24: Summary of Junction 2A capacity analysis (AM peak) during operations

AM Peak hour (07:30 – 08:30)			
Stream	Queue (Veh)	Delay (s)	RFC
2026			
Development Access - R179 (West)	0.0	6.54	0.01
Development Access - R179 (East)	0.0	9.58	0.01
R179 – Development Access	0.0	5.74	0.04
2031			
Development Access - R179 (West)	0.0	6.60	0.01
Development Access - R179 (East)	0.0	9.77	0.01
R179 – Development Access	0.0	5.80	0.04
2041			
Development Access - R179 (West)	0.0	6.68	0.01
Development Access - R179 (East)	0.0	10.00	0.01
R179 – Development Access	0.0	5.86	0.04

Table 14.25: Summary of Junction 2A capacity analysis (PM peak) during operations

PM Peak hour (16:30 – 17:30)			
Stream	Queue (Veh)	Delay (s)	RFC
2026			
Development Access - R179 (West)	0.0	6.47	0.04
Development Access - R179 (East)	0.1	9.53	0.08
R179 – Development Access	0.0	5.27	0.01
2031			
Development Access - R179 (West)	0.0	6.51	0.04
Development Access - R179 (East)	0.1	9.67	0.08
R179 – Development Access	0.0	5.30	0.01
2041			
Development Access - R179 (West)	0.0	6.56	0.04
Development Access - R179 (East)	0.1	9.84	0.08
R179 – Development Access	0.0	5.34	0.01

Potential Effects: Community Sports Complex: Operational Phase: Location: Junction 3 – Mine Access

A summary of the junction capacity analysis results for Junction 3 – Existing Mine Access is shown in Table 14.26 and Table 14.27. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2026, 2031 and 2041 for both AM and PM peak periods. The effect on the local road network is therefore **Imperceptible**.

Table 14.26: Summary of Traffic analysis (AM peak) at Junction 3 during operations

AM Peak Hour (07:30 – 08:30)			
Stream	Queue (Veh)	Delay (s)	RFC
2026 With Development (Opening Year)			
Mine Access - L4816 (North)	0.0	0.00	0.00
Mine Access - L4816 (South)	0.2	8.20	0.19
L4816 (North) to L4816 (South)	0.0	6.54	0.01
2031 With Development			
Mine Access - L4816 (North)	0.0	0.00	0.00
Mine Access - L4816 (South)	0.2	8.25	0.20
L4816 (North) to L4816 (South)	0.0	6.55	0.01
2041 With Development			
Mine Access - L4816 (North)	0.0	0.00	0.00
Mine Access - L4816 (South)	0.2	8.33	0.20
L4816 (North) to L4816 (South)	0.0	6.56	0.01

Table 14.27: Summary of traffic analysis (PM peak) at Junction 3 during operations

PM Peak Hour (17:00 – 18:00)			
Stream	Queue (Veh)	Delay (s)	RFC
2026 With Development (Opening Year)			
Mine Access - L4816(North)	0.0	6.06	0.02
Mine Access - L4816(South)	0.4	8.68	0.26
L4816 (North) to L4816 (South)	0.0	0.00	0.00
2031 With Development			
Mine Access - L4816(North)	0.0	6.08	0.02
Mine Access - L4816(South)	0.4	8.77	0.27
L4816 (North) to L4816 (South)	0.0	0.00	0.00
2041 With Development			
Mine Access - L4816(North)	0.0	6.11	0.02
Mine Access - L4816(South)	0.4	8.89	0.27
L4816 (North) to L4816 (South)	0.0	0.00	0.00

14.6.3.6 Community Sports Complex: Operational Phase: Road Infrastructure

N2 Ardee to Castleblayney Scheme

As has been previously assessed in Section 14.6.1.6, the Community Sports Complex is located outside the N2 Ardee to Castleblayney Route Study Area and no closer than 5 km to the preferred route corridor.

Link and Junction capacity analysis has demonstrated that the development will have an **Imperceptible** effect on the local road network, and thus can be expected to have no impact on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

14.6.3.7 Community Sports Complex: Operational Phase: Road Safety

Potential Effects: Community Sports Complex: Operational Phase: Road Safety: Collision History

As stated in Section 14.6.1.7, a review of the historical collision data did not identify any collision patterns at, or near, the Community Sports Complex. It is not considered likely that the operation of the proposed Community Sports Complex will impact the road safety of the network, therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Operational Phase: Road Safety: Site Access

During the operational phase of the Community Sports Complex, the existing entrance off the R179 will continue to be used. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Operational Phase: Road Safety: Sightlines

During the operational phase of the Community Sports Complex, the existing entrance off the R179 will continue to be used. Sightlines associated with this entrance are permitted under Reg. Ref. 20/365 are in compliance with the necessary visibility splays. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Operational Phase: Road Safety: Public Transport

There are no public transport provisions in the vicinity of the Community Sports Complex. This is not considered further.

Potential Effects: Community Sports Complex: Operational Phase: Road Safety: Parking

The gross floor areas for the proposed Community Sports Complex are provided in Table 14.28, below.

The Net Floor Area of the proposed Community Sports Complex buildings is 2,135 m² as it does not include the toilets, staff and storage areas in the calculation, in line with Table 15.6 of the Monaghan County Development Plan. This Net Floor Area equates to the requirement for a minimum of 43 car parking spaces for the Community Sports Complex.

However, the Applicant has included plans for 100 formal parking spaces on the site (between Reg. Ref. 20/365 and the proposed Community Sports Complex). The proposed Community Sports Complex will also provide informal parking (overspill), which may be in use occasionally for match fixtures.

Table 14.28: Gross floor area details for the Community Sports Complex Building

Breakdown of Gross Floor Areas		Area m ²
Gross Floor Area Ground Floor (Including Plant Room)		2,041.50
Gross Floor Area First Floor		785.00
Total First Floor and Ground Floor Gross Floor Area		2,826.50
Area of Spectator Stand		260.00
Detailed Breakdown of Internal Net Floor Areas		Area m ²
Sports Hall		628.00
Handball Alley		72.00
Changing Room (inc Toilets)		428.00
Gymnasium		81.00
Club Room		229.00
Meeting Room 1		71.00
Kitchen (inc. Store and Staff)		70.00
Circulation (inc. Viewing Gallery)		556.00
Total of Internal Net Room Floor Areas		2,135.00
Internal Net Floor Areas (staff, storage & toilets)		Area m ²
Staff		41.00
Toilets		84.50
Storage		152.50
Plant Room		106.00
Total		384.00

Traffic likely to be generated by the proposed Community Sports Complex development has been estimated using trip rates from the Trip Rate Information Computer System (TRICS) database based on the surveyed traffic for similar types of developments in similar locations.

The forecast arrivals and departures for the Community Sports Complex (Phase 2) indicate that the estimated daily arrivals and departures result in a maximum occupancy of 48 total parking spaces. It is considered that the proposed parking provision is sufficient for the forecast day-to-day demand.

Table 14.29: Operational Traffic for the Community Sports Complex (During Major Events)

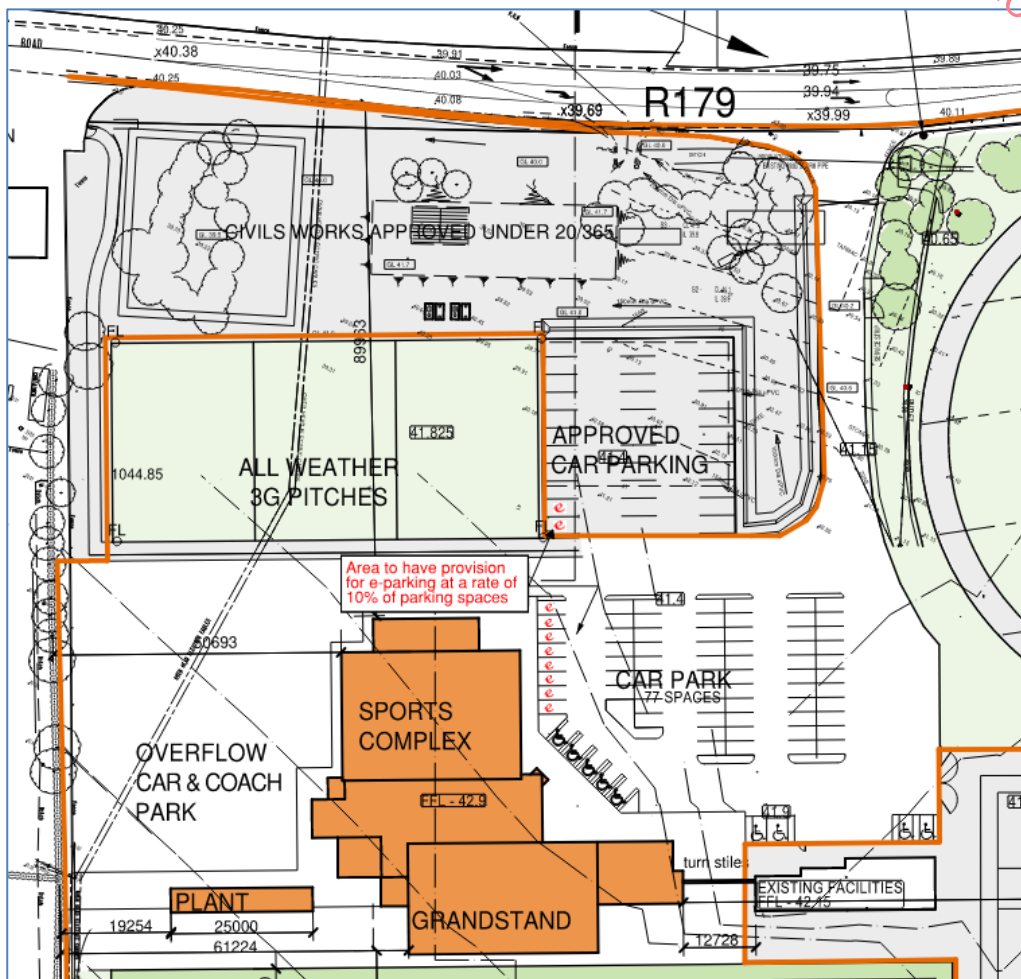
Time Range	No. of parked vehicles	Arrivals		Departures	
		Trip Rate Factor (Per Unit)	Trips	Trip Rate Factor (Per Unit)	Trips
07:00 - 08:00	100	0.107	11	0.007	1
08:00 - 09:00		0.180	18	0.024	3
09:00 - 10:00		0.193	20	0.057	6
10:00 - 11:00		0.225	23	0.135	14
11:00 - 12:00		0.115	12	0.119	12
12:00 - 13:00		0.126	13	0.199	20
13:00 - 14:00		0.133	14	0.126	13
14:00 - 15:00		0.162	17	0.228	23
15:00 - 16:00		0.136	14	0.129	13
16:00 - 17:00		0.060	6	0.139	14
17:00 - 18:00		0.041	5	0.148	15
18:00 - 19:00		0.085	9	0.112	12
Totals			162		146

Table 14.30: Residual Parking Capacity for the Community Sports Complex (Phase 2)

100 Formal Car Parking spaces available first thing in the morning				
Hour Beginning	Trips In	Trips Out	Spaces Available	Spaces Occupied
06:00	-	-	100	0
07:00	0	0	100	0
08:00	11	1	90	10
09:00	18	3	75	25
10:00	20	6	61	39
11:00	23	14	52	48
12:00	12	12	52	48
13:00	13	20	59	41
14:00	14	13	58	42
15:00	17	23	64	36
16:00	14	13	63	37
17:00	6	14	71	29
18:00	5	15	81	19

EV parking will be provided within the proposed formal parking area at a ratio of 10%. Ten EV parking spaces are indicated on Figure 14.15, below.

Therefore, as parking provisions within the site are more than required, the effect on the local road network is considered to be **Imperceptible**.



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Figure 14.15: EV (E) parking provision within the Community Sports Complex site

Potential Effects: Community Sports Complex: Construction Phase: Road Safety: Pedestrians and Cyclists

There are no designated cycle or pedestrian facilities on the R179 national road or on the L4816 and L49014 local roads. There are hard strips at the edge of the carriageway on the R179 should vulnerable road users wish to travel along the R179. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Community Sports Complex: Construction Phase: Road Safety Summary

A review of the local road network in terms of Road Safety has not identified any existing or potential safety issues that may give rise to road collisions or an exacerbation of the existing collision record. The operation of the Community Sports Complex will therefore have an **Imperceptible** effect on road safety.

14.6.4 Potential Effects: Operational Phase: Mine Development

Normal working hours for all construction activities have been assumed to be between 8.00am and 6.00pm. Trip and traffic details applicable to this phase and development are considered in Sections 14.6.4.1, 14.6.4.2, 14.6.4.3 and 16.6.4.4.

The following sections assess the potential effects of the construction phase of the Mine Development under each of the four headings:

- **Link Capacity:** Link capacity is defined as the probability that the road network can accommodate a certain level of traffic demand, and is built on the concept of network reserve capacity. Refer to Sections 14.6.4.5 and 14.6.4.6;
- **Junction Capacity:** Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for both the AM and PM Peaks for each of the construction and operational assessment years (2024, 2025, 2026 for the Opening Year, 2031 and 2041 for the Future Assessment Years). A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicates a junction operating at capacity. Refer to Section 14.6.4.7;
- **Road Infrastructure:** Impacts upon the 'N2 Ardee to Castleblayney Preferred Route', a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council, have been assessed. Refer to Section 14.6.4.8; and
- **Road Safety:** The increased use of the Knocknacran West Open-Cast Mine access may give rise to road safety problems if the access layout does not provide sufficient visibility, signage, and road markings. Refer to Section 14.6.4.9.

14.6.4.1 Potential Effects: Operational Phase: Mine Development: Derived Trips

Over the course of the extended time period c. 9 million tonnes of gypsum would be extracted over a number of phases, with a maximum annual extraction rate of between 250,000 and 500,000 tonnes. This is in line with the existing operations at Knocknacran and Drummond Mines, no intensification of trips is proposed due to the proposed Knocknacran West Mine. For the purposes of a robust assessment the upper limit of 500,000 tonnes per annum will be analysed. This equates to approximately 67 loads per day (Table 14.31) based on the following assumptions:

- The facility would operate for 50 weeks per year;
- Material would be transported from the site in 20 tonne and 28 tonne loads (25 tonnes average assumed);
- The facility would operate for six days per week (Monday to Saturday) inclusive; and
- The Facility opening times will be 06:00am to 09:00pm on Monday to Saturday.

Table 14.31: Exported Mine Material

Exported Quantities of Gypsum (based upon maximum permitted extraction rate / annum)	
Quantity per annum	500,000
Quantity per week (50 operational weeks / year)	10,000
Loads per week (25 tonnes / load)	400
Loads per Day (6 working days / week)	67

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For the purposes of the traffic modelling assessment undertaken, a conservative value of 70 loads per day has been used. This approach also uses the maximum production rates proposed, however, production will vary between 250,000 tonnes to 500,000 of gypsum per annum, in line with the existing Mine Development production rates.

14.6.4.2 Potential Effects: Operational Phase: Mine Development: Staff Trips

The proposed Community Sports Complex will employ up to 40 full-time staff members, with a number of additional sub-contractors (up to ca. 45 at any one time, including periodic stripping campaigns) depending on operational needs. To support a robust assessment, it is assumed that all staff members (85 in total) will arrive at the site during the AM Peak Hour and depart during the PM Peak Hour. It is acknowledged that this scenario is extremely unlikely due to the employment of some employees on a seasonal basis. For the purposes of this assessment, staff movements will therefore generate a maximum of 170 peak hour trips, 85 inbound trips during the AM Peak Hour and 85 outbound trips during the PM Peak Hour.

14.6.4.3 Potential Effects: Operational Phase: Mine Development: Miscellaneous Trips

A total of 10 trips have been assumed to occur daily to cater for possible miscellaneous trips. These miscellaneous trips allow for operations meetings, site inspections, maintenance operations for plant and machinery, etc. It is not considered that these trips would coincide with either peak hour, however for a robust assessment they have been assessed as arriving during the AM Peak and departing during the PM Peak.

Summary of Operational Derived Mine Development Trips

The total daily trips associated with the mine operation accounts for 330 movements daily, 140 of which relate to HGV's (52%). These numbers are arrived at by summing the following components:

- 140 daily truck movements, 70 inbound and 70 outbound;
- 170 staff trips daily, 85 inbound and 85 outbound; and
- 20 miscellaneous trips daily, 10 inbound and 10 outbound.

14.6.4.4 Mine Development Trip Assessment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts and projected haul routes, and is illustrated in Figure 14.17.

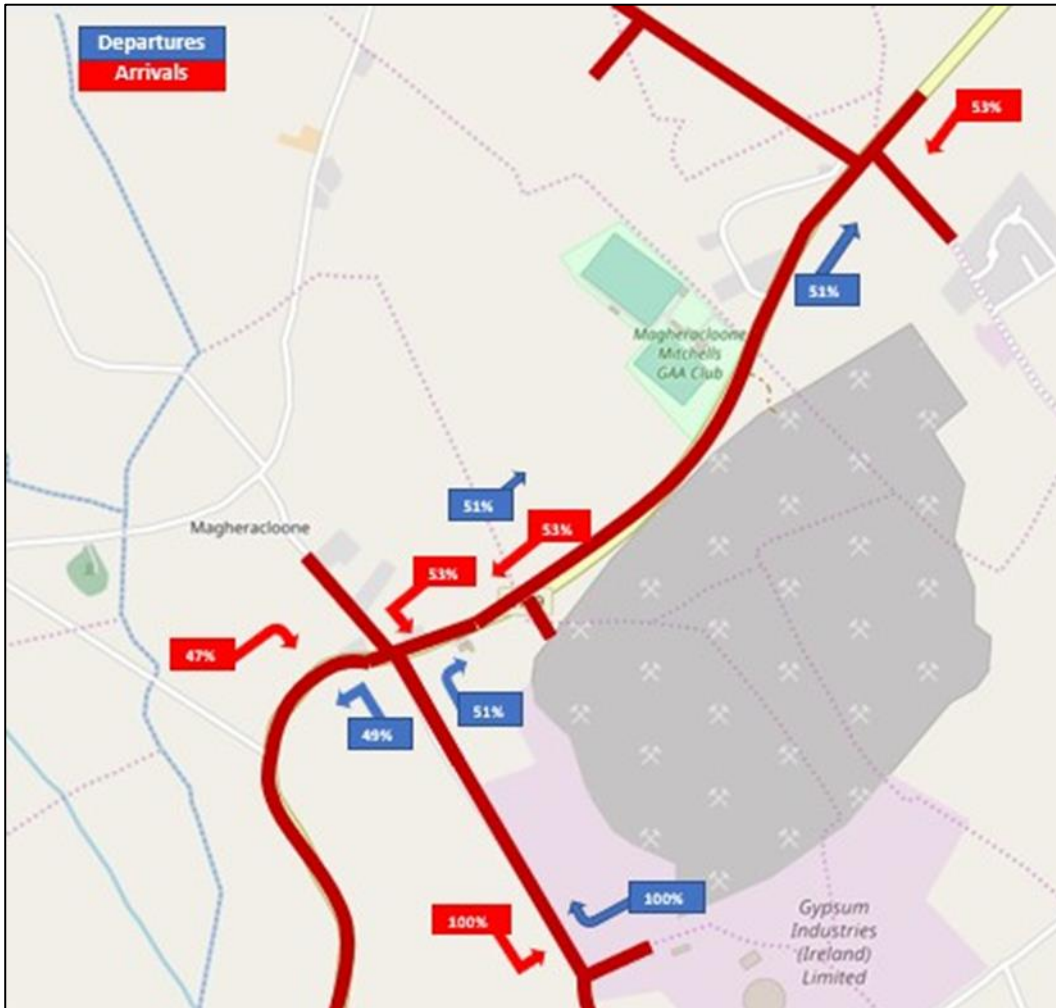


Figure 14.16: Assignment of operational mine traffic

14.6.4.5 Potential Effects: Operational Phase: Mine Development: Link Capacity Assessment Local Roads

The L4816 has a paved width of approximately 9.0m, however, it is noted that there are no footpath or cycle facilities on this road. The forecast two-way AADT for the final future forecast year is 1,088 which is less than the maximum AADT for a road of this type at Level of Service D.

The L8830 and the L4900 have paved carriageway widths of 6.00m, with no footpaths or cycle facilities on these roads. The forecast two-way AADT for the final future forecast year is 563 and 760 respectively which is less than the maximum AADT for a road of this type at Level of Service D (5,000).

The L49014 has a paved carriageway width of 3.0m to 4.0m along its length and a footpath along its eastern side. The forecast two-way AADT for the final future forecast year is 206 which is less than the maximum AADT for a road of this type at Level of Service D (5,000).

It is concluded that the L49014, L8830, L4900, and L4816 will have sufficient link capacity for each of the future assessment years with, and without, the Mine Development. The impact on link capacity will therefore be **Imperceptible**.

14.6.4.6 Potential Effects: Operational Phase: Mine Development: Link Capacity Assessment R179 Regional Road

This section considers the collective link capacity assessment from the overall Mine Development construction phase.

The R719 has a paved carriageway width of 10m and no pedestrian or cycle facilities on either side. The forecast two-way AADT for the final future forecast year is 7,460 which is less than the maximum AADT for a road of this type at Level of Service D.

It is consequently concluded that the R179 will have sufficient link capacity for each of the future assessment years with, and without, the Mine Development when designated as a Rural Link Road. The impact on link capacity will therefore be **Imperceptible**.

14.6.4.7 Potential Effects: Operational Phase: Mine Development: Junction Analysis

As previously stated under Section 14.1, the proposed Community Sports Complex traffic is inherently part of the future baseline when considering the Mine Development. Therefore, when considering the effect of the proposed Mine Development on junctions, the traffic analysis presented in Section 14.1.19.5 (including Tables 14.8, 14.9, 14.10, 14.11, 14.12 and 14.13) above, is valid for the Mine Development also.

Potential Effects: Mine Development: Construction Phase: Location: Junction 1 – R179/L4900/L8830 Staggered Crossroads

A summary of the junction capacity analysis results for Junction 1 – R179/L4900/L8830 Staggered Crossroads are shown in Table 14.8 and Table 14.9, above. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods. The impact on the local road network is therefore **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Location: Junction 2 – R179/L4816/L49014 Crossroads

A summary of the junction capacity analysis results for Junction 2 – R179/L4816/L49014 Crossroads are shown in Table 14.10 and Table 14.11, above. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods. The impact on the local road network is therefore **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Location: Junction 2A – Community Sports Complex proposed access

A summary of the junction capacity analysis results for the GAA access junction during the Construction of the Mine and GAA Phase 2 is given in Table 14.12 and below Table 14.13, above. The results indicate that the junction will operate within capacity for the construction year 2024 and 2025 for both AM and PM peak periods. The impact on the local road network is therefore **Imperceptible**.

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14.6.4.8 Mine Development: Operational Phase: Road Infrastructure

N2 Ardee to Castleblayney Scheme

As has been previously assessed in Section 14.6.1.6, the Mine Development is located outside the N2 Ardee to Castleblayney Route Study Area and no closer than 5 km to the preferred route corridor.

Link and Junction capacity analysis has demonstrated that the development will have an **Imperceptible** effect on the local road network, and thus can be expected to have no impact on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

14.6.4.9 Mine Development: Operational Phase: Road Safety

Potential Effects: Mine Development: Operational Phase: Road Safety: Collision History

As stated in Section 14.6.2.8, a review of the historical collision data did not identify any collision patterns at, or near, the Mine Development. In addition, the operational phase of the proposed Mine Development is a continuation of existing operations and therefore, their effects on the road network. It is not considered likely that the operation of the proposed Mine Development will impact the road safety of the network, therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Operational Phase: Road Safety: Site Access

During the operational phase of the Mine Development, the entrance off the L4816 (which is constructed in the construction phase) will be used for the development. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Operational Phase: Road Safety: Sightlines

As a new site access will be provided during the construction phase which achieves a 90 m sightline to the south. Given the low volume of traffic using the L4816 to the south of the access, the absence of any collisions at this location, and the low 85thile speeds, the provision of a 90 m sightline to the south is considered to be appropriate in this location. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Operational Phase: Road Safety: Public Transport

There are no public transport provisions in the vicinity of the Mine Development. This is not considered further.

Potential Effects: Mine Development: Operational Phase: Road Safety: Parking

There are approximately 50 existing car parking spaces within the mine site. The mine employs 40 full-time staff, of which approximately 12 work shifts in the evening/night in Drummond. There are an additional 45 occasional staff members, 35 of which are earthworks contractors which work from their own compound during periods of stripping campaigns (over approximately 6 months every 3 to 5 years).

During the site visit, which took place between 09:30 and 12:00 hours, the car park did not exceed capacity. The proposed extension of operations will not generate any further staff traffic movements. Therefore, the current car parking provision within the site is considered to be adequate.

Therefore, the effect from the Mine Development is considered to be **Imperceptible**.

Potential Effects: Mine Development: Operational Phase: Road Safety: Pedestrians and Cyclists

There are no designated cycle or pedestrian facilities on the R179 national road or on the L4816 and L49014 local roads. There are hard strips at the edge of the carriageway on the R179 should vulnerable road users wish to travel along the R179. Therefore, the effect on the local road network is considered to be **Imperceptible**.

Potential Effects: Mine Development: Construction Phase: Road Safety Summary

A review of the local road network in terms of Road Safety has not identified any existing or potential safety issues that may give rise to road collisions or an exacerbation of the existing collision record. The construction of the Mine Development will therefore have an **Imperceptible** effect on road safety.

14.6.5 Potential Effects: Restoration/Closure Phase: Community Sports Complex

There is no proposal to close the Community Sports Complex development and this phase is non-applicable.

14.6.6 Potential Effects: Restoration/Closure Phase: Mine Development

It is presented that in advance of closure a suitable developer would be sought to take over the plant site and reuse the non-mining plant (such as the office) for light industrial use, however, this would be subject to acquiring the necessary regulatory permissions.

Mine plant (such as the crushers and conveyors) will be dismantled during closure. It is considered that the potential traffic and transport effects from vehicle movements associated with this phase will be significantly less than those in the mine construction phase and of a similar duration. As the site progresses into aftercare, site access would be undertaken occasionally (gradually reducing from weekly, monthly, quarterly, annually, etc.). Therefore, the potential effects on link capacity, junction capacity, road infrastructure and road safety are considered to be **Imperceptible**.

A Closure, Restoration and Aftercare Management Plan (CRAMP) has been prepared, which sets out the closure and aftercare proposals following cessation of mine operations. Any further proposals at the Application Site by a suitable developer to continue to use the plant site would be subject to planning permission and traffic effects associated with a future development will be assessed as part of that.

14.7 Mitigation and Management

14.7.1 Mitigation and Management: Construction Phase: Community Sports Complex

Following assessment, the additional trips associated with the construction of the Community Sports Complex were found to have an Imperceptible impact on link and junction capacity, and an Imperceptible impact in relation to Road Safety and existing Road Infrastructure. To support long term safety for local road users, as well as construction staff using the developments, the following minor mitigation measure will be provided:

- A Construction Traffic Management Plan for Community Sports Complex will be developed in order to manage instances where construction traffic may affect local road users. Methods and approaches in this plan will be agreed with Monaghan County Council as appropriate.

14.7.2 Mitigation and Management: Construction Phase: Mine Development

Following assessment, the additional trips associated with the construction of the Mine Development were found to have an Imperceptible impact on link and junction capacity, and an Imperceptible impact in relation to Road Safety and existing Road Infrastructure. To support long term safety for local road users, as well as construction staff using the developments, the following minor mitigation measures will be provided:

- A Construction Traffic Management Plan for the Mine Development will be developed for the appropriate work areas in order to manage instances where construction traffic may affect local road users. Methods and approaches in this plan will be agreed with Monaghan County Council as appropriate;
- Revision of the Mine Access to maximise sightlines to the south of the access on the L4816. A new proposed mine access will provide 90 m sightlines to the south, which is consistent with the prevailing 85%ile speed (62.9-64kph) recorded on the L4816. For a design speed of 60kph the required visibility is 90m;
- New Stop sign and associated road markings at the Mine Access; and
- Cutting back vegetation and a tree canopy that is currently reducing visibility to the Stop sign at the L4816/R179 T-Junction.

14.7.3 Mitigation and Management: Operational Phase: Community Sports Complex

Following assessment, the additional trips associated with the operation of the Community Sports Complex were found to have an Imperceptible impact on link and junction capacity, and an Imperceptible impact in relation to Road Safety and existing Road Infrastructure. No further mitigation is proposed for this development during its operational life.

14.7.4 *Mitigation and Management: Operational Phase: Mine Development*

Following assessment, the additional trips associated with the construction of the Mine Development were found to have an Imperceptible impact on link and junction capacity, and an Imperceptible impact in relation to Road Safety and existing Road Infrastructure. To support long term safety for local road users, as well as operational staff using the developments, the following minor mitigation measures will be provided:

- The Cut-and-cover tunnel will be used for internal site access between the Knocknacran West and Knocknacran Mine sites to ensure haul trucks do not enter the public road network in the course of extraction activities; and
- Signage will be maintained and erected within the Mine Site to maintain a safe and orderly traffic regime on the Site.

14.7.5 *Mitigation and Management: Restoration/Closure Phase: Community Sports Complex*

There is no proposal to close the Community Sports Complex development and this phase is non-applicable.

14.7.6 *Mitigation and Management: Restoration/Closure Phase: Mine Development*

Following assessment, the additional trips associated with the restoration and closure of the Knocknacran West Open-Mine were found to have an Imperceptible impact on link and junction capacity, and an Imperceptible impact in relation to Road Safety and existing Road Infrastructure. If it is required due to the nature of restoration and closure activities, and to support long term safety for local road users, the following minor mitigation measure will be provided:

- A Construction (Demolition) Traffic Management Plan will be developed in order to manage instances where construction traffic may affect local road users. Methods and approaches in this plan will be agreed with Monaghan County Council as appropriate.

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14.8 Monitoring

14.8.1 *Monitoring: Construction Phase: Community Sports Complex*

Traffic monitoring is not proposed for the construction phase of the Community Sports Complex.

14.8.2 *Monitoring: Construction Phase: Mine Development*

During this phase, a Construction Traffic Management Plan will be in place for the relevant work areas. Monitoring of this phase will be regulated through adherence to this plan.

14.8.3 *Monitoring: Operational Phase: Community Sports Complex*

Traffic monitoring is not proposed for the operational phase of the Community Sports Complex.

14.8.4 *Monitoring: Operational Phase: Mine Development*

Traffic monitoring is not proposed for the operational phase of the Mine Development; however, the mine site will keep a record of gypsum haul trucks leaving and entering site to/from the public road, as is standard and current practice.

14.8.5 *Monitoring: Restoration/Closure Phase: Community Sports Complex*

This phase is non-applicable and not considered further here.

14.8.6 *Monitoring: Restoration/Closure Phase: Mine Development*

During this phase, if required by the Council, a Construction (Demolition) Traffic Management Plan will be in place for the relevant work areas. Monitoring of this phase will be regulated through adherence to this plan.

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14.9 Residual Effects

14.9.1 Community Sports Complex

The residual effects are deemed **Not Significant**.

14.9.2 Mine Development

The residual effects are deemed **Not Significant**.

14.10 Cumulative Effects

14.10.1 The Project – Community Sports Complex and Mine Development

As stated in Section 14.6, it is intrinsic that if the Mine Development is in construction/operation/closure, then the Community Sports Complex is also going to be in the relevant construction/operation phases. These developments will inherently occur together. During consideration of the potential effects, the assessment has already included the cumulative aspect of the two developments and associated traffic and transport considerations because they will occur cumulatively.

In addition, while the construction phase of the Mine Development identifies several works areas, their effect on road infrastructure has been assessed cumulatively already in Section 14.6.

The cumulative effects from the Project are therefore deemed **Not Significant**, in line with the potential effects already assessed in Section 14.6.

14.10.2 The Project and Other Offsite Projects

As outlined in Section 14.4.6, a recent planning application has been granted permission for a Community Centre in the village of Drumgoosat. The predicted traffic from this development has already been considered in the baseline flows and therefore are accounted for in consideration of the potential effects of the Project in Section 14.6.

As outlined in Section 14.6, consideration has also been given to the N2 Ardee to Castleblayney Scheme under potential road infrastructure effects. Link and Junction capacity analysis has demonstrated that the Project will have an **Imperceptible** effect on the local road network, and thus can be expected to have no impact or effect on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

Losset ADN Materials Ltd. have a planning application under consideration (Reg. Ref. 22/254) and are located ca. 1 km to the north of the Project site. Based on a review of the current planning file data (to date 27th March 2023), this development is not seeking to change their potential road network impacts.

Other industry within the wider area is currently operating within the area and forms part of the baseline traffic data, as such, these are inherently considered within Section 14.6.

The cumulative effects are deemed **Not Significant** between the Project and other offsite Projects.

14.11 Do-Nothing Scenario

In the event of a Do-Nothing scenario at the Community Sports Complex site, phase 1 the existing development under Reg. Ref. 20/365 would be the only development contributing traffic to the road network. Phase 2 would not be developed and would therefore not contribute to the road traffic network.

In the event of a Do-Nothing scenario for the Mine Development, the Knocknacran West site would remain as it is currently, with vehicular access for maintenance works such as drain, and hedge clearance works and routine monitoring. The Knocknacran Mine would continue to operate until it reaches closure, at which point the potential effects would be similar to the closure phase that would have been associated with this site had the Knocknacran West Mine been permitted. However, Knocknacran Mine would enter closure in the short-term rather than in the long-term and traffic effects would therefore happen sooner.

14.12 Difficulties Encountered

There were no particular difficulties encountered during the compilation of this chapter.

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14.13 References

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- Transport Infrastructure Ireland (2016) 'Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts'. Available at: <https://www.tiipublications.ie/library/PE-PAG-02039-01.pdf> (Accessed: 8th February 2023).
- Transport Infrastructure Ireland (2017a) 'Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade-separated and compact grade-separated junctions)'. Accessed at: <https://www.tiipublications.ie/library/DN-GEO-03060-02.pdf> (Accessed: 8th February 2023).
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- Transport Infrastructure Ireland (2021) 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections'. Available at: <https://www.tiipublications.ie/library/PE-PAG-02017-03.pdf> (Accessed: 21 February 2023).

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APPENDIX 14.1

Traffic and Transport Assessment (TTA) (including road safety audit)

RECEIVED: 11/04/2023

Saint-Gobain Mining (Ireland) Ltd.

RECEIVED: 11/04/2023

Knocknacran West Open-Cast
Mine and Community Sports
Complex

Traffic and Transport Assessment

Saint-Gobain Mining (Ireland) Ltd.

RECEIVED: 11/04/2023

Knocknacran West Open-Cast Mine and Community Sports Complex

Traffic and Transport Assessment

Document Ref: P22069-PMCE-ZZ-00-RP-TR-TR-3_00_01

Rev	Prepared By	Reviewed By	Approved By	Issue Date	Reason for Revision
2.0	AP	PJM	PJM	28 th Mar. 2023	Final Report
1.0	AP	PJM	PJM	28 th Feb. 2023	Draft Report

Executive Summary

This report assesses the traffic related impacts associated with the proposed Knocknacran West Open-Cast Mine and Community Sports Complex (Extension). The Proposed Development would comprise: -

- The extraction of gypsum from the former (Drumgoosat) underground mine at Knocknacran West by open-cast mining methods.
- The construction of a Cut-and-Cover Tunnel under the main Carrickmacross to Kingscourt regional road (R179) for the transport of gypsum to the existing processing plant at the existing Knocknacran Mine, and for the transport of overburden and interburden to the existing Knocknacran Mine for restoration purposes.
- The continued restoration of the existing Knocknacran Mine located in the townlands of Derrynascobe, Derrynaglah, Enagh, Knocknacran (East & West) and Drummond, Co. Monaghan, to modify the currently permitted restoration plan and return the existing Knocknacran Mine to near original ground levels.
- The continuation of use and refurbishment of the existing processing plant, water treatment facilities and associated infrastructure on the existing Knocknacran Mine site.
- The demolition of one residential house and three unoccupied houses and sheds in the townlands of Knocknacran West and Knocknacran East, Co. Monaghan.
- The construction of a new vehicular access to the existing Knocknacran and Drummond Mine site from the L4816.
- The development of the extension of a Community Sports Complex located in the townlands of Drummond, Derrynaglah and Knocknacran West, Co. Monaghan. The initial phase of this development has received planning permission (Reg. Ref.: 20/365), and the next phase would involve extending the Community Sports Complex by the construction of two further playing pitches, one with a perimeter running track, an all-weather pitch, a new club building, including a sports hall, a handball alley, changing rooms & toilets, a viewing gallery, a part-covered grandstand, additional parking and associated siteworks. During the construction of the extension of the Community Sports Complex development, the pitch, changing facilities and carpark constructed during the initial phase will be in use. The Community Sports Complex is accessed directly from the R179 Regional Road.

Restoration of the existing open-cast mine would commence in 2024 and is expected to last for a period ca. 11 to 15 years.

Access to the proposed Mine would be from an improved access adjacent to the existing mine access on the L4816. During construction a temporary construction access to the site of the proposed Knocknacran West Open-Cast Mine would be provided via an existing emergency access on the L4900, approximately 240m north-west from the junction with the R179.

Junction Turning Counts were carried out on Tuesday 17th May 2022 at three junctions (the existing mine access, the R179/L4816/L49014 Crossroads and the R179/L4900/L8830 Staggered Crossroads) and on Wednesday the 1st February 2023 at the Community Sports Complex access. Automatic Traffic Counts & Speed Surveys were undertaken between Tuesday 10th September 2019 and Monday 16th September 2019 on the L4816 and on the R179, and a Vehicle Speed Survey was undertaken on Wednesday 1st February 2023 on the L4816 near the existing mine access.

The maximum number of trips arising from the proposed development is forecast to be 330 per day. This forecast is considered to be conservative and allows for periods where the removal of gypsum occurs in concentrated peaks (i.e. worst-case scenario). The production from the Mine will be aligned with what is already permitted under Planning Reg. Refs. 17/217 and 03/578. The total number of daily trips at the Community Sports Complex (The extension) was estimated using TRICS.

A link capacity analysis was carried out on the R179, L4816, L49014, L4900 and L8830 and it was determined that each road would continue to operate within capacity for each of the assessment years 2024, 2025, 2026 (opening year), 2031 and 2041.

A junction capacity analysis was undertaken at four junctions, namely: -

- Junction 1 - R179/L4900/L8830 Staggered Crossroads
- Junction 2 - R179/L4816/L49014 Crossroads
- Junction 3 - Existing Mine Access
- Junction 2A - Community Sports Complex Access

The results of the Junction Capacity Analysis indicate that each junction would continue to operate within capacity for each of the assessment years 2024, 2025, 2026 (opening year), 2031 and 2041.

Sightlines for the proposed new vehicular access to the mine have been assessed with reference to the TII Publications document DN-GEO-03043 (Section 7.7) and to Section 15.27 of the Monaghan County Development Plan 2019 - 2025. Visibility to the right (north) for drivers exiting the new access, towards the R179, of 120m would be provided and visibility to the left (south) for drivers exiting the new access, along the L4816, of 90m would be provided. The visibility to the left (south) is consistent with the prevailing vehicular speeds, with the speed surveys data collected in 2019 & 2023 giving an 85th percentile speed for northbound vehicles approaching the access location of 62.9kph and 64kph. For a design speed of 60kph the required visibility is 90m.

The proposed access improvements, including sightlines at the Mine Access, are illustrated in Appendix C of this report.

The Knocknacran West Open-Mine Development was also assessed to determine if proposals associated with the mine development, including works associated with the GAA Playing Pitches, would impact upon the N2 Ardee to Castleblayney Preferred Route, a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council. It was determined that the proposed mine development is outside the N2 Ardee to Castleblayney Study Area, and no closer than 5km to the Preferred Route.

Link and Junction capacity analysis has demonstrated that the development would have a negligible impact on the local road network, and thus can be expected to have no impact on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

Glossary of Terms

Road Network:	The existing and proposed public and private roads within the study area.
Traffic Growth:	The normal expected growth in traffic over time.
Trip:	One movement, in or out of the study area by foot, cycle or vehicle.
Thresholds:	Minimum intervention levels at which Transport and Traffic Assessments are to be conducted.
Generated Trips:	Additional trips made as a result of the presence of a development.
Peak Time:	Time of day at which the transport demands from a development are greatest.
Capacity Calculations:	Standardised methods of estimating traffic capacity on links and at junctions.
Trip Distribution:	The estimated directional distribution of the estimated traffic at each junction in the study area.
Trip Assignment:	The final estimated flows of traffic for each direction of travel at each junction and along each link within the study area.
TRICS:	A database containing empirically obtained trip generation data for a wide range of different types of developments.
AADT:	Annual Average Daily Traffic – The mean daily traffic volume over the course of a year on a particular route.
Level of Service:	Level of Service (LOS) is a measure of the capacity of a road related to the average vehicular speed and level of congestion on the road. It ranges from LOS A to LOS F, with A representing free flow and F representing stop/start traffic. LOS C represents stable flow conditions

Table of Contents

1	Introduction	1
1.1	General.....	1
1.2	Information Reviewed.....	1
1.3	Objective	1
1.4	Methodology.....	1
1.5	Location Plan.....	2
2	Existing Conditions.....	3
2.1	The Site	3
2.2	Existing Road Network	3
2.3	Traffic Volumes	4
2.4	Traffic Speeds	7
3	Proposed Development	8
3.1	General.....	8
3.2	Knocknacran West Open-Cast Mine.....	8
3.3	Community Sports Complex (Extension)	9
4	Trip Generation.....	10
4.1	Knocknacran West Open-Cast Mine.....	10
4.2	Community Sports Complex (Extension)	11
4.3	Construction Traffic	12
4.4	Adjacent Developments	15
5	Trip Distribution & Assignment.....	16
5.1	Trip Distribution	16
5.2	Trip Assignment	16
5.3	Scope of Assessment.....	16
6	Road Impacts	23
6.1	Assessment Years	23
6.2	Traffic Growth	23
6.3	Link Capacity Assessment	23
6.4	Junction Capacity Analysis	24
6.5	N2 Ardee to Castleblayney Scheme	36
6.6	Parking	37
7	Road Safety.....	39
7.1	Knocknacran West Open-Cast Mine Site Access & Sightlines.....	39
7.2	Public Transport	39
7.3	Pedestrians & Cyclists.....	39
7.4	R179/ L4816 Junction	39
7.5	Road Safety Audit	40
8	Conclusions	41

Table of Figures

Figure 1-1: Location Plan.....	2
Figure 1-2: Location Plan of Community Sports Complex (Extension).....	3
Figure 2-1: Existing Mine Site Access.....	3
Figure 2-2: Looking North Along R179 from its Junction with the L4816.....	3
Figure 2-3: L4816 Approach to R179.....	4
Figure 3-1: Proposed Development.....	9
Figure 5-1: Assignment of Construction Traffic for the Community Sports Complex (Extended).....	18
Figure 5-2: Assignment of Construction Traffic for Knocknacran West Open-Cast Mine.....	18
Figure 5-3: Assignment of Construction Traffic for the R179 Diversion.....	19
Figure 5-4: Assignment of Construction Traffic for the Cut-and-Cover Tunnel.....	19
Figure 5-5: Assignment of Mine Traffic.....	20
Figure 5-6: Assignment of Community Sports Complex (Extended) Traffic.....	20
Figure 5-7: Assignment of Drumgosaat Community Centre Development Traffic.....	21
Figure 5-8: Development Traffic as a Percentage of the Background Traffic Volumes.....	21
Figure 5-9 Location of Junctions to be Modelled.....	22
Figure 6-1 N2 Ardee to Castleblayney Scheme (Source: TII/MCC/LCC).....	36
Figure 6-2 N2 Ardee to Castleblayney Preferred Route (Source: TII/MCC/LCC).....	36

Index of Tables

Table 2.1: AADT at Junction 1 - R179/L4900/L8830 Staggered Crossroads	5
Table 2.2: AADT at Junction 2 - R179/L4816/L49014 Crossroads	6
Table 2.3: AADT at Junction 2A – Community Sports Complex Access	6
Table 2.4: AADT at Junction 3 - Existing Mine Access	7
Table 2.5: Traffic Count and Speed Survey Results	7
Table 4.1: Exported Mine Material.....	10
Table 4.2: Traffic Following Construction of The Extension	11
Table 4.3: Summary of Predicted TotalTrips During Temporary Diversion Construction	13
Table 4.4: Summary of Predicted TotalTrips during Cut-and-Cover Tunnel Construction.....	14
Table 4.5: Druumgoosat Community Centre Traffic.....	15
Table 5.1: Summary of Predicted Daily Trips During all Analysis Scenarios	16
Table 6.1: Future Year Traffic Growth Figures for County Monaghan	23
Table 6.2: Summary of Traffic Analysis (AM Peak) at Junction 1 During Construction	25
Table 6.3: Summary of Traffic Analysis (PM Peak) at Junction 1 During Construction	26
Table 6.4: Summary of Traffic Analysis (AM Peak) at Junction 2 During Construction	27
Table 6.5: Summary of Traffic Analysis (PM Peak) at Junction 2 During Construction	28
Table 6.6: Summary of Junction Capacity Analysis (AM Peak) During Construction	29
Table 6.7: Summary of Junction Capacity Analysis (PM Peak) During Construction	29
Table 6.8: Summary of Traffic Analysis (AM Peak) at Junction 1 During Operation.....	30
Table 6.9: Summary of Traffic Analysis (PM Peak) at Junction 1 During Operation.....	31
Table 6.10: Summary of Traffic Analysis (AM Peak) at Junction 2 During Operation.....	32
Table 6.11: Summary of Traffic Analysis (PM Peak) at Junction 2 During Operation.....	33
Table 6.12: Summary of Junction 2A Capacity Analysis (AM Peak) During Operation	34
Table 6.13: Summary of Junction 2A Capacity Analysis (PM Peak) During Operation	34
Table 6.14: Summary of Traffic Analysis (AM Peak) at Junction 3 During Operation.....	35
Table 6.15: Summary of Traffic Analysis (PM Peak) at Junction 3 During Operation.....	35
Table 6.16: Summary of Community Sports Complex (Extension) Floor Areas	37
Table 6.17: Traffic Following Construction of the Extension (100 Formal Parking Spaces)	38
Table 6.18: Residual Parking Capacity for the Community Sports Complex (Extension).....	38
Table 7.1: Summary of Stage 1 & Stage 2 Road Safety Audits problems	40

1 Introduction

1.1 General

PMCE Ltd. have been commissioned by SLR Consulting (SLR) on behalf of Saint-Gobain Mining (Ireland) Ltd. to undertake an assessment of the traffic impacts associated with the proposed Knocknacran West Open-Cast Mine, restoration of the existing Knocknacran Open-Cast Mine, development of a Community Sports Complex and associated works in a site located in the Townlands of Drummond, Derrynaglah and Knocknacran West, Magheracloone, Co. Monaghan.

1.2 Information Reviewed

In preparing this report reference has been made to the following documents: -

- “Traffic and Transport Assessment Guidelines” (May 2014) published by the Transport Infrastructure Ireland (TII).
- “Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections” (October 2021) published by Transport Infrastructure Ireland.
- Traffic Count and Speed Survey Data, collected by Traffinomics.
- Topographical Survey Data/Mapping provided by Golder Associates Ireland.
- “Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts” (October 2016) published by Transport Infrastructure Ireland.
- Monaghan County Development Plan 2019 – 2025 (March 2019).
- TII Publications document DN-GEO-03031, “Rural Road Link Design” (June 2017) published by Transport Infrastructure Ireland (TII).
- TII Publications document DN-GEO-03060, “Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade-separated and compact grade-separated junctions)” (June 2017) published by Transport Infrastructure Ireland (TII).

1.3 Objective

The objective of this report is to examine the traffic implications associated with the proposed developments in terms of their integration with existing traffic in the area.

The report determines and quantifies the extent of additional trips generated by the developments, and the impact on operational performance of such trips on the local road network.

1.4 Methodology

The methodology adopted for this appraisal and report involved, in brief: -

- A site visit on the 26th July 2022, during which the weather was dry, and the ground surface was dry.
- 12-hour Traffic Turning Count Surveys were undertaken on Tuesday 17th May 2022 and on Wednesday 1st February 2023.
- Vehicle Speed Surveys were undertaken between Tuesday 10th September 2019 and Monday 16th September 2019, and on Wednesday 1st February 2023.

- Trip Generation and Trip Assignment – This is used to derive trip rates for a 12-hour period and to provide information as to which direction of travel vehicles will travel to/from the proposed developments.
- Link Capacity Assessment - To obtain an AADT value for the roads linking the development to the surrounding network and to assess the residual capacity of the affected roads.
- Existing Traffic Assessment - The traffic count data was used to develop models for junctions affected by the proposed developments.
- Future Year Assessments – The estimated future year volumes on the study area network, as a result of the increase in background traffic and any development traffic, is used to assess the future operational performance of the surrounding road network for 2024 (Construction of Mine and Community Sports Complex extension, year 1), 2025 (Construction of Mine and Community Sports Complex extension, year 2), 2026 (year of opening of the developments) and at two future assessment years, the opening year +5 (2031) and the opening year +15 (2041). and
- A review of the 'N2 Ardee to Castleblayney Preferred Route', which is a Major Road Improvement Scheme being developed by TII, Monaghan County Council and Louth County Council.

1.5 Location Plan

Figure 1-1 shows the application site (outlined in red) which includes the existing Knocknacran Mine, and the proposed Knocknacran West Open-Cast Mine, Co. Monaghan.

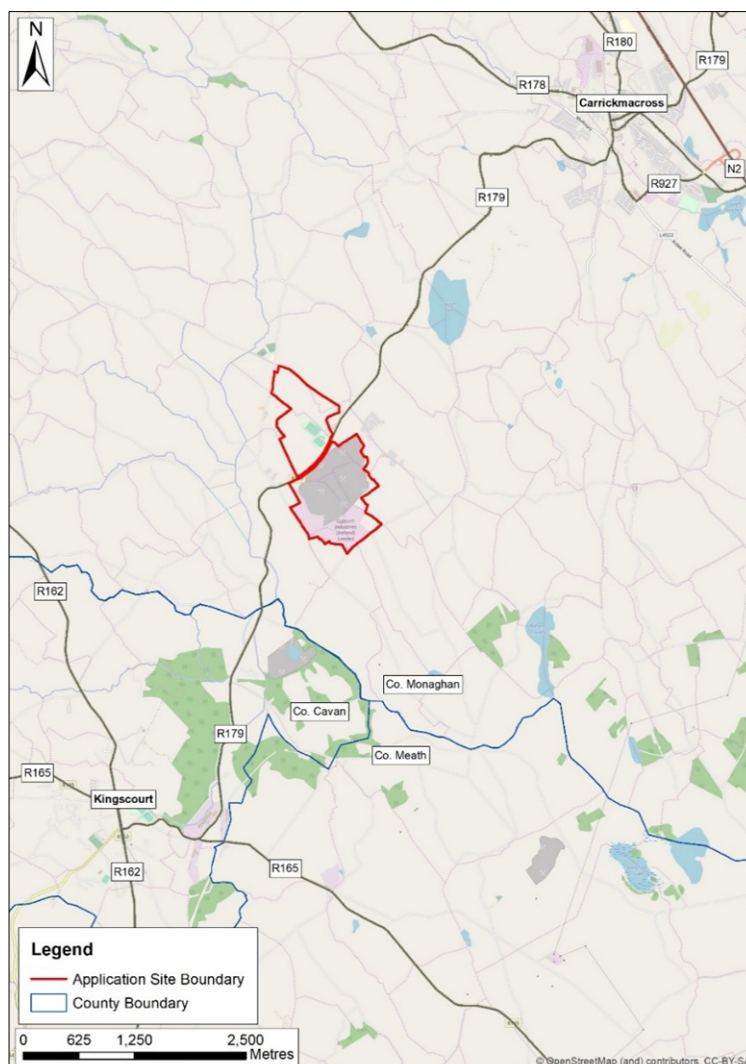


FIGURE 1-1: LOCATION PLAN

Figure 1-2 shows the location of the Community Sports Complex.

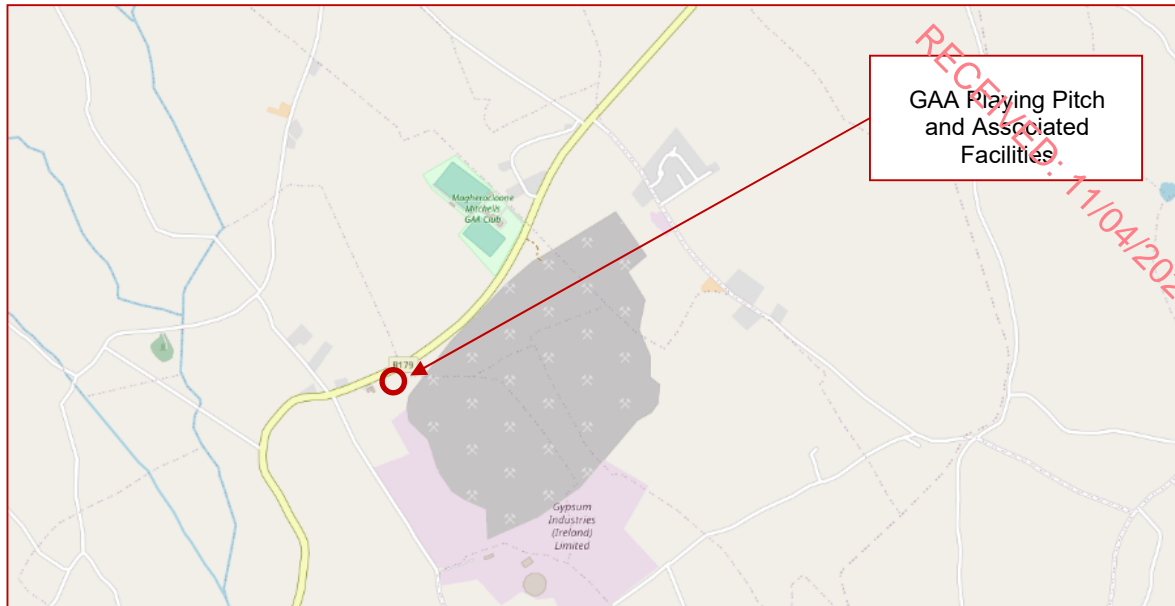


FIGURE 1-2: LOCATION PLAN OF COMMUNITY SPORTS COMPLEX (EXTENSION)

2 Existing Conditions

2.1 The Site

The existing site consists of an open-cast mine which operates on a six-day working week. Truck movements to and from the site normally take place between the hours of 06:00am and 09:00pm Monday to Saturday. These hours include production from the pit and overburden stripping, which occurs on a phased basis.

The existing mine is bounded to the north by the R179 Regional Road. An underground mine (Drumgoosat Mine) is located on the northern side of the R179 which forms part of the application site.

2.2 Existing Road Network

2.2.1 R179

The R179 is a Regional Road approximately 10m wide with hard strips on both sides of the carriageway. The pavement within the westbound hard strip is in poor condition immediately east of the R179/L4816 junction.

In the vicinity of the R179/L4816 junction the R179 has a centreline and edge of carriageway road markings on both sides, although the edge of carriageway markings are faded in places.

The horizontal alignment of the R179 to the east of the junction is relatively straight, however, to the west of the junction there is a high-demand horizontal curve. The L49014 local road forms a staggered crossroads with the R179 and the L4816.



FIGURE 2-1: EXISTING MINE SITE ACCESS



FIGURE 2-2: LOOKING NORTH ALONG R179 FROM ITS JUNCTION WITH THE L4816

2.2.2 L4816

The existing mine access is located on the L4816 Local Road which is approximately 9.0m wide with no hard shoulder or hard strip at the edge of the carriageway. The L4816 terminates to the south at its junction with the R179 Regional Road.

The existing mine is bounded to the west by the L4816 which runs in a north-west to south-east direction and has a relatively straight horizontal alignment. There are no designated pedestrian or cyclist facilities on the L4816.

The cross-section of the L4816 to the north of the site access is wide, and then narrows gradually south of the existing mine access. There are approximately six residential properties on the L4816 in the vicinity of the site access.



FIGURE 2-3: L4816 APPROACH TO R179

2.2.3 L49014

The proposed Knocknacran West Open-Cast Mine is bounded to the west by the L49014 Local Road which runs in a north-west to south-east direction terminating at its junction with the R179 Regional Road. The L49014 is approximately 3.0m to 4.0m wide with no hard strips or hard shoulders at the edge of the carriageway.

2.2.4 L4900

The proposed Knocknacran West Open-Cast Mine is bounded to the east by the L4900 Local Road which is approximately 6.0m wide with no hard shoulder or hard strip at the edge of the carriageway at its junction with the R179. The L4900 runs in a north-west to south-east direction continuing through the town lands of Drumgoosat and Tonaneave.

2.2.5 L8830

The L8830 Local Road is located to the east of the existing Knocknacran Mine and runs in a north-west to south-east direction terminating at its junction with the R179 Regional Road. The L8830 is approximately 7.0m wide with no hard strips or hard shoulders at the edge of the carriageway at its junctions with the R179.

2.3 Traffic Volumes

Junction Turning Counts were carried out on Tuesday 17th May 2022 at three junctions (the existing mine access, the R179/L4816/L49014 Crossroads and the R179/L4900/L8830 Staggered Crossroads) and on Wednesday 1st February 2023 at the Community Sports Complex Access.

The 2022 and 2023 classified turning counts were carried out between the hours of 6:00am & 10:00am and 16:00pm to 21:00pm, these time periods including the opening/closing hours of the mine and the peak hours on the adjacent Regional and County Roads. Surveyed vehicles were broken down into five categories as follows: -

1. Cars
2. LGV's (Light Goods Vehicles)
3. OGV1 (Two and three axle goods vehicles)
4. OGV2 (Four and five axle goods vehicles)
5. Buses

The detailed results of the traffic survey are summarised in Appendix B. The morning and evening peak hours have been established as follows:

- Junction 1 - R179/L4900/L8830 Staggered Crossroads – 07:45 – 08:45 (AM Peak) and 16:45 – 17:45 (PM Peak)
- Junction 2 - R179/L4816/L49014 Crossroads – 07:45 – 08:45 (AM Peak) and 16:45 – 17:45 (PM Peak)
- Junction 2A - Community Complex Access – 07:30 – 08:30 (AM Peak) and 16:30 – 17:30 (PM Peak)
- Junction 3 - Existing Mine Access – 07:30 – 08:30 (AM Peak) and 17:00 – 18:00 (PM Peak)

The traffic count data for each site has been converted to Annual Average Daily Traffic (AADT) values using the methodology described in “Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts” (October 2016) published by Transport Infrastructure Ireland. Annexes A to C of this document were used in the expansion of traffic counts to AADTs.

The AADTs at the junction, both existing and future, was calculated to determine the percentage increase in traffic volumes on the road network as a result of the trips generated by the proposed development.

A combined factor of 0.543 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow. This was then converted to a Weekly Average Daily Traffic (WADT) using an index of 0.99 and 0.97 for the Tuesday and Wednesday traffic count respectively. Finally, this was converted to AADT using an index of 0.98 and 1.03 for the month of May and February respectively. These factors were used to calculate the AADTs for each arm of the junctions.

TABLE 2.1: AADT AT JUNCTION 1 - R179/L4900/L8830 STAGGERED CROSSROADS

Hour Ending	R179 (N)	L8830	R179 (S)	L4900
07:00	143	11	136	18
08:00	349	32	369	22
09:00	464	34	451	43
10:00	325	36	304	87
17:00	466	33	439	44
18:00	489	50	481	48
19:00	346	61	363	28
20:00	217	51	227	17
21:00	174	21	172	17
Period Total	2,439	246	2,407	272
Period Total HGVs	193	6	190	9
% HGVs	8%	2%	8%	3%
Total AADT	4,431	447	4,373	494

TABLE 2.2: AADT AT JUNCTION 2 - R179/L4816/L49014 CROSSROADS

Hour Ending	R179 (N)	L4816	R179 (S)	L9014
07:00	136	10	136	4
08:00	369	44	373	10
09:00	451	38	437	12
10:00	304	37	296	15
17:00	439	31	432	14
18:00	481	47	472	14
19:00	363	33	341	7
20:00	227	16	224	7
21:00	172	11	166	5
Period Total	2,407	230	2,351	72
Period Total HGVs	190	39	215	6
% HGVs	8%	17%	9%	8%
Total AADT	4,373	418	4,271	131

TABLE 2.3: AADT AT JUNCTION 2A – COMMUNITY SPORTS COMPLEX ACCESS

Hour Ending	R179 (E)	GAA Access	R179 (W)
07:00	111	0	111
08:00	369	0	369
09:00	444	0	444
10:00	335	0	335
17:00	443	1	444
18:00	461	0	461
19:00	356	41	351
20:00	244	60	234
21:00	182	58	174
Period Total	2,408	42	2,404
Period Total HGVs	145	1	146
% HGVs	6%	2%	6%
Total AADT	4,505	79	4,498

TABLE 2.4: AADT AT JUNCTION 3 - EXISTING MINE ACCESS

Hour Ending	L4816 (N)	Mine Access	L4816 (S)
07:00	10	22	7
08:00	44	26	22
09:00	38	17	25
10:00	37	14	25
17:00	31	12	19
18:00	47	24	31
19:00	33	4	29
20:00	16	2	14
21:00	11	0	11
Period Total	257	97	176
Period Total HGVs	39	30	11
% HGVs	15%	31%	6%
Total AADT	467	180	320

2.4 Traffic Speeds

In addition to the classified turning counts, Vehicle Speed Surveys were undertaken between Tuesday 10th September 2019 and Monday 16th September 2019, and on Wednesday 1st February 2023 to assess vehicle speeds on the L4816 to the north of the mine access.

TABLE 2.5: TRAFFIC COUNT AND SPEED SURVEY RESULTS

ATC Location	Direction	Speed Limit (km/h)	Number of Vehicles	No. of Vehs. Exceeding Speed Limit	% of Vehs. Exceeding Speed Limit	Mean Speed (km/h)	85 th ile Speed (km/h)
L4816 north of Mine Access	Northbound	80	1,512	2	0.1%	53.7	63.99
	Southbound	80	1,600	10	0.7%	52.6	62.90

3 Proposed Development

3.1 General

The Proposed Development would comprise: -

- The extraction of gypsum from the former (Drumgoosat) underground mine at Knocknacran West by open-cast mining methods.
- The construction of a Cut-and-Cover Tunnel under the main Carrickmacross to Kingscourt regional road (R179) for the transport of gypsum to the existing processing plant at the existing Knocknacran Mine, and for the transport of overburden and interburden to the existing Knocknacran Mine for restoration purposes.
- The continued restoration of the existing Knocknacran Mine located in the townlands of Derrynascobe, Derrynaglah, Enagh, Knocknacran (East & West) and Drummond, Co. Monaghan, to modify the currently permitted restoration plan and return the existing Knocknacran Mine to near original ground levels.
- The continuation of use and refurbishment of the existing processing plant, water treatment facilities and associated infrastructure on the existing Knocknacran Mine site.
- The demolition of one residential house and three unoccupied houses and sheds in the townlands of Knocknacran West and Knocknacran East, Co. Monaghan.
- The construction of a new vehicular access to the existing Knocknacran and Drummond Mine site from the L4816.
- The development of the extension of the Community Sports Complex located in the townlands of Drummond, Derrynaglah and Knocknacran West, Co. Monaghan. The initial phase of this development has received planning permission (Reg. Ref.: 20/365), and the next phase will involve extending the Community Sports Complex by the construction of two further playing pitches, one with a perimeter running track, an all-weather pitch, a new club building including a sports hall, a handball alley, changing rooms & toilets, a viewing gallery, a part-covered grandstand, additional parking and associated siteworks.

3.2 Knocknacran West Open-Cast Mine

The proposed development, as shown in Figure 3-1, includes the proposed Knocknacran West Open-Cast Mine where it is proposed to extract gypsum. The extracted material will be transported (by haulage truck and covered conveyor) to the existing Knocknacran Mine for processing via a Cut-and-Cover Tunnel to be constructed under the R179 Regional Road.

As part of the works, it is proposed to restore the existing Knocknacran Open-Cast Mine on the southern side of the R179, with the continued use of the existing processing plant (including water treatment facilities and ancillary structures) located further south.

The proposed Knocknacran West Open-Cast Mine will be facilitated by a service and contractor yard to the northeast of the Site which will be in use during initial construction phase (i.e. until the Cut-and-Cover tunnel has been constructed). Thereafter it will be used as an emergency exit/entrance throughout the life of the mine. In addition, emergency entrances/exits will be provided along the perimeter of the proposed Knocknacran West Open-Cast Mine.

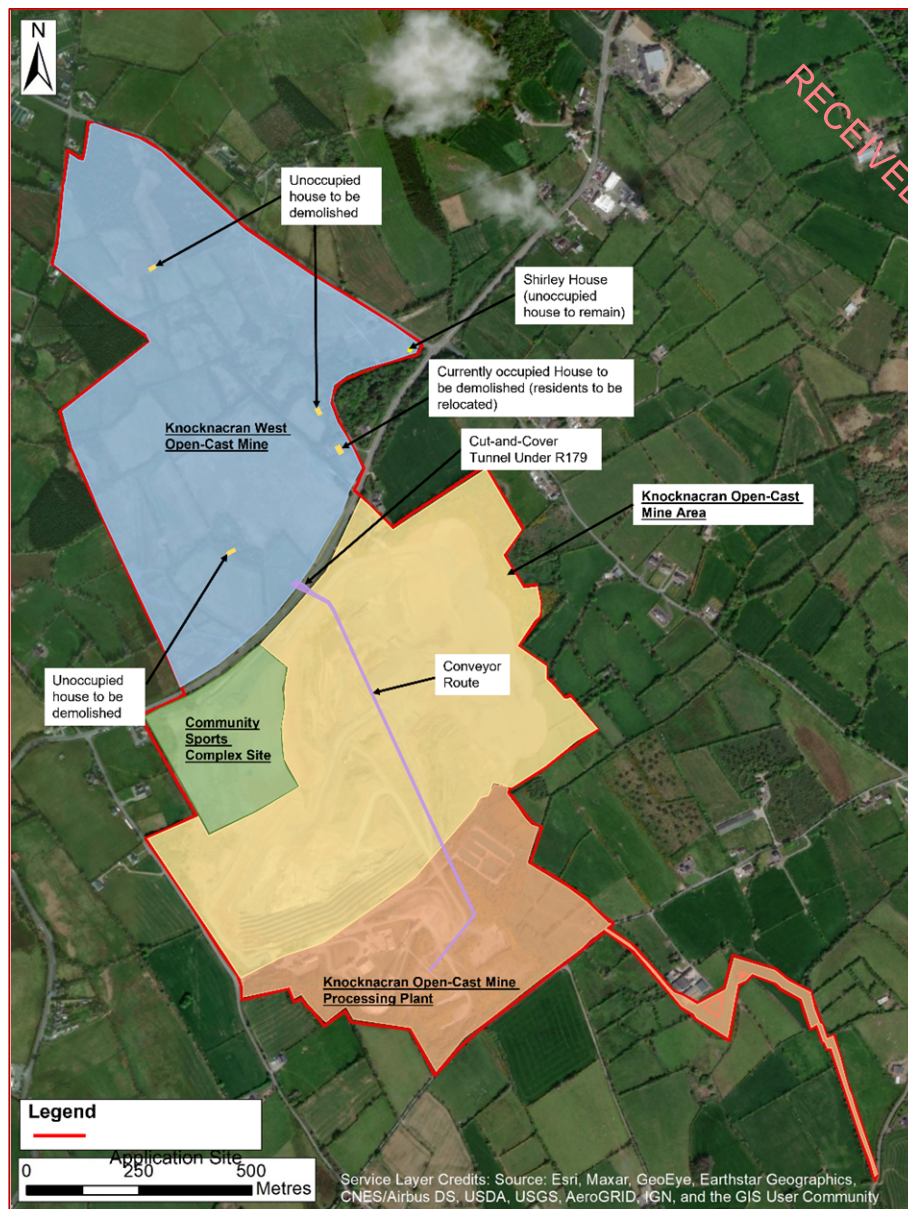


FIGURE 3-1: PROPOSED DEVELOPMENT

3.3 Community Sports Complex (Extension)

It is also proposed to development of the extension of the Community Sports Complex on the southern side of the R179. The extension of the Community Sports Complex would consist of the provision of additional playing pitches and associated facilities. Access to the Community Sports Complex will be via the junction on the southern side of the R179 Regional Road which was approved under the initial phase planning application (Reg. Ref.: 20/365).

The construction of extension of the Community Sports Complex will include the following: -

- Sand based playing pitch with goals, ball stops, fencing, floodlighting and terrace.
- Sand based junior pitch with goals, ball stops, fencing, floodlighting, and running track.
- All-weather pitch with goals, fencing and floodlighting.
- Entrance, coach & car parking.

The following indoor facilities will also be provided within the Development: -

- Offices
- Community/activity room
- Multipurpose hall
- Six changing rooms
- Shop
- Entrance foyer
- Function room
- Viewing gallery
- Fully equipped kitchen
- Meeting rooms
- Public toilets
- Plant rooms

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4 Trip Generation

4.1 Knocknacran West Open-Cast Mine

4.1.1 Operations

Over the course of the extended time period c. 9 million tonnes of gypsum would be extracted in a number of phases, with a maximum annual extraction rate of between 250,000 and 500,000 tonnes. For the purposes of a robust assessment the upper limit of 500,000 tonnes per annum will be used in this assessment. This equates to approximately 67 loads per day (Table 4.1) based on the following assumptions: -

- The facility would operate for 50 weeks per year.
- Material would be transported from the site in 20 tonne and 28 tonne loads (25 tonnes average assumed).
- The facility would operate for six days per week (Monday to Saturday) inclusive.
- The Facility opening times would be 06:00am to 09:00pm on Monday to Saturday.

TABLE 4.1: EXPORTED MINE MATERIAL

Exported Quantities of Gypsum (based upon maximum permitted extraction rate / annum)	
Quantity per annum	500,000
Quantity per week (50 operational weeks / year)	10,000
Loads per week (25 tonnes / load)	400
Loads per Day (6 working days / week)	67

For the purposes of the traffic modelling assessment undertaken, a conservative value of 70 loads per day has been used.

4.1.2 Staff Trips

The proposed development would continue to employ up to 40 full-time staff members, with a number of additional sub-contractors (up to c. 45 at any one time, including periodic stripping campaigns) depending on operational needs. To support a robust assessment, it has been assumed that all staff members (85 in total during peak times) would arrive at the site during the AM Peak Hour and depart during the PM Peak Hour.

It is acknowledged that this scenario would arise infrequently due to the employment of some employees on a seasonal basis. For the purposes of this assessment, staff movements have been assumed to generate a maximum of 170 peak hour trips, 85 inbound trips during the AM Peak Hour and 85 outbound trips during the PM Peak Hour.

4.1.3 Miscellaneous Trips

A total of 10 visits has been assumed to occur daily to cater for possible miscellaneous trips. These miscellaneous trips allow for operations meetings, site inspections, maintenance operations for plant and machinery, etc.

It is not considered that these trips would coincide with either peak hour, however for a robust assessment they have been assessed as arriving during the AM Peak and departing during the PM Peak.

4.1.4 Summary

The total daily trips associated with the mine operation accounts for 330 movements daily, 140 of which relate to HGV's (52%). These numbers are arrived at by summing the following components: -

- 140 daily truck movements, 70 inbound and 70 outbound.
- 170 staff trips daily, 85 inbound and 85 outbound.
- 20 miscellaneous trips daily, 10 inbound and 10 outbound.

4.2 Community Sports Complex (Extension)

Traffic likely to be generated by the proposed Community Sports Complex development (Extension) has been estimated using trip rates from the Trip Rate Information Computer System (TRICS) database based on the surveyed traffic for similar types of developments in similar locations. A summary of the sites from the TRICS database used to estimate the traffic generated by the proposed development are given in Appendix A, and the estimated number of vehicles arriving to, and departing from, the proposed development between 7am and 7pm is summarised in Table 4.2.

For the purposes of a robust, conservative, assessment it has been assumed that all trips to/from the Community Sports Complex development will be by private car and no trip reduction has been applied to take into account trips undertaken using public transport and/or buses. In addition, it has been assumed that on a day with a major fixture all formal and overspill parking areas will be filled and that a maximum of 350 cars would be parked in the site. This is considered a conservative approach in assessing junction and link capacity.

TABLE 4.2: TRAFFIC FOLLOWING CONSTRUCTION OF THE EXTENSION

Time Range	No. of parked vehicles	Arrivals		Departures	
		Trip Rate Factor (Per Unit)	Trips	Trip Rate Factor (Per Unit)	Trips
07:00 - 08:00	350	0.107	37	0.007	2
08:00 - 09:00		0.180	63	0.024	9
09:00 - 10:00		0.193	68	0.057	20
10:00 - 11:00		0.225	79	0.135	47
11:00 - 12:00		0.115	40	0.119	42
12:00 - 13:00		0.126	44	0.199	70
13:00 - 14:00		0.133	47	0.126	44
14:00 - 15:00		0.162	57	0.228	80
15:00 - 16:00		0.136	47	0.129	45
16:00 - 17:00		0.060	21	0.139	49
17:00 - 18:00		0.041	14	0.148	52
18:00 - 19:00		0.085	30	0.112	39
Totals			547		499

4.3 Construction Traffic

4.3.1 Overview

The construction works for the proposed development would include: -

- the construction of a new cut-and-cover tunnel on the R179, along with the construction of a temporary diversion of the R179 to facilitate the construction of the cut-and-cover tunnel and the reinstatement of the R179 along its current alignment and removal of the diversion following completion of the cut-and-cover tunnel construction;
- the construction of works to facilitate the operation of the Knocknacran West Open-Cast Mine; and
- construction of the Community Sports Complex (Extension).

4.3.2 Construction Hours of Operation

Normal working hours for all construction activities have been assumed to be between 8.00am and 6.00pm.

4.3.3 R179 Cut-and-Cover Tunnel Construction

To facilitate the construction of the new tunnel under the R179 Regional Road a temporary diversion of the R179 is proposed. The construction of the temporary road diversion is predicted to take between three to six months.

Table 4.3 outlines the deliveries forecast for construction of the temporary diversion, which is c. 1,139 trips, including the delivery of all materials required for constructing the temporary diversion including tarmacadam, sub-base, capping, safety barrier, geotextile etc.

It is estimated that the peak number of daily deliveries would be 20 loads (40 trips) associated with surfacing of the temporary carriageway. Consequently, 40 trips per day have been used in the capacity assessment relating to the delivery of materials to the site during this phase.

The construction of the tunnel is expected to take approximately six months, during which time a temporary "Road Works" speed limit of 60 kph would apply to the temporary diversion.

Table 4.4 indicates the total trips generated by the cut-and-cover tunnel construction. The total number of deliveries forecast for the construction of the cut-and-cover tunnel is c. 1,120, which includes for the delivery of all materials required for constructing the cut-and-cover tunnel including precast cut-and-cover tunnel segments, concrete, waterproofing, safety barrier, tarmacadam, sub-base, capping, safety barrier, geotextile, pipes, headwalls, etc.

It is estimated that the maximum number of deliveries in a day would be 18 loads (36 trips) associated with the import of capping material. Consequently, 36 trips (18 loads) per day have been used in the capacity assessment relating to the delivery of materials to the site during the construction of the cut-and-cover tunnel.

The arrival and departure of construction related vehicles to the site is expected to be spread throughout the day, although for the purpose of a conservative assessment it has been assumed that staff & materials delivery will arrive at, and depart from, the site during the AM and PM Peak hours respectively.

TABLE 4.3: SUMMARY OF PREDICTED TOTAL TRIPS DURING TEMPORARY DIVERSION CONSTRUCTION

		Inbound Loads	Outbound Loads	Trips	Remarks
Site Clearance	General Site Clearance	-	8	16	-
	Transport of Asphalt off site to licenced waste facility	-	2	4	-
	Fencing and Safety Barriers	-	15	30	-
	Demolition of buildings or structures and removal of waste such as bulky/wood/asbestos to licenced facilities	-	4	8	-
Fencing and Environmental Noise Barriers	Temporary Fencing and Guardrails	2	2	8	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
	TTM Barriers & Equipment	2	2	8	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
Earthworks	Topsoil Strip	Stockpiled on-site			
	Excavation of Sub-soil	Stockpiled on-site			
	Excavation of Class U1 Soil (Contingency)	-	2	4	-
	Excavation of Hard Material (Contingency)	-	2	4	-
	Imported Topsoil	From Stockpile			
	Imported acceptable material fill	From Stockpile			
	Capping: Class 6F1/6F2	139	-	278	Either Left in Place or Removed to Stockpile upon removal of diversion
	Import of Geotextile	2	2	8	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
Drainage and Service Ducts	Pipes, Manholes, Gullies	2	-	4	Either Left in Place or Removed to Stockpile upon removal of diversion
	Headwalls	1	-	2	Either Left in Place or Removed to Stockpile upon removal of diversion
Pavements	Tarmacadam	111	111	444	Inbound at commencement of construction of the diversion and outbound upon removal of diversion
	Sub-Base: Clause 804	83	-	166	Either Left in Place or Removed to Stockpile upon removal of diversion
	Filter Rock Fill: Class 6H	62	-	124	Either Left in Place or Removed to Stockpile upon removal of diversion
Traffic Signs and Road Markings	Temporary Traffic Signs	1	1	4	-
	Temporary Road Markings	2	-	4	-
Miscellaneous (Assumed 5%)	Miscellaneous	-	-	23	-
Total Forecast Trips					1,139

TABLE 4.4: SUMMARY OF PREDICTED TOTAL TRIPS DURING CUT-AND-COVER TUNNEL CONSTRUCTION

		Inbound Loads	Outbound Loads	Trips	Remarks
Site Clearance	General Site Clearance	-	3	6	
	Fencing and Safety Barriers	1	1	4	Inbound at commencement of construction and outbound upon completion
Fencing and Environmental Noise Barriers	Temporary Fencing and Guardrails	2	2	8	Inbound at commencement of construction and outbound upon completion
Earthworks	Topsoil Strip	Stockpiled on-site			
	Excavation of Sub-soil	Stockpiled on-site			
	Excavation of Class U1 Soil (Contingency)	-	2	4	-
	Excavation of Hard Material (Contingency)	-	2	4	-
	Imported Topsoil	From Stockpile			
	Imported acceptable material fill	From Stockpile			
	Capping: Class 6F1/6F2	380	-	-	-
	Import of Geotextile	1	-	-	-
Drainage and Service Ducts	Pipes, Manholes, Gullies	2	-	4	-
	Headwalls	1	-	2	-
Pavements	Tarmacadam	17	-	34	-
	Sub-Base: Clause 804	13	-	26	--
	Fill: Class 6N1	418	-	836	-
Structure	Tunnel: L-Type Segments	9	-	18	-
	Tunnel: S-Type Segments	6	-	12	-
	Crane Trips	8	-	16	-
	Concrete: Wing Walls x 4	5	-	10	-
	Concrete: Binding	9	-	18	-
	Concrete: Decking	8	-	16	--
Miscellaneous	Miscellaneous			102	-
Total Forecast Trips					1,120

4.3.4 Knocknacran West Open-Cast Mine

Construction works for the Knocknacran West Mine are scheduled to commence in 2024 and are expected to be complete in 2025, with the opening year of the full development in 2026. The construction of works associated with mine are predicted to take approximately one year, during which construction traffic will use an existing entrance to the west of the L4900 Local Road. The construction works would include the following:-

- Perimeter fence erection;
- Screening berm construction;
- Screen planting;
- Demolition of non-occupied buildings; and
- Other site preparatory work.

Construction traffic in relation to the works associated with the Knocknacran West site is forecast to be 30 trips (15 arrivals and 15 departures) per day associated with construction staff/operatives travelling to/from the Site, and approximately 6 trips (3 loads) per day associated with the delivery of materials to site.

4.3.5 Community Sports Complex (Extension)

Subject to planning permission, the construction of the proposed pitches & facilities within the Community Sports Complex (Extension) is intended to commence in 2024. The construction period for the pitches is estimated to be six months, with a subsequent establishment period of one year before the pitches are playable.

The construction of the building and ancillary works would be undertaken during the pitch's establishment period, with all construction expected to be completed in 2026.

During the construction of the GAA pitch it is conservatively assumed that 30 to 50 people will be employed on the site, with normal working hours assumed to be between 8.00am and 6.00pm. Assuming each of the construction workers arrive to work by car, and assuming 50 people are employed on the site, a maximum of 50 cars will arrive at the site between 7.00am and 8.00am with the same number leaving the site between 5.30pm and 6.30pm. An additional 20 trips (10 loads) per day would be associated with the delivery of materials to site.

4.4 Adjacent Developments

A search of planned future developments which may have an impact on future traffic flows in the vicinity of the proposed developments was undertaken.

The initial phase of the proposed Community Sports Complex (Reg. Ref. 20/365) has been recently constructed. A traffic count has been undertaken at the entrance to the Community Sports Complex on the R179, and this traffic has been added to the background traffic for this traffic assessment for all assessment years.

A proposed new Community Centre at Drumgoosat, Co. Monaghan has received planning permission and the forecast traffic for this Community Centre are shown in Table 4.5, and have been added to the background traffic for this traffic assessment for all assessment years. This is considered a conservative approach as the traffic growth factors used in the analysis are based on the forecast of future developments such as these adjacent developments.

TABLE 4.5: DRUUMGOOSAT COMMUNITY CENTRE TRAFFIC

Time Range	Gross Floor Area (sqm)	Arrivals		Departures	
		Trip Rate Factor (Per sqm)	Trips	Trip Rate Factor (Per sqm)	Trips
07:00 - 08:00	1,154	0.0	0	0.0	0
08:00 - 09:00		1.902	22	1.057	13
09:00 - 10:00		1.606	19	1.014	12
10:00 - 11:00		0.296	4	1.057	13
11:00 - 12:00		0.254	3	0.634	8
12:00 - 13:00		1.479	17	1.606	19
13:00 - 14:00		0.254	3	0.803	10
14:00 - 15:00		0.761	9	0.127	2
15:00 - 16:00		1.648	19	0.972	12
16:00 - 17:00		0.93	11	0.803	10
17:00 - 18:00		0.845	10	1.606	19
18:00 - 19:00		1.31	15	0.507	6
Totals			130		118

Other reasonably foreseeable developments in the area include an extension to the existing TEREX MDS site ca. 800 m to the south which is still under planning consideration (Reg. Ref. 22/279). A review of the planning file (to date 10th February 2023) indicate that there will not be a substantial increase in traffic movements due to this development. Losset ADN Materials Ltd. also have a planning application under consideration (Reg. Ref. 22/254) and are located ca. 1 km to the north of the Project site. Based on a review of the current planning

file data (to date 10th February 2023), this development is not seeking to change their potential road network impacts.

Another planning application is still in progress for Clonpad Ltd. (Reg. Ref. 22/253) for the provision of a warehousing facility ca. 800 m north of the site. No traffic details related to this proposed development are currently associated with the planning file (to date 10th February 2023). However, based on the citing of this facility in a rural area it is considered that should the development be permitted, it will be a small scale development to suit a rural area. As such, it is considered that the potential effect on the existing road network is likely to be small and the development is noted to the north of the Mine Development. In particular, during the long-term mine operational phase, gypsum road truck haulage will only be directed to the south towards Kingscourt and will not head towards this proposed development site.

Other industry within the wider area is currently operating within the area and forms part of the baseline traffic data.

5 Trip Distribution & Assignment

5.1 Trip Distribution

Table 5.1 below indicates the total distribution of traffic generated by the proposed developments.

TABLE 5.1: SUMMARY OF PREDICTED DAILY TRIPS DURING ALL ANALYSIS SCENARIOS

Development	Phase	Type of Traffic	Daily Trips	
			Arrivals	Departures
GAA Playing Pitch and Associated Facilities	Construction of the extension	Construction LVs	50	50
		Construction HGVs	10	10
	In Operation	Development Traffic for Daily Operation	162	146
Knocknacran West Mine	Construction Works - Knocknacran West	Construction LVs	15	15
		Construction HGVs	3	3
	Diversion Road Construction	Construction LVs	20	20
		Construction HGVs	20	20
	Tunnel Construction	Construction LVs	20	20
		Construction HGVs	18	18
	In Operation	Exported Quarried Material	70	70
		Staff	85	85
		Miscellaneous	10	10

5.2 Trip Assignment

The assignment of the forecast development traffic onto the adjacent road network is based on the existing traffic flow distribution at each junction as derived from the traffic counts and projected haul routes, and is illustrated in Figure 5-1 to Figure 5-5.

5.3 Scope of Assessment

The proposed development, as outlined in Section 3.1 of this report, will include a number of new accesses onto the existing road network. Development traffic travelling to/from these accesses will result in an increase in the traffic volumes on the roads and at the junctions in close proximity to the proposed development.

Section 2.1 of the “Traffic and Transport Assessment Guidelines” published by Transport Infrastructure Ireland recommends that a traffic assessment should cover all of the roads and junctions where the development traffic exceeds 10% of the existing or background traffic, or 5% in congested or other sensitive locations, including junctions with national roads.

Figure 5-8 outlines the distributed development traffic as percentage of the background traffic on the adjacent road network. The development traffic exceeds 10% on the R179, the L49014, the L4816 and at the mine access.

As a result, the assessment shall undertake a junction capacity assessment of the following junctions (as illustrated in Figure 5-9 below):

1. Junction 1 – R179/L4900/L8830 Staggered Crossroads
2. Junction 2 - R179/L4816/L49014 Crossroads
3. Junction 2A - Community Complex Access
4. Junction 3 - Existing Mine Access

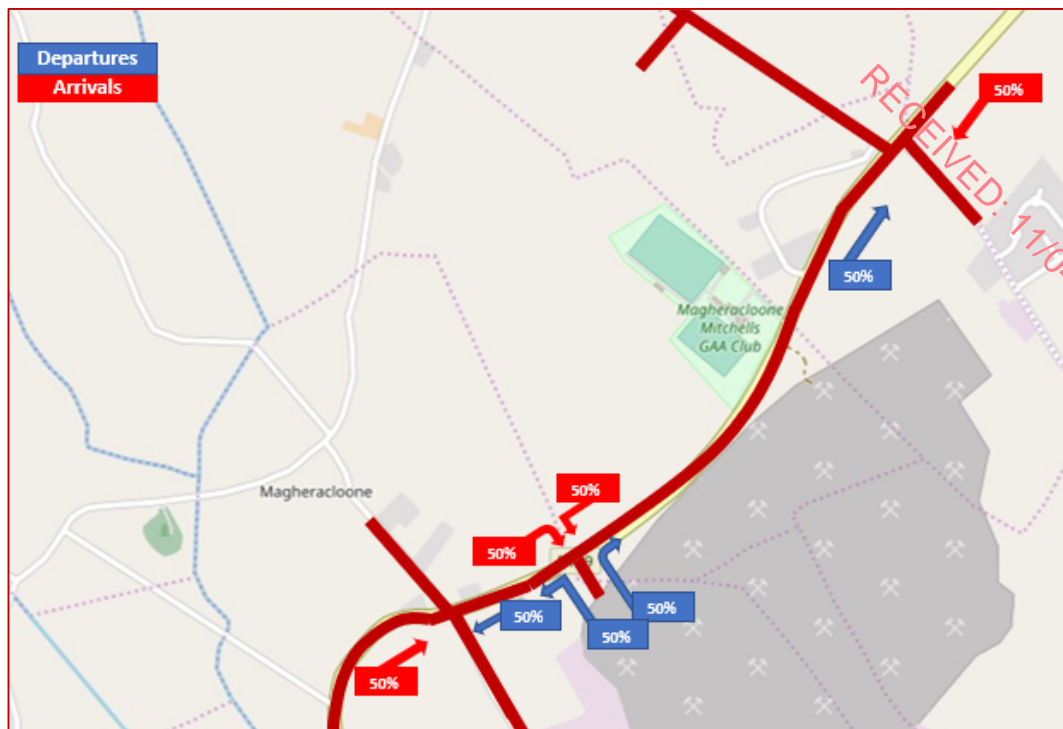


FIGURE 5-1: ASSIGNMENT OF CONSTRUCTION TRAFFIC FOR THE COMMUNITY SPORTS COMPLEX (EXTENDED)

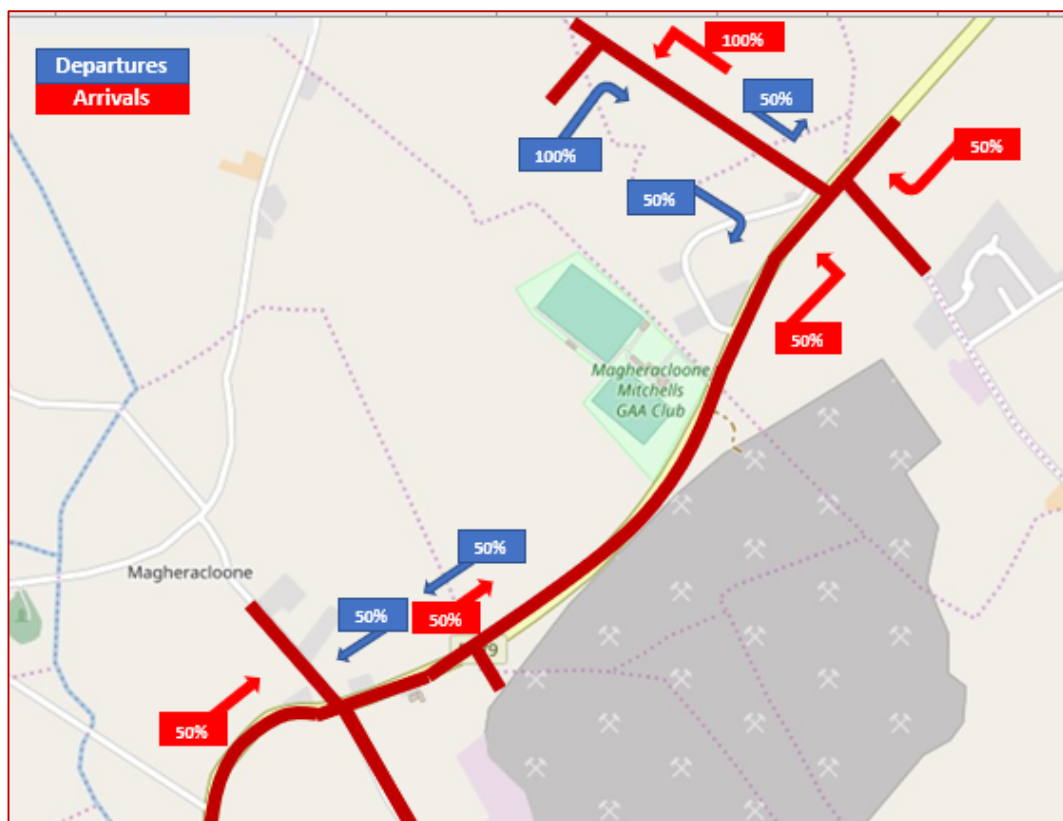


FIGURE 5-2: ASSIGNMENT OF CONSTRUCTION TRAFFIC FOR KNOCKNACRAN WEST OPEN-CAST MINE



FIGURE 5-3: ASSIGNMENT OF CONSTRUCTION TRAFFIC FOR THE R179 DIVERSION

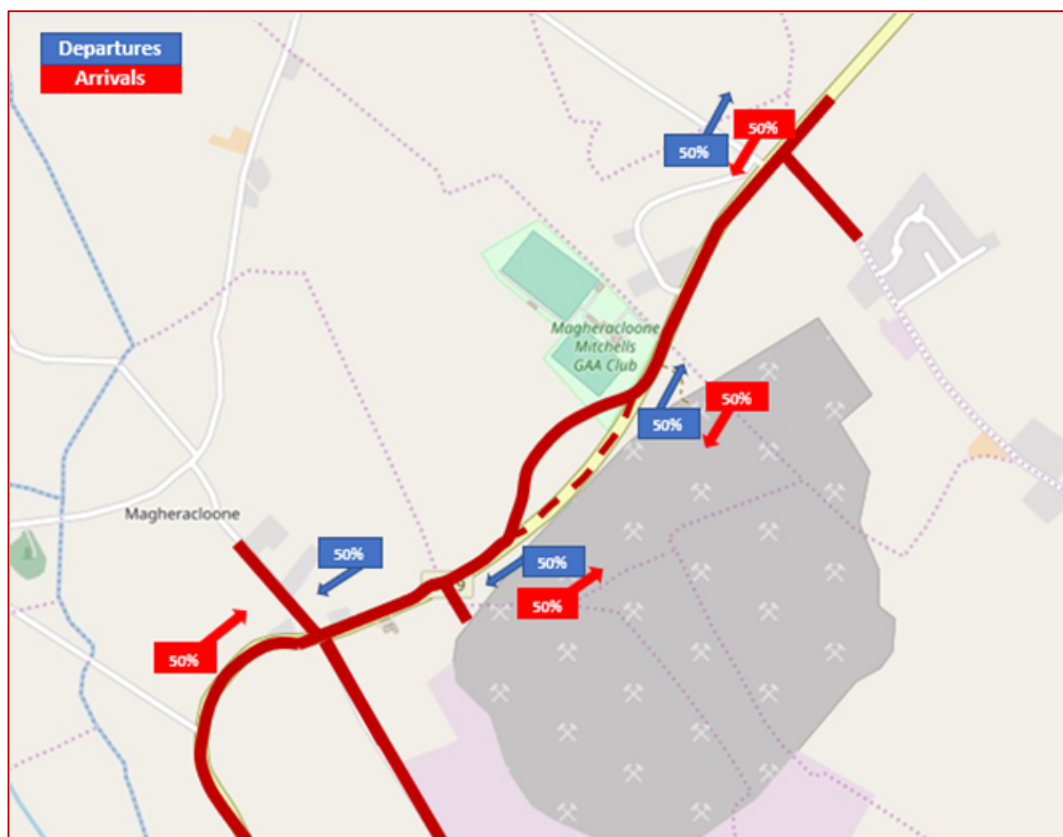


FIGURE 5-4: ASSIGNMENT OF CONSTRUCTION TRAFFIC FOR THE CUT-AND-COVER TUNNEL



FIGURE 5-5: ASSIGNMENT OF MINE TRAFFIC

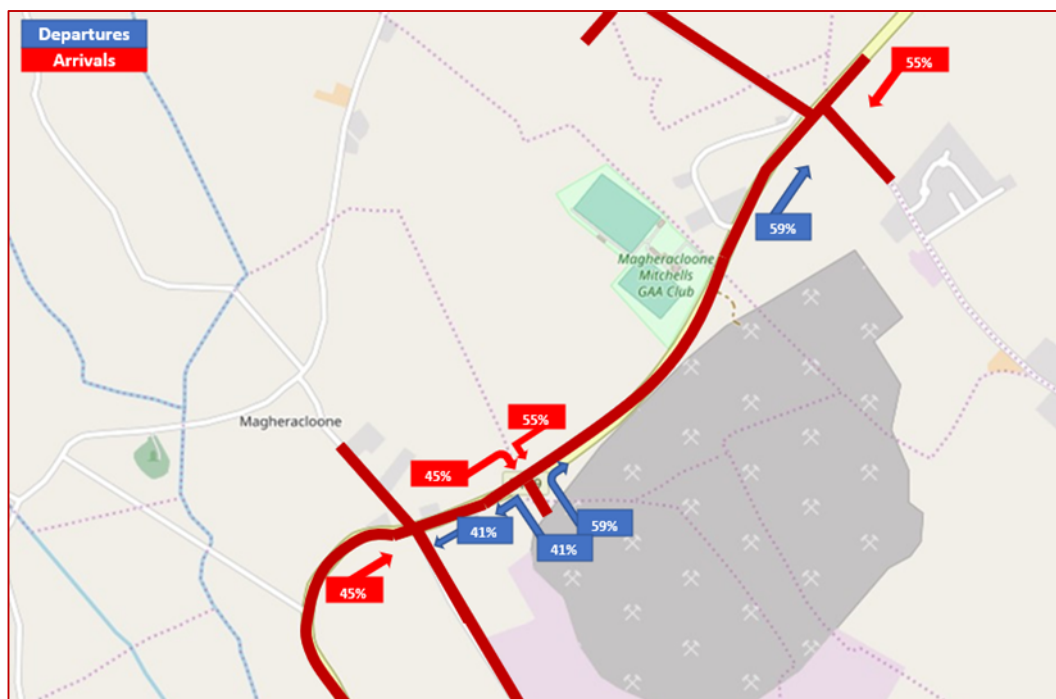


FIGURE 5-6: ASSIGNMENT OF COMMUNITY SPORTS COMPLEX (EXTENDED) TRAFFIC

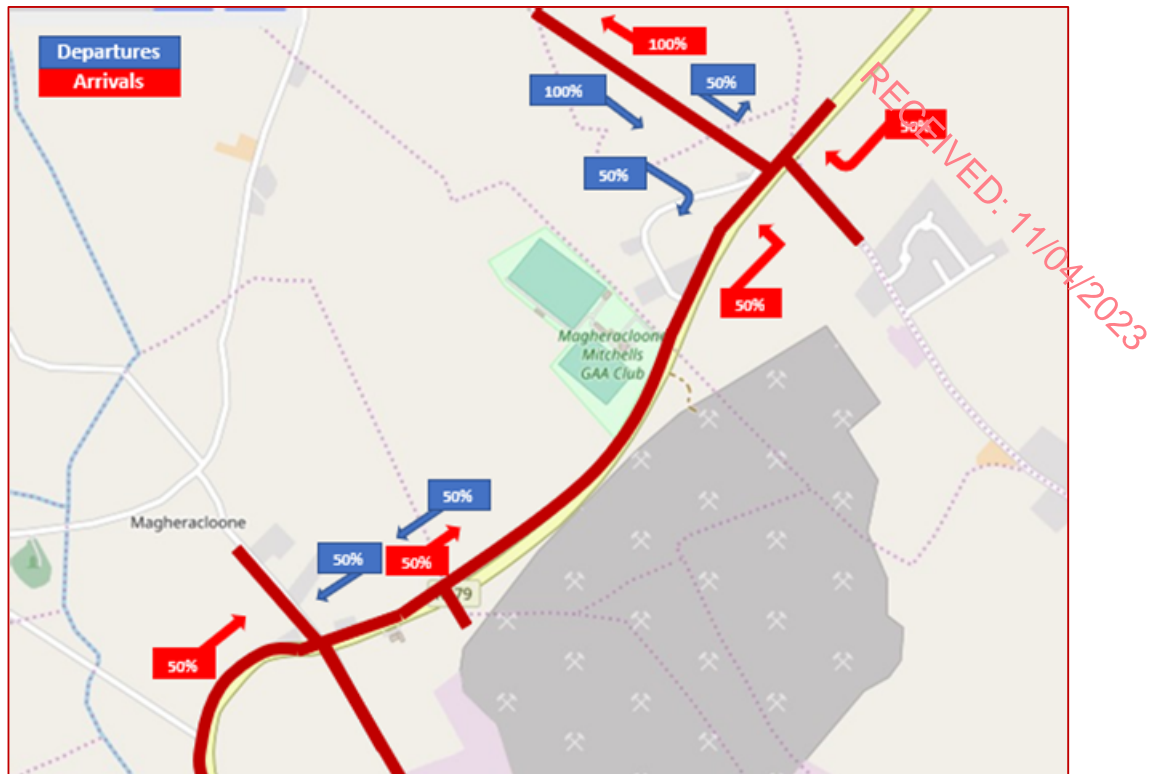


FIGURE 5-7: ASSIGNMENT OF DRUMGOSAAT COMMUNITY CENTRE DEVELOPMENT TRAFFIC

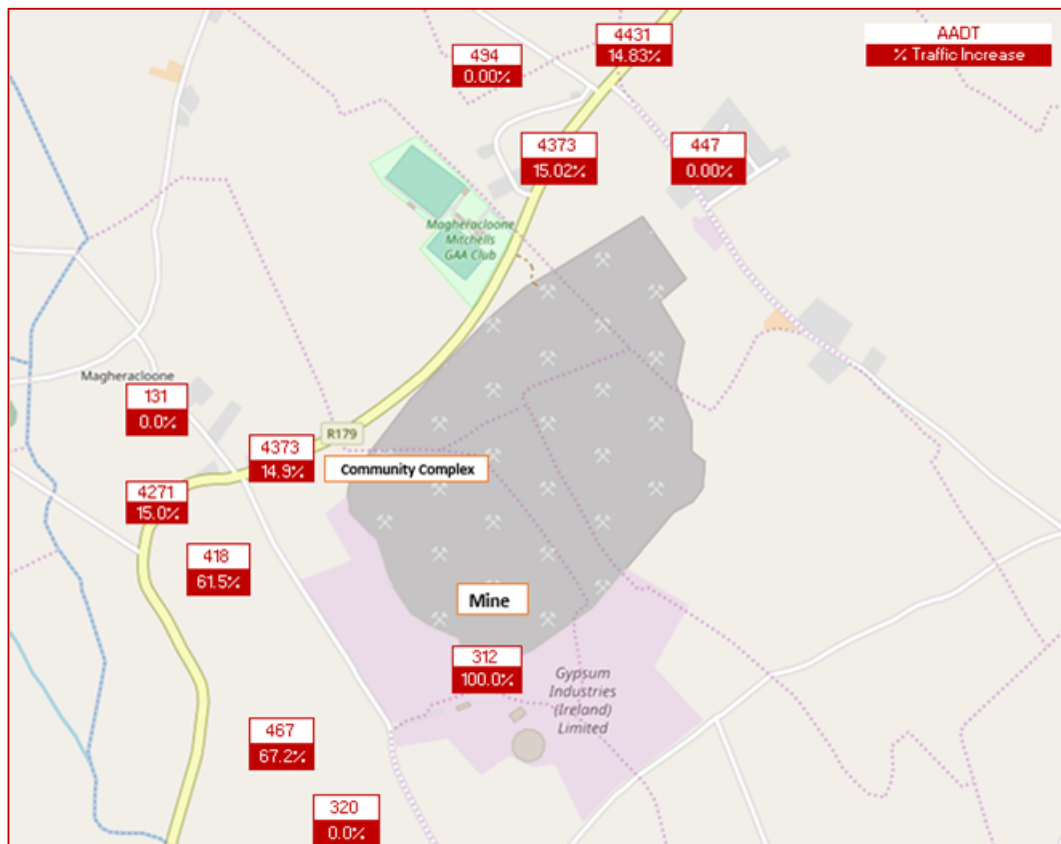


FIGURE 5-8: DEVELOPMENT TRAFFIC AS A PERCENTAGE OF THE BACKGROUND TRAFFIC VOLUMES

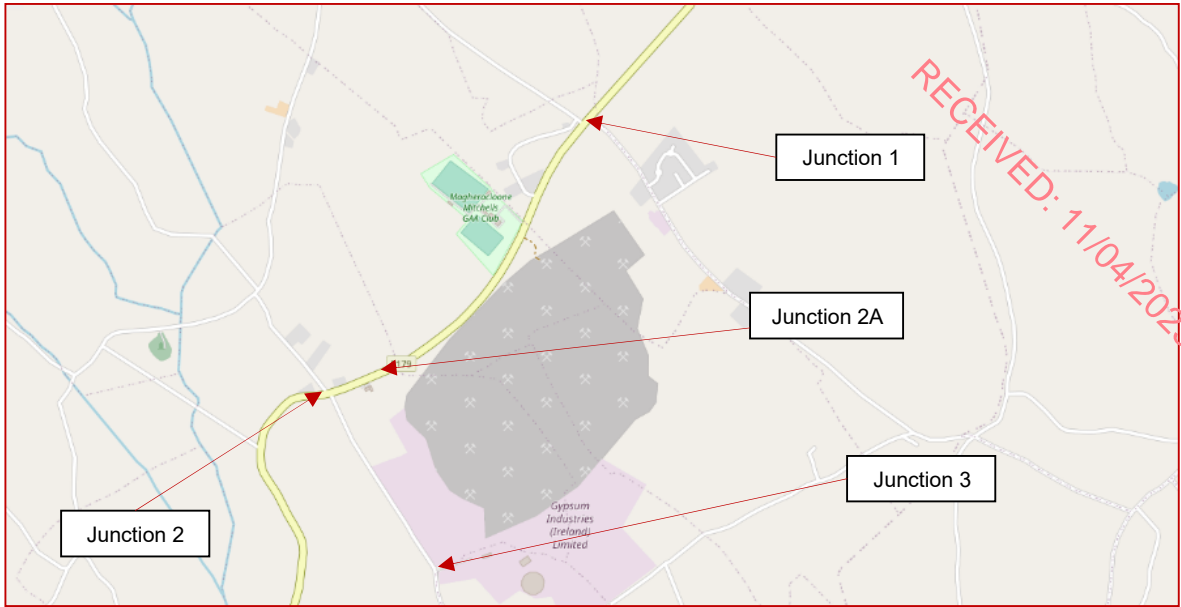


FIGURE 5-9 LOCATION OF JUNCTIONS TO BE MODELLED

6 Road Impacts

6.1 Assessment Years

The "Traffic and Transport Assessment Guidelines" published by Transport Infrastructure Ireland recommend the assessment of traffic in the Opening Year, for the Opening Year +5 years and the Opening Year +15 years.

The assessment years for the impact assessment including all years of construction operations are therefore 2024, 2025, 2026 for the Opening Year, 2031 and 2041 for the Future Assessment Years.

6.2 Traffic Growth

The "Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections" (October 2021) published by Transport Infrastructure Ireland has been used to determine future year traffic flows on the network from the 2022 traffic count data. Table 6.1 contains a summary of the traffic growth factors published in Table 6.2 of Unit 5.3 of the "Project Appraisal Guidelines". For this assessment, a central growth scenario has been adopted (a 'central' growth scenario was assumed given the site location and scale).

TABLE 6.1: FUTURE YEAR TRAFFIC GROWTH FIGURES FOR COUNTY MONAGHAN

Year	Low Growth		Central Growth		High Growth	
	LV	HV	LV	HV	LV	HV
2026-2030	1.0103	1.0236	1.0115	1.0252	1.0141	1.0285
2030-2040	1.0032	1.0093	1.0047	1.0112	1.0079	1.0147
2040-2050	1.0021	1.0119	1.0041	1.0138	1.0080	1.0234

6.3 Link Capacity Assessment

When assessing the link capacity of a road a Level of Service D has been chosen as, according to the TII Publications document DN-GEO-03031 "Rural Road Link Design", it is at this level that, *"speeds begin to decline slightly with slight increase of flows and density begins to increase somewhat more quickly. Freedom to manoeuvre within the traffic stream is more noticeably limited, and the driver experiences reduced comfort levels."*

6.3.1 L49014, L4816, L4900 and L8830 Local Roads

The capacity of the L49014, L4816, L8830 and L4900 have been assessed by reference to the TII Publications document DN-GEO-03031 "Rural Road Link Design."

The 'Road Type' selected for the L4816, which best describes the road layout, is a 'Type 2 Single Carriageway' in accordance with this publication, which represents a 7.0m wide carriageway with 0.5m hard strips, cycle facilities and footways which minimises the number of direct accesses, incorporates priority junctions with other local roads and roundabouts and compact grade separated junctions with major roads.' The maximum AADT for a road of this type at Level of Service D is 8,600.

The L4816 has a paved width of approximately 9.0m, however, it is noted that there are no footpath or cycle facilities on this road. The forecast two-way AADT for the final future forecast year is 1,088 which is less than the maximum AADT for a road of this type at Level of Service D.

The 'Road Type' selected for the L8830, L4900 and L49014, which best describes the road layout, is a 'Type 3 Single Carriageway' in accordance with this publication, which represents a 6.0m wide carriageway with 0.5m hard strips, cycle facilities and footways which minimises the number of direct accesses, incorporates simple priority junctions with other local roads and priority junctions with ghost islands where necessary or roundabouts with major roads.' The maximum AADT for a road of this type at Level of Service D is 5,000.

The L8830 and the L4900 have paved carriageway widths of 6.00m, with no footpaths or cycle facilities on these roads. The forecast two-way AADT for the final future forecast year is 563 and 760 respectively which is less than the maximum AADT for a road of this type at Level of Service D (5,000).

The L49014 has a paved carriageway width of 3.0m to 4.0m along its length and a footpath along its eastern side. The forecast two-way AADT for the final future forecast year is 206 which is less than the maximum AADT for a road of this type at Level of Service D (5,000).

It is concluded, therefore, that the L49014, L8830, L4900, and L4816 will have sufficient link capacity for each of the future assessment years with, and without, the proposed development.

6.3.2 R179 Regional Road

The capacity of the R179 has been assessed by reference to the TII Publications document DN-GEO-03031 "Rural Road Link Design." The 'Road Type' selected for the R179, which best describes the road layout, is a 'Type 1 Single Carriageway' in accordance with this publication, which represents a 7.3m wide carriageway with 2.5m hard shoulders which minimises the number of direct accesses, incorporates priority junctions with ghost islands where necessary with other local roads and ghost islands, roundabouts or compact grade separated junctions where necessary with major roads. The maximum AADT for a road of this type at Level of Service D is 11,600.

The R719 has a paved carriageway width of 10m and no pedestrian or cycle facilities on either side. The forecast two-way AADT for the final future forecast year is 7,460 which is less than the maximum AADT for a road of this type at Level of Service D.

It is consequently concluded that the R179 will have sufficient link capacity for each of the future assessment years with, and without, the proposed development.

6.4 Junction Capacity Analysis

The capacity of the surveyed junctions was assessed using the Transport Research Laboratory's (TRL) computer programme Junctions 9.

Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for both the AM and PM Peak Hours for each of the assessment years 2024 & 2025 (Construction of West Cast Mine facilities, the road diversion, the underground tunnel between the two sites of the mine and GAA extension), 2026 (year of opening of developments) and at two future assessment years, the opening year +5 (2031) and the opening year +15 (2041).

A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicates a junction operating at capacity. The detailed junction capacity analysis outputs for each of the analysed junctions, for each of the assessment years, are contained within Appendix F to this report.

6.4.1 Construction of Mine Facilities and Community Sports Complex (Extension)

Location: Junction 1 – R179/L4900/L8830 Staggered Crossroads

A summary of the junction capacity analysis results for Junction 1 – R179/L4900/L8830 Staggered Crossroads are shown in Table 6.2 and Table 6.3. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods.

TABLE 6.2: SUMMARY OF TRAFFIC ANALYSIS (AM PEAK) AT JUNCTION 1 DURING CONSTRUCTION

	AM Peak Hour (07:45-08:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2024 Do Nothing		
L8830 - R179 (West/East)	0.1	6.12	0.05
L8830 - R179 (East)	0.0	8.38	0.03
R179 (East)/L8830 - R179 (West)/L4900	0.0	13.67	0.03
L4900 - R179 (East)/L8830	0.0	5.65	0.04
L4900 - R179 (East)	0.0	7.22	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.83	0.04
Stream	2025 Do Nothing		
L8830 - R179 (West/East)	0.1	6.13	0.05
L8830 - R179 (East)	0.0	8.41	0.03
R179 (East)/L8830 - R179 (West)/L4900	0.0	13.70	0.03
L4900 - R179 (East)/L8830	0.0	5.67	0.04
L4900 - R179 (East)	0.0	7.25	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.84	0.04
Stream	2024 Do Something		
L8830 - R179 (West/East)	0.1	6.49	0.05
L8830 - R179 (East)	0.0	8.73	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.3	16.58	0.22
L4900 - R179 (East)/L8830	0.1	5.74	0.06
L4900 - R179 (East)	0.0	8.33	0.04
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.25	0.04
Stream	2025 Do Something		
L8830 - R179 (West/East)	0.1	6.44	0.05
L8830 - R179 (East)	0.0	8.66	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.2	15.48	0.15
L4900 - R179 (East)/L8830	0.1	5.97	0.06
L4900 - R179 (East)	0.0	8.11	0.04
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.19	0.04

TABLE 6.3: SUMMARY OF TRAFFIC ANALYSIS (PM PEAK) AT JUNCTION 1 DURING CONSTRUCTION

	PM Peak Hour (16:45 - 17:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2024 Do Nothing		
L8830 - R179 (West/East)	0.1	5.94	0.05
L8830 - R179 (East)	0.0	8.47	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.02	0.06
L4900 - R179 (East)/L8830	0.0	5.77	0.02
L4900 - R179 (East)	0.0	7.24	0.02
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.84	0.04
Stream	2025 Do Nothing		
L8830 - R179 (West/East)	0.1	5.95	0.05
L8830 - R179 (East)	0.0	8.49	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.04	0.06
L4900 - R179 (East)/L8830	0.0	5.78	0.02
L4900 - R179 (East)	0.0	7.27	0.02
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.86	0.04
Stream	2024 Do Something		
L8830 - R179 (West/East)	0.1	5.97	0.05
L8830 - R179 (East)	0.0	8.79	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.33	0.08
L4900 - R179 (East)/L8830	0.1	8.17	0.12
L4900 - R179 (East)	0.1	10.27	0.13
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.87	0.04
Stream	2025 Do Something		
L8830 - R179 (West/East)	0.1	5.98	0.05
L8830 - R179 (East)	0.0	8.78	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.41	0.08
L4900 - R179 (East)/L8830	0.1	6.59	0.07
L4900 - R179 (East)	0.1	8.16	0.09
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.89	0.04

Location: Junction 2 – R179/L4816/L49014 Crossroads

A summary of the junction capacity analysis results for Junction 2 – R179/L4816/L49014 Crossroads are shown in Table 6.4 and Table 6.5. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2024 and 2025 for both AM and PM peak periods.

TABLE 6.4: SUMMARY OF TRAFFIC ANALYSIS (AM PEAK) AT JUNCTION 2 DURING CONSTRUCTION

Stream	AM Peak Hour (07:45 – 08:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2024 Do Nothing		
L4816 - R179 (West)/L49014	0.0	10.08	0.04
L4816 -R179 (East)/L49014	0.1	9.50	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.26	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.05	0.03
L49014 - L4816/R179 (West)	0.0	12.94	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	7.50	0.06
Stream	2025 Do Nothing		
L4816 - R179 (West)/L49014	0.0	10.12	0.04
L4816 -R179 (East)/L49014	0.1	9.56	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.25	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.09	0.03
L49014 - L4816/R179 (West)	0.0	12.99	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	7.48	0.06
Stream	2024 Do Something		
L4816 - R179 (West)/L49014	0.0	10.08	0.04
L4816 -R179 (East)/L49014	0.1	9.88	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.32	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.41	0.03
L49014 - L4816/R179 (West)	0.0	13.65	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.70	0.07
Stream	2025 Do Something		
L4816 - R179 (West)/L49014	0.0	10.12	0.04
L4816 -R179 (East)/L49014	0.1	9.93	0.05
R179 (East) - R179 (West)/L1816/L49014	0.0	5.31	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	8.45	0.04
L49014 - L4816/R179 (West)	0.0	13.68	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.70	0.07

TABLE 6.5: SUMMARY OF TRAFFIC ANALYSIS (PM PEAK) AT JUNCTION 2 DURING CONSTRUCTION

	PM Peak Hour (16:45 - 17:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2024 Do Nothing		
L4816 - R179 (West)/L49014	0.0	8.19	0.03
L4816 - R179 (East)/L49014	0.0	9.11	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.34	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.63	0.02
L49014 - L4816/R179 (West)	0.0	13.60	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.32	0.04
Stream	2025 Do Nothing		
L4816 - R179 (West)/L49014	0.0	8.20	0.04
L4816 - R179 (East)/L49014	0.0	9.14	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.33	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.71	0.02
L49014 - L4816/R179 (West)	0.0	13.68	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.32	0.04
Stream	2024 Do Something		
L4816 - R179 (West)/L49014	0.0	8.36	0.04
L4816 - R179 (East)/L49014	0.0	9.40	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.17	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.80	0.02
L49014 - L4816/R179 (West)	0.0	13.89	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.32	0.04
Stream	2025 Do Something		
L4816 - R179 (West)/L49014	0.0	8.37	0.04
L4816 - R179 (East)/L49014	0.0	9.42	0.03
R179 (East) - R179 (West)/L1816/L49014	0.0	5.16	0.03
L49014 - R179 (East)/R179 (West)/L4816	0.0	11.87	0.02
L49014 - L4816/R179 (West)	0.0	13.96	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.31	0.04

Location: Junction 2A - GAA proposed access

A summary of the junction capacity analysis results for the GAA access junction during the Construction of the Mine and GAA extension is given in Table 6.6 and below Table 6.7. The results indicate that the junction will operate within capacity for the construction year 2024 and 2025 for both AM and PM peak periods.

TABLE 6.6: SUMMARY OF JUNCTION CAPACITY ANALYSIS (AM PEAK) DURING CONSTRUCTION

	AM Peak hour (07:45-08:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2024		
Development Access - R179 (West)	0.0	0.00	0.00
Development Access - R179 (East)	0.0	0.00	0.00
R179 – Development Access	0.0	6.62	0.05
Stream	2025		
Development Access - R179 (West)	0.0	0.00	0.00
Development Access - R179 (East)	0.0	0.00	0.00
R179 – Development Access	0.0	6.63	0.05

TABLE 6.7: SUMMARY OF JUNCTION CAPACITY ANALYSIS (PM PEAK) DURING CONSTRUCTION

	PM Peak hour (16:45 – 17:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2024		
Development Access - R179 (West)	0.1	7.69	0.07
Development Access - R179 (East)	0.1	11.91	0.10
R179 – Development Access	0.0	0.00	0.00
Stream	2025		
Development Access - R179 (West)	0.1	7.69	0.07
Development Access - R179 (East)	0.1	11.95	0.10
R179 – Development Access	0.0	0.00	0.00

6.4.2 Operational Traffic

Junction 1 – R179/L4900/L8830 Staggered Crossroads

A summary of the junction capacity analysis results for Junction 1 – R179/L4900/L8830 Staggered Crossroads are shown in Table 6.8 and Table 6.9. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2026, 2031 and 2041 for both AM and PM peak periods.

TABLE 6.8: SUMMARY OF TRAFFIC ANALYSIS (AM PEAK) AT JUNCTION 1 DURING OPERATION

	AM Peak Hour (07:45 – 08:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026 With Development (Opening Year)		
L8830 - R179 (West/East)	0.1	6.45	0.05
L8830 - R179 (East)	0.0	8.81	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.1	14.39	0.07
L4900 - R179 (East)/L8830	0.1	5.86	0.05
L4900 - R179 (East)	0.0	7.97	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.20	0.04
Stream	2031 With Development		
L8830 - R179 (West/East)	0.1	6.49	0.06
L8830 - R179 (East)	0.0	8.93	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.1	14.52	0.07
L4900 - R179 (East)/L8830	0.1	5.91	0.06
L4900 - R179 (East)	0.0	8.11	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.26	0.04
Stream	2041 With Development		
L8830 - R179 (West/East)	0.1	6.55	0.06
L8830 - R179 (East)	0.0	9.08	0.04
R179 (East)/L8830 - R179 (West)/L4900	0.1	14.68	0.08
L4900 - R179 (East)/L8830	0.1	5.98	0.06
L4900 - R179 (East)	0.0	8.27	0.04
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.34	0.04

TABLE 6.9: SUMMARY OF TRAFFIC ANALYSIS (PM PEAK) AT JUNCTION 1 DURING OPERATION

	PM Peak Hour (16:45 - 17:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026 With Development (Opening Year)		
L8830 - R179 (West/East)	0.1	6.01	0.05
L8830 - R179 (East)	0.0	8.86	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.42	0.07
L4900 - R179 (East)/L8830	0.0	6.00	0.03
L4900 - R179 (East)	0.0	7.68	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.92	0.04
Stream	2031 With Development		
L8830 - R179 (West/East)	0.1	6.05	0.06
L8830 - R179 (East)	0.0	8.98	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.49	0.08
L4900 - R179 (East)/L8830	0.0	6.04	0.04
L4900 - R179 (East)	0.0	7.80	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	6.98	0.04
Stream	2041 With Development		
L8830 - R179 (West/East)	0.1	6.11	0.06
L8830 - R179 (East)	0.0	9.12	0.02
R179 (East)/L8830 - R179 (West)/L4900	0.1	7.58	0.08
L4900 - R179 (East)/L8830	0.0	6.10	0.04
L4900 - R179 (East)	0.0	7.94	0.03
R179 (West)/L4900 - R179 (East)/L8830	0.0	7.04	0.04

Junction 2 – R179/L4816/L49014 Crossroads

A summary of the junction capacity analysis results for Junction 2 – R179/L4816/L49014 Crossroads are shown in Table 6.10 and Table 6.11. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2026, 2031 and 2041 for both AM and PM peak periods.

TABLE 6.10: SUMMARY OF TRAFFIC ANALYSIS (AM PEAK) AT JUNCTION 2 DURING OPERATION

	AM Peak Hour (07:45 – 08:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026 With Development (Opening Year)		
L4816 - R179 (West)/L49014	0.1	11.66	0.05
L4816 -R179 (East)/L49014	0.1	13.07	0.07
R179 (East) - R179 (West)/L1816/L49014	0.0	5.06	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	7.45	0.03
L49014 - L4816/R179 (West)	0.0	12.05	0.03
R179 (West) - R179 (East)/L1816/L49014	0.3	6.82	0.16
Stream	2031 With Development		
L4816 - R179 (West)/L49014	0.1	11.78	0.05
L4816 -R179 (East)/L49014	0.1	13.34	0.07
R179 (East) - R179 (West)/L1816/L49014	0.0	5.02	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	7.55	0.03
L49014 - L4816/R179 (West)	0.0	12.14	0.04
R179 (West) - R179 (East)/L1816/L49014	0.3	6.81	0.17
Stream	2041 With Development		
L4816 - R179 (West)/L49014	0.1	11.94	0.06
L4816 -R179 (East)/L49014	0.1	13.70	0.08
R179 (East) - R179 (West)/L1816/L49014	0.0	4.98	0.01
L49014 - R179 (East)/R179 (West)/L4816	0.0	7.68	0.03
L49014 - L4816/R179 (West)	0.0	12.25	0.04
R179 (West) - R179 (East)/L1816/L49014	0.3	6.79	0.17

TABLE 6.11: SUMMARY OF TRAFFIC ANALYSIS (PM PEAK) AT JUNCTION 2 DURING OPERATION

	PM Peak Hour (16:45 - 17:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026 With Development (Opening Year)		
L4816 - R179 (West)/L49014	0.1	7.28	0.13
L4816 - R179 (East)/L49014	0.2	9.81	0.15
R179 (East) - R179 (West)/L1816/L49014	0.0	5.14	0.03
L49014 - R179 (East)/L4816	0.0	11.99	0.02
L49014 - L4816/R179 (West)	0.0	14.39	0.02
R179 (West) - R179 (East)/L1816/L49014	0.1	6.46	0.05
Stream	2031 With Development		
L4816 - R179 (West)/L49014	0.1	7.36	0.13
L4816 - R179 (East)/L49014	0.2	9.97	0.15
R179 (East) - R179 (West)/L1816/L49014	0.0	5.11	0.03
L49014 - R179 (East)/L4816	0.0	12.31	0.02
L49014 - L4816/R179 (West)	0.0	14.74	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.42	0.05
Stream	2041 With Development		
L4816 - R179 (West)/L49014	0.1	7.45	0.13
L4816 - R179 (East)/L49014	0.2	10.17	0.15
R179 (East) - R179 (West)/L1816/L49014	0.0	5.08	0.03
L49014 - R179 (East)/L4816	0.0	12.74	0.03
L49014 - L4816/R179 (West)	0.0	15.18	0.03
R179 (West) - R179 (East)/L1816/L49014	0.1	6.37	0.06

Junction 2A - GAA Access

A summary of the junction capacity analysis results for the GAA access junction during full development operations is given in Table 6.12 and Table 6.13 below. The results indicate that the junction will operate within capacity for the construction year 2026, 2031 and 2041 for both AM and PM peak periods.

TABLE 6.12: SUMMARY OF JUNCTION 2A CAPACITY ANALYSIS (AM PEAK) DURING OPERATION

	AM Peak hour (07:45 – 08:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026		
Development Access - R179 (West)	0.0	6.54	0.01
Development Access - R179 (East)	0.0	9.58	0.01
R179 – Development Access	0.0	5.74	0.04
Stream	2031		
Development Access - R179 (West)	0.0	6.60	0.01
Development Access - R179 (East)	0.0	9.77	0.01
R179 – Development Access	0.0	5.80	0.04
Stream	2041		
Development Access - R179 (West)	0.0	6.68	0.01
Development Access - R179 (East)	0.0	10.00	0.01
R179 – Development Access	0.0	5.86	0.04

TABLE 6.13: SUMMARY OF JUNCTION 2A CAPACITY ANALYSIS (PM PEAK) DURING OPERATION

	PM Peak hour (16:45 – 17:45)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026		
Development Access - R179 (West)	0.0	6.47	0.04
Development Access - R179 (East)	0.1	9.53	0.08
R179 – Development Access	0.0	5.27	0.01
Stream	2031		
Development Access - R179 (West)	0.0	6.51	0.04
Development Access - R179 (East)	0.1	9.67	0.08
R179 – Development Access	0.0	5.30	0.01
Stream	2041		
Development Access - R179 (West)	0.0	6.56	0.04
Development Access - R179 (East)	0.1	9.84	0.08
R179 – Development Access	0.0	5.34	0.01

Junction 3 – Mine Access

A summary of the junction capacity analysis results for Junction 3 – Existing Mine Access is shown in Table 6.14 and Table 6.15. The results indicate that the junction will continue to operate within capacity for each of the assessment years 2026, 2031 and 2041 for both AM and PM peak periods.

TABLE 6.14: SUMMARY OF TRAFFIC ANALYSIS (AM PEAK) AT JUNCTION 3 DURING OPERATION

	AM Peak Hour (07:30 – 08:30)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026 With Development (Opening Year)		
Mine Access - L4816 (North)	0.0	0.00	0.00
Mine Access - L4816 (South)	0.2	8.20	0.19
L4816 (North) to L4816 (South)	0.0	6.54	0.01
Stream	2031 With Development		
Mine Access - L4816 (North)	0.0	0.00	0.00
Mine Access - L4816 (South)	0.2	8.25	0.20
L4816 (North) to L4816 (South)	0.0	6.55	0.01
Stream	2041 With Development		
Mine Access - L4816 (North)	0.0	0.00	0.00
Mine Access - L4816 (South)	0.2	8.33	0.20
L4816 (North) to L4816 (South)	0.0	6.56	0.01

TABLE 6.15: SUMMARY OF TRAFFIC ANALYSIS (PM PEAK) AT JUNCTION 3 DURING OPERATION

	PM Peak Hour (17:00 – 18:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	2026 With Development (Opening Year)		
Mine Access - L4816(North)	0.0	6.06	0.02
Mine Access - L4816(South)	0.4	8.68	0.26
L4816 (North) to L4816 (South)	0.0	0.00	0.00
Stream	2031 With Development		
Mine Access - L4816(North)	0.0	6.08	0.02
Mine Access - L4816(South)	0.4	8.77	0.27
L4816 (North) to L4816 (South)	0.0	0.00	0.00
Stream	2041 With Development		
Mine Access - L4816(North)	0.0	6.11	0.02
Mine Access - L4816(South)	0.4	8.89	0.27
L4816 (North) to L4816 (South)	0.0	0.00	0.00

6.5 N2 Ardee to Castleblayney Scheme

Monaghan County Council is working in partnership with Louth County Council and in association with Transport Infrastructure Ireland (TII) to develop a scheme to upgrade a 32km section of the N2/A5 Dublin-Derry Road. The proposed project is located in Counties Monaghan and Louth, between Ardee and Castleblayney and is called the “N2 Ardee to Castleblayney Road Scheme” (Figure 6-1).

At the time of writing a Preferred Route Corridor has been identified, following public consultation, and is being progressed in accordance with TII's Project Management Guidelines. The preferred route is illustrated in Figure 6-2 (indicated by the yellow line).

The location of the Knocknacran West Open-Cast Mine development including the Community Sports Complex is indicated in Figure 6-2. The proposed development is located outside the N2 Ardee to Castleblayney Route Study Area, and no closer than 5km to the preferred route corridor.



FIGURE 6-1 N2 ARDEE TO CASTLEBLAYNEY SCHEME (SOURCE: TII/MCC/LCC)

Link and Junction capacity analysis has demonstrated that the development will have a negligible impact on the local road network, and thus can be expected to have no impact on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

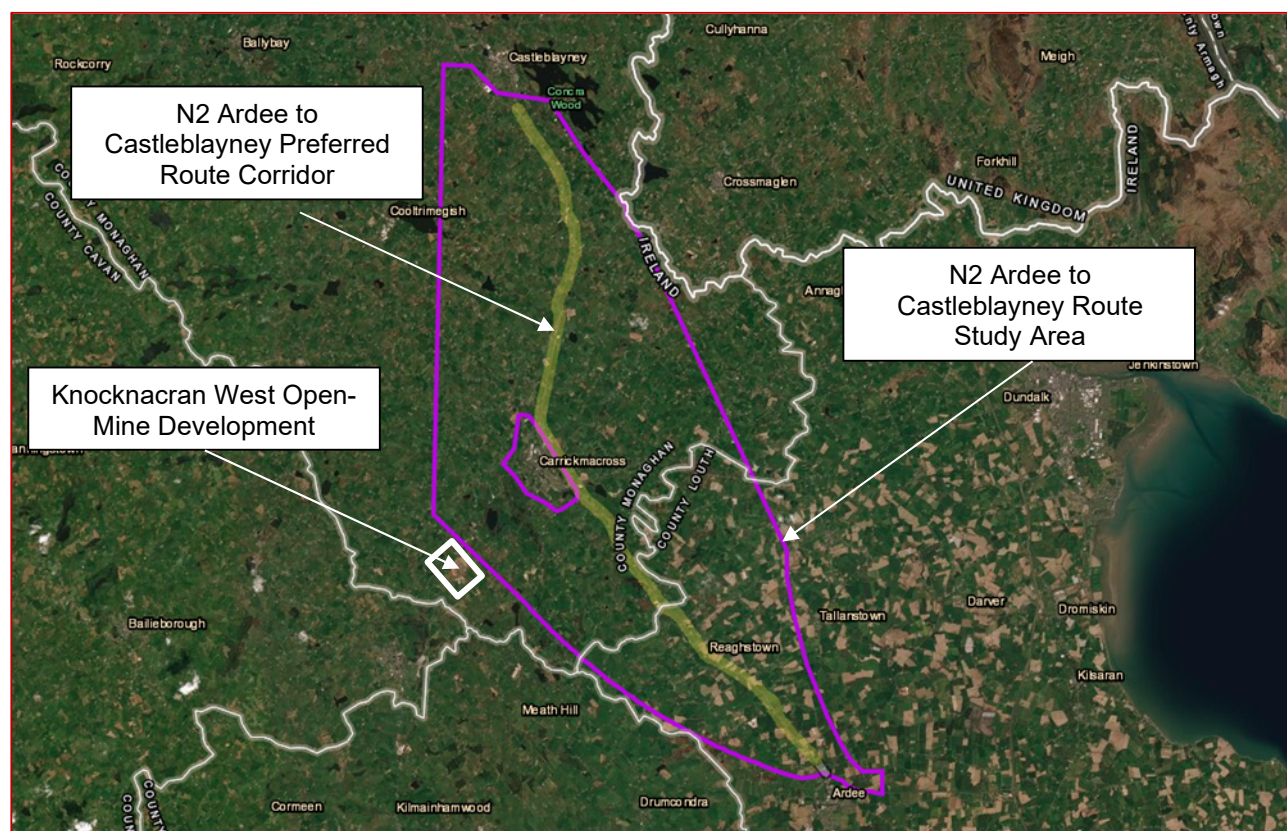


FIGURE 6-2 N2 ARDEE TO CASTLEBLAYNEY PREFERRED ROUTE (SOURCE: TII/MCC/LCC)

6.6 Parking

6.6.1 Knocknacran West Open-Cast Mine

There are approximately 50 existing car parking spaces within the mine site. The mine employs 40 full-time staff, of which approximately 12 of whom work shifts in the evening/night in Drummond. There are an additional 45 occasional staff members, 35 of which are earthworks contractors which work from their own compound during periods of stripping campaigns (over approximately 6 months every 3 to 5 years).

During the site visit, which took place between 09:30 and 12:00 hours, the car park did not exceed capacity. The proposed extension of operations will not generate any further staff traffic movements. Therefore, the current car parking provision within the site is considered to be adequate.

6.6.2 Community Sports Complex (Extension)

Section 15.28 of the Monaghan County Development Plan details the car parking standards for various land use classifications. Table 15.6 of the County Development Plan states that for a Leisure Centre or Sports Club a total of one car parking space is required per 50m² Nett Floor Area, which includes the area for the sale and display of goods, check-out counters, circulation areas, packing zones, fitting rooms and information areas, but excluding toilets, stores and staff areas, but excludes toilets, stores and staff areas.

The Net Floor Area of the proposed Community Sports Complex (Extension) buildings is approximately 2,135m² which equates to a minimum requirement of 43 car parking spaces. Table 6.16 outlines the breakdown of the floor area of the proposed development.

TABLE 6.16: SUMMARY OF COMMUNITY SPORTS COMPLEX (EXTENSION) FLOOR AREAS

Community Sports Complex Floor Areas	
Gross Floor Areas	
Ground Floor (including Plant Room)	2,041.50m ²
First Floor	785m ²
Total	2,826.50 m²
Area of Spectator Stand	260m ²
Internal Net Floor Areas (excluding staff, storage & toilets)	
Sports Hall	628m ²
Handball Alley	72m ²
Changing Room (inc Toilets)	428m ²
Gymnasium	81m ²
Club Room	229m ²
Meeting Room 1	71m ²
Kitchen (inc. Store & Staff)	70m ²
Circulation (inc. Viewing Gallery)	556m ²
Total	2,135m²
Internal Net Floor Areas (staff, storage & toilets)	
Staff	41m ²
Toilets	84.50m ²
Storage	152.50m ²
Plant Room	106m ²
Total	384 m²

There would be 100 formal parking spaces within the Community Sports Complex development (following completion of the extension), and an informal parking (overspill) area which may be in use occasionally during major match fixtures.

Traffic likely to be generated by the proposed Community Sports Complex development has been estimated using trip rates from the Trip Rate Information Computer System (TRICS) database based on the surveyed traffic for similar types of developments in similar locations (Ref: Table 6.17).

The forecast arrivals and departures for the Community Sports Complex (Extension) indicate that the estimated daily arrivals and departures result in a maximum occupancy of 48 total parking spaces (Ref: Table 6.18). It is considered that the proposed parking provision is sufficient for the forecast day-to-day demand.

TABLE 6.17: TRAFFIC FOLLOWING CONSTRUCTION OF THE EXTENSION (100 FORMAL PARKING SPACES)

Time Range	No. of parking spaces	Arrivals		Departures	
		Trip Rate Factor (Per Unit)	Trips	Trip Rate Factor (Per Unit)	Trips
07:00 - 08:00	100	0.107	11	0.007	1
08:00 - 09:00		0.180	18	0.024	3
09:00 - 10:00		0.193	20	0.057	6
10:00 - 11:00		0.225	23	0.135	14
11:00 - 12:00		0.115	12	0.119	12
12:00 - 13:00		0.126	13	0.199	20
13:00 - 14:00		0.133	14	0.126	13
14:00 - 15:00		0.162	17	0.228	23
15:00 - 16:00		0.136	14	0.129	13
16:00 - 17:00		0.060	6	0.139	14
17:00 - 18:00		0.041	5	0.148	15
18:00 - 19:00		0.085	9	0.112	12
Totals			162		146

TABLE 6.18: RESIDUAL PARKING CAPACITY FOR THE COMMUNITY SPORTS COMPLEX (EXTENSION)

100 Formal Car Parking spaces available first thing in the morning				
Hour Beginning	Trips In	Trips Out	Spaces Available	Spaces Occupied
06:00	-	-	100	0
07:00	0	0	100	0
08:00	11	1	90	10
09:00	18	3	75	25
10:00	20	6	61	39
11:00	23	14	52	48
12:00	12	12	52	48
13:00	13	20	59	41
14:00	14	13	58	42
15:00	17	23	64	36
16:00	14	13	63	37
17:00	6	14	71	29
18:00	5	15	81	19

7 Road Safety

7.1 Knocknacran West Open-Cast Mine Site Access & Sightlines

The entrance to the mine is located on the L4816. The L4816 continues south of the mine access in one direction and north of the mine access towards the R179 Regional Road in the other direction. Vehicles travelling on the L4816 have priority over vehicles entering/leaving the mine. The posted speed limit on this road is 80kph.

Sightlines have been assessed with reference to Section 15.27 of the Monaghan County Development Plan 2019 – 2025 and also with reference to Section 7.7 of the TII Publications document DN-GEO-03043.

- **Sightline to the North from the Mine Access:** Visibility to the right (north) for drivers exiting the mine would be 120m.
- **Sightline to the South from the Mine Access:** Visibility to the left (south) along the L4816 is constrained by a combination of the horizontal alignment and the boundary hedge of adjacent lands. The existing sightline to the south is 79m.

The 85th percentile speed at this location is between 62.9kph and 64kph. For a design speed of 60kph the required visibility is 90m. In adopting this design speed, the required visibility to the south along the L4816 from the mine access remains below that required.

To mitigate this the existing Mine Access is proposed to be modified to achieve a 90m sightline in this direction. Given the low volume of traffic using the L4816 to the south of the access, the absence of any collisions at this location, and the low 85th percentile speeds, the provision of 120m to the north and a 90m sightline to the south is considered to be appropriate in this location.

The new access arrangement will also include a 'Stop' sign and associated road markings to indicate to exiting drivers where they must stop before entering the L4816. The proposed access layout, including sightlines for exiting drivers, are shown on the drawings in Appendix C, D and E of this report.

7.2 Public Transport

There are no public transport provisions in the vicinity of the mine.

7.3 Pedestrians & Cyclists

There are no designated cycle or pedestrian facilities on the R179 National Road or on the L4816 and L49014 local roads. There are hard strips at the edge of the carriageway on the R179 should vulnerable road users wish to travel along the R179.

7.4 R179/ L4816 Junction

During a site visit undertaken in July 2022, it was noted that the existing tree canopy no longer impedes visibility to the Stop sign at the R179 t-junction.



7.5 Road Safety Audit

A Stage 1 Road Safety Audit and a Stage 2 Road Safety Audit has been carried out on the proposed temporary diversion and the permanent reinstatement of the R179 (Ref. Appendices G and H).

The Audit Team also reviewed the proposed new Mine Access Layout on the L4816, the visibility to the Stop sign on the L4816 approaching the R179 and the existing junction between the R179/L4900/L8330. Table 7.1 summarises the findings and recommendations of the Stage 1 & Stage 2 Road Safety Audits

TABLE 7.1: SUMMARY OF STAGE 1 & STAGE 2 ROAD SAFETY AUDITS PROBLEMS

Stage 1 Road Safety Audit		
Location	Problem	Recommendation
Proposed Temporary Diversion of the R179	<ul style="list-style-type: none"> The construction and finish of the temporary alignment will appear like a permanent alignment which might lead to high speeds. The change in cross fall at the superelevated sections of the temporary alignment occurs over short distances which may lead to overturning of high sided vehicles. It is unclear how far the VRS will be from the interceptor ditch for the tunnel and if the proposed working width of W4 will be accommodated. 	<ul style="list-style-type: none"> Additional measures should be provided to indicate to drivers of the temporary nature of the diversion and the need to slow. This may include narrow widths. The rate of change of crossfall should be suitable for the anticipated operating speed of the temporary diversion. Sufficient space should be provided to allow the proposed VRS to function as intended.
Permanent Reinstatement of the R179	No safety issues identified.	-
Proposed New Mine Access	<ul style="list-style-type: none"> The type of the proposed fencing at the realigned access has not been provided. 	<ul style="list-style-type: none"> Rail-less fencing with passively safe posts should be provided.
Existing L4816/R179 Sign	No safety issues identified.	-
Stage 2 Road Safety Audit		
Location	Problem	Recommendation
Proposed Temporary Diversion of the R179	<ul style="list-style-type: none"> The horizontal curves on the temporary alignment are relatively tight which may lead to loss of control incidents 	<ul style="list-style-type: none"> Sharp bend and chevron signs should be provided.
Permanent Reinstatement of the R179	No safety issues identified.	-
Proposed New Mine Access	<ul style="list-style-type: none"> Road markings and signage at the realigned mine access have not been provided. No access point is provided to the footpath along the access road. 	<ul style="list-style-type: none"> Stop road markings and signage should be provided at the new access. A section of dropped kerb should be provided.
Existing L4816/R179 Sign	No safety issues identified.	-

All of the Recommendations arising from the Audits have been accepted and the drawings have been amended to reflect these changes.

8 Conclusions

- 1) Link capacity analysis was carried out on the R179, L4816, L49014, L4900 and L8830. It was determined that all of these roads will continue to operate within capacity for each of the assessment years 2026 (Opening Year), 2031 and 2041.
- 2) A junction capacity analysis was undertaken for the four junctions listed below: -
 - Junction 1 - R179/L4900/L8830 Staggered Crossroads Existing
 - Junction 2 - R179/L4816/L49014 Crossroads
 - Junction 3 - Mine Access
 - Junction 2A - Community Complex Access

The results of the junction capacity analyses indicate that all junctions will continue to operate within capacity for each of the assessment years 2024, 2025, 2026, 2031 and 2041.

- 3) The assessment therefore indicates that the development will have a negligible impact on traffic flows on the existing road network due to the low volumes of traffic being generated by the development.
- 4) Sightlines have been assessed at the existing mine access on the L4816. The available sightlines to the south of the mine access on the L4816 is 79m.

The proposed new mine access will provide 90m sightlines to the south, which is consistent with the 85%ile speed (62.9kph and 64kph) recorded on the L4816. For a design speed of 60kph the required visibility is 90m. Visibility to the right (north) for drivers exiting the mine would be 120m.

- 5) The Knocknacran West Open-Mine Development was assessed to determine if proposals associated with the mine development, including works associated with the Community Sports Complex (Extension), would impact upon the N2 Ardee to Castleblayney Preferred Route. It was determined that the proposed development is outside the N2 Ardee to Castleblayney Study Area, and no closer than 5km to the Preferred Route.

Link and Junction capacity analysis has demonstrated that the development will have a negligible impact on the local road network, and thus can be expected to have no impact on the N2 Ardee to Castleblayney Preferred Route being advanced by TII, Monaghan County Council and Louth County Council.

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Appendix A – TRICS Output

Calculation Reference: AUDIT-261601-191022-1055

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT

Category : H - QUARRY

VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	DC DORSET	1 days
05	EAST MIDLANDS	
	NR NORTHAMPTONSHIRE	1 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days
09	NORTH	
	DH DURHAM	2 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Site area
 Actual Range: 10.00 to 40.00 (units: hect)
 Range Selected by User: 10.00 to 40.00 (units: hect)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/86 to 09/11/10

*This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.*Selected survey days:

Tuesday	2 days
Wednesday	2 days
Friday	1 days

*This data displays the number of selected surveys by day of the week.*Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

*This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.*Selected Locations:

Edge of Town	1
Free Standing (PPS6 Out of Town)	4

*This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.*Selected Location Sub Categories:

Out of Town	4
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

B2 5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

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Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	2 days
75,001 to 100,000	1 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Not Known	2 days
No	3 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days
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This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

1	DC-02-H-02	STONE QUARRY	DORSET	
	SOUTHWELL STREET			
	NEAR PORTLAND			
	SOUTHWELL			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:	40.00 hect		
	Survey date: WEDNESDAY	03/09/97	Survey Type: MANUAL	
2	DH-02-H-01	LIMESTONE QUARRY	DURHAM	
	STONYBECK LANE			
	NEAR DURHAM			
	BISHOP MIDDLEHAM			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:	10.00 hect		
	Survey date: TUESDAY	02/12/08	Survey Type: MANUAL	
3	DH-02-H-02	QUARRY	DURHAM	
	HART VILLAGE			
	HARTLEPOOL			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:	22.80 hect		
	Survey date: TUESDAY	09/11/10	Survey Type: MANUAL	
4	GM-02-H-01	STONE QUARRY	GREATER MANCHESTER	
	GEORGE'S LANE			
	HORWICH			
	Edge of Town			
	No Sub Category			
	Total Site area:	17.00 hect		
	Survey date: FRIDAY	09/08/91	Survey Type: MANUAL	
5	NR-02-H-01	GRAVEL QUARRY	NORTHAMPTONSHIRE	
	WOLLASTON ROAD			
	BOZEAT			
	WELLINGBOROUGH			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:	14.50 hect		
	Survey date: WEDNESDAY	26/11/08	Survey Type: MANUAL	

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

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TRIP RATE for Land Use 02 - EMPLOYMENT/H - QUARRY
VEHICLES

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	5	20.86	0.393	5	20.86	0.153	5	20.86	0.546
07:30 - 08:00	5	20.86	0.249	5	20.86	0.211	5	20.86	0.460
08:00 - 08:30	5	20.86	0.230	5	20.86	0.163	5	20.86	0.393
08:30 - 09:00	5	20.86	0.201	5	20.86	0.221	5	20.86	0.422
09:00 - 09:30	5	20.86	0.259	5	20.86	0.240	5	20.86	0.499
09:30 - 10:00	5	20.86	0.268	5	20.86	0.192	5	20.86	0.460
10:00 - 10:30	5	20.86	0.153	5	20.86	0.173	5	20.86	0.326
10:30 - 11:00	5	20.86	0.182	5	20.86	0.182	5	20.86	0.364
11:00 - 11:30	5	20.86	0.173	5	20.86	0.163	5	20.86	0.336
11:30 - 12:00	5	20.86	0.173	5	20.86	0.153	5	20.86	0.326
12:00 - 12:30	5	20.86	0.105	5	20.86	0.153	5	20.86	0.258
12:30 - 13:00	5	20.86	0.153	5	20.86	0.163	5	20.86	0.316
13:00 - 13:30	5	20.86	0.192	5	20.86	0.201	5	20.86	0.393
13:30 - 14:00	5	20.86	0.230	5	20.86	0.240	5	20.86	0.470
14:00 - 14:30	5	20.86	0.249	5	20.86	0.211	5	20.86	0.460
14:30 - 15:00	5	20.86	0.221	5	20.86	0.259	5	20.86	0.480
15:00 - 15:30	5	20.86	0.192	5	20.86	0.182	5	20.86	0.374
15:30 - 16:00	5	20.86	0.182	5	20.86	0.125	5	20.86	0.307
16:00 - 16:30	4	22.45	0.156	4	22.45	0.134	4	22.45	0.290
16:30 - 17:00	4	22.45	0.134	4	22.45	0.156	4	22.45	0.290
17:00 - 17:30	4	22.45	0.067	4	22.45	0.111	4	22.45	0.178
17:30 - 18:00	4	22.45	0.033	4	22.45	0.234	4	22.45	0.267
18:00 - 18:30	4	22.45	0.011	4	22.45	0.089	4	22.45	0.100
18:30 - 19:00	4	22.45	0.011	4	22.45	0.011	4	22.45	0.022
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:		4.217			4.120			8.337	

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

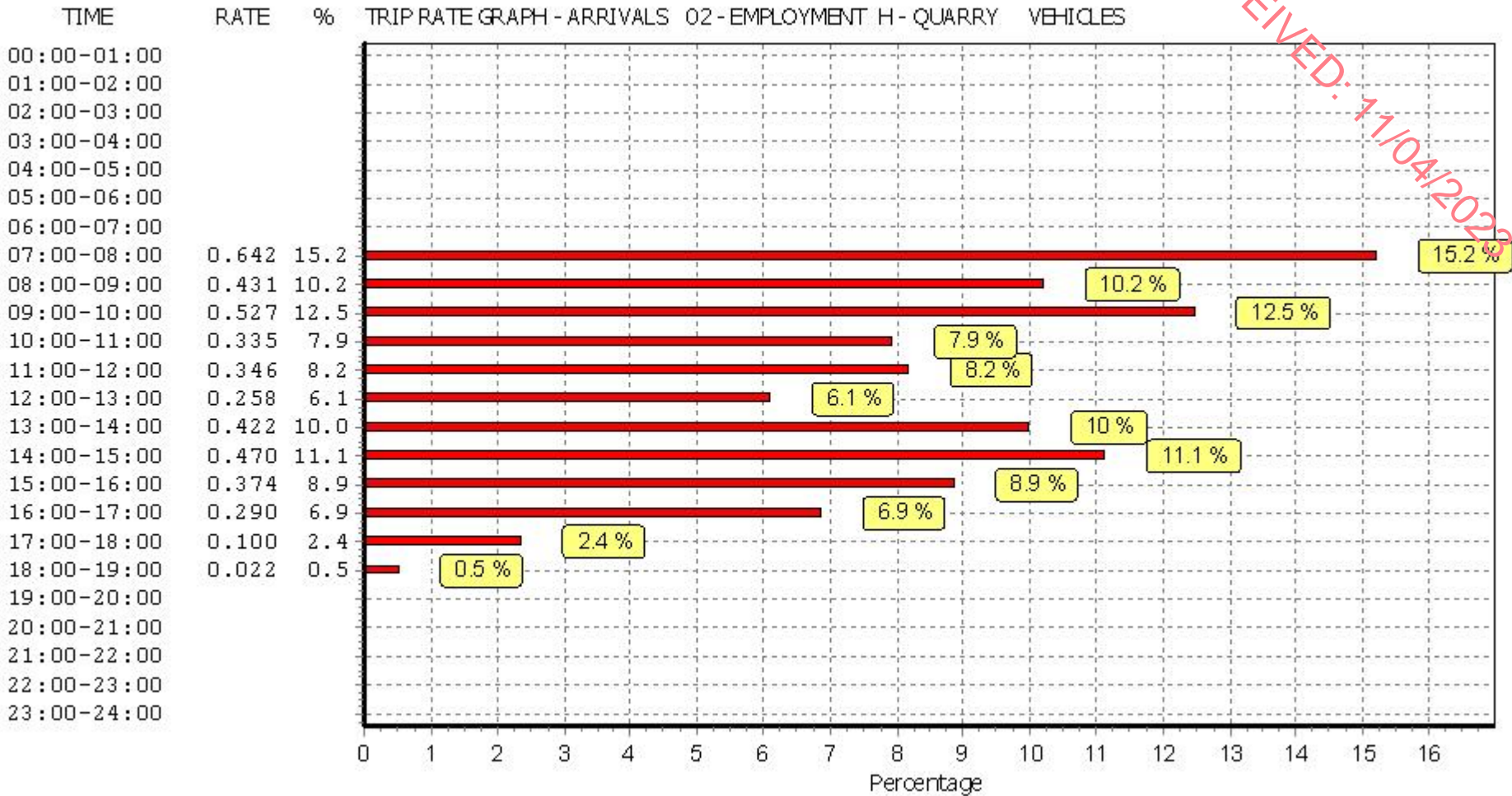
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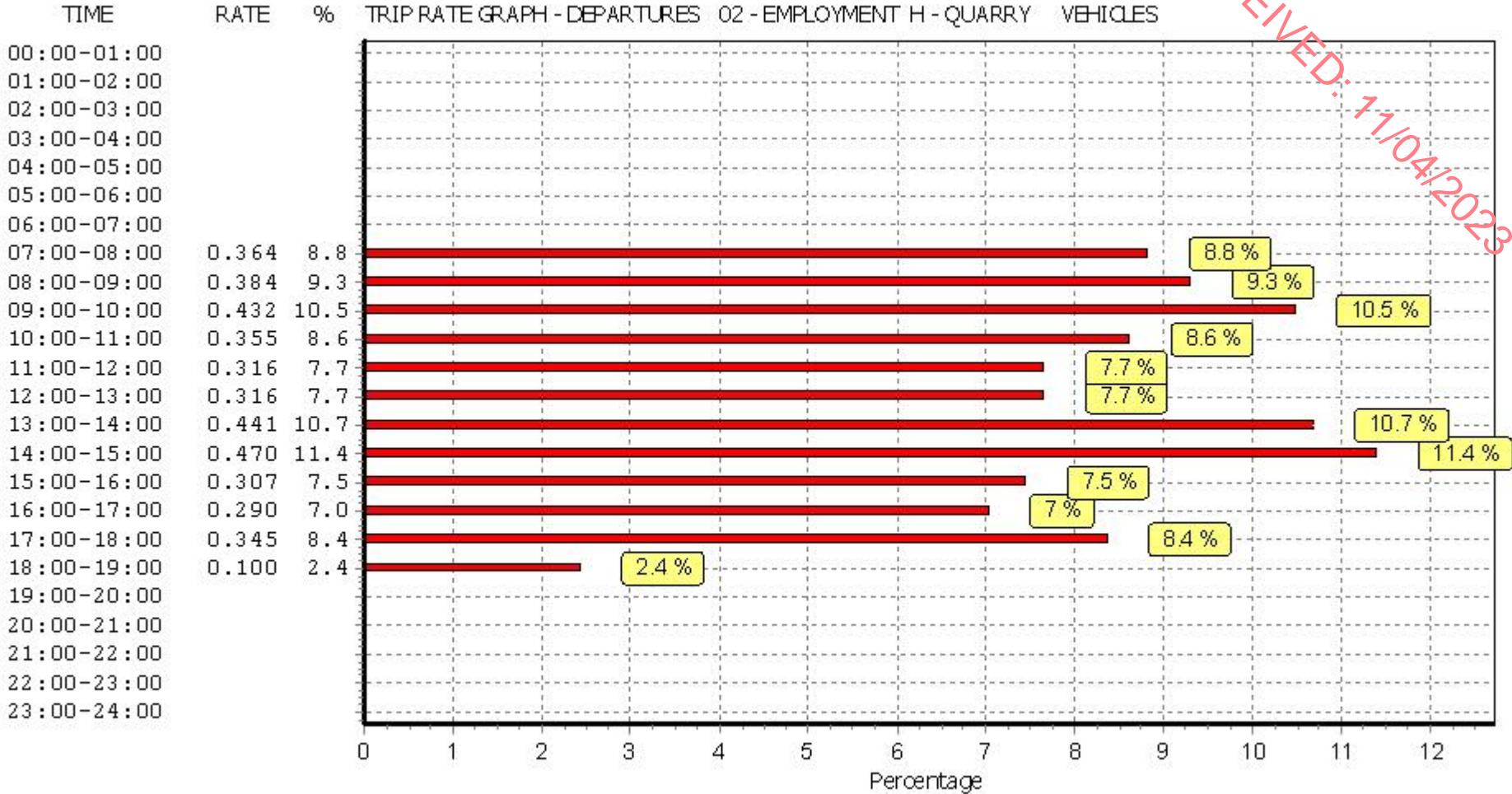
Parameter summary

Trip rate parameter range selected:	10.00 to 40.00 (units: hect)
Survey date date range:	01/01/86 - 09/11/10
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

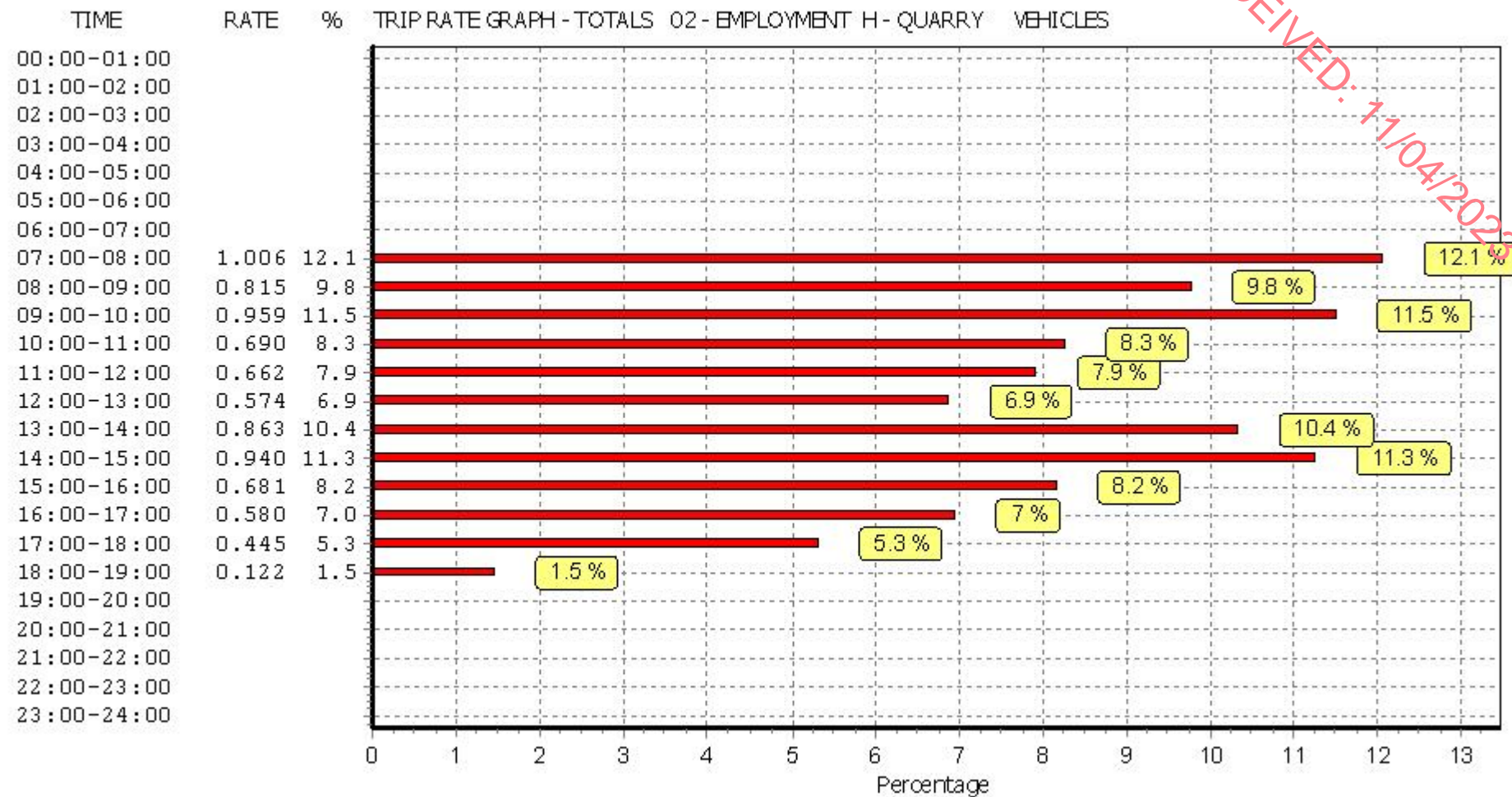
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Calculation Reference: AUDIT-261601-191023-1020

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : Q - COMMUNITY CENTRE
 VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	WL WILTSHIRE	1 days
09	NORTH	
	DH DURHAM	1 days
	TW TYNE & WEAR	1 days
11	SCOTLAND	
	FA FALKIRK	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	CV CAVAN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Site area
 Actual Range: 0.13 to 1.72 (units: hect)
 Range Selected by User: 0.04 to 2.50 (units: hect)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 24/05/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	1 days
Wednesday	1 days
Thursday	1 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
------------------------------------	---

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	4
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

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Secondary Filtering selection:

Use Class:

D1	1 days
D2	4 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
100,001 to 125,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	5 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

1	CV-07-Q-01 KILLYMOONEY DRIVE CAVAN	COMMUNITY CENTRE CAVAN	CAVAN
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Site area:	1.72 hect	
	Survey date: WEDNESDAY	19/12/12	Survey Type: MANUAL
2	DH-07-Q-01 JUTLAND ROAD HARTLEPOOL	COM. CENTRE HARTLEPOOL	DURHAM
	Suburban Area (PPS6 Out of Centre) No Sub Category Total Site area:	0.13 hect	
	Survey date: FRIDAY	28/09/07	Survey Type: MANUAL
3	FA-07-Q-01 DAVID'S LOAN FALKIRK BAINSFORD	COMMUNITY CENTRE FALKIRK BAINSFORD	FALKIRK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Site area:	1.27 hect	
	Survey date: THURSDAY	19/04/07	Survey Type: MANUAL
4	TW-07-Q-03 ASKEW ROAD W GATESHEAD TEAMS	COMMUNITY CENTRE GATESHEAD TEAMS	TYNE & WEAR
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Site area:	0.33 hect	
	Survey date: FRIDAY	24/05/19	Survey Type: MANUAL
5	WL-07-Q-01 OLD COURT WOOTTON BASSETT	COM.CENTRE WOOTTON BASSETT	WILTSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Site area:	0.20 hect	
	Survey date: TUESDAY	03/10/06	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

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TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
VEHICLES

Calculation factor: 1 hect

Estimated TRIP rate value per 9 HECT shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. AREA	Trip Rate	Estimated Trip Rate	No. Days	Ave. AREA	Trip Rate	Estimated Trip Rate	No. Days	Ave. AREA	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00												
08:00 - 09:00	5	0.73	4.110	36.986	5	0.73	0.822	7.397	5	0.73	4.932	44.383
09:00 - 10:00	5	0.73	6.849	61.644	5	0.73	4.110	36.986	5	0.73	10.959	98.630
10:00 - 11:00	5	0.73	3.288	29.589	5	0.73	3.562	32.055	5	0.73	6.850	61.644
11:00 - 12:00	5	0.73	4.932	44.384	5	0.73	6.027	54.247	5	0.73	10.959	98.631
12:00 - 13:00	5	0.73	7.123	64.110	5	0.73	6.301	56.712	5	0.73	13.424	120.822
13:00 - 14:00	5	0.73	4.932	44.384	5	0.73	4.932	44.384	5	0.73	9.864	88.768
14:00 - 15:00	5	0.73	7.397	66.575	5	0.73	7.671	69.041	5	0.73	15.068	135.616
15:00 - 16:00	5	0.73	4.658	41.918	5	0.73	6.027	54.247	5	0.73	10.685	96.165
16:00 - 17:00	5	0.73	2.740	24.658	5	0.73	4.658	41.918	5	0.73	7.398	66.576
17:00 - 18:00	5	0.73	5.753	51.781	5	0.73	4.110	36.986	5	0.73	9.863	88.767
18:00 - 19:00	4	0.83	12.952	116.566	4	0.83	6.627	59.639	4	0.83	19.579	176.205
19:00 - 20:00	4	0.83	10.542	94.880	4	0.83	7.831	70.482	4	0.83	18.373	165.362
20:00 - 21:00	4	0.83	3.916	35.241	4	0.83	9.940	89.458	4	0.83	13.856	124.699
21:00 - 22:00	3	0.53	3.125	28.125	3	0.53	17.500	157.500	3	0.53	20.625	185.625
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			82.317	740.841			90.118	811.052			172.435	1551.893

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

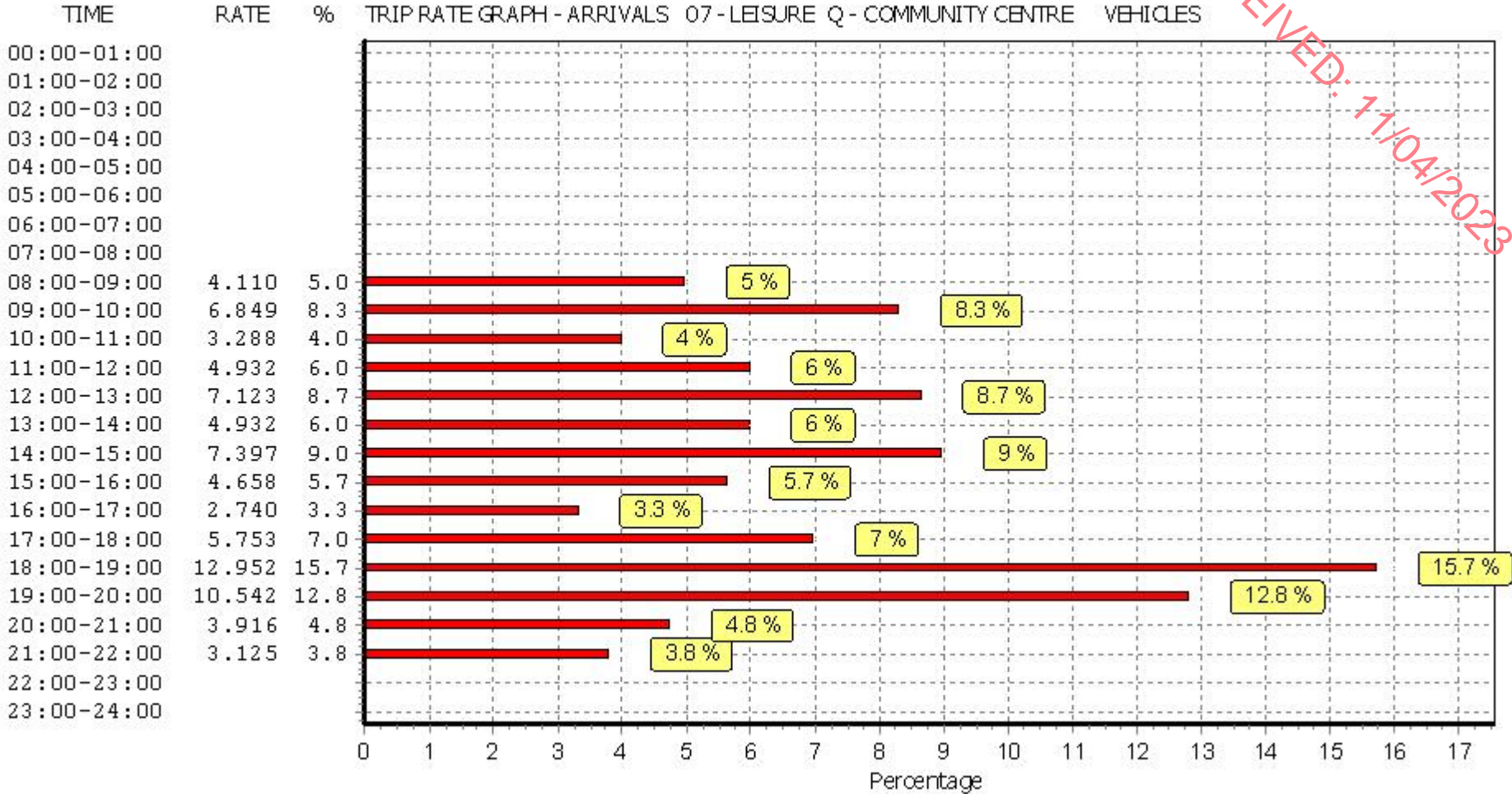
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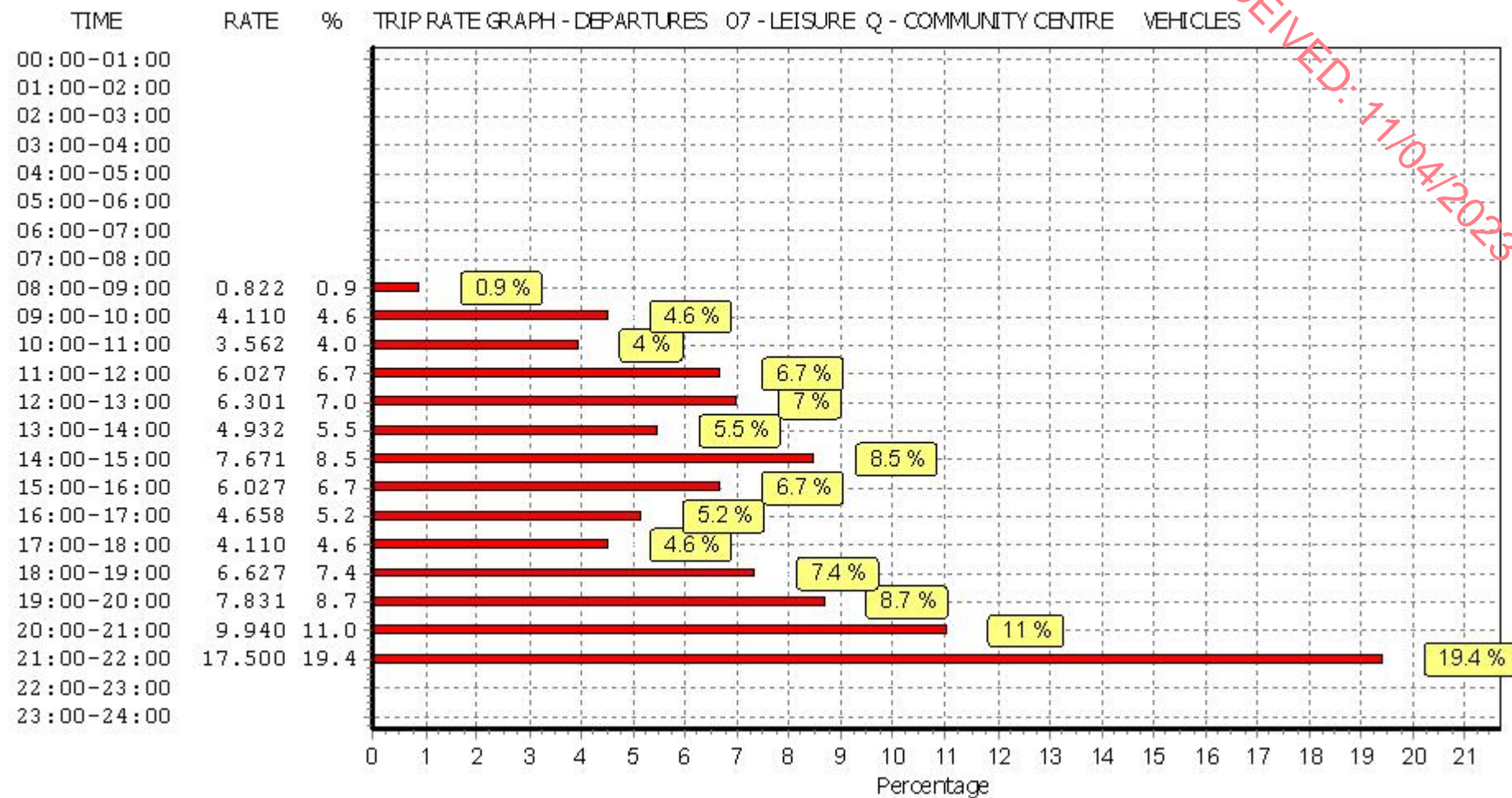
Parameter summary

Trip rate parameter range selected:	0.13 to 1.72 (units: hect)
Survey date range:	01/01/02 - 24/05/19
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

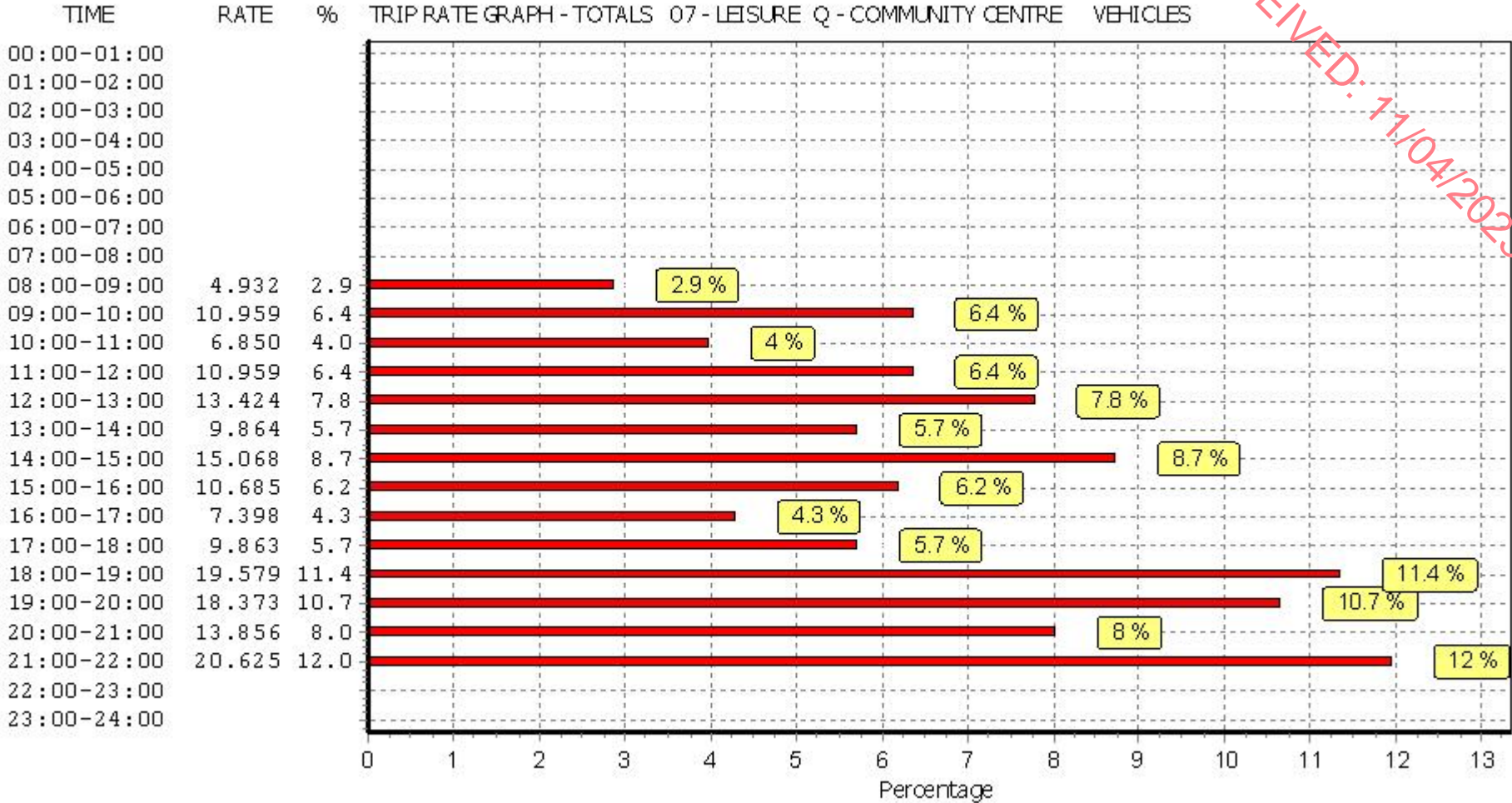
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Site reference: KC-16-A-03 Survey date: 23/11/1997 Day of week: Sunday

Survey type: Manual Count

Mild and Light

AM weather: Rain

PM weather: Mild and Cloudy

Initial car park occupancy: Final car park
1 occupancy: 0

BRACKETED

ACCUMULATION FIGURES

ARE NOT ABSOLUTE

Parking Capacity 62% (150 On-Site Spaces)

Data proportions in %

Motor cars Motor cycles Public service

Light goods OGV (1) OGV (2)

Taxis

Servicing Vehicles count
recorded

No

Time	Arr 208	Dep 209	Totals 417	Parking Accum	
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00		13	0	13	14
08:00-09:00		36	2	38	48
09:00-10:00		15	4	19	59
10:00-11:00		47	16	63	90
11:00-12:00		18	15	33	93
12:00-13:00		30	33	63	90
13:00-14:00		16	36	52	70
14:00-15:00		9	55	64	24
15:00-16:00		3	15	18	12
16:00-17:00		0	4	4	8
17:00-18:00		0	5	5	3
18:00-19:00		5	1	6	7
19:00-20:00		12	7	19	12
20:00-21:00		3	4	7	11
21:00-22:00		1	12	13	0
22:00-23:00					
23:00-24:00					

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Site reference: KC-16-A-03 Survey date: 22/11/1997 Day of week: Saturday

Survey type: Manual

Mild and

AM weather: Cloudy

Mild and

PM weather: Cloudy

Initial car park occupancy: 2 Final car park occupancy: 15

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ACCUMULATION FIGURES
ARE NOT ABSOLUTE

Parking Capacity 59% (150 On-Site Spaces)

Data proportions in %

Motor cars Motor cycles Public service

Light goods OGV (1) OGV (2)

Taxis

Servicing Vehicles count
recorded

No

Time	Arr 211	Dep 198	Totals 409	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	13	0	13	15
08:00-09:00	39	3	42	51
09:00-10:00	33	13	46	71
10:00-11:00	32	14	46	89
11:00-12:00	17	27	44	79
12:00-13:00	14	33	47	60
13:00-14:00	7	8	15	59
14:00-15:00	6	40	46	25
15:00-16:00	15	15	30	25
16:00-17:00	7	8	15	24
17:00-18:00	9	16	25	17
18:00-19:00	7	14	21	10
19:00-20:00	10	7	17	13
20:00-21:00	2	0	2	15
21:00-22:00	0	0	0	15
22:00-23:00	0	0	0	15
23:00-24:00				

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Site reference: KC-16-A-03 Survey date: 27/11/1997 Day of week: Thursday

Survey type: Manual Count
 AM weather: Mild and Light
 PM weather: Mild and Light
 Final car park
 Initial car park occupancy: occupancy:

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BRACKETED ACCUMULATION
 FIGURES ARE NOT ABSOLUTE

Parking Capacity

Data proportions in %

Motor cars	Motor cycles	Public service
Light goods	OGV (1)	OGV (2)
Taxis		
Servicing Vehicles count recorded	No	

Time	Arr 283	Dep 272	Totals 555	Parking Accum	
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00		22	3	25	-19
08:00-09:00		26	9	35	-36
09:00-10:00		20	4	24	-52
10:00-11:00		12	8	20	-56
11:00-12:00		19	21	40	-54
12:00-13:00		18	18	36	-54
13:00-14:00		9	13	22	-50
14:00-15:00		16	30	46	-36
15:00-16:00		19	22	41	-33
16:00-17:00		16	20	36	-29
17:00-18:00		11	20	31	-20
18:00-19:00		29	19	48	-30
19:00-20:00		43	24	67	-49
20:00-21:00		20	10	30	-59
21:00-22:00		3	23	26	-39
22:00-23:00		0	28	28	-11
23:00-24:00					

Site reference: DC-16-A-12 Survey date: 29/09/2001 Day of week: Saturday

Survey type: Manual

AM weather: Mild and Light Rain

PM weather: Mild and Clear

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Initial car park occupancy: 8 Final car park occupancy: 20

BRACKETED
ACCUMULATION FIGURES
ARE NOT ABSOLUTE

Parking Capacity 90% (250 On-Site Spaces)

Data proportions in %

Motor cars 95 Motor cycles 2 Public service 0

Light goods 3 OGV (1) 0 OGV (2) 0

Taxis 0

Servicing Vehicles count
recorded No

Time Arr 542 Dep 530 Totals 1072 Parking Accum

00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00				
08:00-09:00	12	1	13	19
09:00-10:00	80	22	102	77
10:00-11:00	73	72	145	78
11:00-12:00	25	14	39	89
12:00-13:00	23	59	82	53
13:00-14:00	80	31	111	102
14:00-15:00	110	20	130	192
15:00-16:00	74	42	116	224
16:00-17:00	22	86	108	160
17:00-18:00	8	80	88	88
18:00-19:00	17	55	72	50
19:00-20:00	18	48	66	20
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Comments

Any taxis are included as cars within the total vehicles count.

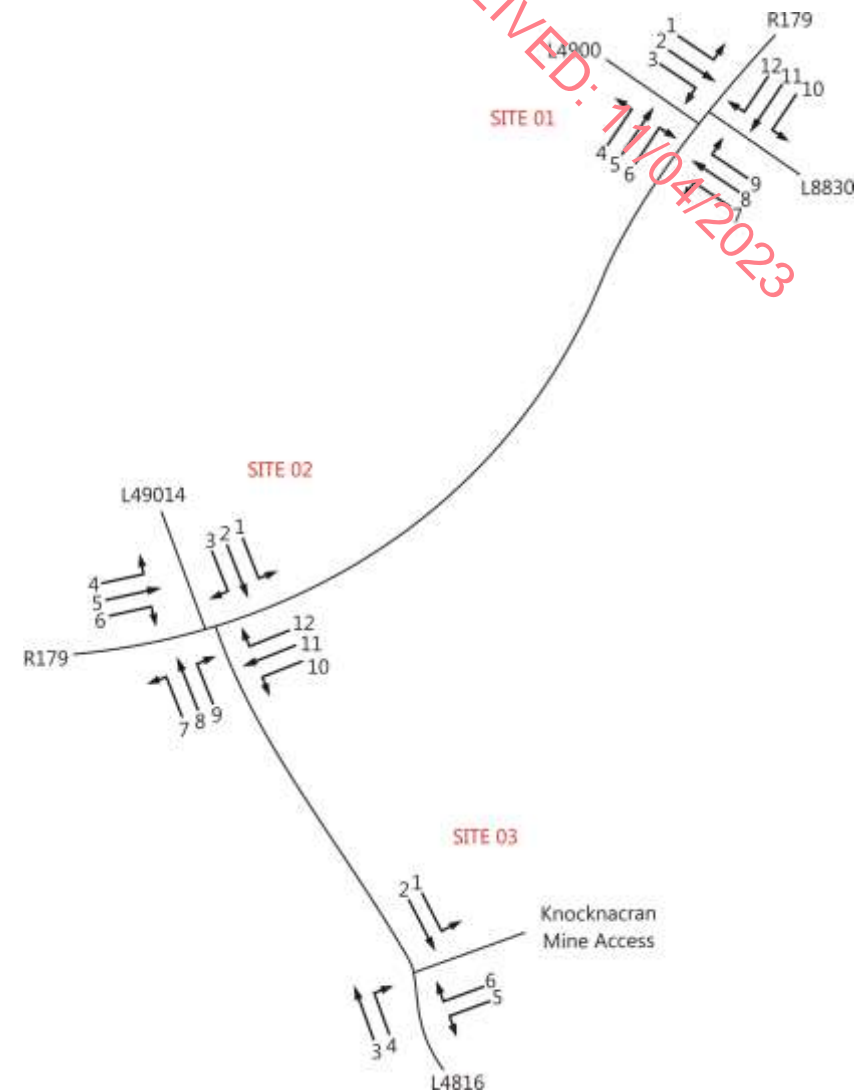
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Appendix B – Traffic Survey Data

Site Locations



Movement Numbers



Job number:

TRA/22/141

Client:

PMCE

Job Date:

17th May 2022

Job Day:

Tuesday

Drawing No:

TRA/22/141-01

Author:

SPW

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 01

DATE:

17th May 2022

LOCATION: R179/L4900/L8830

DAY:

Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	1	2	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0
06:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	2	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
06:45	2	1	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	4	6	0	0	0	10	10	1	0	0	0	0	1	1	3	0	0	0	0	3	3
07:00	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:30	3	1	0	0	0	4	4	0	0	0	0	0	0	0	1	1	0	0	0	2	2
07:45	5	0	0	0	0	5	5	0	0	0	0	0	0	0	3	1	0	0	0	4	4
H/TOT	8	2	0	0	0	10	10	0	0	0	0	0	0	0	4	3	0	0	0	7	7
08:00	1	0	0	1	0	2	3	0	1	0	0	0	1	1	1	1	0	0	0	2	2
08:15	3	0	1	0	0	4	5	0	1	0	0	0	1	1	1	0	0	0	0	1	1
08:30	4	2	0	0	0	6	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
08:45	6	0	0	0	0	6	6	0	0	0	0	0	0	0	1	0	1	0	0	2	3
H/TOT	14	2	1	1	0	18	20	1	2	0	0	0	3	3	3	1	1	0	0	5	6
09:00	7	0	0	0	0	7	7	2	0	0	0	0	2	2	2	1	0	0	0	3	3
09:15	16	0	0	0	0	16	16	5	0	1	0	0	6	7	12	0	0	0	0	12	12
09:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
09:45	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	26	1	0	0	0	27	27	8	0	1	0	0	9	10	14	1	0	0	0	15	15
P/TOT	52	11	1	1	0	65	67	10	2	1	0	0	13	14	24	5	1	0	0	30	31

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	3	1	1	0	0	5	6	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:15	7	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	13	1	1	0	0	15	15	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	1	1	0	0	0	2	2	0	1	0	0	0	1	1
17:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
17:45	5	0	0	0	0	5	5	1	0	0	0	0	1	1	0	1	0	0	0	1	1
H/TOT	8	1	0	0	0	9	9	2	1	0	0	0	3	3	1	2	0	0	0	3	3
18:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	1	1	0	0	0	2	2
18:15	5	1	0	0	0	6	6	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
18:45	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	10	1	0	0	0	11	11	1	2	0	0	0	3	3	1	1	0	0	0	2	2
19:00	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	0	0	0	0	3	3	1	0	0	0	0	1	1	3	0	0	0	0	3	3
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
20:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
P/TOT	35	3	1	0	0	39	39	4	3	0	0	0	7	20	9	3	0	0	0	12	30

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 01

DATE:

17th May 2022

LOCATION: R179/L4900/L8830

DAY:

Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	3	2	0	0	1	6	7	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	4	4	0	1	0	9	10	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	9	7	1	0	0	17	18	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	16	7	1	1	0	25	27	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	32	20	2	2	1	57	0	1	0	0	0	0	1	1
07:00	0	0	0	0	0	0	0	19	7	0	1	0	27	28	2	0	0	0	0	2	2
07:15	0	0	0	0	0	0	0	24	13	1	1	0	39	41	1	0	0	0	0	1	1
07:30	0	0	0	0	0	0	0	29	14	0	3	0	46	50	0	1	0	0	0	1	1
07:45	2	1	0	0	0	3	3	27	14	1	1	3	46	51	1	1	0	0	0	2	2
H/TOT	2	1	0	0	0	3	3	99	48	2	6	3	158	0	4	2	0	0	0	6	6
08:00	1	0	0	0	0	1	1	40	6	1	1	4	52	58	1	0	0	0	0	1	1
08:15	1	0	0	0	0	1	1	52	5	0	4	0	61	66	0	0	0	0	0	0	0
08:30	2	1	0	0	0	3	3	42	7	1	6	1	57	66	2	2	0	0	0	4	4
08:45	2	0	0	0	0	2	2	37	8	1	3	0	49	53	0	0	0	0	0	0	0
H/TOT	6	1	0	0	0	7	7	171	26	3	14	5	219	35	3	2	0	0	0	5	5
09:00	5	0	0	0	0	5	5	27	9	1	4	0	41	47	1	0	0	0	0	1	1
09:15	2	0	0	0	0	2	2	27	8	1	3	1	40	45	1	0	0	0	0	1	1
09:30	0	0	0	0	0	0	0	20	7	4	3	0	34	40	1	0	0	0	0	1	1
09:45	1	1	0	0	0	2	2	23	13	2	2	0	40	44	0	0	0	0	0	0	0
H/TOT	8	1	0	0	0	9	9	97	37	8	12	1	155	119	3	0	0	0	0	3	3
P/TOT	16	3	0	0	0	19	19	399	131	15	34	10	589	154	11	4	0	0	0	15	15

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	0	0	0	0	0	0	40	9	3	6	1	59	69	5	0	0	0	0	5	5
16:15	1	0	0	0	0	1	1	36	17	4	3	1	61	68	4	0	0	0	0	4	4
16:30	1	2	0	0	0	3	3	29	8	2	4	1	44	51	2	0	0	0	0	2	2
16:45	0	1	0	0	0	1	1	52	11	2	1	0	66	68	2	0	0	0	0	2	2
H/TOT	2	3	0	0	0	5	14	157	45	11	14	3	230	167	13	0	0	0	0	13	8
17:00	1	0	0	0	0	1	1	49	11	1	1	0	62	64	2	2	0	0	0	4	4
17:15	0	2	0	0	0	2	2	45	11	3	1	0	60	63	2	0	0	0	0	2	2
17:30	0	1	0	0	0	1	1	41	10	1	2	0	54	57	5	0	0	0	0	5	5
17:45	1	0	0	0	0	1	1	39	13	1	1	2	56	60	4	0	0	0	0	4	4
H/TOT	2	3	0	0	0	5	5	174	45	6	5	2	232	273	13	2	0	0	0	15	15
18:00	2	0	0	0	0	2	2	19	16	1	0	0	36	37	7	2	0	0	0	9	9
18:15	1	0	0	0	0	1	1	34	10	0	0	1	45	46	5	1	0	0	0	6	6
18:30	0	0	0	0	0	0	0	33	1	1	0	0	35	36	3	1	0	0	0	4	4
18:45	0	0	0	0	0	0	0	28	5	0	0	0	33	33	4	1	0	0	0	5	5
H/TOT	3	0	0	0	0	3	3	114	32	2	0	1	149	188	19	5	0	0	0	24	24
19:00	0	0	0	0	0	0	0	27	6	0	3	0	36	40	2	1	0	0	0	3	3
19:15	0	0	0	0	0	0	0	15	5	0	0	0	20	20	3	1	0	0	0	4	4
19:30	1	0	0	0	0	1	1	18	2	0	1	0	21	22	3	0	0	0	0	3	3
19:45	0	0	0	0	0	0	0	13	3	0	0	0	16	16	3	0	0	0	0	3	3
H/TOT	1	0	0	0	0	1	1	73	16	0	4	0	93	351	11	2	0	0	0	13	13
20:00	2	0	0	0	0	2	2	26	3	0	0	0	29	29	1	1	0	0	0	2	2
20:15	0	0	0	0	0	0	0	13	6	0	1	0	20	21	2	0	1	0	0	3	4
20:30	2	0	0	0	0	2	2	11	0	0	0	0	11	11	0	0	0	0	0	0	0
20:45	0	1	0	0	0	1	1	14	3	0	1	0	18	19	3	0	0	0	0	3	3
H/TOT	4	1	0	0	0	5	5	64	12	0	2	0	78	391	6	1	1	0	0	8	9
P/TOT	12	7	0	0	0	19	28	582	150	19	25	6	782	1369	62	10	1	0	0	73	69

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 01

DATE:

17th May 2022

LOCATION: R179/L4900/L8830

DAY:

Tuesday

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
06:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
06:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
06:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	4	1	0	0	0	5	5	1	0	0	0	0	1	1	3	0	0	0	0	3	3
07:00	1	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	5	3	0	0	0	8	8	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
07:45	5	3	0	0	0	8	8	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	12	7	1	0	0	20	21	1	0	0	0	0	1	1	3	0	0	0	0	3	3
08:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	4	4
08:15	4	0	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
08:45	3	2	0	0	0	5	5	1	0	0	0	0	1	1	1	0	1	0	0	2	3
H/TOT	9	2	0	0	0	11	11	1	0	0	0	0	1	1	8	1	1	0	0	10	11
09:00	3	1	0	0	0	4	4	3	0	1	0	0	4	5	2	0	0	0	0	2	2
09:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
09:45	4	0	0	0	0	4	4	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	8	1	0	0	0	9	9	5	0	1	0	0	6	7	5	0	0	0	0	5	5
P/TOT	33	11	1	0	0	45	46	8	0	1	0	0	9	10	19	1	1	0	0	21	22

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:15	0	0	1	0	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	1	1	2	0	0	4	16	0	0	0	0	0	0	8	5	0	0	0	0	5	14
17:00	3	1	0	0	0	4	4	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:15	6	1	0	0	0	7	7	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:45	2	0	0	0	0	2	2	0	1	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	12	3	0	0	0	15	15	3	1	0	0	0	4	4	3	0	0	0	0	3	3
18:00	4	0	0	0	0	4	4	1	0	0	0	0	1	1	2	0	0	0	0	2	2
18:15	4	2	0	0	0	6	6	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:30	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:45	3	2	0	0	0	5	5	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	15	5	0	0	0	20	20	1	0	0	0	0	1	1	6	1	0	0	0	7	7
19:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	0	0	0	3	3
19:15	3	2	0	0	0	5	5	0	0	0	0	0	0	0	2	0	0	0	0	2	2
19:30	3	1	0	0	0	4	4	1	0	0	0	0	1	1	1	0	0	0	0	1	1
19:45	9	1	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	16	4	0	0	0	20	20	1	0	0	0	0	1	1	4	2	0	0	0	6	6
20:00	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
20:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	3	0	0	0	0	3	3	1	0	0	0	0	1	1	3	0	0	0	0	3	3
P/TOT	47	13	2	0	0	62	74	6	1	0	0	0	7	15	21	3	0	0	0	24	33

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**MAY 2022
TRA/22/141**

SITE: 01
LOCATION: R179/L4900/L8830

DATE: 17th May 2022
DAY: Tuesday

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	11	2	0	0	0	13	13	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	7	7	1	0	0	15	16	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	9	6	0	2	0	17	20	2	0	0	0	0	2	2
06:45	0	0	0	0	0	0	0	14	9	1	1	0	25	27	0	1	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	41	24	2	3	0	70	0	2	1	0	0	0	3	3
07:00	1	0	0	0	0	1	1	15	13	1	7	0	36	46	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	8	5	0	3	0	16	20	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	45	16	0	0	0	61	61	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	43	15	0	3	1	62	67	0	0	0	0	1	1	2
H/TOT	2	0	0	0	0	2	2	111	49	1	13	1	175	0	0	0	0	0	1	1	2
08:00	0	0	0	0	0	0	0	41	3	0	3	0	47	51	1	0	0	0	0	1	1
08:15	1	0	0	0	0	1	1	41	5	0	3	2	51	57	0	0	0	0	0	0	0
08:30	1	0	0	0	0	1	1	44	11	1	3	1	60	65	1	1	0	0	0	2	2
08:45	2	0	0	0	0	2	2	28	12	3	3	0	46	51	6	0	0	0	0	6	6
H/TOT	4	0	0	0	0	4	4	154	31	4	12	3	204	48	8	1	0	0	0	9	9
09:00	1	0	0	0	0	1	1	21	4	3	1	0	29	32	9	0	0	1	0	10	11
09:15	0	0	0	0	0	0	0	11	5	4	4	0	24	31	5	1	0	0	0	6	6
09:30	1	0	0	0	0	1	1	28	5	0	3	0	36	40	2	1	0	0	0	3	3
09:45	2	0	0	0	0	2	2	13	7	1	3	0	24	28	2	0	0	0	0	2	2
H/TOT	4	0	0	0	0	4	4	73	21	8	11	0	113	127	18	2	0	1	0	21	22
P/TOT	10	0	0	0	0	10	10	379	125	15	39	4	562	175	28	4	0	1	1	34	36

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	4	0	0	0	0	4	4	33	11	2	3	1	50	56	4	2	0	0	1	7	8
16:15	2	0	0	0	0	2	2	32	11	0	2	2	47	52	1	1	0	0	0	2	2
16:30	3	1	0	0	0	4	4	28	5	1	6	1	41	50	4	1	0	0	0	5	5
16:45	1	0	0	0	0	1	1	24	18	3	1	0	46	49	3	4	0	0	0	7	7
H/TOT	10	1	0	0	0	11	6	117	45	6	12	4	184	151	12	8	0	0	1	21	29
17:00	3	0	0	0	0	3	3	44	17	1	0	0	62	63	3	0	0	0	0	3	3
17:15	1	2	0	0	0	3	3	37	6	1	0	1	45	47	4	3	0	0	0	7	7
17:30	2	1	0	0	0	3	3	41	15	2	0	0	58	59	2	2	0	0	0	4	4
17:45	1	0	0	0	0	1	1	45	0	0	0	1	46	47	9	1	0	0	0	10	10
H/TOT	7	3	0	0	0	10	10	167	38	4	0	2	211	301	18	6	0	0	0	24	24
18:00	2	0	0	0	0	2	2	47	10	2	0	0	59	60	3	1	0	0	0	4	4
18:15	0	1	0	0	0	1	1	42	4	0	1	0	47	48	2	0	0	0	0	2	2
18:30	2	0	0	0	0	2	2	26	5	0	1	0	32	33	1	1	0	0	0	2	2
18:45	0	1	0	0	0	1	1	19	5	0	3	0	27	31	0	0	0	0	0	0	0
H/TOT	4	2	0	0	0	6	6	134	24	2	5	0	165	158	6	2	0	0	0	8	8
19:00	2	0	0	0	0	2	2	26	3	0	0	1	30	31	1	0	0	0	0	1	1
19:15	6	0	0	0	0	6	6	18	5	0	0	0	23	23	2	0	0	0	0	2	2
19:30	0	0	0	0	0	0	0	17	5	0	0	0	22	22	4	1	0	0	0	5	5
19:45	2	0	0	0	0	2	2	19	3	0	0	0	22	22	0	0	0	0	0	0	0
H/TOT	10	0	0	0	0	10	10	80	16	0	0	1	97	319	7	1	0	0	0	8	8
20:00	0	0	0	0	0	0	0	17	10	1	1	0	29	31	2	0	1	0	0	3	4
20:15	2	0	0	0	0	2	2	13	2	0	0	1	16	17	5	0	0	0	0	5	5
20:30	0	0	0	0	0	0	0	10	3	1	0	0	14	15	1	0	0	0	0	1	1
20:45	4	0	0	0	0	4	4	12	4	0	2	0	18	21	0	0	0	0	0	0	0
H/TOT	6	0	0	0	0	6	6	52	19	2	3	1	77	443	8	0	1	0	0	9	10
P/TOT	37	6	0	0	0	43	38	550	142	14	20	8	734	1372	51	17	1	0	1	70	79

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 02

DATE:

17th May 2022

LOCATION: R179/L4816/L49014

DAY:

Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
H/TOT	0	0	0	0	0	0	0	1	1	0	0	0	2	2	2	2	0	0	0	4	4
08:00	3	0	0	0	0	3	3	0	1	0	0	0	1	1	1	0	0	0	0	1	1
08:15	2	1	0	0	0	3	3	0	0	0	0	1	1	2	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	5	1	0	0	0	6	6	0	1	0	0	1	2	3	2	0	0	0	0	2	2
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:15	3	0	0	0	0	3	3	0	1	0	0	0	1	1	1	0	0	0	0	1	1
09:30	2	1	0	0	0	3	3	0	1	0	0	1	2	3	1	0	0	0	0	1	1
09:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	6	2	0	0	0	8	8	0	2	0	0	1	3	4	3	0	0	0	0	3	3
P/TOT	12	3	0	0	0	15	15	1	5	0	0	2	8	10	7	2	0	0	0	9	9

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	1	0	0	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	0	0	0
16:45	1	0	0	0	0	1	1	0	0	1	0	0	1	2	1	0	0	0	0	1	1
H/TOT	2	0	0	0	0	2	12	0	0	1	0	2	3	7	2	0	0	0	0	2	5
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	1	0	0	0	1	1
18:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
19:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
H/TOT	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	1	1
P/TOT	9	1	0	0	0	10	20	0	0	1	0	2	3	7	4	2	0	0	0	6	9

TRAFFINOMICS LIMITED

KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS

MAY 2022

MANUAL CLASSIFIED JUNCTION TURNING COUNTS

TRA/22/141

SITE: 02

DATE:

17th May 2022

LOCATION: R179/L4816/L49014

DAY:

Tuesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	3	2	0	0	1	6	7	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	4	4	0	1	0	9	10	0	0	0	0	0	0	0
06:30	1	0	0	0	0	1	1	8	7	1	0	0	16	17	1	0	0	0	0	1	1
06:45	0	1	0	0	0	1	1	15	6	1	1	0	23	25	0	1	0	1	0	2	3
H/TOT	1	1	0	0	0	2	2	30	19	2	2	1	54	59	1	1	0	1	0	3	4
07:00	1	0	0	0	0	1	1	19	6	0	1	0	26	27	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	24	11	1	1	0	37	39	1	1	0	0	0	2	2
07:30	0	0	0	0	0	0	0	28	14	0	3	0	45	49	5	2	1	2	0	10	13
07:45	0	1	0	0	0	1	1	28	14	1	1	2	46	50	1	3	0	0	0	4	4
H/TOT	1	1	0	0	0	2	2	99	45	2	6	2	154	165	7	6	1	2	0	16	19
08:00	1	0	0	0	0	1	1	39	6	1	1	4	51	57	1	0	0	3	0	4	8
08:15	0	0	0	0	0	0	0	48	3	0	4	0	55	60	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	41	10	1	6	1	59	68	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	35	8	1	3	0	47	51	0	0	0	2	0	2	5
H/TOT	1	0	0	0	0	1	1	163	27	3	14	5	212	237	1	0	0	5	0	6	13
09:00	0	0	0	0	0	0	0	32	9	1	4	0	46	52	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	24	7	1	3	1	36	41	1	2	0	2	0	5	8
09:30	0	0	0	0	0	0	0	19	5	4	3	0	31	37	0	1	1	0	0	2	3
09:45	0	0	0	0	0	0	0	22	12	2	2	0	38	42	1	1	0	1	0	3	4
H/TOT	0	0	0	0	0	0	0	97	33	8	12	1	151	172	2	4	1	3	0	10	14
P/TOT	3	2	0	0	0	5	5	389	124	15	34	9	571	632	11	11	2	11	0	35	50

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	0	0	0	0	0	0	43	9	3	6	1	62	72	0	1	0	1	0	2	3
16:15	0	0	0	0	0	0	0	41	15	4	3	1	64	71	0	0	0	1	0	1	2
16:30	0	1	0	0	0	1	1	31	10	2	4	1	48	55	1	0	0	0	0	1	1
16:45	1	0	0	0	0	1	1	50	12	2	1	0	65	67	1	1	0	1	0	3	4
H/TOT	1	1	0	0	0	2	1	165	46	11	14	3	239	367	2	2	0	3	0	7	23
17:00	0	0	0	0	0	0	0	49	13	1	1	0	64	66	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	45	12	3	1	0	61	64	1	0	0	0	0	1	1
17:30	1	0	0	0	0	1	1	45	10	1	2	0	58	61	1	0	0	1	0	2	3
17:45	0	0	0	0	0	0	0	41	10	1	1	2	55	59	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	180	45	6	5	2	238	250	3	0	0	1	0	4	5
18:00	0	0	0	0	0	0	0	23	18	1	0	0	42	43	0	0	0	0	0	0	0
18:15	1	0	0	0	0	1	1	36	9	0	0	1	46	47	1	0	0	0	0	1	1
18:30	0	0	0	0	0	0	0	35	2	1	0	0	38	39	1	1	0	0	0	2	2
18:45	0	0	0	0	0	0	0	32	3	0	0	0	35	35	1	0	0	0	0	1	1
H/TOT	1	0	0	0	0	1	1	126	32	2	0	1	161	163	3	1	0	0	0	4	4
19:00	0	0	0	0	0	0	0	28	7	0	3	0	38	42	1	0	0	0	0	1	1
19:15	0	0	0	0	0	0	0	18	6	0	0	0	24	24	0	3	0	0	0	3	3
19:30	1	0	0	0	0	1	1	21	2	0	1	0	24	25	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	16	3	0	0	0	19	19	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	1	83	18	0	4	0	105	110	1	3	0	0	0	4	4
20:00	0	0	0	0	0	0	0	28	3	0	0	0	31	31	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	14	6	1	1	0	22	24	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	13	0	0	0	0	13	13	1	0	0	0	0	1	1
20:45	0	0	0	0	0	0	0	14	4	0	1	0	19	20	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	69	13	1	2	0	85	88	1	0	0	0	0	1	1
P/TOT	4	1	0	0	0	5	4	623	154	20	25	6	828	978	10	6	0	4	0	20	37

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 02

DATE:

17th May 2022

LOCATION: R179/L4816/L49014

DAY:

Tuesday

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	2	1	0	0	0	3	3
07:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
07:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	0	0	0	3	3
07:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	1	0	0	0	2	2
07:45	1	0	0	1	0	2	3	0	0	0	0	0	0	0	2	2	0	0	1	5	6
H/TOT	2	0	0	3	0	5	9	0	0	0	0	0	0	0	6	6	0	0	1	13	14
08:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	1	1	0	2	0	4	7	0	0	0	0	0	0	0	3	1	0	0	0	4	4
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
08:45	0	1	0	1	0	2	3	0	0	0	0	0	0	0	4	0	0	0	0	4	4
H/TOT	2	2	0	3	0	7	11	0	0	0	0	0	0	0	12	1	0	0	0	13	13
09:00	1	1	0	1	0	3	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
09:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	0	0	4	4
09:30	0	0	0	2	0	2	5	0	0	0	0	0	0	0	0	1	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	2	1	0	3	0	6	10	0	0	0	0	0	0	0	5	3	0	0	0	8	8
P/TOT	6	4	0	9	0	19	31	0	0	0	0	0	0	0	25	11	0	0	1	37	38

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:30	1	0	0	2	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	2	0	0	0	2	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
H/TOT	1	2	0	2	0	5	21	0	0	0	0	0	0	0	5	2	0	0	0	7	19
17:00	0	0	0	1	0	1	2	0	0	0	0	0	0	0	3	0	0	0	0	3	3
17:15	1	1	1	0	0	3	4	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:30	1	3	0	0	0	4	4	0	2	0	0	0	2	2	1	1	0	0	0	2	2
17:45	5	3	0	1	0	9	10	0	1	0	0	0	1	1	3	2	0	0	0	5	5
H/TOT	7	7	1	2	0	17	20	0	3	0	0	0	3	3	7	4	0	0	0	11	11
18:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	0	0	0	3	3
18:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	4	2	0	0	0	6	6
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:45	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	3	0	0	0	3	3
H/TOT	2	1	0	0	0	3	3	1	0	0	0	0	1	1	8	5	0	0	0	13	13
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	2	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	2	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
H/TOT	1	2	0	0	0	3	3	0	0	0	0	0	0	0	3	1	0	0	0	4	4
P/TOT	12	14	1	4	0	31	50	1	3	0	0	0	4	4	24	12	0	0	0	36	48

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 02

DATE:

17th May 2022

LOCATION: R179/L4816/L49014

DAY:

Tuesday

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	1	0	0	0	0	1	1	11	2	0	0	0	13	13	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	8	8	1	0	0	17	18	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	11	6	0	2	0	19	22	0	0	0	0	0	0	0
06:45	1	0	0	0	0	1	1	16	9	1	1	0	27	29	0	0	0	0	0	0	0
H/TOT	2	0	0	0	0	2	2	46	25	2	3	0	76	81	0	0	0	0	0	0	0
07:00	1	1	0	0	0	2	2	15	12	2	7	0	36	46	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	13	8	0	3	0	24	28	0	1	0	0	0	1	1
07:30	2	2	0	0	0	4	4	45	15	0	0	0	60	60	0	1	0	0	0	1	1
07:45	0	2	0	0	0	2	2	51	17	0	3	1	72	77	0	0	0	0	0	0	0
H/TOT	3	5	0	0	0	8	8	124	52	2	13	1	192	211	0	2	0	0	0	2	2
08:00	0	1	0	0	0	1	1	43	3	0	3	0	49	53	0	0	0	0	0	0	0
08:15	2	1	0	0	1	4	5	43	4	0	3	1	51	56	1	0	0	0	0	1	1
08:30	2	1	0	0	0	3	3	43	10	1	3	1	58	63	0	0	0	0	0	0	0
08:45	1	1	0	0	0	2	2	31	13	4	3	0	51	57	0	0	0	0	0	0	0
H/TOT	5	4	0	0	1	10	11	160	30	5	12	2	209	229	1	0	0	0	0	1	1
09:00	2	1	0	0	0	3	3	24	5	3	1	0	33	36	0	0	0	0	0	0	0
09:15	4	0	0	0	0	4	4	19	5	4	4	0	32	39	0	0	0	0	0	0	0
09:30	1	1	0	0	0	2	2	27	4	0	3	0	34	38	1	0	0	0	0	1	1
09:45	1	0	0	0	0	1	1	16	7	1	3	0	27	31	0	0	0	0	0	0	0
H/TOT	8	2	0	0	0	10	10	86	21	8	11	0	126	144	1	0	0	0	0	1	1
P/TOT	18	11	0	0	1	30	31	416	128	17	39	3	603	665	2	2	0	0	0	4	4

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	3	0	0	0	0	3	3	30	11	2	3	1	47	53	2	0	0	0	0	2	2
16:15	0	2	0	0	1	3	4	31	9	0	2	1	43	47	1	0	1	0	0	2	3
16:30	1	0	0	0	0	1	1	26	5	2	6	1	40	50	1	0	0	0	0	1	1
16:45	2	0	0	0	0	2	2	24	19	3	1	0	47	50	0	0	0	0	0	0	0
H/TOT	6	2	0	0	1	9	20	111	44	7	12	3	177	342	4	0	1	0	0	5	2
17:00	3	3	0	0	0	6	6	44	15	1	0	0	60	61	0	0	0	0	0	0	0
17:15	2	1	0	0	0	3	3	40	7	1	0	1	49	51	1	0	0	0	0	1	1
17:30	2	0	0	0	0	2	2	39	15	2	0	0	56	57	2	1	0	0	0	3	3
17:45	1	0	0	0	0	1	1	44	1	0	0	1	46	47	2	0	0	0	0	2	2
H/TOT	8	4	0	0	0	12	12	167	38	4	0	2	211	215	5	1	0	0	0	6	6
18:00	1	3	1	0	0	5	6	49	8	1	0	0	58	59	2	0	0	0	0	2	2
18:15	3	0	0	0	0	3	3	43	6	0	1	0	50	51	0	0	0	0	0	0	0
18:30	2	1	0	0	0	3	3	27	5	0	1	0	33	34	1	0	0	0	0	1	1
18:45	0	1	0	0	0	1	1	22	6	0	3	0	31	35	0	0	0	0	0	0	0
H/TOT	6	5	1	0	0	12	13	141	25	1	5	0	172	179	3	0	0	0	0	3	3
19:00	3	0	0	0	0	3	3	22	2	0	0	1	25	26	2	1	0	0	0	3	3
19:15	1	1	0	0	0	2	2	21	6	0	0	0	27	27	0	0	0	0	0	0	0
19:30	1	1	0	0	0	2	2	21	5	0	0	0	26	26	0	0	0	0	0	0	0
19:45	1	0	0	0	0	1	1	27	4	0	0	0	31	31	0	0	0	0	0	0	0
H/TOT	6	2	0	0	0	8	8	91	17	0	0	1	109	110	2	1	0	0	0	3	3
20:00	2	1	0	0	0	3	3	16	9	1	1	0	27	29	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	13	2	0	0	1	16	17	1	0	0	0	0	1	1
20:30	0	0	0	0	0	0	0	11	3	1	0	0	15	16	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	12	4	0	2	0	18	21	1	0	0	0	0	1	1
H/TOT	2	1	0	0	0	3	3	52	18	2	3	1	76	82	2	0	0	0	0	2	2
P/TOT	28	14	1	0	1	44	56	562	142	14	20	7	745	928	16	2	1	0	0	19	16

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 03

DATE:

17th May 2022

LOCATION: L4816/Mine Access

DAY:

Tuesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
06:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
06:45	1	1	0	1	0	3	4	0	1	0	0	0	1	1	1	1	0	0	0	2	2
H/TOT	1	1	0	1	0	3	4	2	1	0	0	0	3	0	1	2	0	0	0	3	0
07:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	1	0	0	0	3	3
07:15	1	1	0	0	0	2	2	1	0	0	0	0	1	1	2	2	0	0	0	4	4
07:30	5	3	1	2	0	11	14	2	2	0	0	0	4	4	1	1	0	0	0	2	2
07:45	1	5	0	0	0	6	6	0	0	0	0	0	0	0	3	2	0	0	1	6	7
H/TOT	8	10	1	2	0	21	24	3	2	0	0	0	5	0	8	6	0	0	1	15	0
08:00	0	1	0	3	0	4	8	1	1	0	0	0	2	2	1	0	0	0	0	1	1
08:15	0	1	0	0	0	1	1	2	0	0	0	2	4	6	4	1	0	0	0	5	5
08:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	5	0	0	0	0	5	5
08:45	0	1	0	2	0	3	6	1	0	0	0	0	1	1	4	0	0	0	0	4	4
H/TOT	1	4	0	5	0	10	17	5	1	0	0	2	8	2	14	1	0	0	0	15	1
09:00	1	0	0	0	0	1	1	1	1	0	0	0	2	2	2	0	0	0	0	2	2
09:15	0	1	0	1	0	2	3	5	2	0	1	0	8	9	4	0	0	0	0	4	4
09:30	0	2	1	0	0	3	4	1	1	0	0	1	3	4	0	1	0	0	0	1	1
09:45	0	1	0	1	0	2	3	2	0	0	0	0	2	2	1	1	0	0	0	2	2
H/TOT	1	4	1	2	0	8	11	9	4	0	1	1	15	5	7	2	0	0	0	9	9
P/TOT	11	19	2	10	0	42	56	19	8	0	1	3	31	7	30	11	0	0	1	42	10

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	1	0	1	0	2	3	3	0	0	0	1	4	5	1	0	0	0	0	1	1
16:15	0	0	0	1	0	1	2	0	2	0	0	1	3	4	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	2	0	0	0	1	3	4	0	0	0	0	0	0	0
16:45	0	0	0	1	0	1	2	3	1	1	0	0	5	6	2	1	0	0	0	3	3
H/TOT	0	1	0	3	0	4	24	8	3	1	0	3	15	17	3	1	0	0	0	4	8
17:00	0	1	0	0	0	1	1	4	2	0	0	0	6	6	3	0	0	0	0	3	3
17:15	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	1	0	0	0	1	1
17:30	0	0	0	1	0	1	2	3	0	0	0	0	3	3	1	4	0	0	0	5	5
17:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	2	0	0	0	4	4
H/TOT	0	1	0	1	0	2	3	11	3	0	0	0	14	12	6	7	0	0	0	13	19
18:00	0	0	0	0	0	0	0	1	3	1	0	0	5	6	2	0	0	0	0	2	2
18:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	4	1	0	0	0	5	5
18:30	0	0	0	0	0	0	0	3	2	0	0	0	5	5	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	1	1	0	0	0	2	2	2	3	0	0	0	5	5
H/TOT	0	0	0	0	0	0	0	9	6	1	0	0	16	13	9	4	0	0	0	13	1
19:00	0	0	0	0	0	0	0	4	0	0	0	0	4	4	1	0	0	0	0	1	1
19:15	0	1	0	0	0	1	1	1	3	0	0	0	4	4	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	1	0	0	0	1	1
19:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	0	1	0	0	0	1	1	7	4	0	0	0	11	30	2	1	0	0	0	3	17
20:00	0	0	0	0	0	0	0	2	1	0	0	0	3	3	1	1	0	0	0	2	2
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
H/TOT	0	0	0	0	0	0	0	3	1	0	0	0	4	27	4	3	0	0	0	7	27
P/TOT	0	3	0	4	0	7	29	38	17	2	0	3	60	99	24	16	0	0	0	40	72

TRAFFINOMICS LIMITED

**KNOCKNACRAN OPEN CAST MINE TRAFFIC COUNTS
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

MAY 2022

TRA/22/141

SITE: 03

DATE:

17th May 2022

LOCATION: L4816/Mine Access

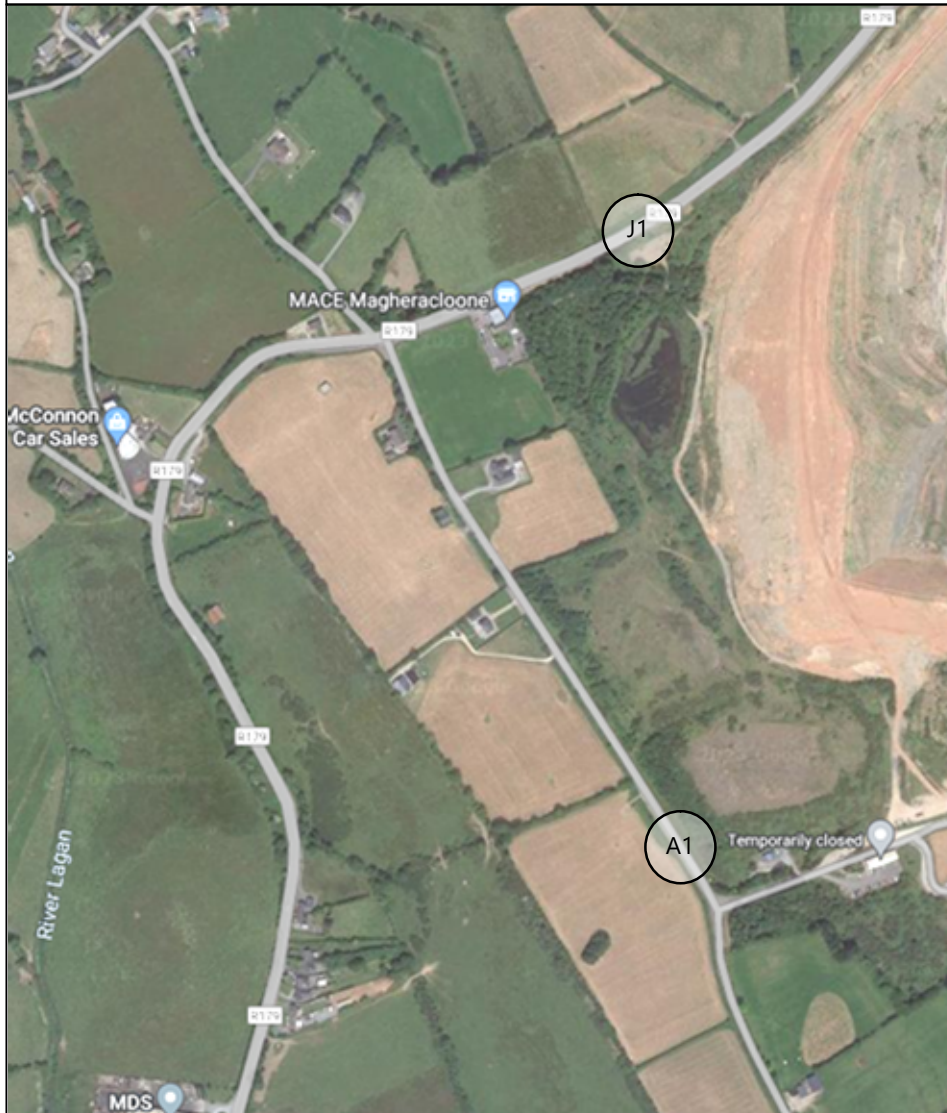
DAY:

Tuesday

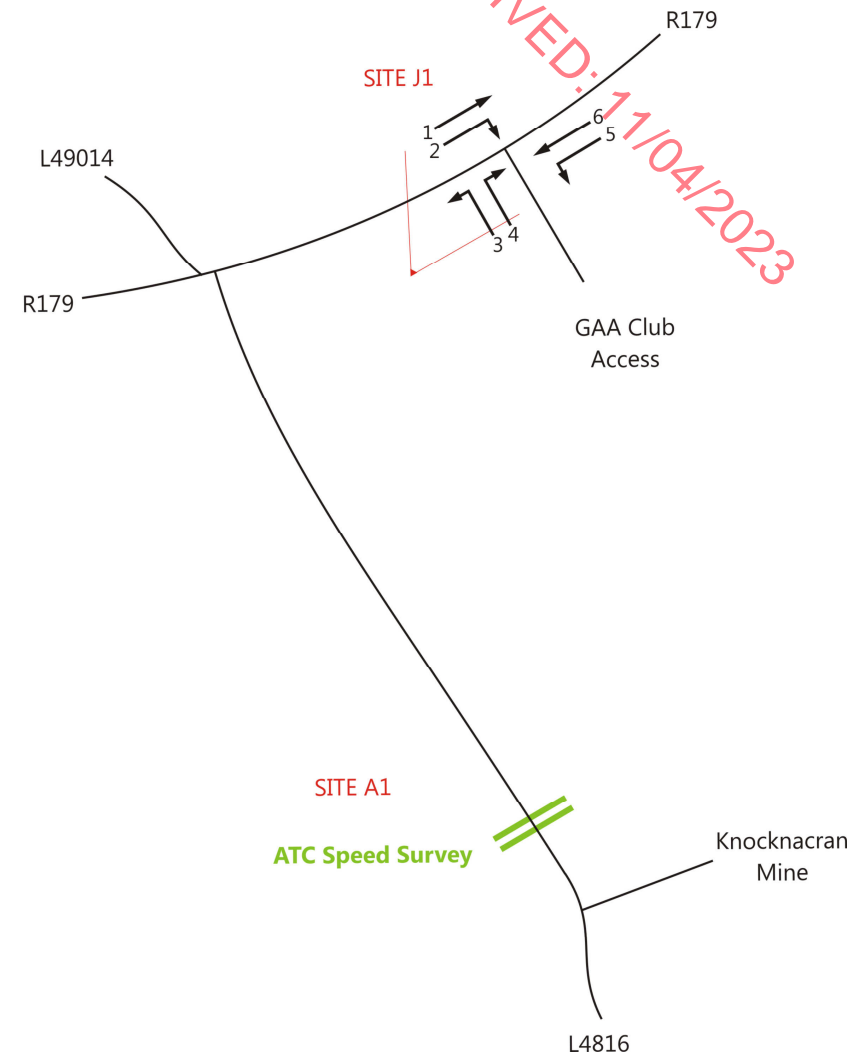
TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
H/TOT	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
07:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
H/TOT	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	3	0	3	7
08:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	6
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	1	0	2	3
H/TOT	1	0	0	0	0	1	1	0	0	0	1	0	1	2	0	2	0	3	0	5	9
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
09:15	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	1
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	2	0	3	0	5	9
P/TOT	2	2	0	0	0	4	4	0	1	0	1	0	2	3	1	4	0	9	0	14	26

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3	6
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	0	0	0	0	0	0	1	0	0	0	0	0	0	3	3	3	0	2	0	8	18
17:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	4
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
17:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	6	4	0	1	0	11	12
H/TOT	0	0	0	0	0	0	0	2	2	0	0	0	4	4	8	7	1	2	0	18	21
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	4
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	1	2	2	0	0	0	4	7	13	13	1	4	0	31	44

Site Locations



Movement Numbers



Job number:

TRA/23/026

Job Date:

1st February 2023

Drawing No:

TRA/23/026-01

Client:

PMCE Consulting Engineers

Job Day:

Wednesday

Author:

SPW



TRAFFINOMICS LIMITED

**KNOCKNACRAN MINE TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**FEBRUARY 2023
TRA/23/026**

SITE: 01 DATE: 1st February 2023
LOCATION: R179/GAA Club Access DAY: Wednesday

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15	9	3	0	0	0	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	9	7	1	1	0	18	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	9	1	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	31	12	1	1	0	45	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	17	5	1	1	0	24	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	21	5	3	0	0	29	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	38	9	1	2	1	51	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	43	16	3	0	1	63	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	119	35	8	3	2	167	177	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	45	11	0	0	4	60	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	42	11	1	2	1	57	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	44	12	0	1	0	57	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	43	7	0	1	0	51	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	174	41	1	4	5	225	236	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	37	7	1	2	1	48	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	60	8	2	3	1	74	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	26	5	1	2	0	34	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	35	9	2	0	0	46	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	158	29	6	7	2	202	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P/TOT	482	117	16	15	9	639	676	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	37	13	3	3	0	56	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	35	14	2	0	0	51	52	0	0	0	0	0	0	0	0	0	1	0	0	1	2
16:30	51	20	7	5	0	83	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	47	11	3	2	0	63	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	170	58	15	10	0	253	274	0	0	0	0	0	0	0	0	0	1	0	0	1	2
17:00	48	17	1	0	0	66	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	36	15	3	1	0	55	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	54	8	0	2	0	64	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	31	12	3	3	0	49	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	169	52	7	6	0	234	245	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	44	6	3	2	0	55	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	36	10	1	0	0	47	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	35	4	1	0	0	40	41	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:45	27	1	0	0	0	28	28	16	1	0	0	0	17	17	0	0	0	0	0	0	0
H/TOT	142	21	5	2	0	170	175	17	1	0	0	0	18	18	0	0	0	0	0	0	0
19:00	33	2	0	0	0	35	35	6	0	0	0	0	6	6	0	0	0	0	0	0	0
19:15	25	5	0	0	0	30	30	2	0	0	0	0	2	2	2	0	0	0	0	2	2
19:30	20	1	0	0	0	21	21	2	1	0	0	0	3	3	1	0	0	0	0	1	1
19:45	22	2	0	0	0	24	24	5	0	0	0	0	5	5	6	0	0	0	0	6	6
H/TOT	100	10	0	0	0	110	110	15	1	0	0	0	16	16	9	0	0	0	0	9	9
20:00	25	2	1	0	0	28	29	1	0	0	0	0	1	1	18	0	0	0	0	18	18
20:15	24	2	0	1	0	27	28	2	0	0	0	0	2	2	4	0	0	0	0	4	4
20:30	10	1	0	1	0	12	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	10	3	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	69	8	1	2	0	80	83	3	0	0	0	0	3	3	22	0	0	0	0	22	22
P/TOT	650	149	28	20	0	847	887	35	2	0	0	0	37	37	31	0	1	0	0	32	33

TRAFFINOMICS LIMITED

**KNOCKNACRAN MINE TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**FEBRUARY 2023
TRA/23/026**

SITE: 01
LOCATION: R179/GAA Club Access

DATE: 1st February 2023
DAY: Wednesday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	3	0	1	0	14	15
06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	8	9
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	3	0	1	0	22	23
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	4	0	2	0	22	25
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	10	0	5	0	66	73
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	4	1	0	0	21	22
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	9	1	0	1	35	37
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	15	1	0	2	65	68
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	19	4	3	1	81	88
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	47	7	3	4	202	213
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	15	0	3	0	59	63
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	10	1	2	1	56	60
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	5	3	2	1	54	59
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	4	3	4	0	50	57
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165	34	7	11	2	219	239
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	10	4	0	0	51	53
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	2	1	1	0	21	23
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	11	0	0	0	31	31
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	6	4	0	0	30	32
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	29	9	1	0	133	139
P/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	451	120	23	20	6	620	664

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	6	0	0	0	40	40
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	7	0	2	0	42	45
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	9	1	1	1	48	51
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	15	1	0	0	55	56
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142	37	2	3	1	185	191
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	10	1	0	0	44	45
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	14	2	0	0	64	65
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	20	3	0	0	66	68
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	5	2	1	0	53	55
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	49	8	1	0	227	232
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	1	1	1	0	58	60
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	3	0	0	0	31	31
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	4	0	1	0	43	44
18:45	0	0	0	0	0	0	0	22	1	0	0	0	23	23	28	3	0	0	0	31	31
H/TOT	0	0	0	0	0	0	0	22	1	0	0	0	23	23	149	11	1	2	0	163	166
19:00	1	0	0	0	0	1	1	6	0	0	0	0	6	6	27	3	0	0	0	30	30
19:15	0	0	0	0	0	0	0	4	0	0	0	0	4	4	20	4	0	0	0	24	24
19:30	3	0	0	0	0	3	3	2	0	0	0	0	2	2	18	3	1	0	0	22	23
19:45	12	1	0	0	0	13	13	6	0	0	0	0	6	6	20	2	1	0	0	23	24
H/TOT	16	1	0	0	0	17	17	18	0	0	0	0	18	18	85	12	2	0	0	99	100
20:00	18	1	0	0	0	19	19	1	0	0	0	0	1	1	12	2	1	0	0	15	16
20:15	6	1	0	0	0	7	7	3	0	0	0	0	3	3	12	6	0	0	0	18	18
20:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	12	0	0	0	1	13	14
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	3	0	0	0	23	23
H/TOT	27	2	0	0	0	29	29	4	0	0	0	0	4	4	56	11	1	0	1	69	71
P/TOT	43	3	0	0	0	46	46	44	1	0	0	0	45	45	601	120	14	6	2	743	760

TRAFFINOMICS LIMITED

**KNOCKNACRAN MINE TRAFFIC COUNT/SPEED SURVEY
AUTOMATIC TRAFFIC COUNT**

SUMMARY

WEEK COMMENCING:

**Wednesday 1 February 2023
TRA/23/026**

SITE 01

LOCATION: L4816 Immediately North of Knocknacran Mine Access (Google Maps Ref: 53.934784, -6.772593)

SPEED SURVEY SUMMARY:

NORTHBOUND 85% Speed = 65.38 km/h, 95% Speed = 69.93 km/h, Median = 52.92 km/h Maximum = 79.7 km/h, Minimum = 16.7 km/h, Mean = 52.0 km/h
SOUTHBOUND 85% Speed = 72.00 km/h, 95% Speed = 78.84 km/h, Median = 61.56 km/h Maximum = 90.1 km/h, Minimum = 5.9 km/h, Mean = 61.3 km/h

VOLUMETRIC VEHICLE COUNTS:

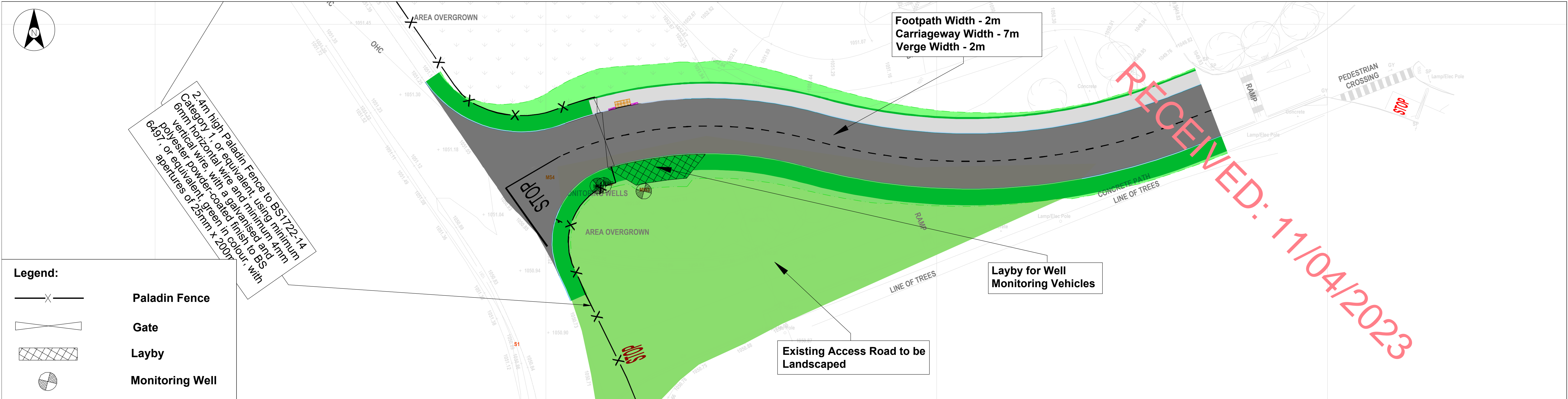
Direction	Time	Wednesday 1 February 2023
NORTHBOUND	07-19	172
SOUTHBOUND	07-19	188
NORTHBOUND	00-00	206
SOUTHBOUND	00-00	229

PEAK FLOW SUMMARY:

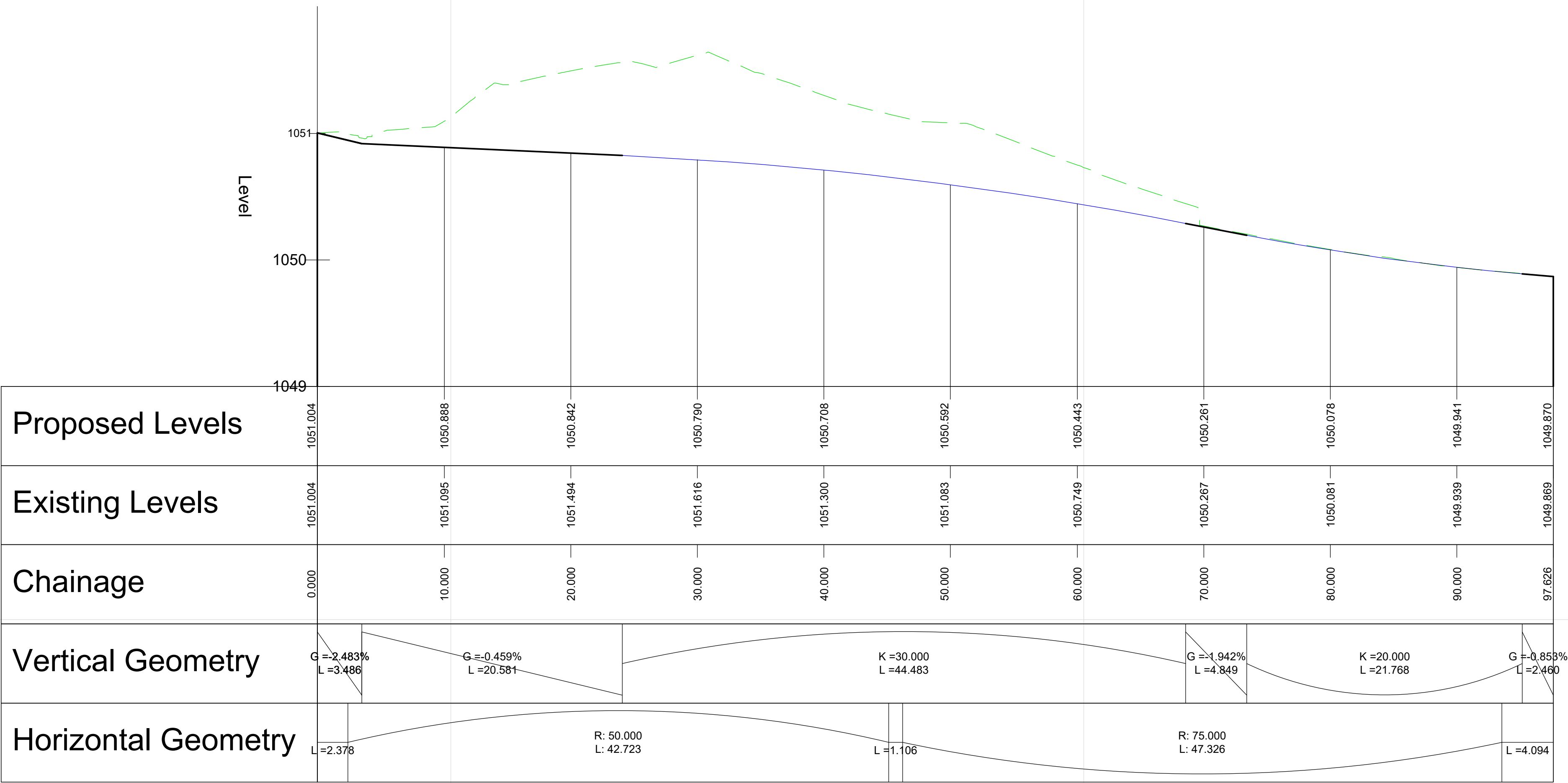
Peak	AM	IP	PM
Peak Hour	0800	1200	1800
Vehicles per Peak Hour	22	18	21

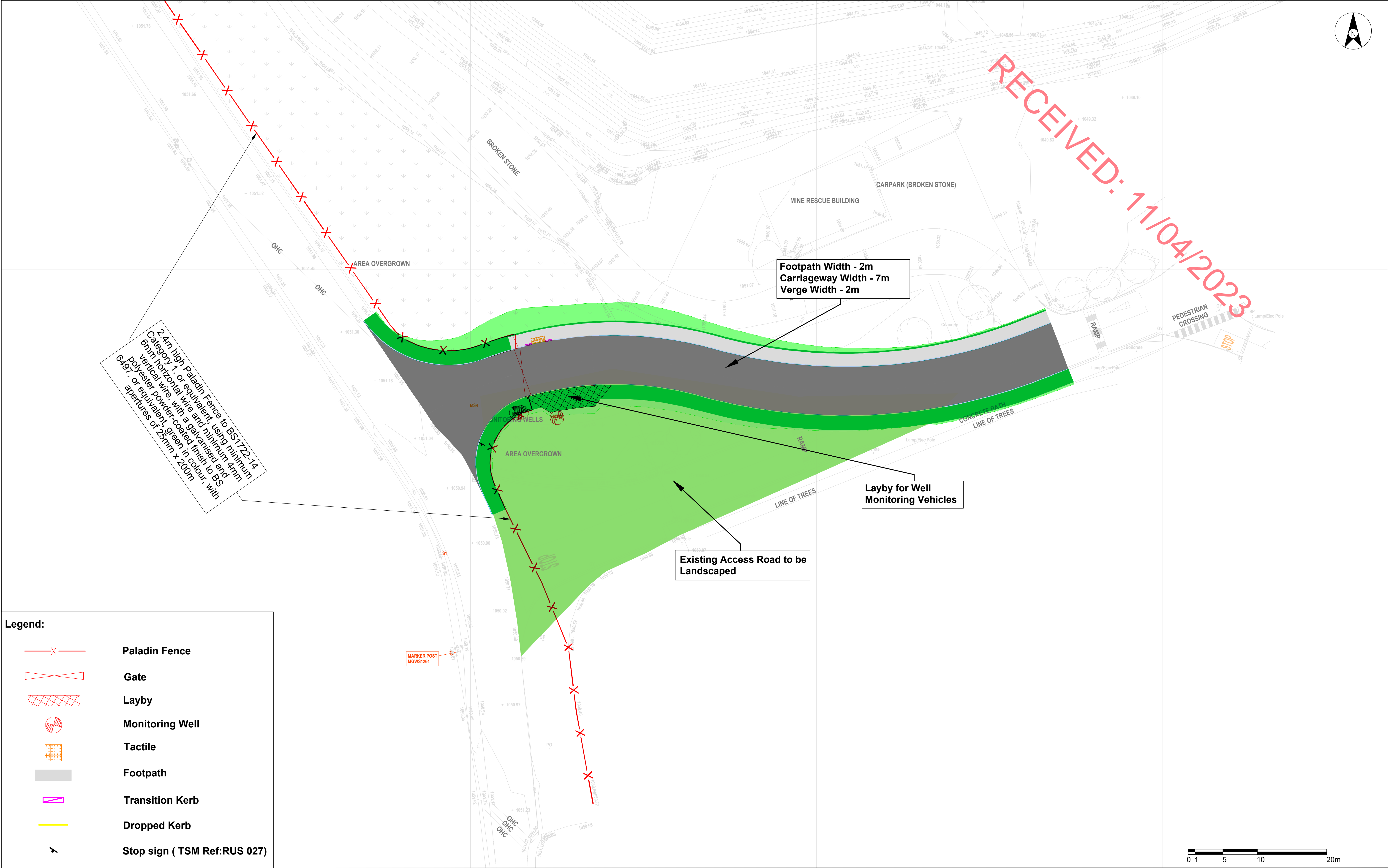
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Appendix C – Relocated Mine Entrance Drawings



MINE ACCESS - LONGSECTION
SCALE: H 1:250,V 1:25. DATUM: 1049.000





Legend:

	Paladin Fence
	Gate
	Layby
	Monitoring Well
	Tactile
	Footpath
	Transition Kerb
	Dropped Kerb
	Stop sign (TSM Ref:RUS 027)

Notes:

P·M·C·E
CONSULTANTS
Independent Specialists · Engineering Solutions

Client: **SLR**

Rev	Date	Drawn	Check	App.	Comments

Project: Knocknacran West Open-Cast Mine Relocated Mine Entrance					
Drawing Title: General Arrangement					
Scale: 1:250 @ A1	1:500 @ A3	Date: 28/03/2023	Drawn: AMG	Check: RF	Approved: PJM
Drawing No: P22-069-PSW5-P-DG-GA-001			Suitability: S5	Revision: 3.0	Status: Approved



Notes:

Legend:



Paladin Fence

Gate



Layby

2.4m high Paladin Fence to BS1722-14 Category 1, or equivalent, using minimum 6mm horizontal wire and minimum 4mm vertical wire, with a galvanised and polyester powder-coated finish to BS 6497, or equivalent, green in colour, with apertures of 25mm x 200mm

P·M·C·E
CONSULTANTS
Independent Specialists · Engineering Solutions

	Client:
--	----------------

SLR 

Rev	Date	Drawn	Check	App.	Comments


Project:	Knocknacran West Open-Cast Mine Relocated Mine Entrance					
Drawing Title:	Fencing					
Scale:	1:250 @ A1	1:500 @ A3	Date: 28/03/2023	Drawn: AMG	Check: RF	Approved: PJM
Drawing No:	P22-069.PSW5.P-DG-EE-004	Suitability: 5	Revision: 2.0	Status:	Approved	


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Appendix D – Sightline Drawings



Legend:

 Visibility Splay

 Fence

Notes:

P·M·C·E

CONSULTANTS

Independent Specialists · Engineering Solutions

Client:

SLR



Rev	Date	Drawn	Check	App.	Comments

Project:

Knocknacran West Open-Cast Mine
Relocated Mine Entrance

Drawing Title:

Visibility Envelope

Scale:

1:250 @ A1

1:500 @ A3

Date:

28/03/2023

Drawn:

RIF

Check:

MAH

Approved:

TAG

Drawing No:

P22-069-PSW5-P-DG-VE-001

Suitability:

S5

Revision:

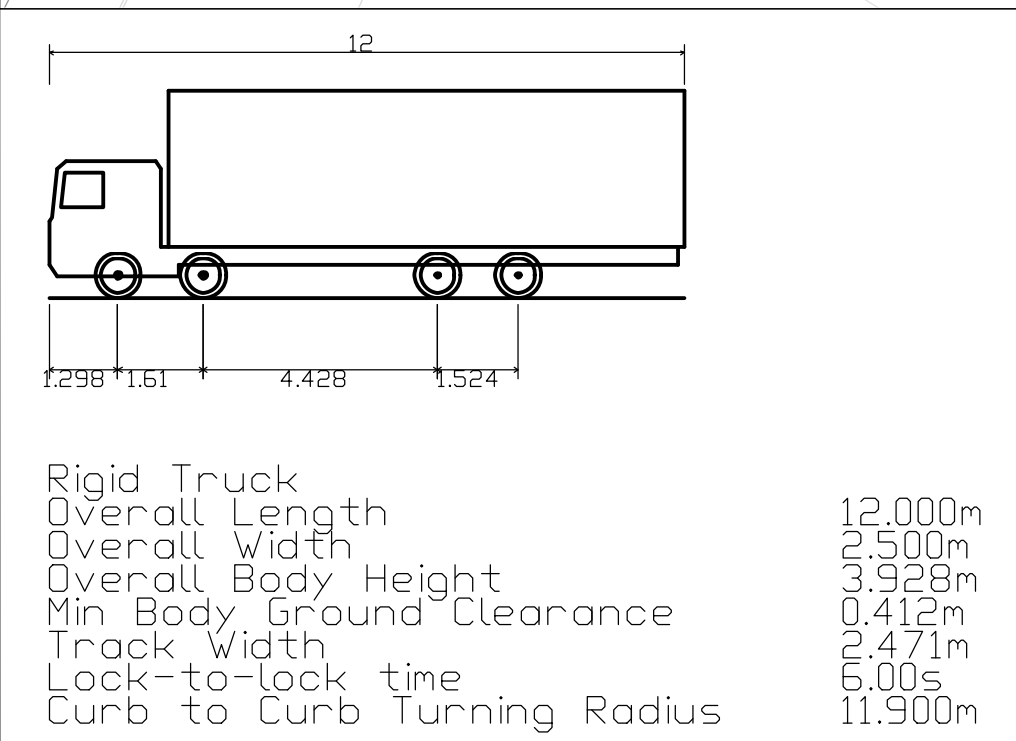
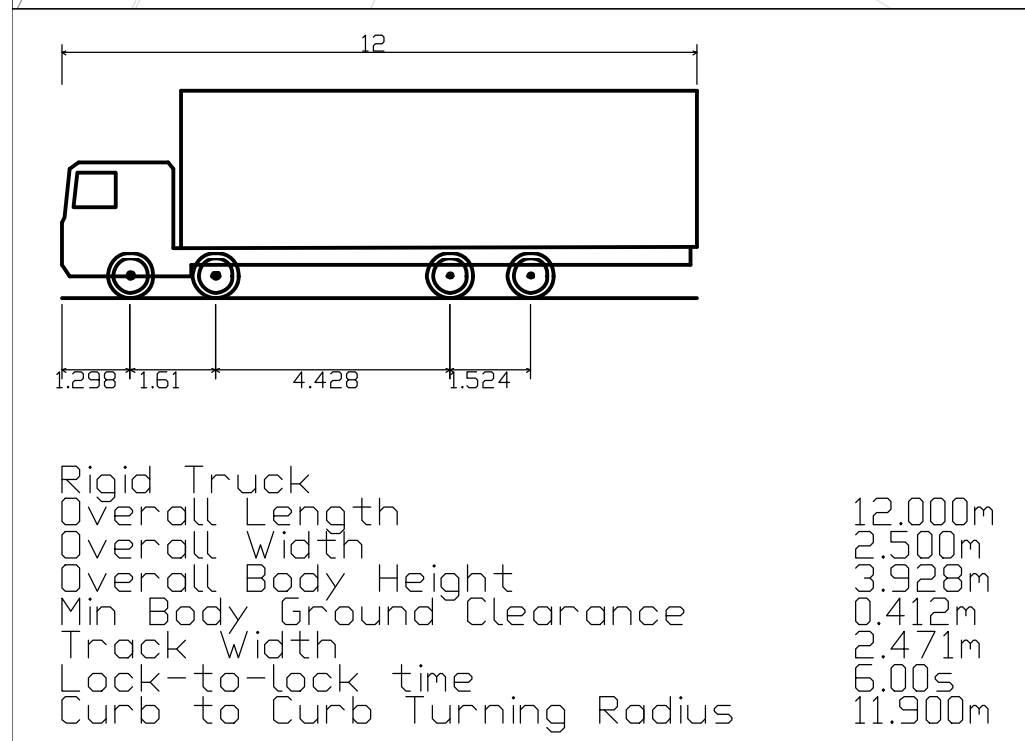
3.0

Status:

Approved

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Appendix E – Swept Path Analysis Drawings



Notes:

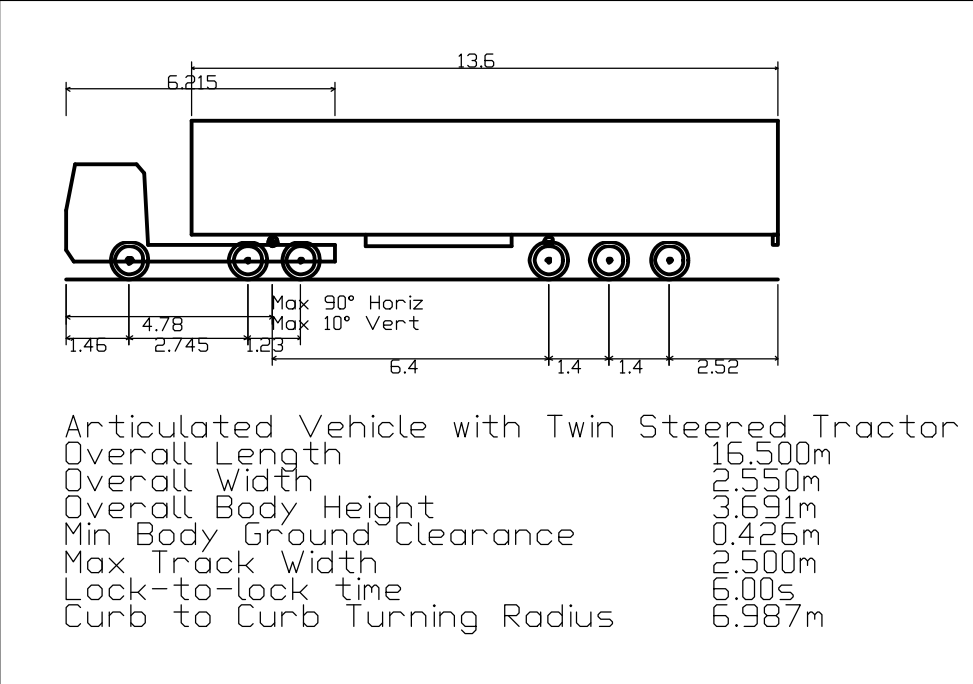
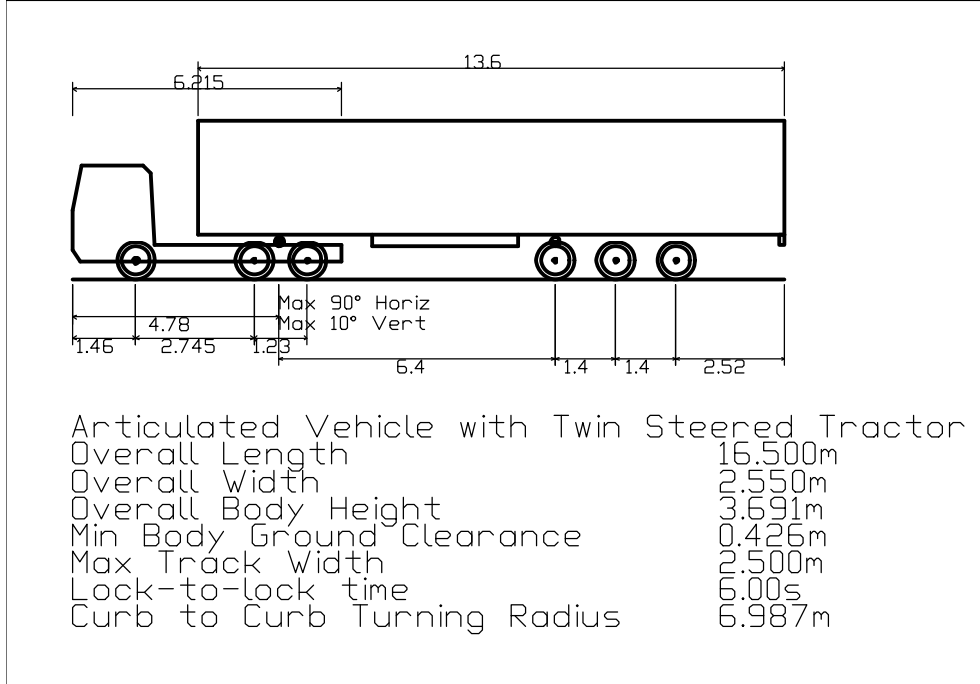
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Client:



Rev	Date	Drawn	Check	App.	Comments

Project: Knocknacran West Open-Cast Mine Relocated Mine Entrance					
Drawing Title: Swept Path - Sheet 1 of 3					
Scale: 1:250 @ A1 A3 Scale @ A3	Date: 28/03/2023	Drawn: RIF	Check: PJM	Approved: PJM	
Drawing No: P22-069-PSW5-P-DG-SP-001	Suitability: S5	Revision: 3.0	Status: Approved		



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Appendix F – Junctions 9 Reports

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

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Filename: Site 1- Staggered Junction.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\1.Construction years

Report generation date: 22/02/2023 11:54:30

- »2024, AM
- »2024, PM
- »2025, AM
- »2025, PM
- »2024+GAA Ph2+ Mine Con+DG , AM
- »2024+GAA Ph2+ Mine Con+DG, PM
- »2025+GAA Ph2+ Mine Con+DG , AM
- »2025+GAA Ph2+ Mine Con+DG , PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2024								
Stream B-CD	0.1	6.12	0.05	A	0.1	5.94	0.05	A
Stream B-A	0.0	8.38	0.03	A	0.0	8.47	0.02	A
Stream AB-CD	0.0	13.67	0.03	B	0.1	7.02	0.06	A
Stream D-AB	0.0	5.65	0.04	A	0.0	5.77	0.02	A
Stream D-C	0.0	7.22	0.03	A	0.0	7.24	0.02	A
Stream CD-AB	0.0	6.83	0.04	A	0.0	6.84	0.04	A
2025								
Stream B-CD	0.1	6.13	0.05	A	0.1	5.95	0.05	A
Stream B-A	0.0	8.41	0.03	A	0.0	8.49	0.02	A
Stream AB-CD	0.0	13.70	0.03	B	0.1	7.04	0.06	A
Stream D-AB	0.0	5.67	0.04	A	0.0	5.78	0.02	A
Stream D-C	0.0	7.25	0.03	A	0.0	7.27	0.02	A
Stream CD-AB	0.0	6.84	0.04	A	0.0	6.86	0.04	A
2024+GAA Ph2+ Mine Con+DG								
Stream B-CD	0.1	6.49	0.05	A	0.1	5.97	0.05	A
Stream B-A	0.0	8.73	0.04	A	0.0	8.79	0.02	A
Stream AB-CD	0.3	16.58	0.22	C	0.1	7.33	0.08	A
Stream D-AB	0.1	5.74	0.06	A	0.1	8.17	0.12	A
Stream D-C	0.0	8.33	0.04	A	0.1	10.27	0.13	B
Stream CD-AB	0.0	7.25	0.04	A	0.0	6.87	0.04	A
2025+GAA Ph2+ Mine Con+DG								
Stream B-CD	0.1	6.44	0.05	A	0.1	5.98	0.05	A
Stream B-A	0.0	8.66	0.04	A	0.0	8.78	0.02	A
Stream AB-CD	0.2	15.48	0.15	C	0.1	7.41	0.08	A
Stream D-AB	0.1	5.97	0.06	A	0.1	6.59	0.07	A
Stream D-C	0.0	8.11	0.04	A	0.1	8.16	0.09	A
Stream CD-AB	0.0	7.19	0.04	A	0.0	6.89	0.04	A

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

File summary

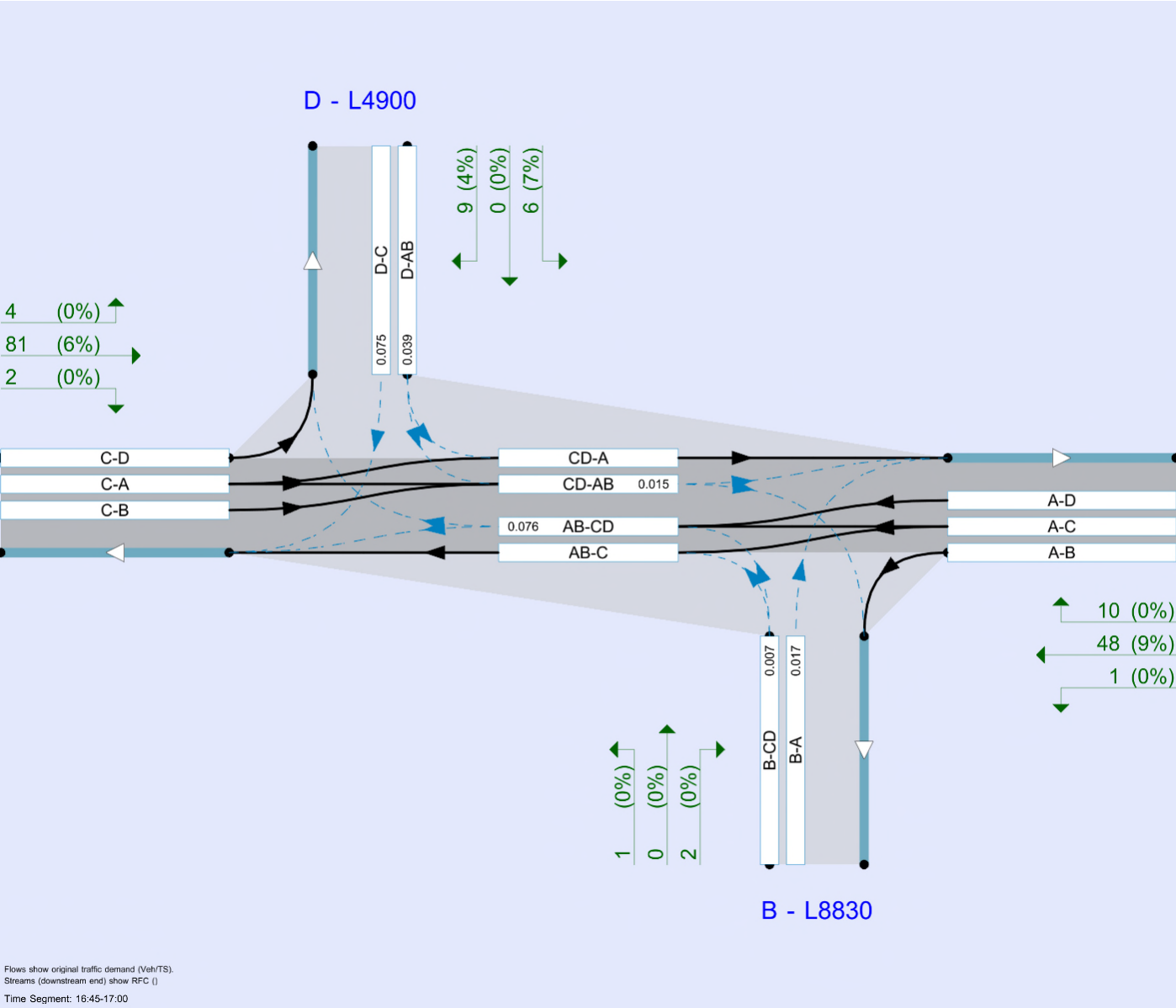
File Description

Title	
Location	
Site number	
Date	22/02/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

RECEIVED: 11/04/2023

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	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	AM	DIRECT	07:45	08:45	60	15			
D2	2024	PM	DIRECT	16:45	17:45	60	15	✓		
D3	2025	AM	DIRECT	07:45	08:45	60	15	✓		
D4	2025	PM	DIRECT	16:45	17:45	60	15	✓		
D5	Construction West Mine Traffic	AM	DIRECT	07:45	08:45	60	15			
D6	Construction West Mine Traffic	PM	DIRECT	16:45	17:45	60	15			
D7	Construction GAA Phase 2	AM	DIRECT	07:45	08:45	60	15			
D8	Construction GAA Phase 2	PM	DIRECT	16:45	17:45	60	15			
D9	Construction Road Diversion Traffic	AM	DIRECT	07:45	08:45	60	15			
D10	Construction Road Diversion Traffic	PM	DIRECT	16:45	17:45	60	15			
D11	Construction Tunnel Traffic	AM	DIRECT	07:45	08:45	60	15			
D12	Construction Tunnel Traffic	PM	DIRECT	16:45	17:45	60	15			
D13	2024+GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D5+D7+D9
D14	2024+GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D6+D8+D10
D15	2025+GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5+D7+D11
D16	2025+GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D6+D8+D12

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R179 East		Major
B	L8830		Minor
C	R179 West		Major
D	L4900		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - R179 East	6.00	✓	2.50	✓	2.50	30.0	✓	4.00
C - R179 West	7.30	✓	2.50	✓	2.50	30.0	✓	4.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - L8830	One lane plus flare	10.00	5.00	3.50	3.00	3.00		1.00	30	50
D - L4900	One lane plus flare	10.00	9.80	5.20	4.00	3.00		1.00	160	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for A-D	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
1	AB-D	152.661	-	-	-	-	-	0.237	0.237	0.237	-	-
1	B-A	132.109	0.086	0.217	0.217	-	-	0.137	0.311	-	0.137	0.311
1	B-CD	176.795	0.102	0.259	0.259	-	-	-	-	-	-	-
1	CD-B	152.661	0.223	0.223	0.223	-	-	-	-	-	-	-
1	D-AB	185.118	-	-	-	-	-	0.287	0.287	0.114	-	-
1	D-C	161.680	-	0.177	0.403	0.177	0.403	0.282	0.282	0.112	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

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Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	0.00	63.55	1.05
	B - L8830	1.02	0.00	8.19	0.00
	C - R179 West	47.20	2.05	0.00	3.07
	D - L4900	5.12	0.00	4.09	0.00

Demand (Veh/TS)

08:00 - 08:15

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	0.00	48.17	1.02
	B - L8830	4.09	0.00	1.02	0.00
	C - R179 West	53.37	1.02	0.00	1.02
	D - L4900	2.07	1.02	2.05	0.00

Demand (Veh/TS)

08:15 - 08:30

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.02	52.32	0.00
	B - L8830	1.02	0.00	4.09	0.00
	C - R179 West	62.52	0.00	0.00	1.02
	D - L4900	4.12	1.02	1.02	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.02	61.53	2.05
	B - L8830	3.07	0.00	1.02	0.00
	C - R179 West	58.54	4.09	0.00	3.07
	D - L4900	6.14	1.02	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0	0	7	100
	B - L8830	0	0	0	0
	C - R179 West	11	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.12	0.1	A	3.58	14.32
B-A	0.03	8.38	0.0	A	2.30	9.21
A-B					0.51	2.05
A-C					56.39	225.56
A-D					1.03	4.12
AB-CD	0.03	13.67	0.0	B	1.03	4.12
AB-C					59.97	239.88
D-AB	0.04	5.65	0.0	A	5.13	20.52
D-C	0.03	7.22	0.0	A	1.79	7.16
C-D					2.05	8.19
C-A					55.41	221.64
C-B					1.79	7.16
CD-AB	0.04	6.83	0.0	A	2.56	10.22
CD-A					59.76	239.05

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.19	8.19	158.36	0.052	8.13	0.0	0.1	5.989	A
B-A	1.02	1.02	108.40	0.009	1.01	0.0	0.0	8.381	A
A-B	0.00	0.00			0.00				
A-C	63.55	63.55			63.55				
A-D	1.05	1.05			1.05				
AB-CD	1.05	1.05	69.54	0.015	1.04	0.0	0.0	13.135	B
AB-C	71.68	71.68			71.68				
D-AB	5.12	5.12	167.81	0.030	5.08	0.0	0.0	5.531	A
D-C	4.09	4.09	131.65	0.031	4.06	0.0	0.0	7.052	A
C-D	3.07	3.07			3.07				
C-A	47.20	47.20			47.20				
C-B	2.05	2.05			2.05				
CD-AB	2.05	2.05	137.07	0.015	2.03	0.0	0.0	6.664	A
CD-A	52.29	52.29			52.29				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	150.08	0.007	1.07	0.1	0.0	6.040	A
B-A	4.09	4.09	121.89	0.034	4.07	0.0	0.0	7.635	A
A-B	0.00	0.00			0.00				
A-C	48.17	48.17			48.17				
A-D	1.02	1.02			1.02				
AB-CD	1.02	1.02	69.08	0.015	1.02	0.0	0.0	13.222	B
AB-C	49.24	49.24			49.24				
D-AB	3.10	3.10	168.20	0.018	3.11	0.0	0.0	5.453	A
D-C	2.05	2.05	133.45	0.015	2.06	0.0	0.0	6.849	A
C-D	1.02	1.02			1.02				
C-A	53.37	53.37			53.37				
C-B	1.02	1.02			1.02				
CD-AB	2.04	2.04	140.74	0.014	2.04	0.0	0.0	6.490	A
CD-A	55.46	55.46			55.46				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.09	4.09	160.48	0.026	4.07	0.0	0.0	5.754	A
B-A	1.02	1.02	112.14	0.009	1.05	0.0	0.0	8.103	A
A-B	1.02	1.02			1.02				
A-C	52.32	52.32			52.32				
A-D	0.00	0.00			0.00				
AB-CD	0.00	0.00	135.98	0.000	0.02	0.0	0.0	0.000	A
AB-C	56.39	56.39			56.39				
D-AB	5.14	5.14	164.28	0.031	5.13	0.0	0.0	5.654	A
D-C	1.02	1.02	125.62	0.008	1.03	0.0	0.0	7.223	A
C-D	1.02	1.02			1.02				
C-A	62.52	62.52			62.52				
C-B	0.00	0.00			0.00				
CD-AB	1.02	1.02	139.98	0.007	1.03	0.0	0.0	6.476	A
CD-A	66.63	66.63			66.63				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	148.05	0.007	1.04	0.0	0.0	6.124	A
B-A	3.07	3.07	114.92	0.027	3.05	0.0	0.0	8.044	A
A-B	1.02	1.02			1.02				
A-C	61.53	61.53			61.53				
A-D	2.05	2.05			2.05				
AB-CD	2.05	2.05	67.85	0.030	2.02	0.0	0.0	13.667	B
AB-C	62.57	62.57			62.57				
D-AB	7.16	7.16	166.44	0.043	7.15	0.0	0.0	5.649	A
D-C	0.00	0.00	120.16	0.000	0.01	0.0	0.0	0.000	A
C-D	3.07	3.07			3.07				
C-A	58.54	58.54			58.54				
C-B	4.09	4.09			4.09				
CD-AB	5.12	5.12	136.88	0.037	5.08	0.0	0.0	6.827	A
CD-A	64.67	64.67			64.67				

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.02	47.18	7.16
	B - L8830	2.05	0.00	1.02	0.00
	C - R179 West	67.61	2.05	0.00	1.02
	D - L4900	1.02	0.00	2.05	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	3.07	63.46	3.07
	B - L8830	1.02	0.00	4.09	1.02
	C - R179 West	63.49	4.09	0.00	1.02
	D - L4900	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	3.07	46.10	7.16
	B - L8830	1.02	0.00	7.16	1.02
	C - R179 West	61.50	2.05	0.00	2.05
	D - L4900	1.02	2.05	1.02	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.07	59.40	4.09
	B - L8830	0.00	0.00	2.05	1.02
	C - R179 West	55.33	5.12	0.00	1.02
	D - L4900	3.07	0.00	1.02	0.00

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Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	9	0
	B - L8830	0	0	0	0
	C - R179 West	5	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	5.94	0.1	A	4.35	17.39
B-A	0.02	8.47	0.0	A	1.02	4.09
A-B					2.56	10.23
A-C					54.03	216.13
A-D					5.37	21.49
AB-CD	0.06	7.02	0.1	A	6.14	24.55
AB-C					57.61	230.44
D-AB	0.02	5.77	0.0	A	1.79	7.16
D-C	0.02	7.24	0.0	A	1.02	4.09
C-D					1.28	5.12
C-A					61.98	247.93
C-B					3.33	13.30
CD-AB	0.04	6.84	0.0	A	3.84	15.35
CD-A					63.26	253.03

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	154.09	0.007	1.02	0.0	0.0	5.879	A
B-A	2.05	2.05	124.32	0.016	2.03	0.0	0.0	7.359	A
A-B	1.02	1.02			1.02				
A-C	47.18	47.18			47.18				
A-D	7.16	7.16			7.16				
AB-CD	7.16	7.16	135.19	0.053	7.11	0.0	0.1	7.023	A
AB-C	48.19	48.19			48.19				
D-AB	1.02	1.02	156.94	0.007	1.02	0.0	0.0	5.771	A
D-C	2.05	2.05	134.13	0.015	2.03	0.0	0.0	6.812	A
C-D	1.02	1.02			1.02				
C-A	67.61	67.61			67.61				
C-B	2.05	2.05			2.05				
CD-AB	2.05	2.05	139.37	0.015	2.03	0.0	0.0	6.553	A
CD-A	68.63	68.63			68.63				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.12	5.12	156.60	0.033	5.09	0.0	0.0	5.940	A
B-A	1.02	1.02	107.35	0.010	1.03	0.0	0.0	8.467	A
A-B	3.07	3.07			3.07				
A-C	63.46	63.46			63.46				
A-D	3.07	3.07			3.07				
AB-CD	4.09	4.09	135.73	0.030	4.11	0.1	0.0	6.838	A
AB-C	67.53	67.53			67.53				
D-AB	0.00	0.00	157.26	0.000	0.01	0.0	0.0	0.000	A
D-C	0.00	0.00	132.93	0.000	0.02	0.0	0.0	0.000	A
C-D	1.02	1.02			1.02				
C-A	63.49	63.49			63.49				
C-B	4.09	4.09			4.09				
CD-AB	4.09	4.09	135.86	0.030	4.08	0.0	0.0	6.829	A
CD-A	63.50	63.50			63.50				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.19	8.19	161.26	0.051	8.17	0.0	0.1	5.878	A
B-A	1.02	1.02	109.15	0.009	1.02	0.0	0.0	8.324	A
A-B	3.07	3.07			3.07				
A-C	46.10	46.10			46.10				
A-D	7.16	7.16			7.16				
AB-CD	8.19	8.19	136.46	0.060	8.15	0.0	0.1	7.012	A
AB-C	53.24	53.24			53.24				
D-AB	3.07	3.07	170.44	0.018	3.05	0.0	0.0	5.376	A
D-C	1.02	1.02	125.28	0.008	1.01	0.0	0.0	7.242	A
C-D	2.05	2.05			2.05				
C-A	61.50	61.50			61.50				
C-B	2.05	2.05			2.05				
CD-AB	4.08	4.08	139.17	0.029	4.08	0.0	0.0	6.664	A
CD-A	62.52	62.52			62.52				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.07	3.07	160.29	0.019	3.10	0.1	0.0	5.726	A
B-A	0.00	0.00	103.99	0.000	0.01	0.0	0.0	0.000	A
A-B	3.07	3.07			3.07				
A-C	59.40	59.40			59.40				
A-D	4.09	4.09			4.09				
AB-CD	5.12	5.12	137.51	0.037	5.14	0.1	0.0	6.802	A
AB-C	61.48	61.48			61.48				
D-AB	3.07	3.07	171.54	0.018	3.07	0.0	0.0	5.343	A
D-C	1.02	1.02	125.89	0.008	1.02	0.0	0.0	7.206	A
C-D	1.02	1.02			1.02				
C-A	55.33	55.33			55.33				
C-B	5.12	5.12			5.12				
CD-AB	5.13	5.13	136.62	0.038	5.12	0.0	0.0	6.843	A
CD-A	58.39	58.39			58.39				

2025, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2025	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	64.33	1.08
		B - L8830	1.03	0.00	8.28	0.00
		C - R179 West	47.82	2.07	0.00	3.10
		D - L4900	5.17	0.00	4.14	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	48.77	1.03
		B - L8830	4.14	0.00	1.03	0.00
		C - R179 West	54.07	1.03	0.00	1.03
		D - L4900	2.11	1.03	2.07	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.03	52.99	0.00
		B - L8830	1.03	0.00	4.14	0.00
		C - R179 West	63.30	0.00	0.00	1.03
		D - L4900	4.18	1.03	1.03	0.00

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Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.03	62.31	2.07
	B - L8830	3.10	0.00	1.03	0.00
	C - R179 West	59.33	4.14	0.00	3.10
	D - L4900	6.21	1.03	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	7	100
	B - L8830	0	0	0	0
	C - R179 West	11	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.13	0.1	A	3.62	14.49
B-A	0.03	8.41	0.0	A	2.33	9.31
A-B					0.52	2.07
A-C					57.10	228.40
A-D					1.05	4.18
AB-CD	0.03	13.70	0.0	B	1.05	4.18
AB-C					60.72	242.88
D-AB	0.04	5.67	0.0	A	5.20	20.78
D-C	0.03	7.25	0.0	A	1.81	7.24
C-D					2.07	8.28
C-A					56.13	224.52
C-B					1.81	7.24
CD-AB	0.04	6.84	0.0	A	2.59	10.34
CD-A					60.54	242.16

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.28	8.28	158.11	0.052	8.22	0.0	0.1	6.003	A
B-A	1.03	1.03	108.08	0.010	1.03	0.0	0.0	8.407	A
A-B	0.00	0.00			0.00				
A-C	64.33	64.33			64.33				
A-D	1.08	1.08			1.08				
AB-CD	1.08	1.08	69.44	0.016	1.06	0.0	0.0	13.158	B
AB-C	72.56	72.56			72.56				
D-AB	5.17	5.17	167.57	0.031	5.14	0.0	0.0	5.541	A
D-C	4.14	4.14	131.23	0.032	4.11	0.0	0.0	7.078	A
C-D	3.10	3.10			3.10				
C-A	47.82	47.82			47.82				
C-B	2.07	2.07			2.07				
CD-AB	2.07	2.07	136.86	0.015	2.05	0.0	0.0	6.676	A
CD-A	52.96	52.96			52.96				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	149.90	0.007	1.08	0.1	0.0	6.051	A
B-A	4.14	4.14	121.59	0.034	4.11	0.0	0.0	7.659	A
A-B	0.00	0.00			0.00				
A-C	48.77	48.77			48.77				
A-D	1.03	1.03			1.03				
AB-CD	1.04	1.04	68.98	0.015	1.04	0.0	0.0	13.245	B
AB-C	49.85	49.85			49.85				
D-AB	3.15	3.15	167.97	0.019	3.16	0.0	0.0	5.460	A
D-C	2.07	2.07	133.06	0.016	2.09	0.0	0.0	6.874	A
C-D	1.03	1.03			1.03				
C-A	54.07	54.07			54.07				
C-B	1.03	1.03			1.03				
CD-AB	2.06	2.06	140.58	0.015	2.06	0.0	0.0	6.496	A
CD-A	56.20	56.20			56.20				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.14	4.14	160.27	0.026	4.12	0.0	0.0	5.763	A
B-A	1.03	1.03	111.82	0.009	1.06	0.0	0.0	8.128	A
A-B	1.03	1.03			1.03				
A-C	52.99	52.99			52.99				
A-D	0.00	0.00			0.00				
AB-CD	0.00	0.00	135.75	0.000	0.02	0.0	0.0	0.000	A
AB-C	57.11	57.11			57.11				
D-AB	5.22	5.22	164.01	0.032	5.20	0.0	0.0	5.667	A
D-C	1.03	1.03	125.21	0.008	1.04	0.0	0.0	7.250	A
C-D	1.03	1.03			1.03				
C-A	63.30	63.30			63.30				
C-B	0.00	0.00			0.00				
CD-AB	1.03	1.03	139.81	0.007	1.04	0.0	0.0	6.487	A
CD-A	67.47	67.47			67.47				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	147.81	0.007	1.05	0.0	0.0	6.135	A
B-A	3.10	3.10	114.52	0.027	3.09	0.0	0.0	8.075	A
A-B	1.03	1.03			1.03				
A-C	62.31	62.31			62.31				
A-D	2.07	2.07			2.07				
AB-CD	2.07	2.07	67.73	0.031	2.04	0.0	0.0	13.697	B
AB-C	63.36	63.36			63.36				
D-AB	7.24	7.24	166.15	0.044	7.23	0.0	0.0	5.663	A
D-C	0.00	0.00	119.73	0.000	0.01	0.0	0.0	0.000	A
C-D	3.10	3.10			3.10				
C-A	59.33	59.33			59.33				
C-B	4.14	4.14			4.14				
CD-AB	5.17	5.17	136.67	0.038	5.14	0.0	0.0	6.841	A
CD-A	65.53	65.53			65.53				

2025, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2025	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.03	47.78	7.24
		B - L8830	2.07	0.00	1.03	0.00
		C - R179 West	68.43	2.07	0.00	1.03
		D - L4900	1.03	0.00	2.07	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.10	64.21	3.10
		B - L8830	1.03	0.00	4.14	1.03
		C - R179 West	64.25	4.14	0.00	1.03
		D - L4900	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.10	46.66	7.24
		B - L8830	1.03	0.00	7.24	1.03
		C - R179 West	62.26	2.07	0.00	2.07
		D - L4900	1.03	2.07	1.03	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.10	60.11	4.14
	B - L8830	0.00	0.00	2.07	1.03
	C - R179 West	56.01	5.17	0.00	1.03
	D - L4900	3.10	0.00	1.03	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	9	0
	B - L8830	0	0	0	0
	C - R179 West	5	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	5.95	0.1	A	4.40	17.59
B-A	0.02	8.49	0.0	A	1.03	4.14
A-B					2.59	10.35
A-C					54.69	218.75
A-D					5.43	21.73
AB-CD	0.06	7.04	0.1	A	6.21	24.83
AB-C					58.31	233.22
D-AB	0.02	5.78	0.0	A	1.81	7.24
D-C	0.02	7.27	0.0	A	1.03	4.14
C-D					1.29	5.17
C-A					62.74	250.96
C-B					3.36	13.45
CD-AB	0.04	6.86	0.0	A	3.88	15.52
CD-A					64.03	256.11

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	153.89	0.007	1.03	0.0	0.0	5.887	A
B-A	2.07	2.07	123.97	0.017	2.05	0.0	0.0	7.381	A
A-B	1.03	1.03			1.03				
A-C	47.78	47.78			47.78				
A-D	7.24	7.24			7.24				
AB-CD	7.24	7.24	134.97	0.054	7.19	0.0	0.1	7.039	A
AB-C	48.80	48.80			48.80				
D-AB	1.03	1.03	156.68	0.007	1.03	0.0	0.0	5.781	A
D-C	2.07	2.07	133.69	0.015	2.05	0.0	0.0	6.836	A
C-D	1.03	1.03			1.03				
C-A	68.43	68.43			68.43				
C-B	2.07	2.07			2.07				
CD-AB	2.07	2.07	139.19	0.015	2.05	0.0	0.0	6.562	A
CD-A	69.46	69.46			69.46				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.17	5.17	156.35	0.033	5.15	0.0	0.0	5.952	A
B-A	1.03	1.03	107.01	0.010	1.04	0.0	0.0	8.493	A
A-B	3.10	3.10			3.10				
A-C	64.21	64.21			64.21				
A-D	3.10	3.10			3.10				
AB-CD	4.13	4.13	135.52	0.031	4.16	0.1	0.0	6.854	A
AB-C	68.33	68.33			68.33				
D-AB	0.00	0.00	157.01	0.000	0.01	0.0	0.0	0.000	A
D-C	0.00	0.00	132.48	0.000	0.02	0.0	0.0	0.000	A
C-D	1.03	1.03			1.03				
C-A	64.25	64.25			64.25				
C-B	4.14	4.14			4.14				
CD-AB	4.14	4.14	135.65	0.031	4.12	0.0	0.0	6.842	A
CD-A	64.26	64.26			64.26				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.28	8.28	161.06	0.051	8.26	0.0	0.1	5.890	A
B-A	1.03	1.03	108.86	0.010	1.04	0.0	0.0	8.348	A
A-B	3.10	3.10			3.10				
A-C	46.66	46.66			46.66				
A-D	7.24	7.24			7.24				
AB-CD	8.28	8.28	136.25	0.061	8.25	0.0	0.1	7.028	A
AB-C	53.88	53.88			53.88				
D-AB	3.10	3.10	170.17	0.018	3.09	0.0	0.0	5.386	A
D-C	1.03	1.03	124.87	0.008	1.03	0.0	0.0	7.266	A
C-D	2.07	2.07			2.07				
C-A	62.26	62.26			62.26				
C-B	2.07	2.07			2.07				
CD-AB	4.13	4.13	139.00	0.030	4.13	0.0	0.0	6.672	A
CD-A	63.29	63.29			63.29				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.10	3.10	160.05	0.019	3.14	0.1	0.0	5.738	A
B-A	0.00	0.00	103.68	0.000	0.01	0.0	0.0	0.000	A
A-B	3.10	3.10			3.10				
A-C	60.11	60.11			60.11				
A-D	4.14	4.14			4.14				
AB-CD	5.17	5.17	137.31	0.038	5.20	0.1	0.0	6.812	A
AB-C	62.21	62.21			62.21				
D-AB	3.10	3.10	171.30	0.018	3.10	0.0	0.0	5.350	A
D-C	1.03	1.03	125.50	0.008	1.03	0.0	0.0	7.230	A
C-D	1.03	1.03			1.03				
C-A	56.01	56.01			56.01				
C-B	5.17	5.17			5.17				
CD-AB	5.19	5.19	136.42	0.038	5.18	0.0	0.0	6.857	A
CD-A	59.10	59.10			59.10				

2024+GAA Ph2+ Mine Con+DG , AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		1.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2024+GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D5+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	0.00	71.05	1.05
	B - L8830	1.02	0.00	8.19	0.00
	C - R179 West	47.20	2.05	0.00	3.07
	D - L4900	5.12	0.00	4.09	0.00

Demand (Veh/TS)

08:00 - 08:15

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	0.00	55.67	6.51
	B - L8830	4.09	0.00	1.02	0.00
	C - R179 West	53.37	1.02	0.00	6.51
	D - L4900	5.12	1.02	5.10	0.00

Demand (Veh/TS)

08:15 - 08:30

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.02	59.82	12.74
	B - L8830	1.02	0.00	4.09	0.00
	C - R179 West	62.52	0.00	0.00	13.76
	D - L4900	7.17	1.02	4.07	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.02	69.03	14.78
	B - L8830	3.07	0.00	1.02	0.00
	C - R179 West	58.54	4.09	0.00	15.81
	D - L4900	9.19	1.02	3.05	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	8	100
	B - L8830	0	0	0	0
	C - R179 West	11	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.49	0.1	A	3.58	14.32
B-A	0.04	8.73	0.0	A	2.30	9.21
A-B					0.51	2.05
A-C					63.89	255.56
A-D					8.77	35.08
AB-CD	0.22	16.58	0.3	C	9.09	36.36
AB-C					67.15	268.60
D-AB	0.06	5.74	0.1	A	7.42	29.67
D-C	0.04	8.33	0.0	A	4.08	16.31
C-D					9.79	39.15
C-A					55.41	221.64
C-B					1.79	7.16
CD-AB	0.04	7.25	0.0	A	2.56	10.22
CD-A					62.04	248.18

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.19	8.19	156.10	0.052	8.13	0.0	0.1	6.081	A
B-A	1.02	1.02	106.50	0.010	1.01	0.0	0.0	8.532	A
A-B	0.00	0.00			0.00				
A-C	71.05	71.05			71.05				
A-D	1.05	1.05			1.05				
AB-CD	1.05	1.05	69.54	0.015	1.04	0.0	0.0	13.135	B
AB-C	79.18	79.18			79.18				
D-AB	5.12	5.12	167.80	0.030	5.08	0.0	0.0	5.531	A
D-C	4.09	4.09	130.09	0.031	4.06	0.0	0.0	7.139	A
C-D	3.07	3.07			3.07				
C-A	47.20	47.20			47.20				
C-B	2.05	2.05			2.05				
CD-AB	2.05	2.05	135.12	0.015	2.03	0.0	0.0	6.762	A
CD-A	52.29	52.29			52.29				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	145.38	0.007	1.07	0.1	0.0	6.240	A
B-A	4.09	4.09	116.79	0.035	4.07	0.0	0.0	7.982	A
A-B	0.00	0.00			0.00				
A-C	55.67	55.67			55.67				
A-D	6.51	6.51			6.51				
AB-CD	6.56	6.56	68.97	0.095	6.47	0.0	0.1	14.387	B
AB-C	56.69	56.69			56.69				
D-AB	6.15	6.15	165.15	0.037	6.14	0.0	0.0	5.659	A
D-C	5.10	5.10	128.03	0.040	5.09	0.0	0.0	7.319	A
C-D	6.51	6.51			6.51				
C-A	53.37	53.37			53.37				
C-B	1.02	1.02			1.02				
CD-AB	2.04	2.04	136.37	0.015	2.04	0.0	0.0	6.698	A
CD-A	58.49	58.49			58.49				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.09	4.09	151.73	0.027	4.07	0.0	0.0	6.095	A
B-A	1.02	1.02	104.12	0.010	1.05	0.0	0.0	8.735	A
A-B	1.02	1.02			1.02				
A-C	59.82	59.82			59.82				
A-D	12.74	12.74			12.74				
AB-CD	13.19	13.19	69.11	0.191	13.05	0.1	0.2	16.102	C
AB-C	63.44	63.44			63.44				
D-AB	8.19	8.19	164.93	0.050	8.18	0.0	0.1	5.741	A
D-C	4.07	4.07	115.97	0.035	4.08	0.0	0.0	8.044	A
C-D	13.76	13.76			13.76				
C-A	62.52	62.52			62.52				
C-B	0.00	0.00			0.00				
CD-AB	1.02	1.02	132.37	0.008	1.03	0.0	0.0	6.852	A
CD-A	69.68	69.68			69.68				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	139.73	0.007	1.04	0.0	0.0	6.489	A
B-A	3.07	3.07	106.36	0.029	3.05	0.0	0.0	8.711	A
A-B	1.02	1.02			1.02				
A-C	69.03	69.03			69.03				
A-D	14.78	14.78			14.78				
AB-CD	15.56	15.56	70.00	0.222	15.51	0.2	0.3	16.575	C
AB-C	69.29	69.29			69.29				
D-AB	10.21	10.21	167.66	0.061	10.20	0.1	0.1	5.715	A
D-C	3.05	3.05	111.07	0.027	3.06	0.0	0.0	8.334	A
C-D	15.81	15.81			15.81				
C-A	58.54	58.54			58.54				
C-B	4.09	4.09			4.09				
CD-AB	5.12	5.12	129.24	0.040	5.08	0.0	0.0	7.246	A
CD-A	67.72	67.72			67.72				

2024+GAA Ph2+ Mine Con+DG, PM

Data Errors and Warnings
No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		1.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2024+GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D6+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	1.02	47.18
		B - L8830	2.05	0.00	1.02
		C - R179 West	75.11	2.05	0.00
		D - L4900	10.59	0.00	11.61

Demand (Veh/TS)

17:00 - 17:15	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	3.07	63.46
		B - L8830	1.02	0.00	4.09
		C - R179 West	70.99	4.09	0.00
		D - L4900	11.88	0.00	11.88

Demand (Veh/TS)

17:15 - 17:30	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	3.07	46.10
		B - L8830	1.02	0.00	7.16
		C - R179 West	69.00	2.05	0.00
		D - L4900	12.91	2.05	12.91

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.07	59.40	6.53
	B - L8830	0.00	0.00	2.05	1.02
	C - R179 West	62.83	5.12	0.00	3.46
	D - L4900	14.95	0.00	12.91	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	9	0
	B - L8830	0	0	0	0
	C - R179 West	6	0	0	0
	D - L4900	27	0	25	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	5.97	0.1	A	4.35	17.39
B-A	0.02	8.79	0.0	A	1.02	4.09
A-B					2.56	10.23
A-C					54.03	216.13
A-D					7.93	31.73
AB-CD	0.08	7.33	0.1	A	8.70	34.79
AB-C					57.61	230.44
D-AB	0.12	8.17	0.1	A	13.09	52.38
D-C	0.13	10.27	0.1	B	12.33	49.31
C-D					3.84	15.36
C-A					69.48	277.93
C-B					3.33	13.30
CD-AB	0.04	6.87	0.0	A	3.84	15.35
CD-A					82.03	328.13

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	153.41	0.007	1.02	0.0	0.0	5.905	A
B-A	2.05	2.05	120.34	0.017	2.03	0.0	0.0	7.606	A
A-B	1.02	1.02			1.02				
A-C	47.18	47.18			47.18				
A-D	9.84	9.84			9.84				
AB-CD	9.85	9.85	132.49	0.074	9.77	0.0	0.1	7.328	A
AB-C	48.19	48.19			48.19				
D-AB	10.59	10.59	120.81	0.088	10.49	0.0	0.1	8.152	A
D-C	11.61	11.61	101.80	0.114	11.49	0.0	0.1	9.951	A
C-D	3.71	3.71			3.71				
C-A	75.11	75.11			75.11				
C-B	2.05	2.05			2.05				
CD-AB	2.05	2.05	138.77	0.015	2.03	0.0	0.0	6.582	A
CD-A	85.60	85.60			85.60				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.12	5.12	155.89	0.033	5.09	0.0	0.0	5.968	A
B-A	1.02	1.02	103.44	0.010	1.03	0.0	0.0	8.788	A
A-B	3.07	3.07			3.07				
A-C	63.46	63.46			63.46				
A-D	5.75	5.75			5.75				
AB-CD	6.77	6.77	133.04	0.051	6.79	0.1	0.1	7.132	A
AB-C	67.53	67.53			67.53				
D-AB	11.88	11.88	121.97	0.097	11.87	0.1	0.1	8.173	A
D-C	11.88	11.88	99.49	0.119	11.88	0.1	0.1	10.272	B
C-D	3.71	3.71			3.71				
C-A	70.99	70.99			70.99				
C-B	4.09	4.09			4.09				
CD-AB	4.09	4.09	135.26	0.030	4.08	0.0	0.0	6.860	A
CD-A	82.86	82.86			82.86				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.19	8.19	160.62	0.051	8.17	0.0	0.1	5.903	A
B-A	1.02	1.02	105.31	0.010	1.02	0.0	0.0	8.629	A
A-B	3.07	3.07			3.07				
A-C	46.10	46.10			46.10				
A-D	9.60	9.60			9.60				
AB-CD	10.62	10.62	133.84	0.079	10.59	0.1	0.1	7.300	A
AB-C	53.24	53.24			53.24				
D-AB	14.95	14.95	126.89	0.118	14.93	0.1	0.1	8.156	A
D-C	12.91	12.91	100.63	0.128	12.90	0.1	0.1	10.256	B
C-D	4.48	4.48			4.48				
C-A	69.00	69.00			69.00				
C-B	2.05	2.05			2.05				
CD-AB	4.07	4.07	138.63	0.029	4.07	0.0	0.0	6.690	A
CD-A	81.90	81.90			81.90				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.07	3.07	159.65	0.019	3.10	0.1	0.0	5.751	A
B-A	0.00	0.00	100.19	0.000	0.01	0.0	0.0	0.000	A
A-B	3.07	3.07			3.07				
A-C	59.40	59.40			59.40				
A-D	6.53	6.53			6.53				
AB-CD	7.55	7.55	134.90	0.056	7.58	0.1	0.1	7.072	A
AB-C	61.48	61.48			61.48				
D-AB	14.95	14.95	124.23	0.120	14.95	0.1	0.1	8.101	A
D-C	12.91	12.91	101.01	0.128	12.91	0.1	0.1	10.214	B
C-D	3.46	3.46			3.46				
C-A	62.83	62.83			62.83				
C-B	5.12	5.12			5.12				
CD-AB	5.13	5.13	136.08	0.038	5.13	0.0	0.0	6.872	A
CD-A	77.77	77.77			77.77				

2025+GAA Ph2+ Mine Con+DG , AM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2025+GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5+D7+D11

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	0.00	76.58
		B - L8830	1.03	0.00	8.28
		C - R179 West	47.82	2.07	0.00
		D - L4900	5.17	0.00	4.14

Demand (Veh/TS)

08:00 - 08:15	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	0.00	61.02
		B - L8830	4.14	0.00	1.03
		C - R179 West	54.07	1.03	0.00
		D - L4900	5.16	1.03	5.12

Demand (Veh/TS)

08:15 - 08:30	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	1.03	65.24
		B - L8830	1.03	0.00	4.14
		C - R179 West	63.30	0.00	0.00
		D - L4900	7.23	1.03	4.08

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.03	74.56	9.81
	B - L8830	3.10	0.00	1.03	0.00
	C - R179 West	59.33	4.14	0.00	13.34
	D - L4900	9.26	1.03	3.05	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	7	100
	B - L8830	0	0	0	0
	C - R179 West	11	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.44	0.1	A	3.62	14.49
B-A	0.04	8.66	0.0	A	2.33	9.31
A-B					0.52	2.07
A-C					69.35	277.40
A-D					6.29	25.14
AB-CD	0.15	15.48	0.2	C	6.39	25.55
AB-C					72.87	291.48
D-AB	0.06	5.97	0.1	A	7.48	29.93
D-C	0.04	8.11	0.0	A	4.10	16.39
C-D					8.56	34.24
C-A					56.13	224.52
C-B					1.81	7.24
CD-AB	0.04	7.19	0.0	A	2.59	10.34
CD-A					62.82	251.28

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.28	8.28	154.62	0.054	8.22	0.0	0.1	6.148	A
B-A	1.03	1.03	105.14	0.010	1.03	0.0	0.0	8.644	A
A-B	0.00	0.00			0.00				
A-C	76.58	76.58			76.58				
A-D	1.08	1.08			1.08				
AB-CD	1.08	1.08	69.44	0.016	1.06	0.0	0.0	13.158	B
AB-C	84.81	84.81			84.81				
D-AB	5.17	5.17	167.54	0.031	5.14	0.0	0.0	5.542	A
D-C	4.14	4.14	128.83	0.032	4.11	0.0	0.0	7.214	A
C-D	3.10	3.10			3.10				
C-A	47.82	47.82			47.82				
C-B	2.07	2.07			2.07				
CD-AB	2.07	2.07	133.84	0.015	2.05	0.0	0.0	6.829	A
CD-A	52.96	52.96			52.96				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	144.03	0.007	1.08	0.1	0.0	6.299	A
B-A	4.14	4.14	115.33	0.036	4.11	0.0	0.0	8.090	A
A-B	0.00	0.00			0.00				
A-C	61.02	61.02			61.02				
A-D	6.52	6.52			6.52				
AB-CD	6.58	6.58	68.92	0.095	6.49	0.0	0.1	14.403	B
AB-C	62.05	62.05			62.05				
D-AB	6.20	6.20	164.90	0.038	6.19	0.0	0.0	5.670	A
D-C	5.12	5.12	126.78	0.040	5.11	0.0	0.0	7.396	A
C-D	6.52	6.52			6.52				
C-A	54.07	54.07			54.07				
C-B	1.03	1.03			1.03				
CD-AB	2.06	2.06	135.14	0.015	2.06	0.0	0.0	6.762	A
CD-A	59.23	59.23			59.23				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.14	4.14	152.86	0.027	4.12	0.0	0.0	6.051	A
B-A	1.03	1.03	104.96	0.010	1.06	0.0	0.0	8.664	A
A-B	1.03	1.03			1.03				
A-C	65.24	65.24			65.24				
A-D	7.74	7.74			7.74				
AB-CD	7.85	7.85	67.68	0.116	7.82	0.1	0.1	15.049	C
AB-C	69.25	69.25			69.25				
D-AB	8.27	8.27	165.01	0.050	8.25	0.0	0.1	5.741	A
D-C	4.08	4.08	118.94	0.034	4.09	0.0	0.0	7.838	A
C-D	11.27	11.27			11.27				
C-A	63.30	63.30			63.30				
C-B	0.00	0.00			0.00				
CD-AB	1.03	1.03	133.36	0.008	1.04	0.0	0.0	6.804	A
CD-A	70.52	70.52			70.52				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	140.77	0.007	1.06	0.0	0.0	6.444	A
B-A	3.10	3.10	107.21	0.029	3.09	0.0	0.0	8.643	A
A-B	1.03	1.03			1.03				
A-C	74.56	74.56			74.56				
A-D	9.81	9.81			9.81				
AB-CD	10.05	10.05	68.24	0.147	10.01	0.1	0.2	15.482	C
AB-C	75.37	75.37			75.37				
D-AB	10.29	10.29	160.99	0.064	10.28	0.1	0.1	5.971	A
D-C	3.05	3.05	114.02	0.027	3.06	0.0	0.0	8.113	A
C-D	13.34	13.34			13.34				
C-A	59.33	59.33			59.33				
C-B	4.14	4.14			4.14				
CD-AB	5.17	5.17	130.20	0.040	5.14	0.0	0.0	7.194	A
CD-A	68.57	68.57			68.57				

2025+GAA Ph2+ Mine Con+DG , PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2025+GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D6+D8+D12

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.03	47.78	9.93
	B - L8830	2.07	0.00	1.03	0.00
	C - R179 West	80.68	2.07	0.00	3.72
	D - L4900	5.60	0.00	9.14	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	3.10	64.21	5.79
	B - L8830	1.03	0.00	4.14	1.03
	C - R179 West	76.50	4.14	0.00	3.72
	D - L4900	6.88	0.00	9.38	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	3.10	46.66	9.68
	B - L8830	1.03	0.00	7.24	1.03
	C - R179 West	74.51	2.07	0.00	4.51
	D - L4900	7.92	2.07	10.42	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.10	60.11	6.58
	B - L8830	0.00	0.00	2.07	1.03
	C - R179 West	68.26	5.17	0.00	3.47
	D - L4900	9.99	0.00	10.42	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	9	0
	B - L8830	0	0	0	0
	C - R179 West	6	0	0	0
	D - L4900	7	0	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	5.98	0.1	A	4.40	17.59
B-A	0.02	8.78	0.0	A	1.03	4.14
A-B					2.59	10.35
A-C					54.69	218.75
A-D					7.99	31.97
AB-CD	0.08	7.41	0.1	A	8.77	35.07
AB-C					58.31	233.22
D-AB	0.07	6.59	0.1	A	8.12	32.46
D-C	0.09	8.16	0.1	A	9.84	39.36
C-D					3.85	15.42
C-A					74.99	299.96
C-B					3.36	13.45
CD-AB	0.04	6.89	0.0	A	3.88	15.52
CD-A					82.57	330.28

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	153.21	0.007	1.03	0.0	0.0	5.913	A
B-A	2.07	2.07	120.43	0.017	2.05	0.0	0.0	7.603	A
A-B	1.03	1.03			1.03				
A-C	47.78	47.78			47.78				
A-D	9.93	9.93			9.93				
AB-CD	9.93	9.93	131.14	0.076	9.85	0.0	0.1	7.415	A
AB-C	48.80	48.80			48.80				
D-AB	5.60	5.60	142.09	0.039	5.56	0.0	0.0	6.590	A
D-C	9.14	9.14	122.24	0.075	9.06	0.0	0.1	7.946	A
C-D	3.72	3.72			3.72				
C-A	80.68	80.68			80.68				
C-B	2.07	2.07			2.07				
CD-AB	2.07	2.07	138.59	0.015	2.05	0.0	0.0	6.591	A
CD-A	86.24	86.24			86.24				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.17	5.17	155.65	0.033	5.15	0.0	0.0	5.980	A
B-A	1.03	1.03	103.53	0.010	1.04	0.0	0.0	8.783	A
A-B	3.10	3.10			3.10				
A-C	64.21	64.21			64.21				
A-D	5.79	5.79			5.79				
AB-CD	6.82	6.82	131.70	0.052	6.84	0.1	0.1	7.211	A
AB-C	68.33	68.33			68.33				
D-AB	6.88	6.88	143.48	0.048	6.87	0.0	0.1	6.587	A
D-C	9.38	9.38	119.61	0.078	9.38	0.1	0.1	8.164	A
C-D	3.72	3.72			3.72				
C-A	76.50	76.50			76.50				
C-B	4.14	4.14			4.14				
CD-AB	4.14	4.14	135.05	0.031	4.12	0.0	0.0	6.874	A
CD-A	83.37	83.37			83.37				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.28	8.28	160.42	0.052	8.26	0.0	0.1	5.914	A
B-A	1.03	1.03	105.47	0.010	1.04	0.0	0.0	8.619	A
A-B	3.10	3.10			3.10				
A-C	46.66	46.66			46.66				
A-D	9.68	9.68			9.68				
AB-CD	10.72	10.72	132.50	0.081	10.69	0.1	0.1	7.386	A
AB-C	53.88	53.88			53.88				
D-AB	9.99	9.99	147.57	0.068	9.97	0.0	0.1	6.578	A
D-C	10.42	10.42	120.67	0.086	10.41	0.1	0.1	8.162	A
C-D	4.51	4.51			4.51				
C-A	74.51	74.51			74.51				
C-B	2.07	2.07			2.07				
CD-AB	4.12	4.12	138.45	0.030	4.13	0.0	0.0	6.701	A
CD-A	82.43	82.43			82.43				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.10	3.10	159.41	0.019	3.14	0.1	0.0	5.759	A
B-A	0.00	0.00	100.37	0.000	0.01	0.0	0.0	0.000	A
A-B	3.10	3.10			3.10				
A-C	60.11	60.11			60.11				
A-D	6.58	6.58			6.58				
AB-CD	7.61	7.61	133.57	0.057	7.64	0.1	0.1	7.147	A
AB-C	62.21	62.21			62.21				
D-AB	9.99	9.99	146.93	0.068	9.99	0.1	0.1	6.526	A
D-C	10.42	10.42	121.11	0.086	10.42	0.1	0.1	8.130	A
C-D	3.47	3.47			3.47				
C-A	68.26	68.26			68.26				
C-B	5.17	5.17			5.17				
CD-AB	5.19	5.19	135.87	0.038	5.18	0.0	0.0	6.886	A
CD-A	78.24	78.24			78.24				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site 2- Crossroads.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\1.Construction years

Report generation date: 22/02/2023 10:23:37

- »2024, AM
- »2024, PM
- »2025, AM
- »2025, PM
- »2024+ GAA Ph2+ Mine Con+DG, AM
- »2024+ GAA Ph2+ Mine Con+DG , PM
- »2025+ GAA Ph2+ Mine Con+DG , AM
- »2025+ GAA Ph2+ Mine Con+DG , PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2024								
Stream B-CD	0.0	10.08	0.04	B	0.0	8.19	0.03	A
Stream B-AD	0.1	9.50	0.05	A	0.0	9.11	0.03	A
Stream A-BCD	0.0	5.26	0.01	A	0.0	5.34	0.03	A
Stream D-AB	0.0	8.05	0.03	A	0.0	11.63	0.02	B
Stream D-BC	0.0	12.94	0.03	B	0.0	13.60	0.02	B
Stream C-ABD	0.1	7.50	0.06	A	0.1	6.32	0.04	A
2025								
Stream B-CD	0.0	10.12	0.04	B	0.0	8.20	0.04	A
Stream B-AD	0.1	9.56	0.05	A	0.0	9.14	0.03	A
Stream A-BCD	0.0	5.25	0.01	A	0.0	5.33	0.03	A
Stream D-AB	0.0	8.09	0.03	A	0.0	11.71	0.02	B
Stream D-BC	0.0	12.99	0.03	B	0.0	13.68	0.02	B
Stream C-ABD	0.1	7.48	0.06	A	0.1	6.32	0.04	A
2024+ GAA Ph2+ Mine Con+DG								
Stream B-CD	0.0	10.08	0.04	B	0.0	8.36	0.04	A
Stream B-AD	0.1	9.88	0.05	A	0.0	9.40	0.03	A
Stream A-BCD	0.0	5.32	0.01	A	0.0	5.17	0.03	A
Stream D-AB	0.0	8.41	0.03	A	0.0	11.80	0.02	B
Stream D-BC	0.0	13.65	0.03	B	0.0	13.89	0.02	B
Stream C-ABD	0.1	6.70	0.07	A	0.1	6.32	0.04	A
2025+ GAA Ph2+ Mine Con+DG								
Stream B-CD	0.0	10.12	0.04	B	0.0	8.37	0.04	A
Stream B-AD	0.1	9.93	0.05	A	0.0	9.42	0.03	A
Stream A-BCD	0.0	5.31	0.01	A	0.0	5.16	0.03	A
Stream D-AB	0.0	8.45	0.04	A	0.0	11.87	0.02	B
Stream D-BC	0.0	13.68	0.03	B	0.0	13.96	0.02	B
Stream C-ABD	0.1	6.70	0.07	A	0.1	6.31	0.04	A

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

File summary

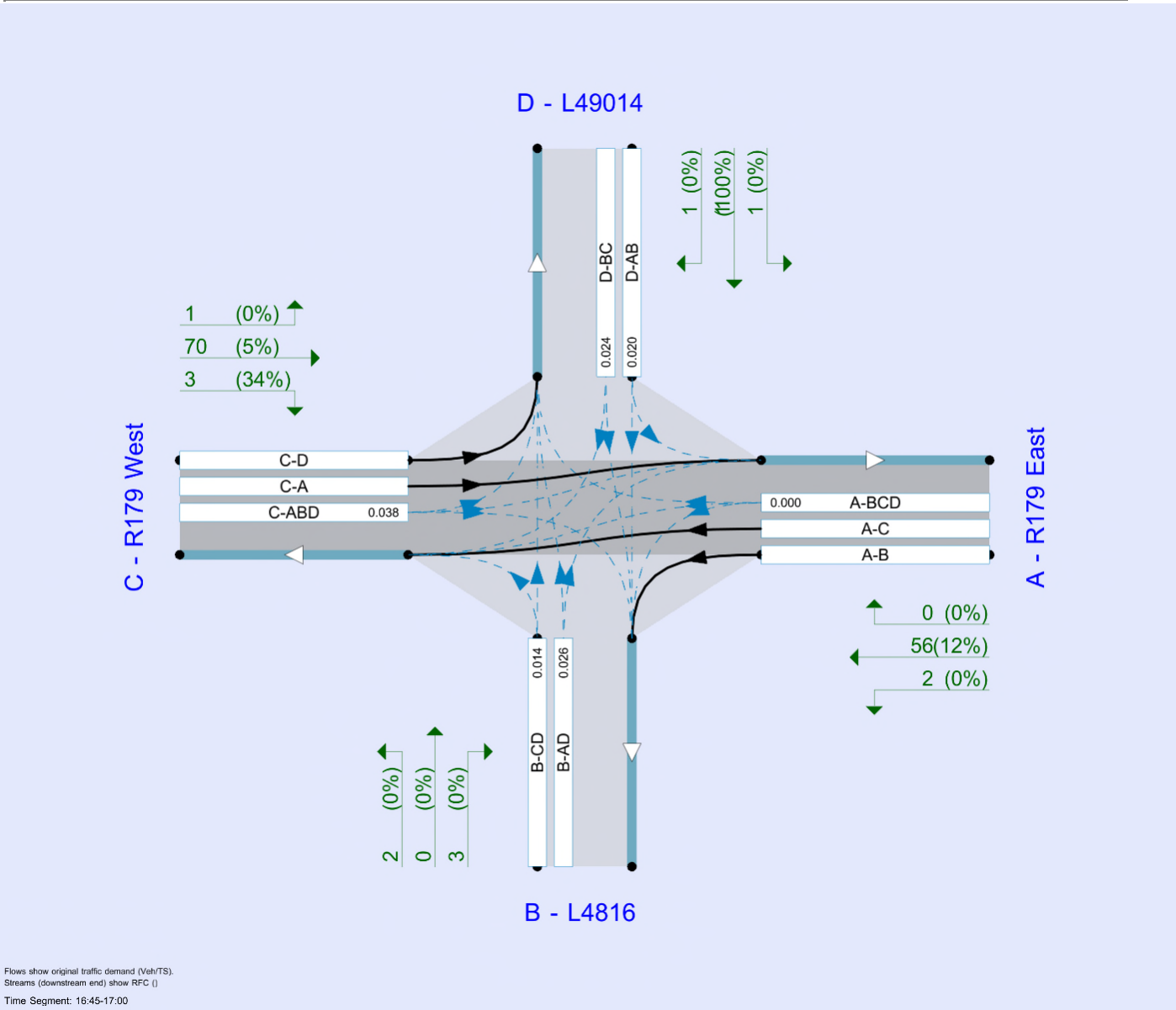
File Description

Title	
Location	
Site number	
Date	22/02/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

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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	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	AM	DIRECT	07:45	08:45	60	15			
D2	2024	PM	DIRECT	16:45	17:45	60	15	✓		
D3	2025	AM	DIRECT	07:45	08:45	60	15	✓		
D4	2025	PM	DIRECT	16:45	17:45	60	15	✓		
D5	Construction West Mine Traffic	AM	DIRECT	07:45	08:45	60	15			
D6	Construction West Mine Traffic	PM	DIRECT	16:45	17:45	60	15			
D7	Construction GAA Phase 2	AM	DIRECT	07:45	08:45	60	15			
D8	Constructon GAA Phase 2	PM	DIRECT	16:45	17:45	60	15			
D9	Construction Road Diversion Traffic	AM	DIRECT	07:45	08:45	60	15			
D10	Construction Road Diversion Traffic	PM	DIRECT	16:45	17:45	60	15			
D11	Construction Tunnel Traffic	AM	DIRECT	07:45	08:45	60	15			
D12	Construction Tunnel Traffic	PM	DIRECT	16:45	17:45	60	15			
D13	2024+ GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D5+D7+D9
D14	2024+ GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D6+D8+D10
D15	2025+ GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5+D7+D11
D16	2025+ GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D6+D8+D12

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R179 East		Major
B	L4816		Minor
C	R179 West		Major
D	L49014		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - R179 East	7.30			30.0	✓	0.00
C - R179 West	7.30			30.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - L4816	One lane plus flare	7.00	5.50	3.50	3.50	3.50		1.00	100	110
D - L49014	One lane plus flare	4.40	3.00	2.20	2.20	2.20		1.00	10	10

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	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
1	A-D	147.834	-	-	-	-	-	-	0.216	0.309	0.216	-	-	-
1	B-A	152.261	0.105	0.265	0.265	-	-	-	0.166	0.378	-	0.265	0.265	0.132
1	B-C	157.609	0.091	0.230	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	128.666	0.088	0.224	0.224	-	-	-	0.141	0.319	0.141	-	-	-
1	B-D, offside lane	152.261	0.105	0.265	0.265	-	-	-	0.166	0.378	0.166	-	-	-
1	C-B	147.834	0.216	0.216	0.309	-	-	-	-	-	-	-	-	-
1	D-A	110.235	-	-	-	-	-	-	0.161	-	0.064	-	-	-
1	D-B, nearside lane	84.982	0.093	0.093	0.211	-	-	-	0.148	0.148	0.058	-	-	-
1	D-B, offside lane	119.032	0.130	0.130	0.295	-	-	-	0.207	0.207	0.082	-	-	-
1	D-C	119.032	-	0.130	0.295	0.103	0.207	0.207	0.207	0.207	0.082	-	-	-

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

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

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

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Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.05	73.78	0.00
	B - L4816	5.14	0.00	2.07	0.00
	C - R179 West	47.18	4.09	0.00	1.02
	D - L49014	0.00	0.00	3.07	0.00

Demand (Veh/TS)

08:00 - 08:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	1.02	50.22	0.00
	B - L4816	0.00	0.00	1.02	0.00
	C - R179 West	52.35	4.18	0.00	1.02
	D - L49014	3.07	1.02	1.02	0.00

Demand (Veh/TS)

08:15 - 08:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	4.12	52.29	1.02
	B - L4816	4.09	0.00	4.15	0.00
	C - R179 West	56.38	0.00	0.00	0.00
	D - L49014	3.07	1.05	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.07	59.48	0.00
	B - L4816	5.12	0.00	0.00	0.00
	C - R179 West	60.59	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	20	0	51	0
	C - R179 West	9	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	0	0	0	0
	C - R179 West	12	76	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	26	8	0
	B - L4816	0	0	51	0
	C - R179 West	7	0	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

08:30 - 08:45

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	14	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	10.08	0.0	B	1.81	7.25
B-AD	0.05	9.50	0.1	A	3.59	14.35
A-BCD	0.01	5.26	0.0	A	0.38	1.52
A-B					2.56	10.22
A-C					58.83	235.31
D-AB	0.03	8.05	0.0	A	1.80	7.18
D-BC	0.03	12.94	0.0	B	1.28	5.12
C-ABD	0.06	7.50	0.1	A	3.34	13.35
C-D					0.49	1.95
C-A					52.88	211.52

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.07	2.07	91.33	0.023	2.05	0.0	0.0	10.078	B
B-AD	5.14	5.14	100.39	0.051	5.09	0.0	0.1	9.439	A
A-BCD	0.00	0.00	133.34	0.000	0.00	0.0	0.0	0.000	A
A-B	2.05	2.05			2.05				
A-C	73.78	73.78			73.78				
D-AB	0.00	0.00	81.83	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.07	3.07	96.04	0.032	3.04	0.0	0.0	9.673	A
C-ABD	5.80	5.80	163.53	0.035	5.75	0.0	0.0	5.703	A
C-D	0.99	0.99			0.99				
C-A	45.50	45.50			45.50				

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08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	175.26	0.006	1.04	0.0	0.0	6.855	A
B-AD	0.00	0.00	79.07	0.000	0.05	0.1	0.0	0.000	A
A-BCD	0.00	0.00	130.70	0.000	0.00	0.0	0.0	0.000	A
A-B	1.02	1.02			1.02				
A-C	50.22	50.22			50.22				
D-AB	3.59	3.59	129.73	0.028	3.56	0.0	0.0	7.130	A
D-BC	1.53	1.53	87.89	0.017	1.54	0.0	0.0	10.426	B
C-ABD	7.51	7.51	120.93	0.062	7.47	0.0	0.1	6.838	A
C-D	0.96	0.96			0.96				
C-A	49.08	49.08			49.08				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.15	4.15	112.37	0.037	4.12	0.0	0.0	7.745	A
B-AD	4.09	4.09	109.98	0.037	4.05	0.0	0.0	9.500	A
A-BCD	1.52	1.52	172.66	0.009	1.51	0.0	0.0	5.258	A
A-B	4.08	4.08			4.08				
A-C	51.83	51.83			51.83				
D-AB	3.59	3.59	108.19	0.033	3.59	0.0	0.0	8.046	A
D-BC	0.53	0.53	44.76	0.012	0.54	0.0	0.0	12.940	B
C-ABD	0.04	0.04	131.38	0.000	0.12	0.1	0.0	7.502	A
C-D	0.00	0.00			0.00				
C-A	56.34	56.34			56.34				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	84.83	0.000	0.04	0.0	0.0	0.000	A
B-AD	5.12	5.12	127.20	0.040	5.12	0.0	0.0	7.371	A
A-BCD	0.00	0.00	128.99	0.000	0.01	0.0	0.0	0.000	A
A-B	3.07	3.07			3.07				
A-C	59.48	59.48			59.48				
D-AB	0.00	0.00	103.27	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	44.49	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	123.93	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	60.59	60.59			60.59				

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	2.05	48.20	0.00
	B - L4816	3.07	0.00	2.05	0.00
	C - R179 West	66.59	3.10	0.00	1.02
	D - L49014	1.02	1.05	1.02	0.00

Demand (Veh/TS)

17:00 - 17:15

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	6.14	61.42	0.00
	B - L4816	3.07	0.00	1.05	0.00
	C - R179 West	65.54	1.02	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	3.07	50.19	1.02
	B - L4816	1.02	0.00	3.10	0.00
	C - R179 West	62.52	1.02	0.00	0.00
	D - L49014	2.05	0.00	1.02	0.00

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Demand (Veh/TS)

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.05	57.35	3.07
	B - L4816	2.05	0.00	4.09	2.05
	C - R179 West	59.43	2.07	0.00	1.02
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	5	34	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	2	0
	B - L4816	0	0	100	0
	C - R179 West	3	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	4	0
	B - L4816	0	0	34	0
	C - R179 West	7	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	4	0
	B - L4816	0	0	0	0
	C - R179 West	5	51	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.03	8.19	0.0	A	2.83	11.32
B-AD	0.03	9.11	0.0	A	2.55	10.21
A-BCD	0.03	5.34	0.0	A	1.54	6.15
A-B					3.30	13.22
A-C					53.80	215.18
D-AB	0.02	11.63	0.0	B	0.90	3.60
D-BC	0.02	13.60	0.0	B	0.64	2.57
C-ABD	0.04	6.32	0.1	A	3.12	12.49
C-D					0.50	1.98
C-A					62.22	248.87

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Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.05	2.05	150.87	0.014	2.03	0.0	0.0	6.046	A
B-AD	3.07	3.07	123.91	0.025	3.04	0.0	0.0	7.443	A
A-BCD	0.00	0.00	128.46	0.000	0.00	0.0	0.0	0.000	A
A-B	2.05	2.05			2.05				
A-C	48.20	48.20			48.20				
D-AB	1.55	1.55	78.90	0.020	1.53	0.0	0.0	11.630	B
D-BC	1.54	1.54	67.65	0.023	1.52	0.0	0.0	13.604	B
C-ABD	5.54	5.54	153.23	0.036	5.49	0.0	0.0	6.091	A
C-D	0.99	0.99			0.99				
C-A	64.18	64.18			64.18				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	74.81	0.014	1.06	0.0	0.0	8.186	A
B-AD	3.07	3.07	122.85	0.025	3.07	0.0	0.0	7.512	A
A-BCD	0.00	0.00	131.17	0.000	0.00	0.0	0.0	0.000	A
A-B	6.14	6.14			6.14				
A-C	61.42	61.42			61.42				
D-AB	0.00	0.00	79.14	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	67.35	0.000	0.02	0.0	0.0	0.000	A
C-ABD	1.64	1.64	177.50	0.009	1.68	0.0	0.0	5.869	A
C-D	0.00	0.00			0.00				
C-A	64.92	64.92			64.92				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.10	3.10	130.41	0.024	3.08	0.0	0.0	7.962	A
B-AD	1.02	1.02	99.84	0.010	1.04	0.0	0.0	9.111	A
A-BCD	1.49	1.49	169.98	0.009	1.48	0.0	0.0	5.341	A
A-B	3.04	3.04			3.04				
A-C	49.75	49.75			49.75				
D-AB	2.05	2.05	140.80	0.015	2.03	0.0	0.0	7.458	A
D-BC	1.02	1.02	83.74	0.012	1.01	0.0	0.0	13.111	B
C-ABD	1.58	1.58	177.97	0.009	1.58	0.0	0.0	5.072	A
C-D	0.00	0.00			0.00				
C-A	61.96	61.96			61.96				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.13	5.13	147.68	0.035	5.12	0.0	0.0	7.138	A
B-AD	3.05	3.05	116.39	0.026	3.04	0.0	0.0	7.938	A
A-BCD	4.66	4.66	174.32	0.027	4.63	0.0	0.0	5.304	A
A-B	1.99	1.99			1.99				
A-C	55.82	55.82			55.82				
D-AB	0.00	0.00	133.71	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	87.94	0.000	0.01	0.0	0.0	0.000	A
C-ABD	3.72	3.72	136.68	0.027	3.70	0.0	0.0	6.325	A
C-D	1.00	1.00			1.00				
C-A	57.80	57.80			57.80				

Data Errors and Warnings

No errors or warnings

RECEIVED: 11/04/2023

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2025	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	2.07	74.68	0.00
	B - L4816	5.22	0.00	2.11	0.00
	C - R179 West	47.78	4.14	0.00	1.03
	D - L49014	0.00	0.00	3.10	0.00

Demand (Veh/TS)

08:00 - 08:15

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	1.03	50.84	0.00
	B - L4816	0.00	0.00	1.03	0.00
	C - R179 West	53.04	4.27	0.00	1.03
	D - L49014	3.10	1.03	1.03	0.00

Demand (Veh/TS)

08:15 - 08:30

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	4.18	52.95	1.03
	B - L4816	4.14	0.00	4.22	0.00
	C - R179 West	57.09	0.00	0.00	0.00
	D - L49014	3.10	1.08	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.10	60.24	0.00
	B - L4816	5.17	0.00	0.00	0.00
	C - R179 West	61.40	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	21	0	51	0
	C - R179 West	9	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	0	0	0	0
	C - R179 West	12	76	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	26	8	0
	B - L4816	0	0	51	0
	C - R179 West	8	0	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	14	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	10.12	0.0	B	1.84	7.37
B-AD	0.05	9.56	0.1	A	3.63	14.53
A-BCD	0.01	5.25	0.0	A	0.39	1.55
A-B					2.59	10.35
A-C					59.56	238.23
D-AB	0.03	8.09	0.0	A	1.82	7.27
D-BC	0.03	12.99	0.0	B	1.30	5.19
C-ABD	0.06	7.48	0.1	A	3.42	13.67
C-D					0.49	1.97
C-A					53.54	214.14

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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.11	2.11	91.01	0.023	2.09	0.0	0.0	10.119	B
B-AD	5.22	5.22	99.84	0.052	5.16	0.0	0.1	9.501	A
A-BCD	0.00	0.00	133.15	0.000	0.00	0.0	0.0	0.000	A
A-B	2.07	2.07			2.07				
A-C	74.68	74.68			74.68				
D-AB	0.00	0.00	81.64	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.10	3.10	95.73	0.032	3.07	0.0	0.0	9.710	A
C-ABD	5.90	5.90	163.74	0.036	5.85	0.0	0.0	5.699	A
C-D	1.00	1.00			1.00				
C-A	46.06	46.06			46.06				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	175.03	0.006	1.05	0.0	0.0	6.882	A
B-AD	0.00	0.00	78.67	0.000	0.05	0.1	0.0	0.000	A
A-BCD	0.00	0.00	130.44	0.000	0.00	0.0	0.0	0.000	A
A-B	1.03	1.03			1.03				
A-C	50.84	50.84			50.84				
D-AB	3.63	3.63	129.50	0.028	3.60	0.0	0.0	7.146	A
D-BC	1.55	1.55	87.62	0.018	1.56	0.0	0.0	10.459	B
C-ABD	7.73	7.73	121.31	0.064	7.69	0.0	0.1	6.838	A
C-D	0.97	0.97			0.97				
C-A	49.64	49.64			49.64				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.22	4.22	112.10	0.038	4.20	0.0	0.0	7.770	A
B-AD	4.14	4.14	109.49	0.038	4.10	0.0	0.0	9.561	A
A-BCD	1.55	1.55	172.97	0.009	1.54	0.0	0.0	5.249	A
A-B	4.14	4.14			4.14				
A-C	52.48	52.48			52.48				
D-AB	3.64	3.64	107.56	0.034	3.64	0.0	0.0	8.094	A
D-BC	0.54	0.54	44.69	0.012	0.55	0.0	0.0	12.988	B
C-ABD	0.04	0.04	131.79	0.000	0.13	0.1	0.0	7.478	A
C-D	0.00	0.00			0.00				
C-A	57.05	57.05			57.05				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	84.50	0.000	0.04	0.0	0.0	0.000	A
B-AD	5.17	5.17	126.78	0.041	5.18	0.0	0.0	7.400	A
A-BCD	0.00	0.00	128.69	0.000	0.01	0.0	0.0	0.000	A
A-B	3.10	3.10			3.10				
A-C	60.24	60.24			60.24				
D-AB	0.00	0.00	102.63	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	44.40	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	123.64	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	61.40	61.40			61.40				

2025, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2025	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	2.07	48.81	0.00
		B - L4816	3.10	0.00	2.07	0.00
		C - R179 West	67.40	3.15	0.00	1.03
		D - L49014	1.03	1.08	1.03	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	6.21	62.14	0.00
		B - L4816	3.10	0.00	1.08	0.00
		C - R179 West	66.32	1.03	0.00	0.00
		D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	3.10	50.80	1.03
		B - L4816	1.03	0.00	3.15	0.00
		C - R179 West	63.30	1.03	0.00	0.00
		D - L49014	2.07	0.00	1.03	0.00

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Demand (Veh/TS)

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.07	58.04	3.10
	B - L4816	2.07	0.00	4.14	2.07
	C - R179 West	60.15	2.11	0.00	1.03
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	5	34	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	2	0
	B - L4816	0	0	100	0
	C - R179 West	3	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	4	0
	B - L4816	0	0	34	0
	C - R179 West	7	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	4	0
	B - L4816	0	0	0	0
	C - R179 West	5	51	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	8.20	0.0	A	2.87	11.48
B-AD	0.03	9.14	0.0	A	2.58	10.33
A-BCD	0.03	5.33	0.0	A	1.56	6.25
A-B					3.34	13.37
A-C					54.44	217.75
D-AB	0.02	11.71	0.0	B	0.91	3.65
D-BC	0.02	13.68	0.0	B	0.65	2.60
C-ABD	0.04	6.32	0.1	A	3.19	12.78
C-D					0.50	2.00
C-A					62.95	251.79

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Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.07	2.07	150.68	0.014	2.06	0.0	0.0	6.055	A
B-AD	3.10	3.10	123.53	0.025	3.08	0.0	0.0	7.469	A
A-BCD	0.00	0.00	128.21	0.000	0.00	0.0	0.0	0.000	A
A-B	2.07	2.07			2.07				
A-C	48.81	48.81			48.81				
D-AB	1.58	1.58	78.43	0.020	1.56	0.0	0.0	11.706	B
D-BC	1.57	1.57	67.30	0.023	1.54	0.0	0.0	13.683	B
C-ABD	5.68	5.68	153.55	0.037	5.63	0.0	0.1	6.083	A
C-D	1.00	1.00			1.00				
C-A	64.90	64.90			64.90				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.08	1.08	74.86	0.014	1.08	0.0	0.0	8.202	A
B-AD	3.10	3.10	122.27	0.025	3.10	0.0	0.0	7.551	A
A-BCD	0.00	0.00	130.97	0.000	0.00	0.0	0.0	0.000	A
A-B	6.21	6.21			6.21				
A-C	62.14	62.14			62.14				
D-AB	0.00	0.00	78.68	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	67.00	0.000	0.02	0.0	0.0	0.000	A
C-ABD	1.67	1.67	177.87	0.009	1.71	0.1	0.0	5.858	A
C-D	0.00	0.00			0.00				
C-A	65.69	65.69			65.69				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.15	3.15	129.98	0.024	3.13	0.0	0.0	7.992	A
B-AD	1.03	1.03	99.53	0.010	1.05	0.0	0.0	9.141	A
A-BCD	1.51	1.51	170.24	0.009	1.50	0.0	0.0	5.333	A
A-B	3.08	3.08			3.08				
A-C	50.34	50.34			50.34				
D-AB	2.07	2.07	140.60	0.015	2.05	0.0	0.0	7.482	A
D-BC	1.03	1.03	83.49	0.012	1.02	0.0	0.0	13.177	B
C-ABD	1.61	1.61	178.35	0.009	1.61	0.0	0.0	5.063	A
C-D	0.00	0.00			0.00				
C-A	62.73	62.73			62.73				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.19	5.19	147.41	0.035	5.18	0.0	0.0	7.165	A
B-AD	3.09	3.09	116.04	0.027	3.07	0.0	0.0	7.965	A
A-BCD	4.74	4.74	174.64	0.027	4.71	0.0	0.0	5.297	A
A-B	2.01	2.01			2.01				
A-C	56.46	56.46			56.46				
D-AB	0.00	0.00	133.51	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	87.68	0.000	0.01	0.0	0.0	0.000	A
C-ABD	3.82	3.82	136.99	0.028	3.80	0.0	0.0	6.318	A
C-D	1.01	1.01			1.01				
C-A	58.47	58.47			58.47				

2024+ GAA Ph2+ Mine Con+DG, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2024+ GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D5+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.05	73.78	0.00
	B - L4816	5.14	0.00	2.07	0.00
	C - R179 West	60.05	4.09	0.00	1.02
	D - L49014	0.00	0.00	3.07	0.00

Demand (Veh/TS)

08:00 - 08:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	1.02	53.27	0.00
	B - L4816	0.00	0.00	1.02	0.00
	C - R179 West	70.71	4.18	0.00	1.02
	D - L49014	3.07	1.02	1.02	0.00

Demand (Veh/TS)

08:15 - 08:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	4.12	55.34	1.02
	B - L4816	4.09	0.00	4.15	0.00
	C - R179 West	74.75	0.00	0.00	0.00
	D - L49014	3.07	1.05	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.07	62.53	0.00
	B - L4816	5.12	0.00	0.00	0.00
	C - R179 West	78.95	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	20	0	51	0
	C - R179 West	14	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	0	0	0	0
	C - R179 West	15	76	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	26	8	0
	B - L4816	0	0	51	0
	C - R179 West	11	0	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	8	0
	B - L4816	0	0	0	0
	C - R179 West	16	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	10.08	0.0	B	1.81	7.25
B-AD	0.05	9.88	0.1	A	3.59	14.35
A-BCD	0.01	5.32	0.0	A	0.39	1.57
A-B					2.56	10.22
A-C					61.10	244.41
D-AB	0.03	8.41	0.0	A	1.80	7.18
D-BC	0.03	13.65	0.0	B	1.28	5.12
C-ABD	0.07	6.70	0.1	A	3.84	15.36
C-D					0.49	1.94
C-A					69.37	277.48

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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.07	2.07	91.30	0.023	2.05	0.0	0.0	10.081	B
B-AD	5.14	5.14	98.04	0.052	5.09	0.0	0.1	9.679	A
A-BCD	0.00	0.00	129.72	0.000	0.00	0.0	0.0	0.000	A
A-B	2.05	2.05			2.05				
A-C	73.78	73.78			73.78				
D-AB	0.00	0.00	79.15	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.07	3.07	92.53	0.033	3.04	0.0	0.0	10.054	B
C-ABD	6.36	6.36	171.48	0.037	6.31	0.0	0.1	5.447	A
C-D	0.99	0.99			0.99				
C-A	57.82	57.82			57.82				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.02	1.02	174.41	0.006	1.04	0.0	0.0	6.888	A
B-AD	0.00	0.00	76.18	0.000	0.05	0.1	0.0	0.000	A
A-BCD	0.00	0.00	125.97	0.000	0.00	0.0	0.0	0.000	A
A-B	1.02	1.02			1.02				
A-C	53.27	53.27			53.27				
D-AB	3.59	3.59	124.63	0.029	3.56	0.0	0.0	7.431	A
D-BC	1.53	1.53	83.38	0.018	1.54	0.0	0.0	11.001	B
C-ABD	8.95	8.95	135.08	0.066	8.90	0.1	0.1	6.304	A
C-D	0.96	0.96			0.96				
C-A	66.01	66.01			66.01				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.15	4.15	111.78	0.037	4.12	0.0	0.0	7.787	A
B-AD	4.09	4.09	105.98	0.039	4.05	0.0	0.0	9.875	A
A-BCD	1.57	1.57	170.63	0.009	1.56	0.0	0.0	5.323	A
A-B	4.08	4.08			4.08				
A-C	54.83	54.83			54.83				
D-AB	3.60	3.60	103.72	0.035	3.59	0.0	0.0	8.405	A
D-BC	0.53	0.53	42.50	0.013	0.54	0.0	0.0	13.651	B
C-ABD	0.05	0.05	145.91	0.000	0.15	0.1	0.0	6.705	A
C-D	0.00	0.00			0.00				
C-A	74.69	74.69			74.69				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	84.38	0.000	0.04	0.0	0.0	0.000	A
B-AD	5.12	5.12	122.50	0.042	5.12	0.0	0.0	7.668	A
A-BCD	0.00	0.00	124.23	0.000	0.01	0.0	0.0	0.000	A
A-B	3.07	3.07			3.07				
A-C	62.53	62.53			62.53				
D-AB	0.00	0.00	98.86	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	42.19	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	119.23	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	78.95	78.95			78.95				

2024+ GAA Ph2+ Mine Con+DG , PM

Data Errors and Warnings
No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2024+ GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D6+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00	From	To			
			A - R179 East	B - L4816	C - R179 West
		D - L49014			
		A - R179 East	0.00	2.05	55.89
		B - L4816	3.07	0.00	2.05
		C - R179 West	69.27	3.10	0.00
		D - L49014	1.02	1.05	1.02

Demand (Veh/TS)

17:00 - 17:15	From	To			
			A - R179 East	B - L4816	C - R179 West
		D - L49014			
		A - R179 East	0.00	6.14	71.42
		B - L4816	3.07	0.00	1.05
		C - R179 West	67.97	1.02	0.00
		D - L49014	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30	From	To			
			A - R179 East	B - L4816	C - R179 West
		D - L49014			
		A - R179 East	0.00	3.07	60.20
		B - L4816	1.02	0.00	3.10
		C - R179 West	64.96	1.02	0.00
		D - L49014	2.05	0.00	1.02

Demand (Veh/TS)

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.05	67.36	3.07
	B - L4816	2.05	0.00	4.09	2.05
	C - R179 West	61.86	2.07	0.00	1.02
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	13	0
	B - L4816	0	0	0	0
	C - R179 West	5	34	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	5	0
	B - L4816	0	0	100	0
	C - R179 West	3	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	8	0
	B - L4816	0	0	34	0
	C - R179 West	6	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	7	0
	B - L4816	0	0	0	0
	C - R179 West	5	51	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	8.36	0.0	A	2.83	11.32
B-AD	0.03	9.40	0.0	A	2.55	10.21
A-BCD	0.03	5.17	0.0	A	1.65	6.60
A-B					3.30	13.22
A-C					63.11	252.45
D-AB	0.02	11.80	0.0	B	0.90	3.60
D-BC	0.02	13.89	0.0	B	0.64	2.57
C-ABD	0.04	6.32	0.1	A	3.21	12.84
C-D					0.49	1.98
C-A					64.63	258.51

RECEIVED: 11/04/2023

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.05	2.05	148.32	0.014	2.03	0.0	0.0	6.152	A
B-AD	3.07	3.07	120.68	0.025	3.04	0.0	0.0	7.648	A
A-BCD	0.00	0.00	126.67	0.000	0.00	0.0	0.0	0.000	A
A-B	2.05	2.05			2.05				
A-C	55.89	55.89			55.89				
D-AB	1.55	1.55	77.80	0.020	1.53	0.0	0.0	11.798	B
D-BC	1.54	1.54	66.30	0.023	1.52	0.0	0.0	13.888	B
C-ABD	5.70	5.70	153.88	0.037	5.65	0.0	0.1	6.070	A
C-D	0.99	0.99			0.99				
C-A	66.70	66.70			66.70				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	73.24	0.014	1.06	0.0	0.0	8.364	A
B-AD	3.07	3.07	119.05	0.026	3.07	0.0	0.0	7.759	A
A-BCD	0.00	0.00	129.42	0.000	0.00	0.0	0.0	0.000	A
A-B	6.14	6.14			6.14				
A-C	71.42	71.42			71.42				
D-AB	0.00	0.00	77.92	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	65.82	0.000	0.02	0.0	0.0	0.000	A
C-ABD	1.68	1.68	176.89	0.009	1.72	0.1	0.0	5.869	A
C-D	0.00	0.00			0.00				
C-A	67.32	67.32			67.32				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.10	3.10	127.73	0.024	3.08	0.0	0.0	8.134	A
B-AD	1.02	1.02	96.81	0.011	1.04	0.0	0.0	9.398	A
A-BCD	1.60	1.60	175.73	0.009	1.59	0.0	0.0	5.168	A
A-B	3.04	3.04			3.04				
A-C	59.65	59.65			59.65				
D-AB	2.05	2.05	140.24	0.015	2.03	0.0	0.0	7.489	A
D-BC	1.02	1.02	81.85	0.013	1.01	0.0	0.0	13.416	B
C-ABD	1.62	1.62	177.32	0.009	1.62	0.0	0.0	5.094	A
C-D	0.00	0.00			0.00				
C-A	64.36	64.36			64.36				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.13	5.13	144.20	0.036	5.12	0.0	0.0	7.317	A
B-AD	3.05	3.05	112.80	0.027	3.03	0.0	0.0	8.198	A
A-BCD	5.00	5.00	180.08	0.028	4.97	0.0	0.0	5.140	A
A-B	1.99	1.99			1.99				
A-C	65.49	65.49			65.49				
D-AB	0.00	0.00	132.90	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	86.12	0.000	0.02	0.0	0.0	0.000	A
C-ABD	3.84	3.84	137.06	0.028	3.82	0.0	0.0	6.325	A
C-D	0.99	0.99			0.99				
C-A	60.13	60.13			60.13				

2025+ GAA Ph2+ Mine Con+DG , AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2025+ GAA Ph2+ Mine Con+DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D5+D7+D11

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.07	74.68	0.00
	B - L4816	5.22	0.00	2.11	0.00
	C - R179 West	60.40	4.14	0.00	1.03
	D - L49014	0.00	0.00	3.10	0.00

Demand (Veh/TS)

08:00 - 08:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	1.03	53.89	0.00
	B - L4816	0.00	0.00	1.03	0.00
	C - R179 West	71.15	4.27	0.00	1.03
	D - L49014	3.10	1.03	1.03	0.00

Demand (Veh/TS)

08:15 - 08:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	4.18	56.00	1.03
	B - L4816	4.14	0.00	4.22	0.00
	C - R179 West	75.20	0.00	0.00	0.00
	D - L49014	3.10	1.08	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.10	63.29	0.00
	B - L4816	5.17	0.00	0.00	0.00
	C - R179 West	79.51	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	21	0	51	0
	C - R179 West	14	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	6	0
	B - L4816	0	0	0	0
	C - R179 West	15	76	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	26	8	0
	B - L4816	0	0	51	0
	C - R179 West	11	0	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	16	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	10.12	0.0	B	1.84	7.37
B-AD	0.05	9.93	0.1	A	3.63	14.53
A-BCD	0.01	5.31	0.0	A	0.40	1.60
A-B					2.59	10.35
A-C					61.83	247.33
D-AB	0.04	8.45	0.0	A	1.82	7.27
D-BC	0.03	13.68	0.0	B	1.30	5.19
C-ABD	0.07	6.70	0.1	A	3.92	15.69
C-D					0.49	1.96
C-A					69.77	279.08

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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.11	2.11	90.98	0.023	2.09	0.0	0.0	10.122	B
B-AD	5.22	5.22	97.57	0.053	5.16	0.0	0.1	9.733	A
A-BCD	0.00	0.00	129.64	0.000	0.00	0.0	0.0	0.000	A
A-B	2.07	2.07			2.07				
A-C	74.68	74.68			74.68				
D-AB	0.00	0.00	79.04	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.10	3.10	92.32	0.034	3.07	0.0	0.0	10.084	B
C-ABD	6.45	6.45	171.59	0.038	6.40	0.0	0.1	5.447	A
C-D	1.00	1.00			1.00				
C-A	58.13	58.13			58.13				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.03	1.03	174.18	0.006	1.05	0.0	0.0	6.913	A
B-AD	0.00	0.00	75.84	0.000	0.06	0.1	0.0	0.000	A
A-BCD	0.00	0.00	125.81	0.000	0.00	0.0	0.0	0.000	A
A-B	1.03	1.03			1.03				
A-C	53.89	53.89			53.89				
D-AB	3.63	3.63	124.50	0.029	3.60	0.0	0.0	7.441	A
D-BC	1.55	1.55	83.20	0.019	1.56	0.0	0.0	11.028	B
C-ABD	9.19	9.19	135.31	0.068	9.14	0.1	0.1	6.310	A
C-D	0.96	0.96			0.96				
C-A	66.30	66.30			66.30				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.22	4.22	111.51	0.038	4.20	0.0	0.0	7.812	A
B-AD	4.14	4.14	105.57	0.039	4.09	0.0	0.0	9.931	A
A-BCD	1.60	1.60	171.04	0.009	1.59	0.0	0.0	5.310	A
A-B	4.14	4.14			4.14				
A-C	55.48	55.48			55.48				
D-AB	3.64	3.64	103.19	0.035	3.64	0.0	0.0	8.448	A
D-BC	0.54	0.54	42.47	0.013	0.55	0.0	0.0	13.684	B
C-ABD	0.06	0.06	146.21	0.000	0.15	0.1	0.0	6.698	A
C-D	0.00	0.00			0.00				
C-A	75.15	75.15			75.15				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	84.05	0.000	0.04	0.0	0.0	0.000	A
B-AD	5.17	5.17	122.17	0.042	5.18	0.0	0.0	7.694	A
A-BCD	0.00	0.00	124.04	0.000	0.01	0.0	0.0	0.000	A
A-B	3.10	3.10			3.10				
A-C	63.29	63.29			63.29				
D-AB	0.00	0.00	98.32	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	42.14	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	119.33	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	79.51	79.51			79.51				

2025+ GAA Ph2+ Mine Con+DG , PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2025+ GAA Ph2+ Mine Con+DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D6+D8+D12

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.07	56.25	0.00
	B - L4816	3.10	0.00	2.07	0.00
	C - R179 West	70.08	3.15	0.00	1.03
	D - L49014	1.03	1.08	1.03	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	6.21	71.89	0.00
	B - L4816	3.10	0.00	1.08	0.00
	C - R179 West	68.76	1.03	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.10	60.55	1.03
	B - L4816	1.03	0.00	3.15	0.00
	C - R179 West	65.74	1.03	0.00	0.00
	D - L49014	2.07	0.00	1.03	0.00

Demand (Veh/TS)

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.07	67.80	3.10
	B - L4816	2.07	0.00	4.14	2.07
	C - R179 West	62.59	2.11	0.00	1.03
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	12	0
	B - L4816	0	0	0	0
	C - R179 West	5	34	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	5	0
	B - L4816	0	0	100	0
	C - R179 West	3	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	8	0
	B - L4816	0	0	34	0
	C - R179 West	7	0	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	0	7	0
	B - L4816	0	0	0	0
	C - R179 West	5	51	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	8.37	0.0	A	2.87	11.48
B-AD	0.03	9.42	0.0	A	2.58	10.33
A-BCD	0.03	5.16	0.0	A	1.67	6.69
A-B					3.34	13.37
A-C					63.51	254.03
D-AB	0.02	11.87	0.0	B	0.91	3.65
D-BC	0.02	13.96	0.0	B	0.65	2.60
C-ABD	0.04	6.31	0.1	A	3.28	13.14
C-D					0.50	2.00
C-A					65.36	261.43

RECEIVED: 11/04/2023

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.07	2.07	148.25	0.014	2.06	0.0	0.0	6.156	A
B-AD	3.10	3.10	120.42	0.026	3.08	0.0	0.0	7.667	A
A-BCD	0.00	0.00	126.56	0.000	0.00	0.0	0.0	0.000	A
A-B	2.07	2.07			2.07				
A-C	56.25	56.25			56.25				
D-AB	1.58	1.58	77.36	0.020	1.56	0.0	0.0	11.871	B
D-BC	1.57	1.57	65.99	0.024	1.54	0.0	0.0	13.960	B
C-ABD	5.84	5.84	154.28	0.038	5.79	0.0	0.1	6.060	A
C-D	1.00	1.00			1.00				
C-A	67.43	67.43			67.43				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.08	1.08	73.35	0.015	1.08	0.0	0.0	8.372	A
B-AD	3.10	3.10	118.61	0.026	3.10	0.0	0.0	7.791	A
A-BCD	0.00	0.00	129.34	0.000	0.00	0.0	0.0	0.000	A
A-B	6.21	6.21			6.21				
A-C	71.89	71.89			71.89				
D-AB	0.00	0.00	77.49	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	65.52	0.000	0.02	0.0	0.0	0.000	A
C-ABD	1.71	1.71	177.36	0.010	1.75	0.1	0.0	5.857	A
C-D	0.00	0.00			0.00				
C-A	68.08	68.08			68.08				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.15	3.15	127.41	0.025	3.13	0.0	0.0	8.158	A
B-AD	1.03	1.03	96.61	0.011	1.05	0.0	0.0	9.420	A
A-BCD	1.62	1.62	175.90	0.009	1.61	0.0	0.0	5.163	A
A-B	3.08	3.08			3.08				
A-C	60.00	60.00			60.00				
D-AB	2.07	2.07	140.03	0.015	2.05	0.0	0.0	7.513	A
D-BC	1.03	1.03	81.66	0.013	1.02	0.0	0.0	13.476	B
C-ABD	1.65	1.65	177.80	0.009	1.65	0.0	0.0	5.080	A
C-D	0.00	0.00			0.00				
C-A	65.13	65.13			65.13				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.19	5.19	144.06	0.036	5.18	0.0	0.0	7.338	A
B-AD	3.09	3.09	112.58	0.027	3.07	0.0	0.0	8.217	A
A-BCD	5.07	5.07	180.30	0.028	5.05	0.0	0.0	5.136	A
A-B	2.01	2.01			2.01				
A-C	65.89	65.89			65.89				
D-AB	0.00	0.00	132.70	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	85.91	0.000	0.02	0.0	0.0	0.000	A
C-ABD	3.94	3.94	137.44	0.029	3.92	0.0	0.0	6.315	A
C-D	1.01	1.01			1.01				
C-A	60.79	60.79			60.79				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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RECEIVED: 11/04/2023

Filename: Site 2A- GAA Access.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\1.Construction years

Report generation date: 22/02/2023 10:47:50

- »2024+ GAA Ph2+ Mine Con+DG, AM
- »2024+ GAA Ph2+ Mine Con+DG , PM
- »2025+ GAA Ph2+ Mine Con+DG , AM
- »2025+ GAA Ph2+ Mine Con+DG , PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2024+ GAA Ph2+ Mine Con+DG								
Stream B-C	0.0	0.00	0.00	A	0.1	7.69	0.07	A
Stream B-A	0.0	0.00	0.00	A	0.1	11.91	0.10	B
Stream C-AB	0.0	6.62	0.05	A	0.0	0.00	0.00	A
2025+ GAA Ph2+ Mine Con+DG								
Stream B-C	0.0	0.00	0.00	A	0.1	7.69	0.07	A
Stream B-A	0.0	0.00	0.00	A	0.1	11.95	0.10	B
Stream C-AB	0.0	6.63	0.05	A	0.0	0.00	0.00	A

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

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

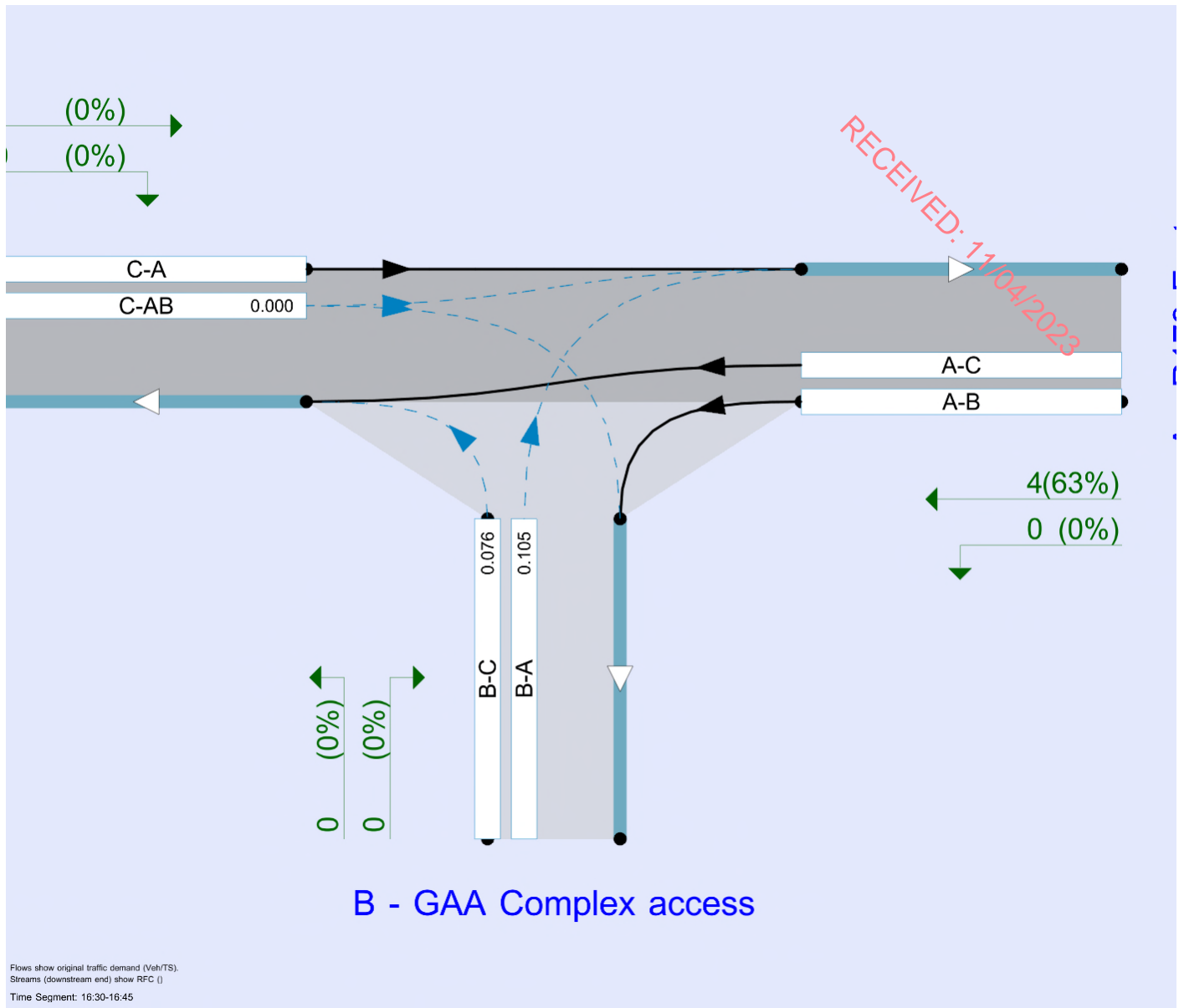
File summary

File Description

Title	
Location	
Site number	
Date	22/02/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
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	perTimeSegment	s	-Min	perMin



Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically	Relationship type	Relationship
D1	2024	AM	ONE HOUR	07:30	09:00	15			
D2	2024	PM	ONE HOUR	16:30	18:00	15			
D3	2025	AM	ONE HOUR	07:30	09:00	15			
D4	2025	PM	ONE HOUR	16:30	18:00	15			
D5	Construction Mine Traffic	AM	ONE HOUR	07:30	09:00	15			
D6	Construction Mine Traffic	PM	ONE HOUR	16:30	18:00	15			
D7	Construction GAA Phase 2	AM	ONE HOUR	07:30	09:00	15			
D8	Construction GAA Phase 2	PM	ONE HOUR	16:30	18:00	15			
D9	Construction Road Diversion Traffic	AM	ONE HOUR	07:30	09:00	15			
D10	Construction Road Diversion Traffic	PM	ONE HOUR	16:30	18:00	15			
D11	Construction Tunnel Traffic	AM	ONE HOUR	07:30	09:00	15			
D12	Construction Tunnel Traffic	PM	ONE HOUR	16:30	18:00	15			
D13	2024+ GAA Ph2+ Mine Con+DG	AM	ONE HOUR	07:30	09:00	15	✓	Simple	D1+D5+D7+D9
D14	2024+ GAA Ph2+ Mine Con+DG	PM	ONE HOUR	16:30	18:00	15	✓	Simple	D2+D6+D8+D10
D15	2025+ GAA Ph2+ Mine Con+DG	AM	ONE HOUR	07:30	09:00	15	✓	Simple	D3+D5+D7+D11
D16	2025+ GAA Ph2+ Mine Con+DG	PM	ONE HOUR	16:30	18:00	15	✓	Simple	D4+D6+D8+D12

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2024+ GAA Ph2+ Mine Con+DG, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Profile Type	D13 - 2024+ GAA Ph2+ Mine Con+DG, AM	'O-D data varies over time' option has been selected but all arms use ONE HOUR profile type, which shapes the flows over time automatically. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R179 East		Major
B	GAA Complex access		Minor
C	R179 West		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R179 West	6.00		✓	3.00	250.0	✓	5.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - GAA Complex access	One lane plus flare	10.00	5.20	3.85	3.76	3.70	✓	1.00	10	10

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	131.192	0.096	0.242	0.152	0.345
1	B-C	170.177	0.104	0.264	-	-
1	C-B	195.330	0.303	0.303	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2024+ GAA Ph2+ Mine Con+DG	AM	ONE HOUR	07:30	09:00	15	✓	Simple	D1+D5+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/TS)	Scaling Factor (%)
A - R179 East		ONE HOUR	✓	73.29	100.000
B - GAA Complex access		ONE HOUR	✓	0.00	100.000
C - R179 West		ONE HOUR	✓	62.02	100.000

Origin-Destination Data

Demand (Veh/TS)

		To		
07:30 - 07:45	From		A - R179 East	B - GAA Complex access
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	54.52	7.50

Demand (Veh/TS)

		To		
07:45 - 08:00	From		A - R179 East	B - GAA Complex access
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	71.03	7.50

Demand (Veh/TS)

		To		
08:00 - 08:15	From		A - R179 East	B - GAA Complex access
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	71.04	7.50

Demand (Veh/TS)

		To		
08:15 - 08:30	From		A - R179 East	B - GAA Complex access
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	68.01	7.50

Demand (Veh/TS)

		To		
08:30 - 08:45	From		A - R179 East	B - GAA Complex access
		A - R179 East	0.00	0.00
		B - GAA Complex access	0.00	0.00
		C - R179 West	65.09	0.00

Demand (Veh/TS)

		To		
08:45 - 09:00	From		A - R179 East	B - GAA Complex access
		A - R179 East	0.00	0.00
		B - GAA Complex access	0.00	0.00
		C - R179 West	54.65	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
07:30 - 07:45	From		A - R179 East	B - GAA Complex access
		A - R179 East	0	17
		B - GAA Complex access	0	0
		C - R179 West	0	17

Heavy Vehicle Percentages

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	0
	B - GAA Complex access	0	0	0
	C - R179 West	0	17	0

Heavy Vehicle Percentages

08:00 - 08:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	5
	B - GAA Complex access	0	0	0
	C - R179 West	6	17	0

Heavy Vehicle Percentages

08:15 - 08:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	18
	B - GAA Complex access	0	0	0
	C - R179 West	17	17	0

Heavy Vehicle Percentages

08:30 - 08:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	12
	B - GAA Complex access	0	0	0
	C - R179 West	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	0
	B - GAA Complex access	0	0	0
	C - R179 West	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.05	6.62	0.0	A	4.05	24.27
C-A					52.86	317.17
A-B					4.70	28.17
A-C					62.56	375.33

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.60	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	107.50	0.000	0.00	0.0	0.0	0.000	A
C-AB	5.65	5.65	150.08	0.038	5.61	0.0	0.0	6.227	A
C-A	41.04	41.04			41.04				
A-B	5.65	5.65			5.65				
A-C	49.53	49.53			49.53				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.58	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	106.17	0.000	0.00	0.0	0.0	0.000	A
C-AB	5.32	5.32	150.09	0.035	5.33	0.0	0.0	6.216	A
C-A	50.43	50.43			50.43				
A-B	5.52	5.52			5.52				
A-C	60.37	60.37			60.37				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	149.21	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	99.41	0.000	0.00	0.0	0.0	0.000	A
C-AB	6.52	6.52	145.27	0.045	6.51	0.0	0.0	6.485	A
C-A	61.76	61.76			61.76				
A-B	8.32	8.32			8.32				
A-C	72.37	72.37			72.37				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	146.74	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	96.05	0.000	0.00	0.0	0.0	0.000	A
C-AB	6.78	6.78	142.77	0.048	6.78	0.0	0.0	6.617	A
C-A	61.50	61.50			61.50				
A-B	8.68	8.68			8.68				
A-C	72.01	72.01			72.01				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	150.76	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	104.91	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	296.64	0.000	0.05	0.0	0.0	0.000	A
C-A	55.75	55.75			55.75				
A-B	0.00	0.00			0.00				
A-C	65.88	65.88			65.88				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	155.63	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	110.54	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	340.28	0.000	0.00	0.0	0.0	0.000	A
C-A	46.69	46.69			46.69				
A-B	0.00	0.00			0.00				
A-C	55.18	55.18			55.18				

2024+ GAA Ph2+ Mine Con+DG , PM

RECEIVED: 11/04/2023

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Profile Type	D14 - 2024+ GAA Ph2+ Mine Con+DG , PM	'O-D data varies over time' option has been selected but all arms use ONE HOUR profile type, which shapes the flows over time automatically. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2024+ GAA Ph2+ Mine Con+DG	PM	ONE HOUR	16:30	18:00	15	✓	Simple	D2+D6+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/TS)	Scaling Factor (%)
A - R179 East		ONE HOUR	✓	54.15	100.000
B - GAA Complex access		ONE HOUR	✓	15.00	100.000
C - R179 West		ONE HOUR	✓	86.44	100.000

Origin-Destination Data

Demand (Veh/TS)

		To			
16:30 - 16:45	From		A - R179 East	B - GAA Complex access	C - R179 West
		A - R179 East	0.00	0.00	54.15
		B - GAA Complex access	7.50	0.00	7.50
		C - R179 West	86.44	0.00	0.00

Demand (Veh/TS)

		To			
16:45 - 17:00	From		A - R179 East	B - GAA Complex access	C - R179 West
		A - R179 East	0.00	0.00	65.58
		B - GAA Complex access	7.50	0.00	7.50
		C - R179 West	66.11	0.00	0.00

Demand (Veh/TS)

		To			
17:00 - 17:15	From		A - R179 East	B - GAA Complex access	C - R179 West
		A - R179 East	0.00	0.00	54.21
		B - GAA Complex access	7.50	0.00	7.50
		C - R179 West	71.41	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	74.45
	B - GAA Complex access	7.50	0.00	7.50
	C - R179 West	60.32	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	73.61
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	69.40	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	56.09
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	54.28	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:30 - 16:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	14
	B - GAA Complex access	17	0	17
	C - R179 West	0	0	0

Heavy Vehicle Percentages

16:45 - 17:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	15
	B - GAA Complex access	17	0	17
	C - R179 West	14	0	0

Heavy Vehicle Percentages

17:00 - 17:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	27
	B - GAA Complex access	17	0	17
	C - R179 West	4	0	0

Heavy Vehicle Percentages

17:15 - 17:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	4
	B - GAA Complex access	17	0	17
	C - R179 West	15	0	0

Heavy Vehicle Percentages

17:30 - 17:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	0
	B - GAA Complex access	0	0	0
	C - R179 West	0	0	0

Heavy Vehicle Percentages

17:45 - 18:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	39
	B - GAA Complex access	0	0	0
	C - R179 West	0	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	7.69	0.1	A	4.82	28.90
B-A	0.10	11.91	0.1	B	4.82	28.90
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					79.31	475.89
A-B					0.00	0.00
A-C					49.69	298.14

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.65	5.65	133.33	0.042	5.60	0.0	0.0	7.045	A
B-A	5.65	5.65	94.37	0.060	5.58	0.0	0.1	10.129	B
C-AB	0.00	0.00	362.62	0.000	0.00	0.0	0.0	0.000	A
C-A	65.07	65.07			65.07				
A-B	0.00	0.00			0.00				
A-C	40.77	40.77			40.77				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.74	6.74	130.57	0.052	6.73	0.0	0.1	7.267	A
B-A	6.74	6.74	89.31	0.076	6.72	0.1	0.1	10.895	B
C-AB	0.00	0.00	356.76	0.000	0.00	0.0	0.0	0.000	A
C-A	77.70	77.70			77.70				
A-B	0.00	0.00			0.00				
A-C	48.68	48.68			48.68				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8.26	8.26	125.32	0.066	8.24	0.1	0.1	7.686	A
B-A	8.26	8.26	83.79	0.099	8.23	0.1	0.1	11.908	B
C-AB	0.00	0.00	344.75	0.000	0.00	0.0	0.0	0.000	A
C-A	95.17	95.17			95.17				
A-B	0.00	0.00			0.00				
A-C	59.62	59.62			59.62				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8.26	8.26	128.47	0.064	8.26	0.1	0.1	7.486	A
B-A	8.26	8.26	85.40	0.097	8.26	0.1	0.1	11.666	B
C-AB	0.00	0.00	353.26	0.000	0.00	0.0	0.0	0.000	A
C-A	95.17	95.17			95.17				
A-B	0.00	0.00			0.00				
A-C	59.62	59.62			59.62				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	131.29	0.000	0.07	0.1	0.0	0.000	A
B-A	0.00	0.00	94.67	0.000	0.11	0.1	0.0	0.000	A
C-AB	0.00	0.00	361.19	0.000	0.00	0.0	0.0	0.000	A
C-A	77.70	77.70			77.70				
A-B	0.00	0.00			0.00				
A-C	48.68	48.68			48.68				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	148.98	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	103.27	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	356.25	0.000	0.00	0.0	0.0	0.000	A
C-A	65.07	65.07			65.07				
A-B	0.00	0.00			0.00				
A-C	40.77	40.77			40.77				

RECEIVED: 11/04/2023

2025+ GAA Ph2+ Mine Con+DG , AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Profile Type	D15 - 2025+ GAA Ph2+ Mine Con+DG , AM	'O-D data varies over time' option has been selected but all arms use ONE HOUR profile type, which shapes the flows over time automatically. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2025+ GAA Ph2+ Mine Con+DG	AM	ONE HOUR	07:30	09:00	15	✓	Simple	D3+D5+D7+D11

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/TS)	Scaling Factor (%)
A - R179 East		ONE HOUR	✓	74.09	100.000
B - GAA Complex access		ONE HOUR	✓	0.00	100.000
C - R179 West		ONE HOUR	✓	62.42	100.000

Origin-Destination Data

Demand (Veh/TS)

		To		
07:30 - 07:45	From		A - R179 East	B - GAA Complex access
				C - R179 West
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	54.92	7.50
				0.00

Demand (Veh/TS)

		To		
07:45 - 08:00	From		A - R179 East	B - GAA Complex access
				C - R179 West
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	71.57	7.50
				0.00

Demand (Veh/TS)

		To		
08:00 - 08:15	From		A - R179 East	B - GAA Complex access
				C - R179 West
		A - R179 East	0.00	7.50
		B - GAA Complex access	0.00	0.00
		C - R179 West	71.55	7.50
				0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	7.50	62.89
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	68.48	7.50	0.00

Demand (Veh/TS)

08:30 - 08:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	60.90
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	65.77	0.00	0.00

Demand (Veh/TS)

08:45 - 09:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	56.84
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	55.26	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:30 - 07:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	22
	B - GAA Complex access	0	0	0
	C - R179 West	16	17	0

Heavy Vehicle Percentages

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	0
	B - GAA Complex access	0	0	0
	C - R179 West	0	17	0

Heavy Vehicle Percentages

08:00 - 08:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	5
	B - GAA Complex access	0	0	0
	C - R179 West	6	17	0

Heavy Vehicle Percentages

08:15 - 08:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	17	18
	B - GAA Complex access	0	0	0
	C - R179 West	18	17	0

Heavy Vehicle Percentages

08:30 - 08:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	12
	B - GAA Complex access	0	0	0
	C - R179 West	0	0	0

Heavy Vehicle Percentages

08:45 - 09:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	0
	B - GAA Complex access	0	0	0
	C - R179 West	3	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.00	0.00	0.0	A	0.00	0.00
C-AB	0.05	6.63	0.0	A	4.05	24.27
C-A					53.23	319.37
A-B					4.70	28.18
A-C					63.29	379.72

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.39	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	106.26	0.000	0.00	0.0	0.0	0.000	A
C-AB	5.65	5.65	149.88	0.038	5.61	0.0	0.0	6.236	A
C-A	41.34	41.34			41.34				
A-B	5.65	5.65			5.65				
A-C	50.13	50.13			50.13				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.39	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	105.94	0.000	0.00	0.0	0.0	0.000	A
C-AB	5.32	5.32	149.90	0.036	5.32	0.0	0.0	6.226	A
C-A	50.79	50.79			50.79				
A-B	5.51	5.51			5.51				
A-C	61.09	61.09			61.09				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	148.94	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	99.04	0.000	0.00	0.0	0.0	0.000	A
C-AB	6.52	6.52	145.00	0.045	6.51	0.0	0.0	6.498	A
C-A	62.20	62.20			62.20				
A-B	8.33	8.33			8.33				
A-C	73.24	73.24			73.24				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	146.44	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	95.63	0.000	0.00	0.0	0.0	0.000	A
C-AB	6.78	6.78	142.48	0.048	6.78	0.0	0.0	6.631	A
C-A	61.94	61.94			61.94				
A-B	8.69	8.69			8.69				
A-C	72.88	72.88			72.88				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	150.51	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	104.63	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	296.16	0.000	0.05	0.0	0.0	0.000	A
C-A	56.11	56.11			56.11				
A-B	0.00	0.00			0.00				
A-C	66.60	66.60			66.60				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	155.47	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	110.33	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	339.46	0.000	0.00	0.0	0.0	0.000	A
C-A	46.99	46.99			46.99				
A-B	0.00	0.00			0.00				
A-C	55.78	55.78			55.78				

RECEIVED: 11/04/2023

2025+ GAA Ph2+ Mine Con+DG , PM

RECEIVED: 11/04/2023

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Profile Type	D16 - 2025+ GAA Ph2+ Mine Con+DG , PM	'O-D data varies over time' option has been selected but all arms use ONE HOUR profile type, which shapes the flows over time automatically. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2025+ GAA Ph2+ Mine Con+DG	PM	ONE HOUR	16:30	18:00	15	✓	Simple	D4+D6+D8+D12

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/TS)	Scaling Factor (%)
A - R179 East		ONE HOUR	✓	54.50	100.000
B - GAA Complex access		ONE HOUR	✓	15.00	100.000
C - R179 West		ONE HOUR	✓	87.57	100.000

Origin-Destination Data

Demand (Veh/TS)

		To			
16:30 - 16:45	From		A - R179 East	B - GAA Complex access	C - R179 West
		A - R179 East	0.00	0.00	54.50
		B - GAA Complex access	7.50	0.00	7.50
		C - R179 West	87.57	0.00	0.00

Demand (Veh/TS)

		To			
16:45 - 17:00	From		A - R179 East	B - GAA Complex access	C - R179 West
		A - R179 East	0.00	0.00	65.98
		B - GAA Complex access	7.50	0.00	7.50
		C - R179 West	66.91	0.00	0.00

Demand (Veh/TS)

		To			
17:00 - 17:15	From		A - R179 East	B - GAA Complex access	C - R179 West
		A - R179 East	0.00	0.00	54.48
		B - GAA Complex access	7.50	0.00	7.50
		C - R179 West	72.19	0.00	0.00

Demand (Veh/TS)**17:15 - 17:30**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	74.97
	B - GAA Complex access	7.50	0.00	7.50
	C - R179 West	61.02	0.00	0.00

Demand (Veh/TS)**17:30 - 17:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	74.42
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	70.17	0.00	0.00

Demand (Veh/TS)**17:45 - 18:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	0.00	56.75
	B - GAA Complex access	0.00	0.00	0.00
	C - R179 West	54.93	0.00	0.00

Vehicle Mix**Heavy Vehicle Percentages****16:30 - 16:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	18
	B - GAA Complex access	17	0	17
	C - R179 West	0	0	0

Heavy Vehicle Percentages**16:45 - 17:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	23
	B - GAA Complex access	17	0	17
	C - R179 West	12	0	0

Heavy Vehicle Percentages**17:00 - 17:15**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	27
	B - GAA Complex access	17	0	17
	C - R179 West	4	0	0

Heavy Vehicle Percentages**17:15 - 17:30**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	17	0	17
	C - R179 West	15	0	0

Heavy Vehicle Percentages**17:30 - 17:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	0
	B - GAA Complex access	0	0	0
	C - R179 West	0	0	0

Heavy Vehicle Percentages**17:45 - 18:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	29
	B - GAA Complex access	0	0	0
	C - R179 West	0	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.07	7.69	0.1	A	4.82	28.90
B-A	0.10	11.95	0.1	B	4.82	28.90
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					80.36	482.14
A-B					0.00	0.00
A-C					50.01	300.07

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.65	5.65	132.86	0.043	5.60	0.0	0.0	7.071	A
B-A	5.65	5.65	93.83	0.060	5.58	0.0	0.1	10.191	B
C-AB	0.00	0.00	361.37	0.000	0.00	0.0	0.0	0.000	A
C-A	65.93	65.93			65.93				
A-B	0.00	0.00			0.00				
A-C	41.03	41.03			41.03				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	6.74	6.74	129.64	0.052	6.73	0.0	0.1	7.322	A
B-A	6.74	6.74	88.50	0.076	6.72	0.1	0.1	11.003	B
C-AB	0.00	0.00	354.31	0.000	0.00	0.0	0.0	0.000	A
C-A	78.72	78.72			78.72				
A-B	0.00	0.00			0.00				
A-C	49.00	49.00			49.00				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8.26	8.26	125.24	0.066	8.24	0.1	0.1	7.691	A
B-A	8.26	8.26	83.53	0.099	8.23	0.1	0.1	11.949	B
C-AB	0.00	0.00	344.55	0.000	0.00	0.0	0.0	0.000	A
C-A	96.42	96.42			96.42				
A-B	0.00	0.00			0.00				
A-C	60.01	60.01			60.01				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	8.26	8.26	128.41	0.064	8.26	0.1	0.1	7.492	A
B-A	8.26	8.26	85.16	0.097	8.26	0.1	0.1	11.702	B
C-AB	0.00	0.00	353.14	0.000	0.00	0.0	0.0	0.000	A
C-A	96.42	96.42			96.42				
A-B	0.00	0.00			0.00				
A-C	60.01	60.01			60.01				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	131.20	0.000	0.07	0.1	0.0	0.000	A
B-A	0.00	0.00	94.48	0.000	0.11	0.1	0.0	0.000	A
C-AB	0.00	0.00	360.99	0.000	0.00	0.0	0.0	0.000	A
C-A	78.72	78.72			78.72				
A-B	0.00	0.00			0.00				
A-C	49.00	49.00			49.00				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	149.94	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	104.02	0.000	0.00	0.0	0.0	0.000	A
C-AB	0.00	0.00	358.54	0.000	0.00	0.0	0.0	0.000	A
C-A	65.93	65.93			65.93				
A-B	0.00	0.00			0.00				
A-C	41.03	41.03			41.03				

RECEIVED: 11/04/2023

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site 1- Staggered Junction.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\2.Operation years

Report generation date: 22/02/2023 10:52:00

»2026, AM

»2026, PM

»2031, AM

»2031, PM

»2041, AM

»2041, PM

»2026+ GAA Phase 2+ Mine Traffic+ DG, AM

»2026+ GAA Phase 2+ Mine Traffic+ DG, PM

»2031+ GAA Phase 2+ Mine Traffic+ DG, AM

»2031+ GAA Phase 2+ Mine Traffic+ DG, PM

»2041+ GAA Phase 2+ Mine Traffic+ DG, AM

»2041+ GAA Phase 2+ Mine Traffic+ DG, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2026								
Stream B-CD	0.1	6.14	0.05	A	0.1	5.96	0.05	A
Stream B-A	0.0	8.43	0.03	A	0.0	8.52	0.02	A
Stream AB-CD	0.0	13.73	0.03	B	0.1	7.06	0.06	A
Stream D-AB	0.0	5.68	0.04	A	0.0	5.79	0.02	A
Stream D-C	0.0	7.27	0.03	A	0.0	7.29	0.02	A
Stream CD-AB	0.0	6.85	0.04	A	0.0	6.87	0.04	A
2031								
Stream B-CD	0.1	6.19	0.06	A	0.1	6.01	0.05	A
Stream B-A	0.0	8.54	0.04	A	0.0	8.64	0.02	A
Stream AB-CD	0.0	13.85	0.03	B	0.1	7.12	0.06	A
Stream D-AB	0.0	5.73	0.05	A	0.0	5.83	0.02	A
Stream D-C	0.0	7.37	0.03	A	0.0	7.39	0.02	A
Stream CD-AB	0.0	6.91	0.04	A	0.0	6.93	0.04	A
2041								
Stream B-CD	0.1	6.24	0.06	A	0.1	6.07	0.06	A
Stream B-A	0.0	8.67	0.04	A	0.0	8.77	0.02	A
Stream AB-CD	0.0	14.00	0.03	B	0.1	7.20	0.07	A
Stream D-AB	0.1	5.80	0.05	A	0.0	5.88	0.02	A
Stream D-C	0.0	7.49	0.04	A	0.0	7.51	0.02	A
Stream CD-AB	0.0	6.98	0.04	A	0.0	6.99	0.04	A
2026+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-CD	0.1	6.45	0.05	A	0.1	6.01	0.05	A
Stream B-A	0.0	8.81	0.04	A	0.0	8.86	0.02	A
Stream AB-CD	0.1	14.39	0.07	B	0.1	7.42	0.07	A
Stream D-AB	0.1	5.86	0.05	A	0.0	6.00	0.03	A
Stream D-C	0.0	7.97	0.03	A	0.0	7.68	0.03	A
Stream CD-AB	0.0	7.20	0.04	A	0.0	6.92	0.04	A
2031+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-CD	0.1	6.49	0.06	A	0.1	6.05	0.06	A
Stream B-A	0.0	8.93	0.04	A	0.0	8.98	0.02	A
Stream AB-CD	0.1	14.52	0.07	B	0.1	7.49	0.08	A
Stream D-AB	0.1	5.91	0.06	A	0.0	6.04	0.04	A
Stream D-C	0.0	8.11	0.03	A	0.0	7.80	0.03	A
Stream CD-AB	0.0	7.26	0.04	A	0.0	6.98	0.04	A
2041+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-CD	0.1	6.55	0.06	A	0.1	6.11	0.06	A
Stream B-A	0.0	9.08	0.04	A	0.0	9.12	0.02	A
Stream AB-CD	0.1	14.68	0.08	B	0.1	7.58	0.08	A
Stream D-AB	0.1	5.98	0.06	A	0.0	6.10	0.04	A
Stream D-C	0.0	8.27	0.04	A	0.0	7.94	0.03	A
Stream CD-AB	0.0	7.34	0.04	A	0.0	7.04	0.04	A

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

File summary

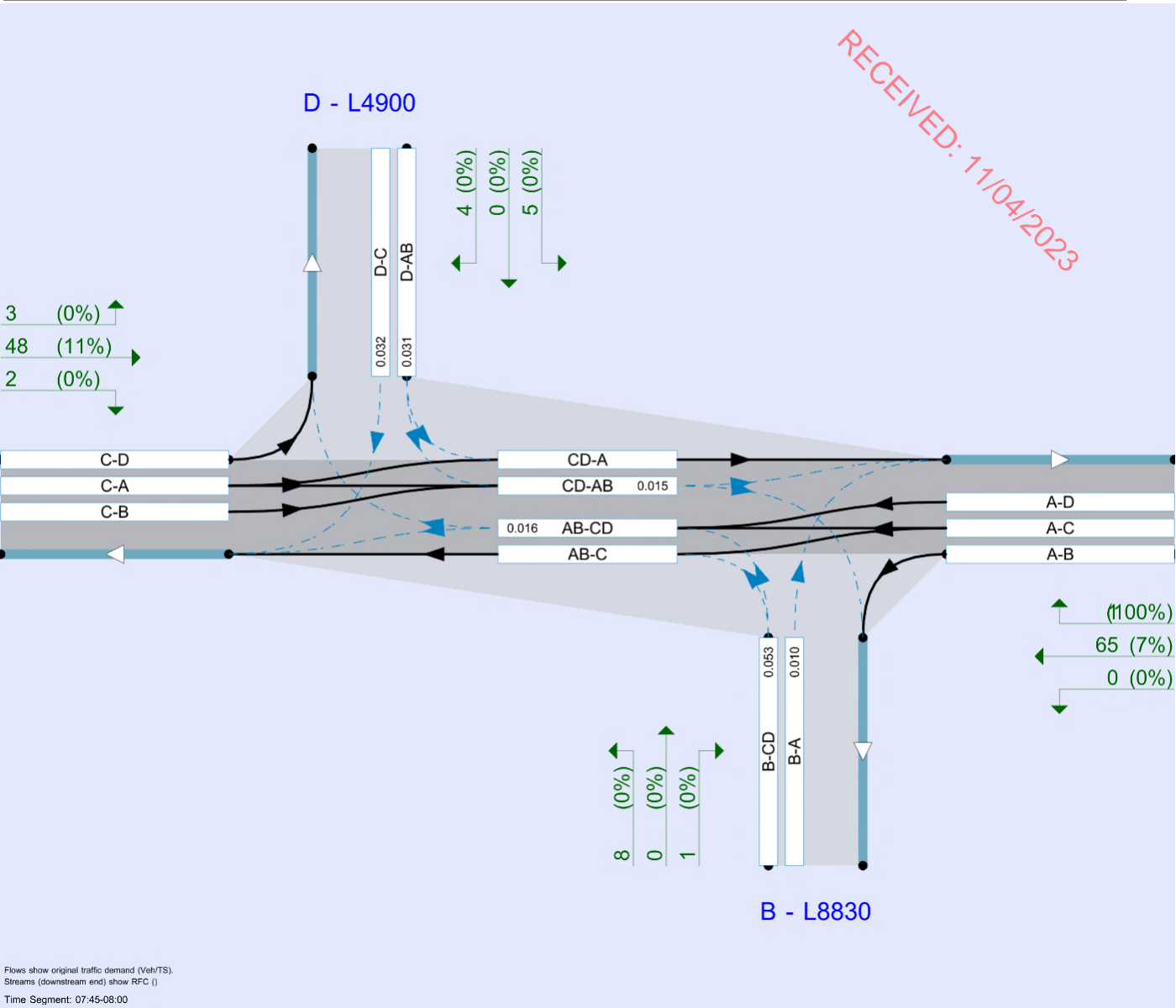
File Description

Title	
Location	
Site number	
Date	22/02/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

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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	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2026	AM	DIRECT	07:45	08:45	60	15	✓		
D2	2026	PM	DIRECT	16:45	17:45	60	15			
D3	2031	AM	DIRECT	07:45	08:45	60	15	✓		
D4	2031	PM	DIRECT	16:45	17:45	60	15	✓		
D5	2041	AM	DIRECT	07:45	08:45	60	15	✓		
D6	2041	PM	DIRECT	16:45	17:45	60	15	✓		
D7	Mine Traffic	AM	DIRECT	07:45	08:45	60	15			
D8	Mine Traffic	PM	DIRECT	16:45	17:45	60	15			
D9	GAA phase 2	AM	DIRECT	07:45	08:45	60	15			
D10	GAA phase 2	PM	DIRECT	16:45	17:45	60	15			
D11	2026+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D7+D9
D12	2026+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D8+D10
D13	2031+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D7+D9
D14	2031+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D8+D10
D15	2041+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D5+D7+D9
D16	2041+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D6+D8+D10

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R179 East		Major
B	L8830		Minor
C	R179 West		Major
D	L4900		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - R179 East	6.00	✓	2.50	✓	2.50	30.0	✓	4.00
C - R179 West	7.30	✓	2.50	✓	2.50	30.0	✓	4.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - L8830	One lane plus flare	10.00	5.00	3.50	3.00	3.00		1.00	30	50
D - L4900	One lane plus flare	10.00	9.80	5.20	4.00	3.00		1.00	160	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for A-D	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
1	AB-D	152.661	-	-	-	-	-	0.237	0.237	0.237	-	-
1	B-A	132.109	0.086	0.217	0.217	-	-	0.137	0.311	-	0.137	0.311
1	B-CD	176.795	0.102	0.259	0.259	-	-	-	-	-	-	-
1	CD-B	152.661	0.223	0.223	0.223	-	-	-	-	-	-	-
1	D-AB	185.118	-	-	-	-	-	0.287	0.287	0.114	-	-
1	D-C	161.680	-	0.177	0.403	0.177	0.403	0.282	0.282	0.112	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2026	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

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Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	0.00	65.13	1.10
	B - L8830	1.05	0.00	8.37	0.00
	C - R179 West	48.44	2.09	0.00	3.14
	D - L4900	5.23	0.00	4.19	0.00

Demand (Veh/TS)

08:00 - 08:15

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	0.00	49.37	1.05
	B - L8830	4.19	0.00	1.05	0.00
	C - R179 West	54.78	1.05	0.00	1.05
	D - L4900	2.15	1.05	2.09	0.00

Demand (Veh/TS)

08:15 - 08:30

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.05	53.68	0.00
	B - L8830	1.05	0.00	4.19	0.00
	C - R179 West	64.09	0.00	0.00	1.05
	D - L4900	4.25	1.05	1.05	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.05	63.10	2.09
	B - L8830	3.14	0.00	1.05	0.00
	C - R179 West	60.13	4.19	0.00	3.14
	D - L4900	6.28	1.05	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0	0	7	100
	B - L8830	0	0	0	0
	C - R179 West	11	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.14	0.1	A	3.66	14.66
B-A	0.03	8.43	0.0	A	2.36	9.42
A-B					0.52	2.09
A-C					57.82	231.28
A-D					1.06	4.25
AB-CD	0.03	13.73	0.0	B	1.06	4.25
AB-C					61.48	245.93
D-AB	0.04	5.68	0.0	A	5.26	21.05
D-C	0.03	7.27	0.0	A	1.83	7.33
C-D					2.09	8.37
C-A					56.86	227.44
C-B					1.83	7.33
CD-AB	0.04	6.85	0.0	A	2.62	10.46
CD-A					61.33	245.31

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.37	8.37	157.86	0.053	8.32	0.0	0.1	6.017	A
B-A	1.05	1.05	107.75	0.010	1.04	0.0	0.0	8.434	A
A-B	0.00	0.00			0.00				
A-C	65.13	65.13			65.13				
A-D	1.10	1.10			1.10				
AB-CD	1.10	1.10	69.35	0.016	1.09	0.0	0.0	13.182	B
AB-C	73.45	73.45			73.45				
D-AB	5.23	5.23	167.32	0.031	5.20	0.0	0.0	5.549	A
D-C	4.19	4.19	130.80	0.032	4.15	0.0	0.0	7.104	A
C-D	3.14	3.14			3.14				
C-A	48.44	48.44			48.44				
C-B	2.09	2.09			2.09				
CD-AB	2.09	2.09	136.64	0.015	2.08	0.0	0.0	6.688	A
CD-A	53.64	53.64			53.64				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	149.71	0.007	1.10	0.1	0.0	6.059	A
B-A	4.19	4.19	121.27	0.035	4.16	0.0	0.0	7.683	A
A-B	0.00	0.00			0.00				
A-C	49.37	49.37			49.37				
A-D	1.05	1.05			1.05				
AB-CD	1.05	1.05	68.87	0.015	1.05	0.0	0.0	13.268	B
AB-C	50.47	50.47			50.47				
D-AB	3.20	3.20	167.73	0.019	3.21	0.0	0.0	5.472	A
D-C	2.09	2.09	132.65	0.016	2.11	0.0	0.0	6.894	A
C-D	1.05	1.05			1.05				
C-A	54.78	54.78			54.78				
C-B	1.05	1.05			1.05				
CD-AB	2.09	2.09	140.43	0.015	2.09	0.0	0.0	6.507	A
CD-A	56.95	56.95			56.95				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.19	4.19	160.07	0.026	4.17	0.0	0.0	5.772	A
B-A	1.05	1.05	111.50	0.009	1.07	0.0	0.0	8.151	A
A-B	1.05	1.05			1.05				
A-C	53.68	53.68			53.68				
A-D	0.00	0.00			0.00				
AB-CD	0.00	0.00	135.52	0.000	0.02	0.0	0.0	0.000	A
AB-C	57.84	57.84			57.84				
D-AB	5.29	5.29	163.73	0.032	5.28	0.0	0.0	5.679	A
D-C	1.05	1.05	124.80	0.008	1.05	0.0	0.0	7.275	A
C-D	1.05	1.05			1.05				
C-A	64.09	64.09			64.09				
C-B	0.00	0.00			0.00				
CD-AB	1.05	1.05	139.63	0.008	1.05	0.0	0.0	6.494	A
CD-A	68.32	68.32			68.32				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	147.57	0.007	1.07	0.0	0.0	6.143	A
B-A	3.14	3.14	114.12	0.028	3.12	0.0	0.0	8.107	A
A-B	1.05	1.05			1.05				
A-C	63.10	63.10			63.10				
A-D	2.09	2.09			2.09				
AB-CD	2.10	2.10	67.61	0.031	2.06	0.0	0.0	13.727	B
AB-C	64.16	64.16			64.16				
D-AB	7.33	7.33	165.85	0.044	7.31	0.0	0.0	5.676	A
D-C	0.00	0.00	119.28	0.000	0.01	0.0	0.0	0.000	A
C-D	3.14	3.14			3.14				
C-A	60.13	60.13			60.13				
C-B	4.19	4.19			4.19				
CD-AB	5.23	5.23	136.45	0.038	5.20	0.0	0.0	6.855	A
CD-A	66.40	66.40			66.40				

2026, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2026	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00	From	To			
			A - R179 East	B - L8830	C - R179 West
			D - L4900		
		A - R179 East	0.00	1.05	48.38
		B - L8830	2.09	0.00	1.05
		C - R179 West	69.26	2.09	0.00
		D - L4900	1.05	0.00	2.09

Demand (Veh/TS)

17:00 - 17:15	From	To			
			A - R179 East	B - L8830	C - R179 West
			D - L4900		
		A - R179 East	0.00	3.14	64.96
		B - L8830	1.05	0.00	4.19
		C - R179 West	65.02	4.19	0.00
		D - L4900	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30	From	To			
			A - R179 East	B - L8830	C - R179 West
			D - L4900		
		A - R179 East	0.00	3.14	47.22
		B - L8830	1.05	0.00	7.33
		C - R179 West	63.04	2.09	0.00
		D - L4900	1.05	2.09	1.05

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Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.14	60.83	4.19
	B - L8830	0.00	0.00	2.09	1.05
	C - R179 West	56.70	5.23	0.00	1.05
	D - L4900	3.14	0.00	1.05	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	9	0
	B - L8830	0	0	0	0
	C - R179 West	5	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	5.96	0.1	A	4.45	17.80
B-A	0.02	8.52	0.0	A	1.05	4.19
A-B					2.62	10.47
A-C					55.35	221.39
A-D					5.50	21.98
AB-CD	0.06	7.06	0.1	A	6.28	25.12
AB-C					59.01	236.04
D-AB	0.02	5.79	0.0	A	1.83	7.33
D-C	0.02	7.29	0.0	A	1.05	4.19
C-D					1.31	5.23
C-A					63.50	254.02
C-B					3.40	13.61
CD-AB	0.04	6.87	0.0	A	3.93	15.70
CD-A					64.81	259.24

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	153.68	0.007	1.04	0.0	0.0	5.895	A
B-A	2.09	2.09	123.62	0.017	2.08	0.0	0.0	7.404	A
A-B	1.05	1.05			1.05				
A-C	48.38	48.38			48.38				
A-D	7.33	7.33			7.33				
AB-CD	7.33	7.33	134.75	0.054	7.27	0.0	0.1	7.056	A
AB-C	49.42	49.42			49.42				
D-AB	1.05	1.05	156.41	0.007	1.04	0.0	0.0	5.792	A
D-C	2.09	2.09	133.25	0.016	2.08	0.0	0.0	6.861	A
C-D	1.05	1.05			1.05				
C-A	69.26	69.26			69.26				
C-B	2.09	2.09			2.09				
CD-AB	2.09	2.09	139.01	0.015	2.08	0.0	0.0	6.572	A
CD-A	70.30	70.30			70.30				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.23	5.23	156.10	0.034	5.21	0.0	0.0	5.964	A
B-A	1.05	1.05	106.67	0.010	1.05	0.0	0.0	8.523	A
A-B	3.14	3.14			3.14				
A-C	64.96	64.96			64.96				
A-D	3.14	3.14			3.14				
AB-CD	4.18	4.18	135.30	0.031	4.21	0.1	0.0	6.868	A
AB-C	69.13	69.13			69.13				
D-AB	0.00	0.00	156.76	0.000	0.01	0.0	0.0	0.000	A
D-C	0.00	0.00	132.03	0.000	0.02	0.0	0.0	0.000	A
C-D	1.05	1.05			1.05				
C-A	65.02	65.02			65.02				
C-B	4.19	4.19			4.19				
CD-AB	4.19	4.19	135.43	0.031	4.17	0.0	0.0	6.856	A
CD-A	65.02	65.02			65.02				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.37	8.37	160.86	0.052	8.35	0.0	0.1	5.901	A
B-A	1.05	1.05	108.56	0.010	1.05	0.0	0.0	8.370	A
A-B	3.14	3.14			3.14				
A-C	47.22	47.22			47.22				
A-D	7.33	7.33			7.33				
AB-CD	8.37	8.37	136.04	0.062	8.34	0.0	0.1	7.045	A
AB-C	54.53	54.53			54.53				
D-AB	3.14	3.14	169.91	0.018	3.12	0.0	0.0	5.396	A
D-C	1.05	1.05	124.47	0.008	1.04	0.0	0.0	7.291	A
C-D	2.09	2.09			2.09				
C-A	63.04	63.04			63.04				
C-B	2.09	2.09			2.09				
CD-AB	4.17	4.17	138.82	0.030	4.18	0.0	0.0	6.683	A
CD-A	64.08	64.08			64.08				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.14	3.14	159.81	0.020	3.17	0.1	0.0	5.746	A
B-A	0.00	0.00	103.36	0.000	0.01	0.0	0.0	0.000	A
A-B	3.14	3.14			3.14				
A-C	60.83	60.83			60.83				
A-D	4.19	4.19			4.19				
AB-CD	5.23	5.23	137.12	0.038	5.26	0.1	0.0	6.828	A
AB-C	62.96	62.96			62.96				
D-AB	3.14	3.14	171.05	0.018	3.14	0.0	0.0	5.361	A
D-C	1.05	1.05	125.10	0.008	1.05	0.0	0.0	7.253	A
C-D	1.05	1.05			1.05				
C-A	56.70	56.70			56.70				
C-B	5.23	5.23			5.23				
CD-AB	5.25	5.25	136.21	0.039	5.24	0.0	0.0	6.871	A
CD-A	59.83	59.83			59.83				

2031, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2031	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	0.00	68.29
		B - L8830	1.09	0.00	8.75
		C - R179 West	50.92	2.19	0.00
		D - L4900	5.47	0.00	4.37

Demand (Veh/TS)

08:00 - 08:15	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	0.00	51.77
		B - L8830	4.37	0.00	1.09
		C - R179 West	57.61	1.09	0.00
		D - L4900	2.31	1.09	2.19

Demand (Veh/TS)

08:15 - 08:30	From	To			
			A - R179 East	B - L8830	C - R179 West
		A - R179 East	0.00	1.09	56.39
		B - L8830	1.09	0.00	4.37
		C - R179 West	67.20	0.00	0.00
		D - L4900	4.50	1.09	1.09

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.09	66.23	2.19
	B - L8830	3.28	0.00	1.09	0.00
	C - R179 West	63.32	4.37	0.00	3.28
	D - L4900	6.56	1.09	0.00	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	7	100
	B - L8830	0	0	0	0
	C - R179 West	12	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.19	0.1	A	3.83	15.31
B-A	0.04	8.54	0.0	A	2.46	9.84
A-B					0.55	2.19
A-C					60.67	242.68
A-D					1.12	4.50
AB-CD	0.03	13.85	0.0	B	1.13	4.50
AB-C					64.49	257.98
D-AB	0.05	5.73	0.0	A	5.53	22.12
D-C	0.03	7.37	0.0	A	1.91	7.65
C-D					2.19	8.75
C-A					59.76	239.05
C-B					1.91	7.65
CD-AB	0.04	6.91	0.0	A	2.73	10.93
CD-A					64.46	257.84

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.75	8.75	156.85	0.056	8.69	0.0	0.1	6.070	A
B-A	1.09	1.09	106.44	0.010	1.08	0.0	0.0	8.543	A
A-B	0.00	0.00			0.00				
A-C	68.29	68.29			68.29				
A-D	1.22	1.22			1.22				
AB-CD	1.22	1.22	68.96	0.018	1.20	0.0	0.0	13.278	B
AB-C	76.98	76.98			76.98				
D-AB	5.47	5.47	166.34	0.033	5.43	0.0	0.0	5.591	A
D-C	4.37	4.37	129.10	0.034	4.34	0.0	0.0	7.211	A
C-D	3.28	3.28			3.28				
C-A	50.92	50.92			50.92				
C-B	2.19	2.19			2.19				
CD-AB	2.19	2.19	135.79	0.016	2.17	0.0	0.0	6.735	A
CD-A	56.35	56.35			56.35				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	148.97	0.007	1.14	0.1	0.0	6.092	A
B-A	4.37	4.37	120.03	0.036	4.35	0.0	0.0	7.778	A
A-B	0.00	0.00			0.00				
A-C	51.77	51.77			51.77				
A-D	1.09	1.09			1.09				
AB-CD	1.09	1.09	68.45	0.016	1.09	0.0	0.0	13.360	B
AB-C	52.91	52.91			52.91				
D-AB	3.40	3.40	166.79	0.020	3.42	0.0	0.0	5.510	A
D-C	2.19	2.19	131.05	0.017	2.20	0.0	0.0	6.988	A
C-D	1.09	1.09			1.09				
C-A	57.61	57.61			57.61				
C-B	1.09	1.09			1.09				
CD-AB	2.18	2.18	139.79	0.016	2.18	0.0	0.0	6.539	A
CD-A	59.94	59.94			59.94				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.37	4.37	159.25	0.027	4.35	0.0	0.0	5.810	A
B-A	1.09	1.09	110.22	0.010	1.12	0.0	0.0	8.251	A
A-B	1.09	1.09			1.09				
A-C	56.39	56.39			56.39				
A-D	0.00	0.00			0.00				
AB-CD	0.00	0.00	134.60	0.000	0.02	0.0	0.0	0.000	A
AB-C	60.74	60.74			60.74				
D-AB	5.59	5.59	162.64	0.034	5.58	0.0	0.0	5.730	A
D-C	1.09	1.09	123.18	0.009	1.10	0.0	0.0	7.372	A
C-D	1.09	1.09			1.09				
C-A	67.20	67.20			67.20				
C-B	0.00	0.00			0.00				
CD-AB	1.09	1.09	138.93	0.008	1.10	0.0	0.0	6.529	A
CD-A	71.68	71.68			71.68				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	146.60	0.007	1.11	0.0	0.0	6.186	A
B-A	3.28	3.28	112.53	0.029	3.26	0.0	0.0	8.236	A
A-B	1.09	1.09			1.09				
A-C	66.23	66.23			66.23				
A-D	2.19	2.19			2.19				
AB-CD	2.19	2.19	67.12	0.033	2.16	0.0	0.0	13.848	B
AB-C	67.34	67.34			67.34				
D-AB	7.65	7.65	164.65	0.046	7.64	0.0	0.0	5.732	A
D-C	0.00	0.00	117.52	0.000	0.01	0.0	0.0	0.000	A
C-D	3.28	3.28			3.28				
C-A	63.32	63.32			63.32				
C-B	4.37	4.37			4.37				
CD-AB	5.47	5.47	135.60	0.040	5.43	0.0	0.0	6.912	A
CD-A	69.87	69.87			69.87				

2031, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2031	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.09	50.80	7.65
		B - L8830	2.19	0.00	1.09	0.00
		C - R179 West	72.54	2.19	0.00	1.09
		D - L4900	1.09	0.00	2.19	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.28	67.92	3.28
		B - L8830	1.09	0.00	4.37	1.09
		C - R179 West	68.05	4.37	0.00	1.09
		D - L4900	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.28	49.46	7.65
		B - L8830	1.09	0.00	7.65	1.09
		C - R179 West	66.11	2.19	0.00	2.19
		D - L4900	1.09	2.19	1.09	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.28	63.67	4.37
	B - L8830	0.00	0.00	2.19	1.09
	C - R179 West	59.42	5.47	0.00	1.09
	D - L4900	3.28	0.00	1.09	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	10	0
	B - L8830	0	0	0	0
	C - R179 West	5	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.01	0.1	A	4.65	18.59
B-A	0.02	8.64	0.0	A	1.09	4.37
A-B					2.73	10.94
A-C					57.96	231.85
A-D					5.74	22.96
AB-CD	0.06	7.12	0.1	A	6.56	26.24
AB-C					61.79	247.14
D-AB	0.02	5.83	0.0	A	1.91	7.65
D-C	0.02	7.39	0.0	A	1.09	4.37
C-D					1.37	5.47
C-A					66.53	266.12
C-B					3.55	14.22
CD-AB	0.04	6.93	0.0	A	4.10	16.40
CD-A					67.89	271.57

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	152.85	0.007	1.09	0.0	0.0	5.929	A
B-A	2.19	2.19	122.22	0.018	2.17	0.0	0.0	7.497	A
A-B	1.09	1.09			1.09				
A-C	50.80	50.80			50.80				
A-D	7.65	7.65			7.65				
AB-CD	7.65	7.65	133.86	0.057	7.59	0.0	0.1	7.124	A
AB-C	51.88	51.88			51.88				
D-AB	1.09	1.09	155.35	0.007	1.09	0.0	0.0	5.833	A
D-C	2.19	2.19	131.48	0.017	2.17	0.0	0.0	6.960	A
C-D	1.09	1.09			1.09				
C-A	72.54	72.54			72.54				
C-B	2.19	2.19			2.19				
CD-AB	2.19	2.19	138.28	0.016	2.17	0.0	0.0	6.612	A
CD-A	73.63	73.63			73.63				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.47	5.47	155.12	0.035	5.44	0.0	0.0	6.013	A
B-A	1.09	1.09	105.32	0.010	1.10	0.0	0.0	8.637	A
A-B	3.28	3.28			3.28				
A-C	67.92	67.92			67.92				
A-D	3.28	3.28			3.28				
AB-CD	4.37	4.37	134.46	0.032	4.39	0.1	0.0	6.920	A
AB-C	72.28	72.28			72.28				
D-AB	0.00	0.00	155.75	0.000	0.01	0.0	0.0	0.000	A
D-C	0.00	0.00	130.24	0.000	0.02	0.0	0.0	0.000	A
C-D	1.09	1.09			1.09				
C-A	68.05	68.05			68.05				
C-B	4.37	4.37			4.37				
CD-AB	4.37	4.37	134.58	0.033	4.36	0.0	0.0	6.911	A
CD-A	68.05	68.05			68.05				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.75	8.75	160.05	0.055	8.73	0.0	0.1	5.947	A
B-A	1.09	1.09	107.37	0.010	1.09	0.0	0.0	8.468	A
A-B	3.28	3.28			3.28				
A-C	49.46	49.46			49.46				
A-D	7.65	7.65			7.65				
AB-CD	8.75	8.75	135.20	0.065	8.71	0.0	0.1	7.113	A
AB-C	57.09	57.09			57.09				
D-AB	3.28	3.28	168.85	0.019	3.26	0.0	0.0	5.435	A
D-C	1.09	1.09	122.85	0.009	1.08	0.0	0.0	7.391	A
C-D	2.19	2.19			2.19				
C-A	66.11	66.11			66.11				
C-B	2.19	2.19			2.19				
CD-AB	4.36	4.36	138.12	0.032	4.36	0.0	0.0	6.730	A
CD-A	67.19	67.19			67.19				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.28	3.28	158.86	0.021	3.32	0.1	0.0	5.788	A
B-A	0.00	0.00	102.11	0.000	0.01	0.0	0.0	0.000	A
A-B	3.28	3.28			3.28				
A-C	63.67	63.67			63.67				
A-D	4.37	4.37			4.37				
AB-CD	5.47	5.47	136.34	0.040	5.49	0.1	0.0	6.878	A
AB-C	65.90	65.90			65.90				
D-AB	3.28	3.28	170.07	0.019	3.28	0.0	0.0	5.397	A
D-C	1.09	1.09	123.52	0.009	1.09	0.0	0.0	7.350	A
C-D	1.09	1.09			1.09				
C-A	59.42	59.42			59.42				
C-B	5.47	5.47			5.47				
CD-AB	5.48	5.48	135.38	0.040	5.47	0.0	0.0	6.927	A
CD-A	62.69	62.69			62.69				

2041, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2041	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	71.86	1.37
		B - L8830	1.14	0.00	9.16	0.00
		C - R179 West	53.77	2.29	0.00	3.43
		D - L4900	5.72	0.00	4.58	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	54.47	1.14
		B - L8830	4.58	0.00	1.14	0.00
		C - R179 West	60.86	1.14	0.00	1.14
		D - L4900	2.51	1.14	2.29	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.14	59.49	0.00
		B - L8830	1.14	0.00	4.58	0.00
		C - R179 West	70.72	0.00	0.00	1.14
		D - L4900	4.80	1.14	1.14	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.14	69.79	2.29
	B - L8830	3.43	0.00	1.14	0.00
	C - R179 West	67.03	4.58	0.00	3.43
	D - L4900	6.87	1.14	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	8	100
	B - L8830	0	0	0	0
	C - R179 West	13	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.24	0.1	A	4.01	16.03
B-A	0.04	8.67	0.0	A	2.58	10.30
A-B					0.57	2.29
A-C					63.90	255.62
A-D					1.20	4.80
AB-CD	0.03	14.00	0.0	B	1.20	4.81
AB-C					67.91	271.63
D-AB	0.05	5.80	0.1	A	5.83	23.34
D-C	0.04	7.49	0.0	A	2.00	8.01
C-D					2.29	9.16
C-A					63.09	252.37
C-B					2.00	8.01
CD-AB	0.04	6.98	0.0	A	2.86	11.44
CD-A					68.06	272.23

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	9.16	9.16	155.67	0.059	9.10	0.0	0.1	6.137	A
B-A	1.14	1.14	104.90	0.011	1.13	0.0	0.0	8.671	A
A-B	0.00	0.00			0.00				
A-C	71.86	71.86			71.86				
A-D	1.37	1.37			1.37				
AB-CD	1.37	1.37	68.52	0.020	1.35	0.0	0.0	13.394	B
AB-C	80.96	80.96			80.96				
D-AB	5.72	5.72	165.17	0.035	5.69	0.0	0.0	5.641	A
D-C	4.58	4.58	127.11	0.036	4.54	0.0	0.0	7.341	A
C-D	3.43	3.43			3.43				
C-A	53.77	53.77			53.77				
C-B	2.29	2.29			2.29				
CD-AB	2.29	2.29	134.79	0.017	2.27	0.0	0.0	6.791	A
CD-A	59.46	59.46			59.46				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	148.11	0.008	1.20	0.1	0.0	6.129	A
B-A	4.58	4.58	118.57	0.039	4.55	0.0	0.0	7.891	A
A-B	0.00	0.00			0.00				
A-C	54.47	54.47			54.47				
A-D	1.14	1.14			1.14				
AB-CD	1.14	1.14	67.96	0.017	1.15	0.0	0.0	13.470	B
AB-C	55.67	55.67			55.67				
D-AB	3.66	3.66	165.70	0.022	3.67	0.0	0.0	5.554	A
D-C	2.29	2.29	129.15	0.018	2.31	0.0	0.0	7.098	A
C-D	1.14	1.14			1.14				
C-A	60.86	60.86			60.86				
C-B	1.14	1.14			1.14				
CD-AB	2.28	2.28	139.07	0.016	2.28	0.0	0.0	6.578	A
CD-A	63.39	63.39			63.39				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.58	4.58	158.30	0.029	4.56	0.0	0.0	5.854	A
B-A	1.14	1.14	108.73	0.011	1.17	0.0	0.0	8.369	A
A-B	1.14	1.14			1.14				
A-C	59.49	59.49			59.49				
A-D	0.00	0.00			0.00				
AB-CD	0.00	0.00	133.53	0.000	0.02	0.0	0.0	0.000	A
AB-C	64.05	64.05			64.05				
D-AB	5.95	5.95	161.36	0.037	5.93	0.0	0.0	5.790	A
D-C	1.14	1.14	121.27	0.009	1.15	0.0	0.0	7.495	A
C-D	1.14	1.14			1.14				
C-A	70.72	70.72			70.72				
C-B	0.00	0.00			0.00				
CD-AB	1.14	1.14	138.12	0.008	1.15	0.0	0.0	6.570	A
CD-A	75.50	75.50			75.50				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	145.47	0.008	1.17	0.0	0.0	6.236	A
B-A	3.43	3.43	110.66	0.031	3.41	0.0	0.0	8.392	A
A-B	1.14	1.14			1.14				
A-C	69.79	69.79			69.79				
A-D	2.29	2.29			2.29				
AB-CD	2.29	2.29	66.54	0.034	2.26	0.0	0.0	13.996	B
AB-C	70.96	70.96			70.96				
D-AB	8.01	8.01	163.22	0.049	8.00	0.0	0.1	5.797	A
D-C	0.00	0.00	115.44	0.000	0.01	0.0	0.0	0.000	A
C-D	3.43	3.43			3.43				
C-A	67.03	67.03			67.03				
C-B	4.58	4.58			4.58				
CD-AB	5.72	5.72	134.62	0.043	5.69	0.0	0.0	6.978	A
CD-A	73.88	73.88			73.88				

2041, PM

Data Errors and Warnings

No errors or warnings

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Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2041	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	1.14	53.55	8.01
	B - L8830	2.29	0.00	1.14	0.00
	C - R179 West	76.22	2.29	0.00	1.14
	D - L4900	1.14	0.00	2.29	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	3.43	71.19	3.43
	B - L8830	1.14	0.00	4.58	1.14
	C - R179 West	71.42	4.58	0.00	1.14
	D - L4900	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L8830	C - R179 West	D - L4900
From	A - R179 East	0.00	3.43	51.96	8.01
	B - L8830	1.14	0.00	8.01	1.14
	C - R179 West	69.57	2.29	0.00	2.29
	D - L4900	1.14	2.29	1.14	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.43	66.84	4.58
	B - L8830	0.00	0.00	2.29	1.14
	C - R179 West	62.48	5.72	0.00	1.14
	D - L4900	3.43	0.00	1.14	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	10	0
	B - L8830	0	0	0	0
	C - R179 West	5	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.07	0.1	A	4.86	19.46
B-A	0.02	8.77	0.0	A	1.14	4.58
A-B					2.86	11.45
A-C					60.88	243.53
A-D					6.01	24.04
AB-CD	0.07	7.20	0.1	A	6.87	27.46
AB-C					64.88	259.54
D-AB	0.02	5.88	0.0	A	2.00	8.01
D-C	0.02	7.51	0.0	A	1.14	4.58
C-D					1.43	5.72
C-A					69.92	279.68
C-B					3.72	14.88
CD-AB	0.04	6.99	0.0	A	4.29	17.17
CD-A					71.35	285.39

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	151.89	0.008	1.14	0.0	0.0	5.969	A
B-A	2.29	2.29	120.60	0.019	2.27	0.0	0.0	7.605	A
A-B	1.14	1.14			1.14				
A-C	53.55	53.55			53.55				
A-D	8.01	8.01			8.01				
AB-CD	8.01	8.01	132.85	0.060	7.95	0.0	0.1	7.203	A
AB-C	54.68	54.68			54.68				
D-AB	1.14	1.14	154.14	0.007	1.14	0.0	0.0	5.881	A
D-C	2.29	2.29	129.45	0.018	2.27	0.0	0.0	7.076	A
C-D	1.14	1.14			1.14				
C-A	76.22	76.22			76.22				
C-B	2.29	2.29			2.29				
CD-AB	2.29	2.29	137.44	0.017	2.27	0.0	0.0	6.658	A
CD-A	77.35	77.35			77.35				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.72	5.72	154.01	0.037	5.69	0.0	0.0	6.066	A
B-A	1.14	1.14	103.80	0.011	1.15	0.0	0.0	8.770	A
A-B	3.43	3.43			3.43				
A-C	71.19	71.19			71.19				
A-D	3.43	3.43			3.43				
AB-CD	4.57	4.57	133.50	0.034	4.60	0.1	0.0	6.985	A
AB-C	75.75	75.75			75.75				
D-AB	0.00	0.00	154.61	0.000	0.01	0.0	0.0	0.000	A
D-C	0.00	0.00	128.21	0.000	0.02	0.0	0.0	0.000	A
C-D	1.14	1.14			1.14				
C-A	71.41	71.41			71.41				
C-B	4.58	4.58			4.58				
CD-AB	4.58	4.58	133.61	0.034	4.56	0.0	0.0	6.974	A
CD-A	71.42	71.42			71.42				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	9.16	9.16	159.13	0.058	9.14	0.0	0.1	6.000	A
B-A	1.14	1.14	106.00	0.011	1.14	0.0	0.0	8.582	A
A-B	3.43	3.43			3.43				
A-C	51.96	51.96			51.96				
A-D	8.01	8.01			8.01				
AB-CD	9.16	9.16	134.23	0.068	9.12	0.0	0.1	7.191	A
AB-C	59.95	59.95			59.95				
D-AB	3.43	3.43	167.64	0.020	3.41	0.0	0.0	5.480	A
D-C	1.14	1.14	121.00	0.009	1.14	0.0	0.0	7.508	A
C-D	2.29	2.29			2.29				
C-A	69.57	69.57			69.57				
C-B	2.29	2.29			2.29				
CD-AB	4.56	4.56	137.32	0.033	4.57	0.0	0.0	6.778	A
CD-A	70.71	70.71			70.71				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.43	3.43	157.78	0.022	3.47	0.1	0.0	5.835	A
B-A	0.00	0.00	100.67	0.000	0.01	0.0	0.0	0.000	A
A-B	3.43	3.43			3.43				
A-C	66.84	66.84			66.84				
A-D	4.58	4.58			4.58				
AB-CD	5.72	5.72	135.46	0.042	5.75	0.1	0.0	6.939	A
AB-C	69.16	69.16			69.16				
D-AB	3.43	3.43	168.96	0.020	3.43	0.0	0.0	5.438	A
D-C	1.14	1.14	121.72	0.009	1.14	0.0	0.0	7.463	A
C-D	1.14	1.14			1.14				
C-A	62.48	62.48			62.48				
C-B	5.72	5.72			5.72				
CD-AB	5.74	5.74	134.43	0.043	5.73	0.0	0.0	6.992	A
CD-A	65.90	65.90			65.90				

2026+ GAA Phase 2+ Mine Traffic+ DG, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2026+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	83.33	1.10
		B - L8830	1.05	0.00	8.37	0.00
		C - R179 West	49.47	2.09	0.00	3.14
		D - L4900	5.23	0.00	4.19	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	70.01	3.79
		B - L8830	4.19	0.00	1.05	0.00
		C - R179 West	56.48	1.05	0.00	3.79
		D - L4900	3.68	1.05	3.62	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.05	74.31	2.74
		B - L8830	1.05	0.00	4.19	0.00
		C - R179 West	65.79	0.00	0.00	3.79
		D - L4900	5.77	1.05	2.57	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.05	83.73	4.84
	B - L8830	3.14	0.00	1.05	0.00
	C - R179 West	61.83	4.19	0.00	5.88
	D - L4900	7.81	1.05	1.52	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	8	100
	B - L8830	0	0	0	0
	C - R179 West	13	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.45	0.1	A	3.66	14.66
B-A	0.04	8.81	0.0	A	2.36	9.42
A-B					0.52	2.09
A-C					77.85	311.38
A-D					3.12	12.48
AB-CD	0.07	14.39	0.1	B	3.13	12.53
AB-C					81.49	325.98
D-AB	0.05	5.86	0.1	A	6.41	25.63
D-C	0.03	7.97	0.0	A	2.98	11.90
C-D					4.15	16.61
C-A					58.39	233.57
C-B					1.83	7.33
CD-AB	0.04	7.20	0.0	A	2.62	10.46
CD-A					64.00	256.01

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.37	8.37	152.67	0.055	8.32	0.0	0.1	6.230	A
B-A	1.05	1.05	103.13	0.010	1.04	0.0	0.0	8.814	A
A-B	0.00	0.00			0.00				
A-C	83.33	83.33			83.33				
A-D	1.10	1.10			1.10				
AB-CD	1.11	1.11	69.13	0.016	1.09	0.0	0.0	13.224	B
AB-C	91.65	91.65			91.65				
D-AB	5.23	5.23	166.75	0.031	5.20	0.0	0.0	5.569	A
D-C	4.19	4.19	126.72	0.033	4.15	0.0	0.0	7.341	A
C-D	3.14	3.14			3.14				
C-A	49.47	49.47			49.47				
C-B	2.09	2.09			2.09				
CD-AB	2.09	2.09	132.16	0.016	2.08	0.0	0.0	6.918	A
CD-A	54.67	54.67			54.67				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	142.96	0.007	1.10	0.1	0.0	6.347	A
B-A	4.19	4.19	113.96	0.037	4.16	0.0	0.0	8.194	A
A-B	0.00	0.00			0.00				
A-C	70.01	70.01			70.01				
A-D	3.79	3.79			3.79				
AB-CD	3.80	3.80	68.46	0.056	3.76	0.0	0.1	13.907	B
AB-C	71.09	71.09			71.09				
D-AB	4.72	4.72	165.15	0.029	4.73	0.0	0.0	5.609	A
D-C	3.62	3.62	126.16	0.029	3.62	0.0	0.0	7.343	A
C-D	3.79	3.79			3.79				
C-A	56.48	56.48			56.48				
C-B	1.05	1.05			1.05				
CD-AB	2.09	2.09	134.16	0.016	2.09	0.0	0.0	6.816	A
CD-A	60.17	60.17			60.17				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.19	4.19	152.86	0.027	4.17	0.0	0.0	6.052	A
B-A	1.05	1.05	104.64	0.010	1.07	0.0	0.0	8.692	A
A-B	1.05	1.05			1.05				
A-C	74.31	74.31			74.31				
A-D	2.74	2.74			2.74				
AB-CD	2.75	2.75	67.21	0.041	2.76	0.1	0.0	13.963	B
AB-C	78.47	78.47			78.47				
D-AB	6.82	6.82	166.72	0.041	6.80	0.0	0.0	5.627	A
D-C	2.57	2.57	119.86	0.021	2.58	0.0	0.0	7.673	A
C-D	3.79	3.79			3.79				
C-A	65.79	65.79			65.79				
C-B	0.00	0.00			0.00				
CD-AB	1.05	1.05	133.36	0.008	1.05	0.0	0.0	6.804	A
CD-A	71.55	71.55			71.55				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	140.71	0.007	1.07	0.0	0.0	6.447	A
B-A	3.14	3.14	106.81	0.029	3.12	0.0	0.0	8.680	A
A-B	1.05	1.05			1.05				
A-C	83.73	83.73			83.73				
A-D	4.84	4.84			4.84				
AB-CD	4.87	4.87	67.38	0.072	4.84	0.0	0.1	14.394	B
AB-C	84.77	84.77			84.77				
D-AB	8.85	8.85	162.53	0.054	8.84	0.0	0.1	5.855	A
D-C	1.52	1.52	114.45	0.013	1.53	0.0	0.0	7.970	A
C-D	5.88	5.88			5.88				
C-A	61.83	61.83			61.83				
C-B	4.19	4.19			4.19				
CD-AB	5.23	5.23	130.17	0.040	5.20	0.0	0.0	7.200	A
CD-A	69.62	69.62			69.62				

2026+ GAA Phase 2+ Mine Traffic+ DG, PM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2026+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.05	51.40	8.67
		B - L8830	2.09	0.00	1.05	0.00
		C - R179 West	87.00	2.09	0.00	2.39
		D - L4900	2.21	0.00	3.25	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.14	66.81	4.36
		B - L8830	1.05	0.00	4.19	1.05
		C - R179 West	83.20	4.19	0.00	2.27
		D - L4900	2.32	0.00	2.32	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.14	49.07	8.55
		B - L8830	1.05	0.00	7.33	1.05
		C - R179 West	81.22	2.09	0.00	3.31
		D - L4900	3.36	2.09	3.36	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.14	62.68	5.41
	B - L8830	0.00	0.00	2.09	1.05
	C - R179 West	74.88	5.23	0.00	2.27
	D - L4900	5.46	0.00	3.36	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	10	0
	B - L8830	0	0	0	0
	C - R179 West	6	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	6.01	0.1	A	4.45	17.80
B-A	0.02	8.86	0.0	A	1.05	4.19
A-B					2.62	10.47
A-C					57.49	229.96
A-D					6.75	26.98
AB-CD	0.07	7.42	0.1	A	7.53	30.11
AB-C					61.15	244.60
D-AB	0.03	6.00	0.0	A	3.86	15.44
D-C	0.03	7.68	0.0	A	3.07	12.30
C-D					2.56	10.23
C-A					81.58	326.31
C-B					3.40	13.61
CD-AB	0.04	6.92	0.0	A	3.93	15.70
CD-A					84.90	339.61

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	152.36	0.007	1.04	0.0	0.0	5.947	A
B-A	2.09	2.09	119.09	0.018	2.08	0.0	0.0	7.690	A
A-B	1.05	1.05			1.05				
A-C	51.40	51.40			51.40				
A-D	8.67	8.67			8.67				
AB-CD	8.67	8.67	129.83	0.067	8.60	0.0	0.1	7.421	A
AB-C	52.44	52.44			52.44				
D-AB	2.21	2.21	152.24	0.014	2.19	0.0	0.0	5.998	A
D-C	3.25	3.25	124.75	0.026	3.23	0.0	0.0	7.403	A
C-D	2.39	2.39			2.39				
C-A	87.00	87.00			87.00				
C-B	2.09	2.09			2.09				
CD-AB	2.09	2.09	137.83	0.015	2.08	0.0	0.0	6.629	A
CD-A	89.19	89.19			89.19				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.23	5.23	155.05	0.034	5.21	0.0	0.0	6.006	A
B-A	1.05	1.05	102.70	0.010	1.05	0.0	0.0	8.856	A
A-B	3.14	3.14			3.14				
A-C	66.81	66.81			66.81				
A-D	4.36	4.36			4.36				
AB-CD	5.40	5.40	130.31	0.041	5.43	0.1	0.0	7.207	A
AB-C	70.98	70.98			70.98				
D-AB	2.32	2.32	155.74	0.015	2.32	0.0	0.0	5.865	A
D-C	2.32	2.32	120.87	0.019	2.32	0.0	0.0	7.594	A
C-D	2.27	2.27			2.27				
C-A	83.20	83.20			83.20				
C-B	4.19	4.19			4.19				
CD-AB	4.19	4.19	134.53	0.031	4.17	0.0	0.0	6.904	A
CD-A	85.52	85.52			85.52				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.37	8.37	159.85	0.052	8.35	0.0	0.1	5.940	A
B-A	1.05	1.05	104.69	0.010	1.05	0.0	0.0	8.683	A
A-B	3.14	3.14			3.14				
A-C	49.07	49.07			49.07				
A-D	8.55	8.55			8.55				
AB-CD	9.59	9.59	131.05	0.073	9.56	0.0	0.1	7.405	A
AB-C	56.38	56.38			56.38				
D-AB	5.46	5.46	159.88	0.034	5.44	0.0	0.0	5.827	A
D-C	3.36	3.36	120.49	0.028	3.35	0.0	0.0	7.683	A
C-D	3.31	3.31			3.31				
C-A	81.22	81.22			81.22				
C-B	2.09	2.09			2.09				
CD-AB	4.17	4.17	137.96	0.030	4.17	0.0	0.0	6.726	A
CD-A	84.58	84.58			84.58				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.14	3.14	158.77	0.020	3.18	0.1	0.0	5.785	A
B-A	0.00	0.00	99.57	0.000	0.01	0.0	0.0	0.000	A
A-B	3.14	3.14			3.14				
A-C	62.68	62.68			62.68				
A-D	5.41	5.41			5.41				
AB-CD	6.45	6.45	132.14	0.049	6.48	0.1	0.1	7.165	A
AB-C	64.81	64.81			64.81				
D-AB	5.46	5.46	161.04	0.034	5.46	0.0	0.0	5.786	A
D-C	3.36	3.36	121.12	0.028	3.36	0.0	0.0	7.642	A
C-D	2.27	2.27			2.27				
C-A	74.88	74.88			74.88				
C-B	5.23	5.23			5.23				
CD-AB	5.25	5.25	135.31	0.039	5.24	0.0	0.0	6.918	A
CD-A	80.33	80.33			80.33				

2031+ GAA Phase 2+ Mine Traffic+ DG, AM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2031+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	86.49	1.22
		B - L8830	1.09	0.00	8.75	0.00
		C - R179 West	51.95	2.19	0.00	3.28
		D - L4900	5.47	0.00	4.37	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	72.40	3.84
		B - L8830	4.37	0.00	1.09	0.00
		C - R179 West	59.31	1.09	0.00	3.84
		D - L4900	3.84	1.09	3.71	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.09	77.02	2.74
		B - L8830	1.09	0.00	4.37	0.00
		C - R179 West	68.90	0.00	0.00	3.84
		D - L4900	6.02	1.09	2.62	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.09	86.86	4.93
	B - L8830	3.28	0.00	1.09	0.00
	C - R179 West	65.02	4.37	0.00	6.02
	D - L4900	8.09	1.09	1.52	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	8	100
	B - L8830	0	0	0	0
	C - R179 West	13	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.49	0.1	A	3.83	15.31
B-A	0.04	8.93	0.0	A	2.46	9.84
A-B					0.55	2.19
A-C					80.70	322.78
A-D					3.18	12.73
AB-CD	0.07	14.52	0.1	B	3.20	12.78
AB-C					84.51	338.03
D-AB	0.06	5.91	0.1	A	6.67	26.69
D-C	0.03	8.11	0.0	A	3.06	12.23
C-D					4.24	16.98
C-A					61.30	245.18
C-B					1.91	7.65
CD-AB	0.04	7.26	0.0	A	2.73	10.93
CD-A					67.13	268.54

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.75	8.75	151.65	0.058	8.69	0.0	0.1	6.292	A
B-A	1.09	1.09	101.82	0.011	1.08	0.0	0.0	8.933	A
A-B	0.00	0.00			0.00				
A-C	86.49	86.49			86.49				
A-D	1.22	1.22			1.22				
AB-CD	1.22	1.22	68.75	0.018	1.20	0.0	0.0	13.321	B
AB-C	95.18	95.18			95.18				
D-AB	5.47	5.47	165.76	0.033	5.43	0.0	0.0	5.611	A
D-C	4.37	4.37	125.02	0.035	4.34	0.0	0.0	7.456	A
C-D	3.28	3.28			3.28				
C-A	51.95	51.95			51.95				
C-B	2.19	2.19			2.19				
CD-AB	2.19	2.19	131.31	0.017	2.17	0.0	0.0	6.969	A
CD-A	57.38	57.38			57.38				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	142.21	0.008	1.15	0.1	0.0	6.381	A
B-A	4.37	4.37	112.71	0.039	4.34	0.0	0.0	8.303	A
A-B	0.00	0.00			0.00				
A-C	72.40	72.40			72.40				
A-D	3.84	3.84			3.84				
AB-CD	3.85	3.85	68.05	0.057	3.81	0.0	0.1	14.005	B
AB-C	73.53	73.53			73.53				
D-AB	4.93	4.93	164.20	0.030	4.93	0.0	0.0	5.650	A
D-C	3.71	3.71	124.55	0.030	3.72	0.0	0.0	7.447	A
C-D	3.84	3.84			3.84				
C-A	59.31	59.31			59.31				
C-B	1.09	1.09			1.09				
CD-AB	2.18	2.18	133.53	0.016	2.18	0.0	0.0	6.851	A
CD-A	63.15	63.15			63.15				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.37	4.37	152.04	0.029	4.35	0.0	0.0	6.094	A
B-A	1.09	1.09	103.36	0.011	1.12	0.0	0.0	8.807	A
A-B	1.09	1.09			1.09				
A-C	77.02	77.02			77.02				
A-D	2.74	2.74			2.74				
AB-CD	2.75	2.75	66.75	0.041	2.76	0.1	0.0	14.065	B
AB-C	81.37	81.37			81.37				
D-AB	7.12	7.12	165.68	0.043	7.10	0.0	0.0	5.675	A
D-C	2.62	2.62	118.14	0.022	2.63	0.0	0.0	7.791	A
C-D	3.84	3.84			3.84				
C-A	68.90	68.90			68.90				
C-B	0.00	0.00			0.00				
CD-AB	1.09	1.09	132.66	0.008	1.10	0.0	0.0	6.843	A
CD-A	74.91	74.91			74.91				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	139.74	0.008	1.12	0.0	0.0	6.492	A
B-A	3.28	3.28	105.21	0.031	3.26	0.0	0.0	8.824	A
A-B	1.09	1.09			1.09				
A-C	86.86	86.86			86.86				
A-D	4.93	4.93			4.93				
AB-CD	4.97	4.97	66.92	0.074	4.93	0.0	0.1	14.524	B
AB-C	87.94	87.94			87.94				
D-AB	9.18	9.18	161.40	0.057	9.16	0.0	0.1	5.911	A
D-C	1.52	1.52	112.57	0.014	1.53	0.0	0.0	8.105	A
C-D	6.02	6.02			6.02				
C-A	65.02	65.02			65.02				
C-B	4.37	4.37			4.37				
CD-AB	5.47	5.47	129.31	0.042	5.43	0.0	0.0	7.263	A
CD-A	73.09	73.09			73.09				

2031+ GAA Phase 2+ Mine Traffic+ DG, PM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2031+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.09	53.81	9.00
		B - L8830	2.19	0.00	1.09	0.00
		C - R179 West	90.28	2.19	0.00	2.44
		D - L4900	2.25	0.00	3.35	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.28	69.77	4.50
		B - L8830	1.09	0.00	4.37	1.09
		C - R179 West	86.23	4.37	0.00	2.31
		D - L4900	2.32	0.00	2.32	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.28	51.31	8.87
		B - L8830	1.09	0.00	7.65	1.09
		C - R179 West	84.29	2.19	0.00	3.41
		D - L4900	3.41	2.19	3.41	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.28	65.52	5.59
	B - L8830	0.00	0.00	2.19	1.09
	C - R179 West	77.61	5.47	0.00	2.31
	D - L4900	5.60	0.00	3.41	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	11	0
	B - L8830	0	0	0	0
	C - R179 West	6	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.05	0.1	A	4.65	18.59
B-A	0.02	8.98	0.0	A	1.09	4.37
A-B					2.73	10.94
A-C					60.10	240.41
A-D					6.99	27.96
AB-CD	0.08	7.49	0.1	A	7.81	31.24
AB-C					63.93	255.71
D-AB	0.04	6.04	0.0	A	3.94	15.76
D-C	0.03	7.80	0.0	A	3.12	12.48
C-D					2.62	10.47
C-A					84.60	338.41
C-B					3.55	14.22
CD-AB	0.04	6.98	0.0	A	4.10	16.40
CD-A					87.99	351.95

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	151.53	0.007	1.09	0.0	0.0	5.982	A
B-A	2.19	2.19	117.69	0.019	2.17	0.0	0.0	7.790	A
A-B	1.09	1.09			1.09				
A-C	53.81	53.81			53.81				
A-D	9.00	9.00			9.00				
AB-CD	9.00	9.00	128.94	0.070	8.92	0.0	0.1	7.493	A
AB-C	54.90	54.90			54.90				
D-AB	2.25	2.25	151.12	0.015	2.24	0.0	0.0	6.045	A
D-C	3.35	3.35	123.03	0.027	3.32	0.0	0.0	7.515	A
C-D	2.44	2.44			2.44				
C-A	90.28	90.28			90.28				
C-B	2.19	2.19			2.19				
CD-AB	2.19	2.19	137.11	0.016	2.17	0.0	0.0	6.669	A
CD-A	92.52	92.52			92.52				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.47	5.47	154.07	0.035	5.44	0.0	0.0	6.053	A
B-A	1.09	1.09	101.35	0.011	1.10	0.0	0.0	8.979	A
A-B	3.28	3.28			3.28				
A-C	69.77	69.77			69.77				
A-D	4.50	4.50			4.50				
AB-CD	5.59	5.59	129.46	0.043	5.61	0.1	0.0	7.270	A
AB-C	74.13	74.13			74.13				
D-AB	2.32	2.32	154.72	0.015	2.32	0.0	0.0	5.904	A
D-C	2.32	2.32	119.11	0.019	2.32	0.0	0.0	7.706	A
C-D	2.31	2.31			2.31				
C-A	86.23	86.23			86.23				
C-B	4.37	4.37			4.37				
CD-AB	4.37	4.37	133.68	0.033	4.36	0.0	0.0	6.959	A
CD-A	88.55	88.55			88.55				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	8.75	8.75	159.04	0.055	8.73	0.0	0.1	5.987	A
B-A	1.09	1.09	103.50	0.011	1.09	0.0	0.0	8.790	A
A-B	3.28	3.28			3.28				
A-C	51.31	51.31			51.31				
A-D	8.87	8.87			8.87				
AB-CD	9.97	9.97	130.21	0.077	9.93	0.0	0.1	7.480	A
AB-C	58.94	58.94			58.94				
D-AB	5.60	5.60	158.91	0.035	5.58	0.0	0.0	5.869	A
D-C	3.41	3.41	118.79	0.029	3.40	0.0	0.0	7.800	A
C-D	3.41	3.41			3.41				
C-A	84.29	84.29			84.29				
C-B	2.19	2.19			2.19				
CD-AB	4.36	4.36	137.27	0.032	4.36	0.0	0.0	6.770	A
CD-A	87.69	87.69			87.69				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.28	3.28	157.82	0.021	3.32	0.1	0.0	5.828	A
B-A	0.00	0.00	98.32	0.000	0.01	0.0	0.0	0.000	A
A-B	3.28	3.28			3.28				
A-C	65.52	65.52			65.52				
A-D	5.59	5.59			5.59				
AB-CD	6.69	6.69	131.37	0.051	6.71	0.1	0.1	7.223	A
AB-C	67.75	67.75			67.75				
D-AB	5.60	5.60	160.13	0.035	5.60	0.0	0.0	5.825	A
D-C	3.41	3.41	119.45	0.029	3.41	0.0	0.0	7.755	A
C-D	2.31	2.31			2.31				
C-A	77.61	77.61			77.61				
C-B	5.47	5.47			5.47				
CD-AB	5.48	5.48	134.49	0.041	5.47	0.0	0.0	6.975	A
CD-A	83.19	83.19			83.19				

2041+ GAA Phase 2+ Mine Traffic+ DG, AM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2041+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D5+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	90.06	1.37
		B - L8830	1.14	0.00	9.16	0.00
		C - R179 West	54.79	2.29	0.00	3.43
		D - L4900	5.72	0.00	4.58	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	0.00	75.10	3.89
		B - L8830	4.58	0.00	1.14	0.00
		C - R179 West	62.56	1.14	0.00	3.89
		D - L4900	4.04	1.14	3.81	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.14	80.13	2.74
		B - L8830	1.14	0.00	4.58	0.00
		C - R179 West	72.42	0.00	0.00	3.89
		D - L4900	6.33	1.14	2.67	0.00

Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	1.14	90.43	5.03
	B - L8830	3.43	0.00	1.14	0.00
	C - R179 West	68.73	4.58	0.00	6.18
	D - L4900	8.39	1.14	1.52	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	8	100
	B - L8830	0	0	0	0
	C - R179 West	14	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.55	0.1	A	4.01	16.03
B-A	0.04	9.08	0.0	A	2.58	10.30
A-B					0.57	2.29
A-C					83.93	335.71
A-D					3.26	13.03
AB-CD	0.08	14.68	0.1	B	3.27	13.09
AB-C					87.92	351.67
D-AB	0.06	5.98	0.1	A	6.98	27.91
D-C	0.04	8.27	0.0	A	3.15	12.59
C-D					4.35	17.39
C-A					64.63	258.51
C-B					2.00	8.01
CD-AB	0.04	7.34	0.0	A	2.86	11.44
CD-A					70.73	282.93

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	9.16	9.16	150.48	0.061	9.09	0.0	0.1	6.362	A
B-A	1.14	1.14	100.28	0.011	1.13	0.0	0.0	9.076	A
A-B	0.00	0.00			0.00				
A-C	90.06	90.06			90.06				
A-D	1.37	1.37			1.37				
AB-CD	1.37	1.37	68.30	0.020	1.35	0.0	0.0	13.437	B
AB-C	99.15	99.15			99.15				
D-AB	5.72	5.72	164.59	0.035	5.69	0.0	0.0	5.662	A
D-C	4.58	4.58	123.02	0.037	4.54	0.0	0.0	7.594	A
C-D	3.43	3.43			3.43				
C-A	54.79	54.79			54.79				
C-B	2.29	2.29			2.29				
CD-AB	2.29	2.29	130.31	0.018	2.27	0.0	0.0	7.029	A
CD-A	60.48	60.48			60.48				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	141.35	0.008	1.20	0.1	0.0	6.423	A
B-A	4.58	4.58	111.25	0.041	4.55	0.0	0.0	8.433	A
A-B	0.00	0.00			0.00				
A-C	75.10	75.10			75.10				
A-D	3.89	3.89			3.89				
AB-CD	3.90	3.90	67.58	0.058	3.86	0.0	0.1	14.122	B
AB-C	76.29	76.29			76.29				
D-AB	5.18	5.18	163.08	0.032	5.18	0.0	0.0	5.701	A
D-C	3.81	3.81	122.65	0.031	3.82	0.0	0.0	7.576	A
C-D	3.89	3.89			3.89				
C-A	62.56	62.56			62.56				
C-B	1.14	1.14			1.14				
CD-AB	2.28	2.28	132.79	0.017	2.28	0.0	0.0	6.897	A
CD-A	66.61	66.61			66.61				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.58	4.58	151.07	0.030	4.56	0.0	0.0	6.142	A
B-A	1.14	1.14	101.86	0.011	1.18	0.0	0.0	8.941	A
A-B	1.14	1.14			1.14				
A-C	80.13	80.13			80.13				
A-D	2.74	2.74			2.74				
AB-CD	2.75	2.75	66.22	0.042	2.77	0.1	0.0	14.182	B
AB-C	84.68	84.68			84.68				
D-AB	7.47	7.47	164.47	0.045	7.46	0.0	0.0	5.731	A
D-C	2.67	2.67	116.13	0.023	2.68	0.0	0.0	7.934	A
C-D	3.89	3.89			3.89				
C-A	72.42	72.42			72.42				
C-B	0.00	0.00			0.00				
CD-AB	1.14	1.14	131.84	0.009	1.15	0.0	0.0	6.889	A
CD-A	78.73	78.73			78.73				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	138.61	0.008	1.17	0.0	0.0	6.548	A
B-A	3.43	3.43	103.34	0.033	3.41	0.0	0.0	9.004	A
A-B	1.14	1.14			1.14				
A-C	90.43	90.43			90.43				
A-D	5.03	5.03			5.03				
AB-CD	5.07	5.07	66.39	0.076	5.04	0.0	0.1	14.675	B
AB-C	91.55	91.55			91.55				
D-AB	9.54	9.54	160.04	0.060	9.52	0.0	0.1	5.979	A
D-C	1.52	1.52	110.37	0.014	1.53	0.0	0.0	8.271	A
C-D	6.18	6.18			6.18				
C-A	68.73	68.73			68.73				
C-B	4.58	4.58			4.58				
CD-AB	5.72	5.72	128.33	0.045	5.69	0.0	0.0	7.336	A
CD-A	77.11	77.11			77.11				

2041+ GAA Phase 2+ Mine Traffic+ DG, PM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Staggered Junction	Left-Right Stagger	Two-way		0.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2041+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D6+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L8830		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L4900		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	1.14	56.56	9.35
		B - L8830	2.29	0.00	1.14	0.00
		C - R179 West	93.95	2.29	0.00	2.49
		D - L4900	2.30	0.00	3.45	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.43	73.04	4.65
		B - L8830	1.14	0.00	4.58	1.14
		C - R179 West	89.60	4.58	0.00	2.36
		D - L4900	2.32	0.00	2.32	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L8830	C - R179 West	D - L4900
		A - R179 East	0.00	3.43	53.81	9.23
		B - L8830	1.14	0.00	8.01	1.14
		C - R179 West	87.76	2.29	0.00	3.51
		D - L4900	3.46	2.29	3.46	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0.00	3.43	68.69	5.80
	B - L8830	0.00	0.00	2.29	1.14
	C - R179 West	80.66	5.72	0.00	2.36
	D - L4900	5.75	0.00	3.46	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L8830	C - R179 West	D - L4900
	A - R179 East	0	0	11	0
	B - L8830	0	0	0	0
	C - R179 West	6	0	0	0
	D - L4900	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	6.11	0.1	A	4.86	19.46
B-A	0.02	9.12	0.0	A	1.14	4.58
A-B					2.86	11.45
A-C					63.02	252.10
A-D					7.26	29.04
AB-CD	0.08	7.58	0.1	A	8.12	32.46
AB-C					67.03	268.11
D-AB	0.04	6.10	0.0	A	4.03	16.12
D-C	0.03	7.94	0.0	A	3.17	12.69
C-D					2.68	10.72
C-A					87.99	351.97
C-B					3.72	14.88
CD-AB	0.04	7.04	0.0	A	4.29	17.17
CD-A					91.44	365.76

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	150.57	0.008	1.14	0.0	0.0	6.022	A
B-A	2.29	2.29	116.08	0.020	2.27	0.0	0.0	7.907	A
A-B	1.14	1.14			1.14				
A-C	56.56	56.56			56.56				
A-D	9.35	9.35			9.35				
AB-CD	9.35	9.35	127.93	0.073	9.28	0.0	0.1	7.580	A
AB-C	57.70	57.70			57.70				
D-AB	2.30	2.30	149.85	0.015	2.29	0.0	0.0	6.099	A
D-C	3.45	3.45	121.06	0.028	3.42	0.0	0.0	7.648	A
C-D	2.49	2.49			2.49				
C-A	93.95	93.95			93.95				
C-B	2.29	2.29			2.29				
CD-AB	2.29	2.29	136.27	0.017	2.27	0.0	0.0	6.716	A
CD-A	96.24	96.24			96.24				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.72	5.72	152.96	0.037	5.69	0.0	0.0	6.109	A
B-A	1.14	1.14	99.83	0.011	1.15	0.0	0.0	9.121	A
A-B	3.43	3.43			3.43				
A-C	73.04	73.04			73.04				
A-D	4.65	4.65			4.65				
AB-CD	5.79	5.79	128.51	0.045	5.82	0.1	0.0	7.336	A
AB-C	77.60	77.60			77.60				
D-AB	2.32	2.32	153.57	0.015	2.32	0.0	0.0	5.949	A
D-C	2.32	2.32	117.13	0.020	2.33	0.0	0.0	7.839	A
C-D	2.36	2.36			2.36				
C-A	89.60	89.60			89.60				
C-B	4.58	4.58			4.58				
CD-AB	4.58	4.58	132.71	0.035	4.56	0.0	0.0	7.022	A
CD-A	91.92	91.92			91.92				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	9.16	9.16	158.12	0.058	9.13	0.0	0.1	6.041	A
B-A	1.14	1.14	102.14	0.011	1.14	0.0	0.0	8.913	A
A-B	3.43	3.43			3.43				
A-C	53.81	53.81			53.81				
A-D	9.23	9.23			9.23				
AB-CD	10.38	10.38	129.24	0.080	10.34	0.0	0.1	7.567	A
AB-C	61.80	61.80			61.80				
D-AB	5.75	5.75	157.78	0.036	5.73	0.0	0.0	5.919	A
D-C	3.46	3.46	116.84	0.030	3.45	0.0	0.0	7.937	A
C-D	3.51	3.51			3.51				
C-A	87.76	87.76			87.76				
C-B	2.29	2.29			2.29				
CD-AB	4.56	4.56	136.47	0.033	4.56	0.0	0.0	6.824	A
CD-A	91.21	91.21			91.21				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.43	3.43	156.74	0.022	3.47	0.1	0.0	5.875	A
B-A	0.00	0.00	96.89	0.000	0.01	0.0	0.0	0.000	A
A-B	3.43	3.43			3.43				
A-C	68.69	68.69			68.69				
A-D	5.80	5.80			5.80				
AB-CD	6.94	6.94	130.48	0.053	6.97	0.1	0.1	7.290	A
AB-C	71.01	71.01			71.01				
D-AB	5.75	5.75	159.10	0.036	5.75	0.0	0.0	5.870	A
D-C	3.46	3.46	117.56	0.029	3.46	0.0	0.0	7.887	A
C-D	2.36	2.36			2.36				
C-A	80.66	80.66			80.66				
C-B	5.72	5.72			5.72				
CD-AB	5.74	5.74	133.54	0.043	5.73	0.0	0.0	7.041	A
CD-A	86.40	86.40			86.40				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site 2- Crossroads.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\2.Operation years

Report generation date: 22/02/2023 10:54:06

»2026, AM

»2026, PM

»2031, AM

»2031, PM

»2041, AM

»2041, PM

»2026+ GAA Phase 2+ Mine Traffic+ DG , AM

»2026+ GAA Phase 2+ Mine Traffic+ DG, PM

»2031+ GAA Phase 2+ Mine Traffic+ DG, AM

»2031+ GAA Phase 2+ Mine Traffic+ DG, PM

»2041+ GAA Phase 2+ Mine Traffic+ DG, AM

»2041+ GAA Phase 2+ Mine Traffic+ DG, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2026								
Stream B-CD	0.0	10.16	0.04	B	0.0	6.75	0.04	A
Stream B-AD	0.1	10.08	0.05	B	0.0	9.06	0.03	A
Stream A-BCD	0.0	5.22	0.01	A	0.0	5.34	0.03	A
Stream D-AB	0.0	7.22	0.03	A	0.0	11.78	0.02	B
Stream D-BC	0.0	11.15	0.03	B	0.0	13.76	0.02	B
Stream C-ABD	0.1	5.69	0.04	A	0.1	6.31	0.04	A
2031								
Stream B-CD	0.0	10.32	0.04	B	0.0	6.77	0.04	A
Stream B-AD	0.1	10.36	0.06	B	0.0	9.18	0.03	A
Stream A-BCD	0.0	5.19	0.01	A	0.0	5.31	0.03	A
Stream D-AB	0.0	7.31	0.03	A	0.0	12.10	0.02	B
Stream D-BC	0.0	11.23	0.03	B	0.0	14.09	0.03	B
Stream C-ABD	0.1	5.68	0.04	A	0.1	6.28	0.04	A
2041								
Stream B-CD	0.0	10.53	0.05	B	0.0	6.80	0.04	A
Stream B-AD	0.1	10.71	0.06	B	0.0	9.32	0.03	A
Stream A-BCD	0.0	5.15	0.01	A	0.0	5.28	0.03	A
Stream D-AB	0.0	7.43	0.03	A	0.0	12.51	0.02	B
Stream D-BC	0.0	11.31	0.04	B	0.0	14.51	0.03	B
Stream C-ABD	0.1	5.66	0.05	A	0.1	6.26	0.05	A
2026+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-CD	0.1	11.66	0.05	B	0.1	7.28	0.13	A
Stream B-AD	0.1	13.07	0.07	B	0.2	9.81	0.15	A
Stream A-BCD	0.0	5.06	0.01	A	0.0	5.14	0.03	A
Stream D-AB	0.0	7.45	0.03	A	0.0	11.99	0.02	B
Stream D-BC	0.0	12.05	0.03	B	0.0	14.39	0.02	B
Stream C-ABD	0.3	6.82	0.16	A	0.1	6.46	0.05	A
2031+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-CD	0.1	11.78	0.05	B	0.1	7.36	0.13	A
Stream B-AD	0.1	13.34	0.07	B	0.2	9.97	0.15	A
Stream A-BCD	0.0	5.02	0.01	A	0.0	5.11	0.03	A
Stream D-AB	0.0	7.55	0.03	A	0.0	12.31	0.02	B
Stream D-BC	0.0	12.14	0.04	B	0.0	14.74	0.03	B
Stream C-ABD	0.3	6.81	0.17	A	0.1	6.42	0.05	A
2041+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-CD	0.1	11.94	0.06	B	0.1	7.45	0.13	A
Stream B-AD	0.1	13.70	0.08	B	0.2	10.17	0.15	B
Stream A-BCD	0.0	4.98	0.01	A	0.0	5.08	0.03	A
Stream D-AB	0.0	7.68	0.03	A	0.0	12.74	0.03	B
Stream D-BC	0.0	12.25	0.04	B	0.0	15.18	0.03	C
Stream C-ABD	0.3	6.79	0.17	A	0.1	6.37	0.06	A

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

File summary

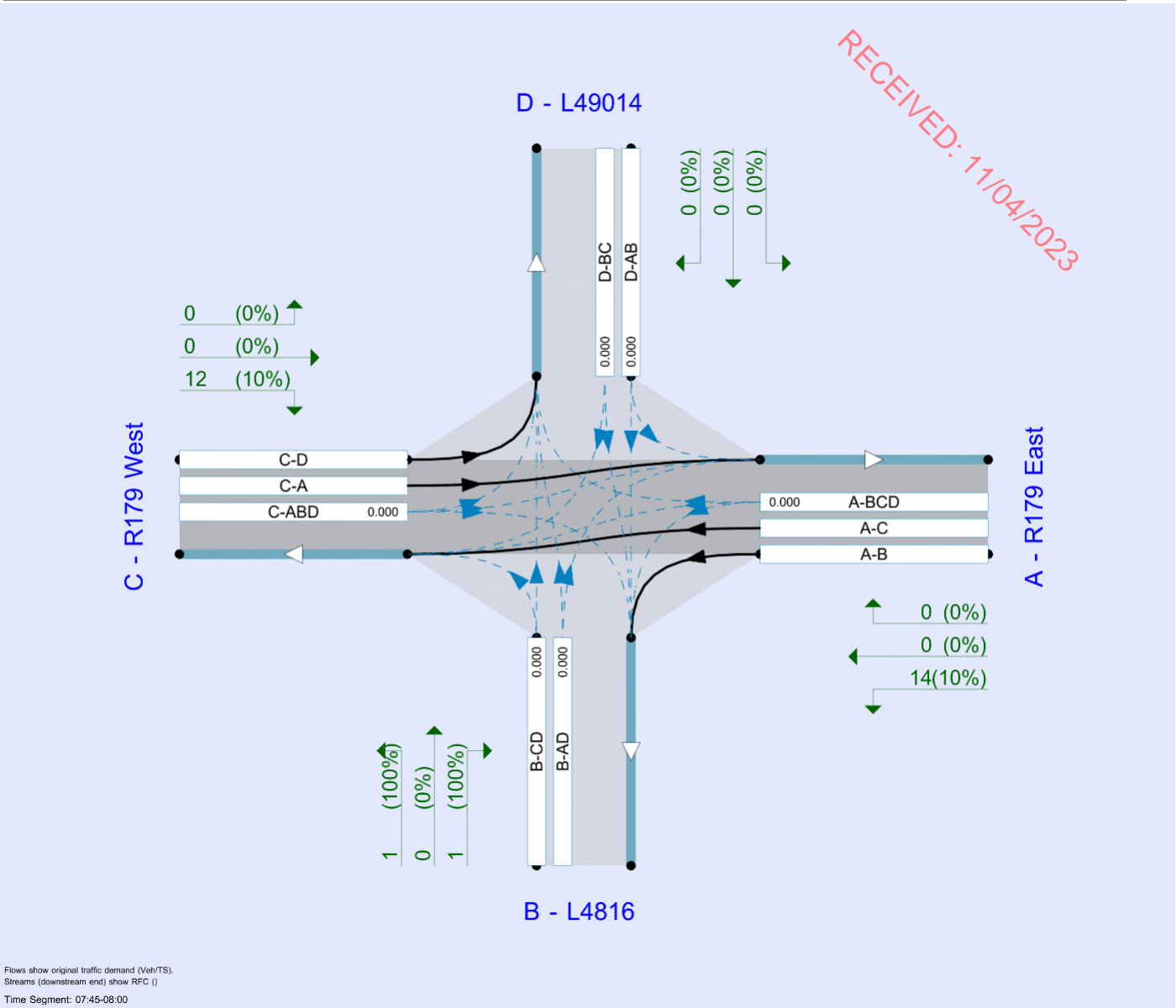
File Description

Title	
Location	
Site number	
Date	09/10/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

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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	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2026	AM	DIRECT	07:45	08:45	60	15	✓		
D2	2026	PM	DIRECT	16:45	17:45	60	15			
D3	2031	AM	DIRECT	07:45	08:45	60	15	✓		
D4	2031	PM	DIRECT	16:45	17:45	60	15	✓		
D5	2041	AM	DIRECT	07:45	08:45	60	15	✓		
D6	2041	PM	DIRECT	16:45	17:45	60	15	✓		
D7	Mine Traffic	AM	DIRECT	07:45	08:45	60	15			
D8	Mine Traffic	PM	DIRECT	16:45	17:45	60	15			
D9	GAA Phase 2	AM	DIRECT	07:45	08:45	60	15			
D10	GAA Phase 2	PM	DIRECT	16:45	17:45	60	15			
D11	2026+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D7+D9
D12	2026+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D8+D10
D13	2031+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D7+D9
D14	2031+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D8+D10
D15	2041+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D5+D7+D9
D16	2041+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D6+D8+D10

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2026, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.87	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R179 East		Major
B	L4816		Minor
C	R179 West		Major
D	L49014		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - R179 East	7.30			30.0	✓	0.00
C - R179 West	7.30			30.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - L4816	One lane plus flare	7.00	5.50	3.50	3.50	3.50		1.00	100	110
D - L49014	One lane plus flare	4.40	3.00	2.20	2.20	2.20		1.00	10	10

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	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
1	A-D	147.834	-	-	-	-	-	-	0.216	0.309	0.216	-	-	-
1	B-A	152.190	0.105	0.264	0.264	-	-	-	0.166	0.378	-	0.264	0.264	0.132
1	B-C	157.826	0.091	0.231	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	128.843	0.089	0.224	0.224	-	-	-	0.141	0.320	0.141	-	-	-
1	B-D, offside lane	152.190	0.105	0.264	0.264	-	-	-	0.166	0.378	0.166	-	-	-
1	C-B	147.834	0.216	0.216	0.309	-	-	-	-	-	-	-	-	-
1	D-A	110.235	-	-	-	-	-	-	0.161	-	0.064	-	-	-
1	D-B, nearside lane	84.982	0.093	0.093	0.211	-	-	-	0.148	0.148	0.058	-	-	-
1	D-B, offside lane	119.032	0.130	0.130	0.295	-	-	-	0.207	0.207	0.082	-	-	-
1	D-C	119.032	-	0.130	0.295	0.103	0.207	0.207	0.207	0.207	0.082	-	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2026	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	2.09	75.60	0.00
		B - L4816	5.29	0.00	2.15	0.00
		C - R179 West	48.38	4.19	0.00	1.05
		D - L49014	0.00	0.00	3.14	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	1.05	51.47	0.00
		B - L4816	0.00	0.00	1.05	0.00
		C - R179 West	53.73	4.36	0.00	1.05
		D - L49014	3.14	1.05	1.05	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	4.25	53.62	1.05
		B - L4816	4.19	0.00	4.30	0.00
		C - R179 West	57.81	0.00	0.00	0.00
		D - L49014	3.14	1.10	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	3.14	61.00	0.00
		B - L4816	5.23	0.00	0.00	0.00
		C - R179 West	62.22	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00	

Vehicle Mix

Heavy Vehicle Percentages

		To			
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0	0	6	0
	B - L4816	21	0	51	0
	C - R179 West	9	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	10.16	0.0	B	1.88	7.50
B-AD	0.05	10.08	0.1	B	3.68	14.71
A-BCD	0.01	5.22	0.0	A	0.39	1.57
A-B					2.62	10.49
A-C					60.30	241.21
D-AB	0.03	7.22	0.0	A	1.84	7.36
D-BC	0.03	11.15	0.0	B	1.31	5.26
C-ABD	0.04	5.69	0.1	A	3.10	12.42
C-D					0.50	2.02
C-A					54.59	218.36

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.15	2.15	90.69	0.024	2.13	0.0	0.0	10.160	B
B-AD	5.29	5.29	99.29	0.053	5.24	0.0	0.1	9.565	A
A-BCD	0.00	0.00	132.96	0.000	0.00	0.0	0.0	0.000	A
A-B	2.09	2.09			2.09				
A-C	75.60	75.60			75.60				
D-AB	0.00	0.00	81.44	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.14	3.14	95.42	0.033	3.11	0.0	0.0	9.747	A
C-ABD	5.99	5.99	163.95	0.037	5.94	0.0	0.0	5.695	A
C-D	1.01	1.01			1.01				
C-A	46.61	46.61			46.61				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.05	1.05	116.89	0.009	1.06	0.0	0.0	7.772	A
B-AD	0.00	0.00	79.29	0.000	0.06	0.1	0.0	0.000	A
A-BCD	0.00	0.00	131.65	0.000	0.00	0.0	0.0	0.000	A
A-B	1.05	1.05			1.05				
A-C	51.47	51.47			51.47				
D-AB	3.67	3.67	129.84	0.028	3.64	0.0	0.0	7.129	A
D-BC	1.56	1.56	88.24	0.018	1.58	0.0	0.0	10.386	B
C-ABD	6.40	6.40	172.58	0.037	6.40	0.0	0.1	5.411	A
C-D	1.01	1.01			1.01				
C-A	51.73	51.73			51.73				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.30	4.30	108.90	0.040	4.27	0.0	0.0	8.598	A
B-AD	4.19	4.19	93.37	0.045	4.14	0.0	0.0	10.080	B
A-BCD	1.57	1.57	173.86	0.009	1.56	0.0	0.0	5.223	A
A-B	4.21	4.21			4.21				
A-C	53.13	53.13			53.13				
D-AB	3.69	3.69	128.28	0.029	3.69	0.0	0.0	7.222	A
D-BC	0.55	0.55	81.28	0.007	0.56	0.0	0.0	11.152	B
C-ABD	0.02	0.02	170.99	0.000	0.07	0.1	0.0	5.187	A
C-D	0.00	0.00			0.00				
C-A	57.79	57.79			57.79				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	84.26	0.000	0.04	0.0	0.0	0.000	A
B-AD	5.23	5.23	105.42	0.050	5.23	0.0	0.1	8.982	A
A-BCD	0.00	0.00	130.80	0.000	0.01	0.0	0.0	0.000	A
A-B	3.14	3.14			3.14				
A-C	61.00	61.00			61.00				
D-AB	0.00	0.00	126.72	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	82.13	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	122.05	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	62.22	62.22			62.22				

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2026, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2026	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	2.09	49.43	0.00
		B - L4816	3.14	0.00	2.09	0.00
		C - R179 West	68.22	3.20	0.00	1.05
		D - L49014	1.05	1.10	1.05	0.00

Demand (Veh/TS)

17:00 - 17:15		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	6.28	62.87	0.00
		B - L4816	3.14	0.00	1.10	0.00
		C - R179 West	67.11	1.05	0.00	0.00
		D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	3.14	51.41	1.05
		B - L4816	1.05	0.00	3.20	0.00
		C - R179 West	64.09	1.05	0.00	0.00
		D - L49014	2.09	0.00	1.05	0.00

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Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	2.09	58.74	3.14
	B - L4816	2.09	0.00	4.19	2.09
	C - R179 West	60.89	2.15	0.00	1.05
	D - L49014	0.00	0.00	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	5	35	0	0
	D - L49014	0	100	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	6.75	0.0	A	2.91	11.65
B-AD	0.03	9.06	0.0	A	2.61	10.45
A-BCD	0.03	5.34	0.0	A	1.59	6.37
A-B					3.38	13.52
A-C					55.09	220.35
D-AB	0.02	11.78	0.0	B	0.92	3.70
D-BC	0.02	13.76	0.0	B	0.66	2.64
C-ABD	0.04	6.31	0.1	A	3.33	13.31
C-D					0.51	2.03
C-A					63.62	254.50

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.09	2.09	150.49	0.014	2.08	0.0	0.0	6.064	A
B-AD	3.14	3.14	123.13	0.026	3.11	0.0	0.0	7.496	A
A-BCD	0.00	0.00	127.96	0.000	0.00	0.0	0.0	0.000	A
A-B	2.09	2.09			2.09				
A-C	49.43	49.43			49.43				
D-AB	1.61	1.61	77.95	0.021	1.58	0.0	0.0	11.783	B
D-BC	1.59	1.59	66.93	0.024	1.57	0.0	0.0	13.764	B
C-ABD	5.82	5.82	153.88	0.038	5.76	0.0	0.1	6.075	A
C-D	1.01	1.01			1.01				
C-A	65.64	65.64			65.64				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.10	1.10	134.50	0.008	1.11	0.0	0.0	6.746	A
B-AD	3.14	3.14	122.92	0.026	3.14	0.0	0.0	7.513	A
A-BCD	0.00	0.00	129.28	0.000	0.00	0.0	0.0	0.000	A
A-B	6.28	6.28			6.28				
A-C	62.87	62.87			62.87				
D-AB	0.00	0.00	77.72	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	66.12	0.000	0.02	0.0	0.0	0.000	A
C-ABD	1.92	1.92	149.93	0.013	1.96	0.1	0.0	6.087	A
C-D	0.00	0.00			0.00				
C-A	66.24	66.24			66.24				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.20	3.20	173.02	0.018	3.19	0.0	0.0	5.299	A
B-AD	1.05	1.05	100.44	0.010	1.06	0.0	0.0	9.057	A
A-BCD	1.54	1.54	169.95	0.009	1.53	0.0	0.0	5.343	A
A-B	3.11	3.11			3.11				
A-C	50.94	50.94			50.94				
D-AB	2.09	2.09	140.68	0.015	2.08	0.0	0.0	7.491	A
D-BC	1.05	1.05	83.33	0.013	1.03	0.0	0.0	13.228	B
C-ABD	1.84	1.84	149.35	0.012	1.84	0.0	0.0	6.085	A
C-D	0.00	0.00			0.00				
C-A	63.29	63.29			63.29				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.25	5.25	146.55	0.036	5.23	0.0	0.0	6.368	A
B-AD	3.12	3.12	115.20	0.027	3.10	0.0	0.0	8.028	A
A-BCD	4.83	4.83	174.22	0.028	4.80	0.0	0.0	5.308	A
A-B	2.04	2.04			2.04				
A-C	57.11	57.11			57.11				
D-AB	0.00	0.00	133.38	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	87.19	0.000	0.02	0.0	0.0	0.000	A
C-ABD	3.74	3.74	146.30	0.026	3.72	0.0	0.0	6.309	A
C-D	1.02	1.02			1.02				
C-A	59.33	59.33			59.33				

2031, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.89	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2031	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	2.19	79.23
		B - L4816	5.59	0.00	2.31
		C - R179 West	50.80	4.37	0.00
		D - L49014	0.00	0.00	3.28

Demand (Veh/TS)

08:00 - 08:15	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	1.09	53.95
		B - L4816	0.00	0.00	1.09
		C - R179 West	56.51	4.74	0.00
		D - L49014	3.28	1.09	1.09

Demand (Veh/TS)

08:15 - 08:30	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	4.50	56.26
		B - L4816	4.37	0.00	4.62
		C - R179 West	60.64	0.00	0.00
		D - L49014	3.28	1.22	0.00

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Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	3.28	64.04	0.00
	B - L4816	5.47	0.00	0.00	0.00
	C - R179 West	65.51	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0	0	6	0
	B - L4816	22	0	53	0
	C - R179 West	10	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	10.32	0.0	B	2.01	8.03
B-AD	0.06	10.36	0.1	B	3.86	15.43
A-BCD	0.01	5.19	0.0	A	0.42	1.67
A-B					2.75	11.02
A-C					63.24	252.95
D-AB	0.03	7.31	0.0	A	1.93	7.72
D-BC	0.03	11.23	0.0	B	1.38	5.52
C-ABD	0.04	5.68	0.1	A	3.38	13.52
C-D					0.52	2.10
C-A					57.29	229.14

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.31	2.31	89.43	0.026	2.28	0.0	0.0	10.324	B
B-AD	5.59	5.59	97.11	0.058	5.53	0.0	0.1	9.821	A
A-BCD	0.00	0.00	132.18	0.000	0.00	0.0	0.0	0.000	A
A-B	2.19	2.19			2.19				
A-C	79.23	79.23			79.23				
D-AB	0.00	0.00	80.66	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.28	3.28	94.15	0.035	3.24	0.0	0.0	9.900	A
C-ABD	6.38	6.38	164.78	0.039	6.33	0.0	0.1	5.679	A
C-D	1.05	1.05			1.05				
C-A	48.83	48.83			48.83				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.09	1.09	115.35	0.009	1.11	0.0	0.0	7.880	A
B-AD	0.00	0.00	77.77	0.000	0.06	0.1	0.0	0.000	A
A-BCD	0.00	0.00	130.72	0.000	0.00	0.0	0.0	0.000	A
A-B	1.09	1.09			1.09				
A-C	53.95	53.95			53.95				
D-AB	3.83	3.83	128.95	0.030	3.80	0.0	0.0	7.189	A
D-BC	1.63	1.63	87.22	0.019	1.65	0.0	0.0	10.518	B
C-ABD	7.11	7.11	173.87	0.041	7.11	0.1	0.1	5.394	A
C-D	1.05	1.05			1.05				
C-A	54.19	54.19			54.19				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	4.62	4.62	107.79	0.043	4.59	0.0	0.0	8.718	A
B-AD	4.37	4.37	91.18	0.048	4.32	0.0	0.0	10.357	B
A-BCD	1.67	1.67	175.17	0.010	1.66	0.0	0.0	5.186	A
A-B	4.45	4.45			4.45				
A-C	55.73	55.73			55.73				
D-AB	3.89	3.89	126.92	0.031	3.89	0.0	0.0	7.314	A
D-BC	0.61	0.61	80.79	0.008	0.62	0.0	0.0	11.227	B
C-ABD	0.02	0.02	172.06	0.000	0.08	0.1	0.0	5.152	A
C-D	0.00	0.00			0.00				
C-A	60.62	60.62			60.62				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	82.98	0.000	0.04	0.0	0.0	0.000	A
B-AD	5.47	5.47	103.32	0.053	5.46	0.0	0.1	9.196	A
A-BCD	0.00	0.00	129.76	0.000	0.01	0.0	0.0	0.000	A
A-B	3.28	3.28			3.28				
A-C	64.04	64.04			64.04				
D-AB	0.00	0.00	131.38	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	81.52	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	120.85	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	65.51	65.51			65.51				

2031, PM

Data Errors and Warnings

No errors or warnings

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Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2031	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.19	51.89	0.00
	B - L4816	3.28	0.00	2.19	0.00
	C - R179 West	71.45	3.40	0.00	1.09
	D - L49014	1.09	1.22	1.09	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	6.56	65.74	0.00
	B - L4816	3.28	0.00	1.22	0.00
	C - R179 West	70.23	1.09	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.28	53.83	1.09
	B - L4816	1.09	0.00	3.40	0.00
	C - R179 West	67.20	1.09	0.00	0.00
	D - L49014	2.19	0.00	1.09	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	2.19	61.49	3.28
	B - L4816	2.19	0.00	4.37	2.19
	C - R179 West	63.80	2.31	0.00	1.09
	D - L49014	0.00	0.00	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0	0	9	0
	B - L4816	0	0	0	0
	C - R179 West	5	36	0	0
	D - L49014	0	100	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	6.77	0.0	A	3.07	12.30
B-AD	0.03	9.18	0.0	A	2.73	10.91
A-BCD	0.03	5.31	0.0	A	1.70	6.80
A-B					3.53	14.12
A-C					57.65	230.62
D-AB	0.02	12.10	0.0	B	0.97	3.90
D-BC	0.03	14.09	0.0	B	0.70	2.79
C-ABD	0.04	6.28	0.1	A	3.65	14.59
C-D					0.53	2.11
C-A					66.52	266.07

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.19	2.19	149.73	0.015	2.17	0.0	0.0	6.099	A
B-AD	3.28	3.28	121.56	0.027	3.25	0.0	0.0	7.605	A
A-BCD	0.00	0.00	126.96	0.000	0.00	0.0	0.0	0.000	A
A-B	2.19	2.19			2.19				
A-C	51.89	51.89			51.89				
D-AB	1.71	1.71	76.06	0.022	1.69	0.0	0.0	12.096	B
D-BC	1.69	1.69	65.51	0.026	1.67	0.0	0.0	14.091	B
C-ABD	6.39	6.39	155.21	0.041	6.33	0.0	0.1	6.044	A
C-D	1.05	1.05			1.05				
C-A	68.51	68.51			68.51				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.22	1.22	134.11	0.009	1.22	0.0	0.0	6.772	A
B-AD	3.28	3.28	121.23	0.027	3.28	0.0	0.0	7.629	A
A-BCD	0.00	0.00	128.39	0.000	0.00	0.0	0.0	0.000	A
A-B	6.56	6.56			6.56				
A-C	65.74	65.74			65.74				
D-AB	0.00	0.00	75.85	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	64.69	0.000	0.03	0.0	0.0	0.000	A
C-ABD	2.07	2.07	151.10	0.014	2.12	0.1	0.0	6.048	A
C-D	0.00	0.00			0.00				
C-A	69.25	69.25			69.25				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.40	3.40	172.24	0.020	3.39	0.0	0.0	5.329	A
B-AD	1.09	1.09	99.19	0.011	1.11	0.0	0.0	9.177	A
A-BCD	1.64	1.64	170.97	0.010	1.63	0.0	0.0	5.314	A
A-B	3.25	3.25			3.25				
A-C	53.31	53.31			53.31				
D-AB	2.19	2.19	139.87	0.016	2.17	0.0	0.0	7.588	A
D-BC	1.09	1.09	82.33	0.013	1.08	0.0	0.0	13.500	B
C-ABD	1.98	1.98	150.53	0.013	1.98	0.0	0.0	6.041	A
C-D	0.00	0.00			0.00				
C-A	66.31	66.31			66.31				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.49	5.49	145.43	0.038	5.47	0.0	0.0	6.430	A
B-AD	3.26	3.26	113.75	0.029	3.24	0.0	0.0	8.143	A
A-BCD	5.15	5.15	175.41	0.029	5.13	0.0	0.0	5.281	A
A-B	2.12	2.12			2.12				
A-C	59.68	59.68			59.68				
D-AB	0.00	0.00	132.57	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	86.11	0.000	0.02	0.0	0.0	0.000	A
C-ABD	4.14	4.14	147.32	0.028	4.12	0.0	0.0	6.282	A
C-D	1.06	1.06			1.06				
C-A	62.00	62.00			62.00				

2041, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2041	AM	DIRECT	07:45	08:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	2.29	83.31
		B - L4816	5.95	0.00	2.51
		C - R179 West	53.55	4.58	0.00
		D - L49014	0.00	0.00	3.43

Demand (Veh/TS)

08:00 - 08:15	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	1.14	56.76
		B - L4816	0.00	0.00	1.14
		C - R179 West	59.72	5.25	0.00
		D - L49014	3.43	1.14	1.14

Demand (Veh/TS)

08:15 - 08:30	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	4.80	59.27
		B - L4816	4.58	0.00	5.02
		C - R179 West	63.85	0.00	0.00
		D - L49014	3.43	1.37	0.00

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Demand (Veh/TS)

08:30 - 08:45

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	3.43	67.50	0.00
	B - L4816	5.72	0.00	0.00	0.00
	C - R179 West	69.32	0.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0	0	7	0
	B - L4816	23	0	54	0
	C - R179 West	10	0	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	10.53	0.0	B	2.17	8.68
B-AD	0.06	10.71	0.1	B	4.06	16.25
A-BCD	0.01	5.15	0.0	A	0.45	1.80
A-B					2.91	11.62
A-C					66.56	266.24
D-AB	0.03	7.43	0.0	A	2.03	8.13
D-BC	0.04	11.31	0.0	B	1.46	5.83
C-ABD	0.05	5.66	0.1	A	3.73	14.92
C-D					0.55	2.19
C-A					60.36	241.44

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.51	2.51	87.89	0.029	2.48	0.0	0.0	10.534	B
B-AD	5.95	5.95	94.48	0.063	5.88	0.0	0.1	10.151	B
A-BCD	0.00	0.00	131.26	0.000	0.00	0.0	0.0	0.000	A
A-B	2.29	2.29			2.29				
A-C	83.31	83.31			83.31				
D-AB	0.00	0.00	79.75	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.43	3.43	92.68	0.037	3.40	0.0	0.0	10.076	B
C-ABD	6.83	6.83	165.71	0.041	6.78	0.0	0.1	5.662	A
C-D	1.10	1.10			1.10				
C-A	51.34	51.34			51.34				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.14	1.14	113.45	0.010	1.16	0.0	0.0	8.018	A
B-AD	0.00	0.00	75.90	0.000	0.07	0.1	0.0	0.000	A
A-BCD	0.00	0.00	129.60	0.000	0.00	0.0	0.0	0.000	A
A-B	1.14	1.14			1.14				
A-C	56.76	56.76			56.76				
D-AB	4.01	4.01	127.91	0.031	3.98	0.0	0.0	7.260	A
D-BC	1.71	1.71	86.02	0.020	1.73	0.0	0.0	10.679	B
C-ABD	8.06	8.06	175.35	0.046	8.05	0.1	0.1	5.377	A
C-D	1.09	1.09			1.09				
C-A	56.96	56.96			56.96				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.02	5.02	106.44	0.047	4.99	0.0	0.0	8.868	A
B-AD	4.58	4.58	88.47	0.052	4.52	0.0	0.1	10.714	B
A-BCD	1.80	1.80	176.65	0.010	1.79	0.0	0.0	5.146	A
A-B	4.75	4.75			4.75				
A-C	58.67	58.67			58.67				
D-AB	4.12	4.12	125.22	0.033	4.12	0.0	0.0	7.430	A
D-BC	0.68	0.68	80.29	0.009	0.70	0.0	0.0	11.308	B
C-ABD	0.02	0.02	173.22	0.000	0.09	0.1	0.0	5.111	A
C-D	0.00	0.00			0.00				
C-A	63.82	63.82			63.82				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.00	0.00	81.41	0.000	0.05	0.0	0.0	0.000	A
B-AD	5.72	5.72	100.75	0.057	5.72	0.1	0.1	9.470	A
A-BCD	0.00	0.00	128.49	0.000	0.01	0.0	0.0	0.000	A
A-B	3.43	3.43			3.43				
A-C	67.51	67.51			67.51				
D-AB	0.00	0.00	128.79	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	80.85	0.000	0.01	0.0	0.0	0.000	A
C-ABD	0.00	0.00	119.35	0.000	0.00	0.0	0.0	0.000	A
C-D	0.00	0.00			0.00				
C-A	69.32	69.32			69.32				

2041, PM

Data Errors and Warnings

No errors or warnings

RECEIVED: 11/04/2023

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		0.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2041	PM	DIRECT	16:45	17:45	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.29	54.69	0.00
	B - L4816	3.43	0.00	2.29	0.00
	C - R179 West	75.07	3.66	0.00	1.14
	D - L49014	1.14	1.37	1.14	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	6.87	68.90	0.00
	B - L4816	3.43	0.00	1.37	0.00
	C - R179 West	73.70	1.14	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.43	56.53	1.14
	B - L4816	1.14	0.00	3.66	0.00
	C - R179 West	70.72	1.14	0.00	0.00
	D - L49014	2.29	0.00	1.14	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0.00	2.29	64.55	3.43
	B - L4816	2.29	0.00	4.58	2.29
	C - R179 West	67.06	2.51	0.00	1.14
	D - L49014	0.00	0.00	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - R179 East	B - L4816	C - R179 West	D - L49014
	A - R179 East	0	0	10	0
	B - L4816	0	0	0	0
	C - R179 West	5	37	0	0
	D - L49014	0	100	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.04	6.80	0.0	A	3.27	13.06
B-AD	0.03	9.32	0.0	A	2.86	11.42
A-BCD	0.03	5.28	0.0	A	1.82	7.28
A-B					3.69	14.77
A-C					60.52	242.08
D-AB	0.02	12.51	0.0	B	1.03	4.13
D-BC	0.03	14.51	0.0	B	0.74	2.96
C-ABD	0.05	6.26	0.1	A	4.05	16.19
C-D					0.55	2.20
C-A					69.73	278.90

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.29	2.29	148.84	0.015	2.27	0.0	0.0	6.140	A
B-AD	3.43	3.43	119.72	0.029	3.40	0.0	0.0	7.736	A
A-BCD	0.00	0.00	125.78	0.000	0.00	0.0	0.0	0.000	A
A-B	2.29	2.29			2.29				
A-C	54.69	54.69			54.69				
D-AB	1.84	1.84	73.73	0.025	1.81	0.0	0.0	12.510	B
D-BC	1.82	1.82	63.79	0.029	1.79	0.0	0.0	14.511	B
C-ABD	7.13	7.13	156.54	0.046	7.06	0.0	0.1	6.020	A
C-D	1.09	1.09			1.09				
C-A	71.65	71.65			71.65				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.37	1.37	133.76	0.010	1.37	0.0	0.0	6.797	A
B-AD	3.43	3.43	119.29	0.029	3.43	0.0	0.0	7.768	A
A-BCD	0.00	0.00	127.34	0.000	0.00	0.0	0.0	0.000	A
A-B	6.87	6.87			6.87				
A-C	68.90	68.90			68.90				
D-AB	0.00	0.00	73.55	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	62.98	0.000	0.03	0.0	0.0	0.000	A
C-ABD	2.25	2.25	152.26	0.015	2.30	0.1	0.0	6.007	A
C-D	0.00	0.00			0.00				
C-A	72.59	72.59			72.59				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.66	3.66	171.36	0.021	3.65	0.0	0.0	5.365	A
B-AD	1.14	1.14	97.73	0.012	1.16	0.0	0.0	9.321	A
A-BCD	1.76	1.76	172.06	0.010	1.75	0.0	0.0	5.284	A
A-B	3.40	3.40			3.40				
A-C	55.96	55.96			55.96				
D-AB	2.29	2.29	138.95	0.016	2.27	0.0	0.0	7.711	A
D-BC	1.14	1.14	81.17	0.014	1.13	0.0	0.0	13.845	B
C-ABD	2.15	2.15	151.74	0.014	2.15	0.0	0.0	5.996	A
C-D	0.00	0.00			0.00				
C-A	69.71	69.71			69.71				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.75	5.75	144.13	0.040	5.73	0.0	0.0	6.502	A
B-AD	3.41	3.41	112.08	0.030	3.39	0.0	0.0	8.280	A
A-BCD	5.53	5.53	176.69	0.031	5.50	0.0	0.0	5.253	A
A-B	2.22	2.22			2.22				
A-C	62.52	62.52			62.52				
D-AB	0.00	0.00	131.64	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	84.87	0.000	0.02	0.0	0.0	0.000	A
C-ABD	4.66	4.66	148.32	0.031	4.63	0.0	0.0	6.261	A
C-D	1.11	1.11			1.11				
C-A	64.95	64.95			64.95				

2026+ GAA Phase 2+ Mine Traffic+ DG , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		1.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2026+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D1+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	16.09	75.95
		B - L4816	6.08	0.00	2.91
		C - R179 West	53.52	16.60	0.00
		D - L49014	0.00	0.00	3.14

Demand (Veh/TS)

08:00 - 08:15	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	14.58	54.25
		B - L4816	0.83	0.00	1.84
		C - R179 West	65.16	16.36	0.00
		D - L49014	3.14	1.05	1.05

Demand (Veh/TS)

08:15 - 08:30	From	To			
			A - R179 East	B - L4816	C - R179 West
			D - L49014		
		A - R179 East	0.00	17.78	56.40
		B - L4816	5.02	0.00	5.10
		C - R179 West	69.23	12.00	0.00
		D - L49014	3.14	1.10	0.00

Demand (Veh/TS)

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	16.67	63.78	0.00
	B - L4816	6.06	0.00	0.80	0.00
	C - R179 West	73.65	12.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	6	0
	B - L4816	31	0	64	0
	C - R179 West	7	8	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	5	0
	B - L4816	100	0	72	0
	C - R179 West	6	7	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	8	5	0
	B - L4816	34	0	59	0
	C - R179 West	6	10	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	8	5	0
	B - L4816	32	0	100	0
	C - R179 West	7	10	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	11.66	0.1	B	2.66	10.65
B-AD	0.07	13.07	0.1	B	4.50	17.99
A-BCD	0.01	5.06	0.0	A	0.45	1.78
A-B					16.24	64.95
A-C					62.45	249.82
D-AB	0.03	7.45	0.0	A	1.84	7.36
D-BC	0.03	12.05	0.0	B	1.31	5.26
C-ABD	0.16	6.82	0.3	A	23.52	94.08
C-D					0.44	1.76
C-A					56.19	224.77

RECEIVED: 11/04/2023

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	2.91	2.91	84.51	0.034	2.87	0.0	0.0	11.019	B
B-AD	6.08	6.08	86.94	0.070	6.00	0.0	0.1	11.109	B
A-BCD	0.00	0.00	125.13	0.000	0.00	0.0	0.0	0.000	A
A-B	16.09	16.09			16.09				
A-C	75.95	75.95			75.95				
D-AB	0.00	0.00	78.18	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.14	3.14	91.11	0.034	3.11	0.0	0.0	10.219	B
C-ABD	25.44	25.44	157.06	0.162	25.15	0.0	0.3	6.818	A
C-D	0.88	0.88			0.88				
C-A	44.85	44.85			44.85				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.84	1.84	97.45	0.019	1.86	0.0	0.0	9.141	A
B-AD	0.83	0.83	51.02	0.017	0.89	0.1	0.0	12.826	B
A-BCD	0.00	0.00	122.67	0.000	0.00	0.0	0.0	0.000	A
A-B	14.58	14.58			14.58				
A-C	54.25	54.25			54.25				
D-AB	3.67	3.67	126.06	0.029	3.64	0.0	0.0	7.349	A
D-BC	1.56	1.56	82.61	0.019	1.58	0.0	0.0	11.108	B
C-ABD	26.92	26.92	170.02	0.158	26.91	0.3	0.3	6.316	A
C-D	0.88	0.88			0.88				
C-A	54.76	54.76			54.76				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.10	5.10	100.71	0.051	5.07	0.0	0.1	9.626	A
B-AD	5.02	5.02	78.82	0.064	4.96	0.0	0.1	13.072	B
A-BCD	1.78	1.78	179.63	0.010	1.77	0.0	0.0	5.059	A
A-B	17.60	17.60			17.60				
A-C	55.84	55.84			55.84				
D-AB	3.69	3.69	124.50	0.030	3.69	0.0	0.0	7.449	A
D-BC	0.55	0.55	75.28	0.007	0.56	0.0	0.0	12.049	B
C-ABD	20.50	20.50	168.54	0.122	20.56	0.3	0.2	6.035	A
C-D	0.00	0.00			0.00				
C-A	60.73	60.73			60.73				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.80	0.80	65.10	0.012	0.84	0.1	0.0	11.656	B
B-AD	6.06	6.06	88.89	0.068	6.06	0.1	0.1	10.953	B
A-BCD	0.00	0.00	123.74	0.000	0.01	0.0	0.0	0.000	A
A-B	16.67	16.67			16.67				
A-C	63.78	63.78			63.78				
D-AB	0.00	0.00	122.87	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	76.19	0.000	0.01	0.0	0.0	0.000	A
C-ABD	21.21	21.21	170.78	0.124	21.21	0.2	0.2	6.026	A
C-D	0.00	0.00			0.00				
C-A	64.43	64.43			64.43				

2026+ GAA Phase 2+ Mine Traffic+ DG, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		1.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2026+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D2+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.73	57.78	0.00
	B - L4816	15.88	0.00	14.33	0.00
	C - R179 West	72.46	3.77	0.00	1.05
	D - L49014	1.05	1.10	1.05	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	6.50	72.84	0.00
	B - L4816	16.00	0.00	13.46	0.00
	C - R179 West	70.32	1.24	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.36	61.38	1.05
	B - L4816	13.91	0.00	15.56	0.00
	C - R179 West	67.29	1.24	0.00	0.00
	D - L49014	2.09	0.00	1.05	0.00

Demand (Veh/TS)

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.32	68.71	3.14
	B - L4816	14.96	0.00	16.55	2.09
	C - R179 West	64.10	2.35	0.00	1.05
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	23	6	0
	B - L4816	4	0	4	0
	C - R179 West	4	44	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	3	6	0
	B - L4816	4	0	5	0
	C - R179 West	4	45	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	7	6	0
	B - L4816	5	0	4	0
	C - R179 West	4	45	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	10	6	0
	B - L4816	4	0	4	0
	C - R179 West	4	40	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.13	7.28	0.1	A	15.27	61.09
B-AD	0.15	9.81	0.2	A	15.41	61.65
A-BCD	0.03	5.14	0.0	A	1.71	6.82
A-B					3.70	14.82
A-C					64.54	258.18
D-AB	0.02	11.99	0.0	B	0.92	3.70
D-BC	0.02	14.39	0.0	B	0.66	2.64
C-ABD	0.05	6.46	0.1	A	4.11	16.44
C-D					0.50	2.01
C-A					66.60	266.42

RECEIVED: 11/04/2023

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	14.33	14.33	144.80	0.099	14.22	0.0	0.1	6.886	A
B-AD	15.88	15.88	110.24	0.144	15.71	0.0	0.2	9.505	A
A-BCD	0.00	0.00	120.80	0.000	0.00	0.0	0.0	0.000	A
A-B	2.73	2.73			2.73				
A-C	57.78	57.78			57.78				
D-AB	1.61	1.61	76.64	0.021	1.58	0.0	0.0	11.939	B
D-BC	1.59	1.59	64.07	0.025	1.57	0.0	0.0	14.389	B
C-ABD	7.36	7.36	150.46	0.049	7.29	0.0	0.1	6.286	A
C-D	1.00	1.00			1.00				
C-A	68.91	68.91			68.91				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	13.46	13.46	138.61	0.097	13.46	0.1	0.1	7.181	A
B-AD	16.00	16.00	109.59	0.146	16.00	0.2	0.2	9.615	A
A-BCD	0.00	0.00	125.33	0.000	0.00	0.0	0.0	0.000	A
A-B	6.50	6.50			6.50				
A-C	72.84	72.84			72.84				
D-AB	0.00	0.00	76.59	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	63.37	0.000	0.03	0.0	0.0	0.000	A
C-ABD	2.45	2.45	145.58	0.017	2.50	0.1	0.0	6.285	A
C-D	0.00	0.00			0.00				
C-A	69.12	69.12			69.12				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	15.56	15.56	149.45	0.104	15.55	0.1	0.1	6.741	A
B-AD	13.91	13.91	107.39	0.130	13.93	0.2	0.1	9.599	A
A-BCD	1.65	1.65	176.76	0.009	1.64	0.0	0.0	5.139	A
A-B	3.33	3.33			3.33				
A-C	60.81	60.81			60.81				
D-AB	2.09	2.09	139.96	0.015	2.08	0.0	0.0	7.530	A
D-BC	1.05	1.05	78.17	0.013	1.03	0.0	0.0	14.114	B
C-ABD	2.34	2.34	144.69	0.016	2.34	0.0	0.0	6.296	A
C-D	0.00	0.00			0.00				
C-A	66.20	66.20			66.20				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	17.74	17.74	141.61	0.125	17.71	0.1	0.1	7.279	A
B-AD	15.86	15.86	107.84	0.147	15.84	0.1	0.2	9.808	A
A-BCD	5.17	5.17	181.04	0.029	5.15	0.0	0.0	5.113	A
A-B	2.25	2.25			2.25				
A-C	66.75	66.75			66.75				
D-AB	0.00	0.00	131.80	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	82.26	0.000	0.02	0.0	0.0	0.000	A
C-ABD	4.29	4.29	144.35	0.030	4.27	0.0	0.0	6.464	A
C-D	1.02	1.02			1.02				
C-A	62.19	62.19			62.19				

2031+ GAA Phase 2+ Mine Traffic+ DG, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		1.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2031+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D3+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	16.18	79.57	0.00
		B - L4816	6.38	0.00	3.07	0.00
		C - R179 West	55.93	16.79	0.00	1.09
		D - L49014	0.00	0.00	3.28	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	14.63	56.74	0.00
		B - L4816	0.83	0.00	1.89	0.00
		C - R179 West	67.93	16.75	0.00	1.09
		D - L49014	3.28	1.09	1.09	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	18.03	59.05	1.09
		B - L4816	5.20	0.00	5.42	0.00
		C - R179 West	72.06	12.00	0.00	0.00
		D - L49014	3.28	1.22	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	16.81	66.82	0.00
	B - L4816	6.30	0.00	0.80	0.00
	C - R179 West	76.93	12.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	6	0
	B - L4816	31	0	64	0
	C - R179 West	8	7	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	6	0
	B - L4816	100	0	73	0
	C - R179 West	7	7	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	8	6	0
	B - L4816	34	0	60	0
	C - R179 West	7	10	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	8	6	0
	B - L4816	32	0	100	0
	C - R179 West	7	10	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.05	11.78	0.1	B	2.79	11.17
B-AD	0.07	13.34	0.1	B	4.68	18.71
A-BCD	0.01	5.02	0.0	A	0.48	1.90
A-B					16.37	65.47
A-C					65.39	261.56
D-AB	0.03	7.55	0.0	A	1.93	7.72
D-BC	0.04	12.14	0.0	B	1.38	5.52
C-ABD	0.17	6.81	0.3	A	24.30	97.18
C-D					0.46	1.82
C-A					58.39	233.57

RECEIVED: 11/04/2023

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.07	3.07	83.70	0.037	3.03	0.0	0.0	11.152	B
B-AD	6.38	6.38	85.40	0.075	6.30	0.0	0.1	11.365	B
A-BCD	0.00	0.00	124.40	0.000	0.00	0.0	0.0	0.000	A
A-B	16.18	16.18			16.18				
A-C	79.57	79.57			79.57				
D-AB	0.00	0.00	77.38	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.28	3.28	89.85	0.037	3.24	0.0	0.0	10.387	B
C-ABD	26.26	26.26	158.11	0.166	25.96	0.0	0.3	6.806	A
C-D	0.91	0.91			0.91				
C-A	46.64	46.64			46.64				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.89	1.89	96.98	0.020	1.91	0.0	0.0	9.191	A
B-AD	0.83	0.83	50.28	0.017	0.90	0.1	0.0	13.040	B
A-BCD	0.00	0.00	121.78	0.000	0.00	0.0	0.0	0.000	A
A-B	14.63	14.63			14.63				
A-C	56.74	56.74			56.74				
D-AB	3.83	3.83	125.16	0.031	3.80	0.0	0.0	7.414	A
D-BC	1.63	1.63	81.59	0.020	1.65	0.0	0.0	11.262	B
C-ABD	28.15	28.15	171.62	0.164	28.14	0.3	0.3	6.301	A
C-D	0.91	0.91			0.91				
C-A	56.71	56.71			56.71				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.42	5.42	100.06	0.054	5.38	0.0	0.1	9.710	A
B-AD	5.20	5.20	77.34	0.067	5.14	0.0	0.1	13.341	B
A-BCD	1.90	1.90	181.02	0.011	1.89	0.0	0.0	5.024	A
A-B	17.84	17.84			17.84				
A-C	58.42	58.42			58.42				
D-AB	3.89	3.89	123.06	0.032	3.89	0.0	0.0	7.550	A
D-BC	0.61	0.61	74.75	0.008	0.62	0.0	0.0	12.145	B
C-ABD	20.99	20.99	169.96	0.124	21.05	0.3	0.2	5.995	A
C-D	0.00	0.00			0.00				
C-A	63.08	63.08			63.08				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.80	0.80	64.59	0.013	0.84	0.1	0.0	11.780	B
B-AD	6.30	6.30	87.48	0.072	6.30	0.1	0.1	11.172	B
A-BCD	0.00	0.00	122.73	0.000	0.01	0.0	0.0	0.000	A
A-B	16.81	16.81			16.81				
A-C	66.82	66.82			66.82				
D-AB	0.00	0.00	126.98	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	75.53	0.000	0.01	0.0	0.0	0.000	A
C-ABD	21.79	21.79	172.49	0.126	21.78	0.2	0.3	5.981	A
C-D	0.00	0.00			0.00				
C-A	67.14	67.14			67.14				

2031+ GAA Phase 2+ Mine Traffic+ DG, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		1.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2031+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D4+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.83	60.24	0.00
	B - L4816	16.02	0.00	14.42	0.00
	C - R179 West	75.70	3.97	0.00	1.09
	D - L49014	1.09	1.22	1.09	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	6.78	75.71	0.00
	B - L4816	16.14	0.00	13.57	0.00
	C - R179 West	73.44	1.29	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.50	63.80	1.09
	B - L4816	13.96	0.00	15.76	0.00
	C - R179 West	70.41	1.29	0.00	0.00
	D - L49014	2.19	0.00	1.09	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.41	71.46	3.28
	B - L4816	15.05	0.00	16.73	2.19
	C - R179 West	67.00	2.51	0.00	1.09
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	23	6	0
	B - L4816	4	0	4	0
	C - R179 West	4	45	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	3	7	0
	B - L4816	4	0	4	0
	C - R179 West	5	46	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	6	6	0
	B - L4816	5	0	4	0
	C - R179 West	5	46	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	6	0
	B - L4816	4	0	4	0
	C - R179 West	5	41	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.13	7.36	0.1	A	15.44	61.74
B-AD	0.15	9.97	0.2	A	15.53	62.10
A-BCD	0.03	5.11	0.0	A	1.82	7.28
A-B					3.85	15.42
A-C					67.10	268.42
D-AB	0.02	12.31	0.0	B	0.97	3.90
D-BC	0.03	14.74	0.0	B	0.70	2.79
C-ABD	0.05	6.42	0.1	A	4.46	17.85
C-D					0.52	2.09
C-A					69.46	277.86

RECEIVED: 11/04/2023

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	14.42	14.42	143.95	0.100	14.31	0.0	0.1	6.936	A
B-AD	16.02	16.02	108.86	0.147	15.85	0.0	0.2	9.658	A
A-BCD	0.00	0.00	120.05	0.000	0.00	0.0	0.0	0.000	A
A-B	2.83	2.83			2.83				
A-C	60.24	60.24			60.24				
D-AB	1.71	1.71	74.75	0.023	1.69	0.0	0.0	12.313	B
D-BC	1.69	1.69	62.70	0.027	1.67	0.0	0.0	14.739	B
C-ABD	8.01	8.01	152.35	0.053	7.93	0.0	0.1	6.232	A
C-D	1.04	1.04			1.04				
C-A	71.72	71.72			71.72				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	13.57	13.57	137.69	0.099	13.58	0.1	0.1	7.238	A
B-AD	16.14	16.14	108.20	0.149	16.14	0.2	0.2	9.775	A
A-BCD	0.00	0.00	124.58	0.000	0.00	0.0	0.0	0.000	A
A-B	6.78	6.78			6.78				
A-C	75.71	75.71			75.71				
D-AB	0.00	0.00	74.71	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	62.00	0.000	0.03	0.0	0.0	0.000	A
C-ABD	2.62	2.62	147.25	0.018	2.68	0.1	0.0	6.217	A
C-D	0.00	0.00			0.00				
C-A	72.11	72.11			72.11				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	15.76	15.76	148.92	0.106	15.75	0.1	0.1	6.778	A
B-AD	13.96	13.96	105.98	0.132	13.98	0.2	0.2	9.749	A
A-BCD	1.76	1.76	177.79	0.010	1.75	0.0	0.0	5.112	A
A-B	3.47	3.47			3.47				
A-C	63.17	63.17			63.17				
D-AB	2.19	2.19	139.15	0.016	2.17	0.0	0.0	7.628	A
D-BC	1.09	1.09	77.17	0.014	1.08	0.0	0.0	14.416	B
C-ABD	2.50	2.50	146.39	0.017	2.50	0.0	0.0	6.229	A
C-D	0.00	0.00			0.00				
C-A	69.20	69.20			69.20				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	17.98	17.98	140.54	0.128	17.95	0.1	0.1	7.357	A
B-AD	15.99	15.99	106.46	0.150	15.96	0.2	0.2	9.972	A
A-BCD	5.52	5.52	182.25	0.030	5.49	0.0	0.0	5.087	A
A-B	2.34	2.34			2.34				
A-C	69.29	69.29			69.29				
D-AB	0.00	0.00	130.99	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	81.17	0.000	0.02	0.0	0.0	0.000	A
C-ABD	4.72	4.72	145.74	0.032	4.70	0.0	0.0	6.416	A
C-D	1.06	1.06			1.06				
C-A	64.83	64.83			64.83				

2041+ GAA Phase 2+ Mine Traffic+ DG, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		1.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2041+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:45	08:45	60	15	✓	Simple	D5+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	16.29	83.65	0.00
		B - L4816	6.73	0.00	3.27	0.00
		C - R179 West	58.68	16.99	0.00	1.14
		D - L49014	0.00	0.00	3.43	0.00

Demand (Veh/TS)

08:00 - 08:15		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	14.68	59.54	0.00
		B - L4816	0.83	0.00	1.94	0.00
		C - R179 West	71.14	17.25	0.00	1.14
		D - L49014	3.43	1.14	1.14	0.00

Demand (Veh/TS)

08:15 - 08:30		To				
	From		A - R179 East	B - L4816	C - R179 West	D - L49014
		A - R179 East	0.00	18.34	62.05	1.14
		B - L4816	5.41	0.00	5.82	0.00
		C - R179 West	75.27	12.00	0.00	0.00
		D - L49014	3.43	1.37	0.00	0.00

Demand (Veh/TS)

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	16.97	70.29	0.00
	B - L4816	6.55	0.00	0.80	0.00
	C - R179 West	80.74	12.00	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:45 - 08:00

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	6	0
	B - L4816	32	0	65	0
	C - R179 West	9	7	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:00 - 08:15

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	6	0
	B - L4816	100	0	73	0
	C - R179 West	7	7	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	7	6	0
	B - L4816	35	0	61	0
	C - R179 West	8	10	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To			
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	8	6	0
	B - L4816	33	0	100	0
	C - R179 West	8	10	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.06	11.94	0.1	B	2.96	11.83
B-AD	0.08	13.70	0.1	B	4.88	19.52
A-BCD	0.01	4.98	0.0	A	0.51	2.05
A-B					16.52	66.06
A-C					68.71	274.83
D-AB	0.03	7.68	0.0	A	2.03	8.13
D-BC	0.04	12.25	0.0	B	1.46	5.83
C-ABD	0.17	6.79	0.3	A	25.24	100.97
C-D					0.47	1.90
C-A					60.87	243.50

RECEIVED: 11/04/2023

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	3.27	3.27	82.68	0.040	3.23	0.0	0.0	11.321	B
B-AD	6.73	6.73	83.46	0.081	6.65	0.0	0.1	11.703	B
A-BCD	0.00	0.00	123.52	0.000	0.00	0.0	0.0	0.000	A
A-B	16.29	16.29			16.29				
A-C	83.65	83.65			83.65				
D-AB	0.00	0.00	76.45	0.000	0.00	0.0	0.0	0.000	A
D-BC	3.43	3.43	88.38	0.039	3.39	0.0	0.0	10.586	B
C-ABD	27.21	27.21	159.29	0.171	26.90	0.0	0.3	6.794	A
C-D	0.95	0.95			0.95				
C-A	48.66	48.66			48.66				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	1.94	1.94	96.30	0.020	1.96	0.0	0.0	9.262	A
B-AD	0.83	0.83	49.42	0.017	0.90	0.1	0.0	13.313	B
A-BCD	0.00	0.00	120.69	0.000	0.00	0.0	0.0	0.000	A
A-B	14.68	14.68			14.68				
A-C	59.54	59.54			59.54				
D-AB	4.01	4.01	124.09	0.032	3.98	0.0	0.0	7.491	A
D-BC	1.71	1.71	80.38	0.021	1.73	0.0	0.0	11.446	B
C-ABD	29.73	29.73	173.46	0.171	29.71	0.3	0.3	6.289	A
C-D	0.95	0.95			0.95				
C-A	58.86	58.86			58.86				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	5.82	5.82	99.23	0.059	5.78	0.0	0.1	9.823	A
B-AD	5.41	5.41	75.44	0.072	5.34	0.0	0.1	13.702	B
A-BCD	2.05	2.05	182.58	0.011	2.03	0.0	0.0	4.984	A
A-B	18.13	18.13			18.13				
A-C	61.36	61.36			61.36				
D-AB	4.12	4.12	121.27	0.034	4.12	0.0	0.0	7.682	A
D-BC	0.68	0.68	74.20	0.009	0.70	0.0	0.0	12.248	B
C-ABD	21.55	21.55	171.54	0.126	21.63	0.3	0.3	5.949	A
C-D	0.00	0.00			0.00				
C-A	65.72	65.72			65.72				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	0.80	0.80	64.01	0.013	0.85	0.1	0.0	11.943	B
B-AD	6.55	6.55	85.67	0.076	6.55	0.1	0.1	11.459	B
A-BCD	0.00	0.00	121.50	0.000	0.01	0.0	0.0	0.000	A
A-B	16.97	16.97			16.97				
A-C	70.29	70.29			70.29				
D-AB	0.00	0.00	124.31	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	74.82	0.000	0.01	0.0	0.0	0.000	A
C-ABD	22.48	22.48	174.45	0.129	22.46	0.3	0.3	5.928	A
C-D	0.00	0.00			0.00				
C-A	70.27	70.27			70.27				

2041+ GAA Phase 2+ Mine Traffic+ DG, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R179 Crossroads Junction	Crossroads	Two-way		1.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2041+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:45	17:45	60	15	✓	Simple	D6+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - L4816		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000
D - L49014		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.93	63.04	0.00
	B - L4816	16.17	0.00	14.53	0.00
	C - R179 West	79.32	4.22	0.00	1.14
	D - L49014	1.14	1.37	1.14	0.00

Demand (Veh/TS)

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	7.09	78.88	0.00
	B - L4816	16.30	0.00	13.73	0.00
	C - R179 West	76.91	1.34	0.00	0.00
	D - L49014	0.00	0.00	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	3.66	66.51	1.14
	B - L4816	14.01	0.00	16.01	0.00
	C - R179 West	73.92	1.34	0.00	0.00
	D - L49014	2.29	0.00	1.14	0.00

Demand (Veh/TS)

17:30 - 17:45

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0.00	2.51	74.52	3.43
	B - L4816	15.15	0.00	16.94	2.29
	C - R179 West	70.27	2.71	0.00	1.14
	D - L49014	0.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	22	7	0
	B - L4816	4	0	4	0
	C - R179 West	5	46	0	0
	D - L49014	0	100	0	0

Heavy Vehicle Percentages

17:00 - 17:15

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	3	7	0
	B - L4816	4	0	4	0
	C - R179 West	5	47	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:15 - 17:30

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	6	7	0
	B - L4816	5	0	4	0
	C - R179 West	5	47	0	0
	D - L49014	0	0	0	0

Heavy Vehicle Percentages

17:30 - 17:45

	To				
		A - R179 East	B - L4816	C - R179 West	D - L49014
From	A - R179 East	0	9	7	0
	B - L4816	4	0	4	0
	C - R179 West	5	42	0	0
	D - L49014	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-CD	0.13	7.45	0.1	A	15.63	62.51
B-AD	0.15	10.17	0.2	B	15.65	62.60
A-BCD	0.03	5.08	0.0	A	1.95	7.81
A-B					4.02	16.07
A-C					69.96	279.84
D-AB	0.03	12.74	0.0	B	1.03	4.13
D-BC	0.03	15.18	0.0	C	0.74	2.96
C-ABD	0.06	6.37	0.1	A	4.91	19.62
C-D					0.55	2.18
C-A					72.63	290.52

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Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	14.53	14.53	142.97	0.102	14.41	0.0	0.1	6.995	A
B-AD	16.17	16.17	107.24	0.151	16.00	0.0	0.2	9.845	A
A-BCD	0.00	0.00	119.14	0.000	0.00	0.0	0.0	0.000	A
A-B	2.93	2.93			2.93				
A-C	63.04	63.04			63.04				
D-AB	1.84	1.84	72.42	0.025	1.81	0.0	0.0	12.743	B
D-BC	1.82	1.82	61.06	0.030	1.79	0.0	0.0	15.177	C
C-ABD	8.83	8.83	154.31	0.057	8.74	0.0	0.1	6.180	A
C-D	1.08	1.08			1.08				
C-A	74.78	74.78			74.78				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	13.73	13.73	136.70	0.100	13.73	0.1	0.1	7.309	A
B-AD	16.30	16.30	106.58	0.153	16.29	0.2	0.2	9.967	A
A-BCD	0.00	0.00	123.68	0.000	0.00	0.0	0.0	0.000	A
A-B	7.09	7.09			7.09				
A-C	78.88	78.88			78.88				
D-AB	0.00	0.00	72.41	0.000	0.03	0.0	0.0	0.000	A
D-BC	0.00	0.00	60.37	0.000	0.03	0.0	0.0	0.000	A
C-ABD	2.83	2.83	148.97	0.019	2.90	0.1	0.0	6.154	A
C-D	0.00	0.00			0.00				
C-A	75.42	75.42			75.42				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	16.01	16.01	148.32	0.108	16.01	0.1	0.1	6.822	A
B-AD	14.01	14.01	104.36	0.134	14.03	0.2	0.2	9.930	A
A-BCD	1.88	1.88	178.90	0.011	1.87	0.0	0.0	5.083	A
A-B	3.62	3.62			3.62				
A-C	65.81	65.81			65.81				
D-AB	2.29	2.29	138.22	0.017	2.27	0.0	0.0	7.753	A
D-BC	1.14	1.14	76.01	0.015	1.13	0.0	0.0	14.797	B
C-ABD	2.69	2.69	148.15	0.018	2.69	0.0	0.0	6.163	A
C-D	0.00	0.00			0.00				
C-A	72.57	72.57			72.57				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	18.25	18.25	139.32	0.131	18.22	0.1	0.1	7.447	A
B-AD	16.13	16.13	104.88	0.154	16.11	0.2	0.2	10.167	B
A-BCD	5.92	5.92	183.55	0.032	5.89	0.0	0.0	5.061	A
A-B	2.43	2.43			2.43				
A-C	72.11	72.11			72.11				
D-AB	0.00	0.00	130.05	0.000	0.02	0.0	0.0	0.000	A
D-BC	0.00	0.00	79.93	0.000	0.02	0.0	0.0	0.000	A
C-ABD	5.28	5.28	147.16	0.036	5.25	0.0	0.0	6.374	A
C-D	1.10	1.10			1.10				
C-A	67.74	67.74			67.74				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site 2A- GAA Access.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\2.Operation years

Report generation date: 22/02/2023 11:11:30

»2026+ GAA Phase 2+ Mine Traffic+ DG, AM
»2026+ GAA Phase 2+ Mine Traffic+ DG, PM
»2031+ GAA Phase 2+ Mine Traffic+ DG, AM
»2031+ GAA Phase 2+ Mine Traffic+ DG, PM
»2041+ GAA Phase 2+ Mine Traffic+ DG, AM
»2041+ GAA Phase 2+ Mine Traffic+ DG, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2026+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-C	0.0	6.54	0.01	A	0.0	6.47	0.04	A
Stream B-A	0.0	9.58	0.01	A	0.1	9.53	0.08	A
Stream C-AB	0.0	5.74	0.04	A	0.0	5.27	0.01	A
2031+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-C	0.0	6.60	0.01	A	0.0	6.51	0.04	A
Stream B-A	0.0	9.77	0.01	A	0.1	9.67	0.08	A
Stream C-AB	0.0	5.80	0.04	A	0.0	5.30	0.01	A
2041+ GAA Phase 2+ Mine Traffic+ DG								
Stream B-C	0.0	6.68	0.01	A	0.0	6.56	0.04	A
Stream B-A	0.0	10.00	0.01	B	0.1	9.84	0.08	A
Stream C-AB	0.0	5.86	0.04	A	0.0	5.34	0.01	A

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

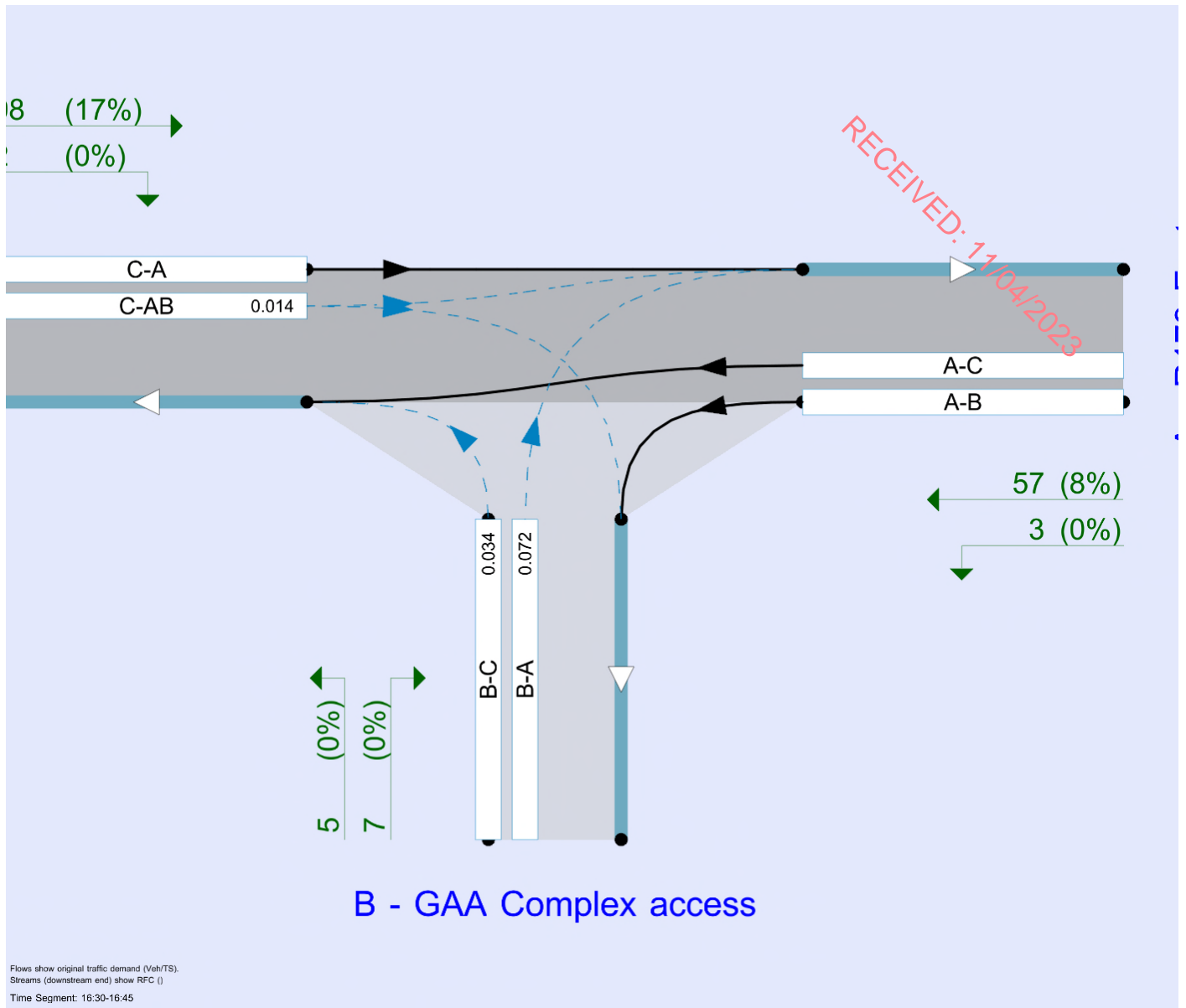
File summary

File Description

Title	
Location	
Site number	
Date	22/02/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
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	perTimeSegment	s	-Min	perMin



Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2026	AM	DIRECT	07:30	09:00	90	15			
D2	2026	PM	DIRECT	16:30	18:00	90	15			
D3	2031	AM	DIRECT	07:30	09:00	90	15			
D4	2031	PM	DIRECT	16:30	18:00	90	15			
D5	2041	AM	DIRECT	07:30	09:00	90	15			
D6	2041	PM	DIRECT	16:30	18:00	90	15			
D7	Mine Traffic	AM	DIRECT	07:30	09:00	90	15			
D8	Mine Traffic	PM	DIRECT	16:30	18:00	90	15			
D9	GAA Phase 2	AM	DIRECT	07:30	09:00	90	15			
D10	GAA Phase 2	PM	DIRECT	16:30	18:00	90	15			
D11	2026+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:30	09:00	90	15	✓	Simple	D1+D7+D9
D12	2026+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:30	18:00	90	15	✓	Simple	D2+D8+D10
D13	2031+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:30	09:00	90	15	✓	Simple	D3+D7+D9
D14	2031+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:30	18:00	90	15	✓	Simple	D4+D8+D10
D15	2041+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:30	09:00	90	15	✓	Simple	D5+D7+D9
D16	2041+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:30	18:00	90	15	✓	Simple	D6+D8+D10

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

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2026+ GAA Phase 2+ Mine Traffic+ DG, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	R179 East		Major
B	GAA Complex access		Minor
C	R179 West		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - R179 West	6.00		✓	3.00	250.0	✓	5.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - GAA Complex access	One lane plus flare	10.00	5.20	3.85	3.76	3.70	✓	1.00	10	10

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	134.038	0.098	0.247	0.155	0.353
1	B-C	166.486	0.102	0.258	-	-
1	C-B	195.330	0.303	0.303	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2026+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:30	09:00	90	15	✓	Simple	D1+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - GAA Complex access		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	5.13	68.81
	B - GAA Complex access	0.34	0.00	0.24
	C - R179 West	53.74	4.20	0.00

Demand (Veh/TS)

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	5.13	98.17
	B - GAA Complex access	0.34	0.00	0.24
	C - R179 West	66.15	4.20	0.00

Demand (Veh/TS)

08:00 - 08:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	77.46
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	64.62	7.10	0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	74.40
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	61.51	7.10	0.00

Demand (Veh/TS)

08:30 - 08:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	72.42
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	61.39	7.10	0.00

Demand (Veh/TS)

08:45 - 09:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	55.73
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	55.18	7.10	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:30 - 07:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	9	0	0

Heavy Vehicle Percentages

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	10
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

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Heavy Vehicle Percentages

08:00 - 08:15

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	5
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages

08:15 - 08:30

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages

08:30 - 08:45

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	10
	B - GAA Complex access	0	0	0
	C - R179 West	3	0	0

Heavy Vehicle Percentages

08:45 - 09:00

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	15
	B - GAA Complex access	0	0	0
	C - R179 West	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	6.54	0.0	A	0.66	3.97
B-A	0.01	9.58	0.0	A	0.95	5.71
C-AB	0.04	5.74	0.0	A	6.13	36.80
C-A					60.43	362.59
A-B					7.50	44.98
A-C					74.50	446.99

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.24	0.24	146.89	0.002	0.24	0.0	0.0	6.136	A
B-A	0.34	0.34	104.79	0.003	0.34	0.0	0.0	8.616	A
C-AB	4.20	4.20	171.54	0.024	4.18	0.0	0.0	5.377	A
C-A	53.74	53.74			53.74				
A-B	5.13	5.13			5.13				
A-C	68.81	68.81			68.81				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.24	0.24	137.90	0.002	0.24	0.0	0.0	6.537	A
B-A	0.34	0.34	94.29	0.004	0.34	0.0	0.0	9.579	A
C-AB	4.20	4.20	161.02	0.026	4.20	0.0	0.0	5.738	A
C-A	66.15	66.15			66.15				
A-B	5.13	5.13			5.13				
A-C	98.17	98.17			98.17				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	144.07	0.006	0.87	0.0	0.0	6.284	A
B-A	1.26	1.26	99.70	0.013	1.25	0.0	0.0	9.142	A
C-AB	7.10	7.10	167.99	0.042	7.08	0.0	0.0	5.593	A
C-A	64.62	64.62			64.62				
A-B	8.68	8.68			8.68				
A-C	77.46	77.46			77.46				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	144.56	0.006	0.87	0.0	0.0	6.262	A
B-A	1.26	1.26	100.68	0.012	1.26	0.0	0.0	9.052	A
C-AB	7.10	7.10	168.59	0.042	7.10	0.0	0.0	5.572	A
C-A	61.51	61.51			61.51				
A-B	8.68	8.68			8.68				
A-C	74.40	74.40			74.40				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	144.52	0.006	0.87	0.0	0.0	6.264	A
B-A	1.26	1.26	101.16	0.012	1.26	0.0	0.0	9.010	A
C-AB	7.10	7.10	168.54	0.042	7.10	0.0	0.0	5.574	A
C-A	61.39	61.39			61.39				
A-B	8.68	8.68			8.68				
A-C	72.42	72.42			72.42				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	148.56	0.006	0.87	0.0	0.0	6.093	A
B-A	1.26	1.26	105.97	0.012	1.26	0.0	0.0	8.596	A
C-AB	7.10	7.10	173.26	0.041	7.10	0.0	0.0	5.418	A
C-A	55.18	55.18			55.18				
A-B	8.68	8.68			8.68				
A-C	55.73	55.73			55.73				

2026+ GAA Phase 2+ Mine Traffic+ DG, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2026+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:30	18:00	90	15	✓	Simple	D2+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - GAA Complex access		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:30 - 16:45

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	2.90	51.78
	B - GAA Complex access	7.19	0.00	5.00
	C - R179 West	88.19	2.38	0.00

Demand (Veh/TS)

16:45 - 17:00

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	2.90	58.94
	B - GAA Complex access	7.19	0.00	5.00
	C - R179 West	79.31	2.38	0.00

Demand (Veh/TS)

17:00 - 17:15

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	1.99	47.02
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	83.52	1.63	0.00

Demand (Veh/TS)**17:15 - 17:30**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	67.76
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	72.27	1.63	0.00

Demand (Veh/TS)**17:30 - 17:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	69.87
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	81.50	1.63	0.00

Demand (Veh/TS)**17:45 - 18:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	56.42
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	54.03	1.63	0.00

Vehicle Mix**Heavy Vehicle Percentages****16:30 - 16:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	15	0	0

Heavy Vehicle Percentages**16:45 - 17:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages**17:00 - 17:15**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	0	0	0
	C - R179 West	2	0	0

Heavy Vehicle Percentages**17:15 - 17:30**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	4
	B - GAA Complex access	0	0	0
	C - R179 West	7	0	0

Heavy Vehicle Percentages**17:30 - 17:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	5
	B - GAA Complex access	0	0	0
	C - R179 West	4	0	0

Heavy Vehicle Percentages**17:45 - 18:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	6
	B - GAA Complex access	0	0	0
	C - R179 West	13	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.04	6.47	0.0	A	5.21	31.28
B-A	0.08	9.53	0.1	A	7.50	45.02
C-AB	0.01	5.27	0.0	A	1.88	11.26
C-A					76.47	458.82
A-B					2.29	13.76
A-C					58.63	351.80

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	149.14	0.034	4.96	0.0	0.0	6.240	A
B-A	7.19	7.19	103.37	0.070	7.12	0.0	0.1	9.344	A
C-AB	2.38	2.38	177.60	0.013	2.36	0.0	0.0	5.135	A
C-A	88.19	88.19			88.19				
A-B	2.90	2.90			2.90				
A-C	51.78	51.78			51.78				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	147.85	0.034	5.00	0.0	0.0	6.299	A
B-A	7.19	7.19	104.70	0.069	7.19	0.1	0.1	9.229	A
C-AB	2.38	2.38	176.09	0.013	2.38	0.0	0.0	5.180	A
C-A	79.31	79.31			79.31				
A-B	2.90	2.90			2.90				
A-C	58.94	58.94			58.94				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	150.99	0.035	5.32	0.0	0.0	6.177	A
B-A	7.66	7.66	108.09	0.071	7.66	0.1	0.1	8.960	A
C-AB	1.63	1.63	180.10	0.009	1.63	0.0	0.0	5.042	A
C-A	83.52	83.52			83.52				
A-B	1.99	1.99			1.99				
A-C	47.02	47.02			47.02				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	145.35	0.037	5.32	0.0	0.0	6.426	A
B-A	7.66	7.66	103.96	0.074	7.65	0.1	0.1	9.345	A
C-AB	1.63	1.63	173.50	0.009	1.63	0.0	0.0	5.236	A
C-A	72.27	72.27			72.27				
A-B	1.99	1.99			1.99				
A-C	67.76	67.76			67.76				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	144.49	0.037	5.32	0.0	0.0	6.466	A
B-A	7.66	7.66	102.07	0.075	7.66	0.1	0.1	9.532	A
C-AB	1.63	1.63	172.53	0.009	1.63	0.0	0.0	5.265	A
C-A	81.50	81.50			81.50				
A-B	1.99	1.99			1.99				
A-C	69.87	69.87			69.87				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	148.08	0.036	5.32	0.0	0.0	6.306	A
B-A	7.66	7.66	108.99	0.070	7.66	0.1	0.1	8.884	A
C-AB	1.63	1.63	176.60	0.009	1.63	0.0	0.0	5.143	A
C-A	54.03	54.03			54.03				
A-B	1.99	1.99			1.99				
A-C	56.42	56.42			56.42				

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2031+ GAA Phase 2+ Mine Traffic+ DG, AM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2031+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:30	09:00	90	15	✓	Simple	D3+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - GAA Complex access		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	5.13	72.00
	B - GAA Complex access	0.34	0.00	0.24
	C - R179 West	56.35	4.20	0.00

Demand (Veh/TS)

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	5.13	102.42
	B - GAA Complex access	0.34	0.00	0.24
	C - R179 West	69.32	4.20	0.00

Demand (Veh/TS)

08:00 - 08:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	80.38
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	67.65	7.10	0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	77.24
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	64.40	7.10	0.00

Demand (Veh/TS)

08:30 - 08:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	75.29
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	64.08	7.10	0.00

Demand (Veh/TS)

08:45 - 09:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	58.49
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	57.60	7.10	0.00

Vehicle Mix

Heavy Vehicle Percentages

07:30 - 07:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	10	0	0

Heavy Vehicle Percentages

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	11
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages

08:00 - 08:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	6
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages

08:15 - 08:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	9	0	0

Heavy Vehicle Percentages

08:30 - 08:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	11
	B - GAA Complex access	0	0	0
	C - R179 West	3	0	0

Heavy Vehicle Percentages

08:45 - 09:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	16
	B - GAA Complex access	0	0	0
	C - R179 West	4	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	6.60	0.0	A	0.66	3.97
B-A	0.01	9.77	0.0	A	0.95	5.71
C-AB	0.04	5.80	0.0	A	6.13	36.80
C-A					63.23	379.39
A-B					7.50	44.98
A-C					77.64	465.82

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.24	0.24	145.98	0.002	0.24	0.0	0.0	6.174	A
B-A	0.34	0.34	103.45	0.003	0.34	0.0	0.0	8.728	A
C-AB	4.20	4.20	170.47	0.025	4.17	0.0	0.0	5.412	A
C-A	56.35	56.35			56.35				
A-B	5.13	5.13			5.13				
A-C	72.00	72.00			72.00				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.24	0.24	136.57	0.002	0.24	0.0	0.0	6.600	A
B-A	0.34	0.34	92.47	0.004	0.34	0.0	0.0	9.769	A
C-AB	4.20	4.20	159.47	0.026	4.20	0.0	0.0	5.795	A
C-A	69.32	69.32			69.32				
A-B	5.13	5.13			5.13				
A-C	102.42	102.42			102.42				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	143.23	0.006	0.87	0.0	0.0	6.321	A
B-A	1.26	1.26	98.36	0.013	1.25	0.0	0.0	9.268	A
C-AB	7.10	7.10	167.00	0.043	7.08	0.0	0.0	5.627	A
C-A	67.65	67.65			67.65				
A-B	8.68	8.68			8.68				
A-C	80.38	80.38			80.38				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	143.71	0.006	0.87	0.0	0.0	6.300	A
B-A	1.26	1.26	99.35	0.013	1.26	0.0	0.0	9.174	A
C-AB	7.10	7.10	167.60	0.042	7.10	0.0	0.0	5.607	A
C-A	64.40	64.40			64.40				
A-B	8.68	8.68			8.68				
A-C	77.24	77.24			77.24				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	143.61	0.006	0.87	0.0	0.0	6.304	A
B-A	1.26	1.26	99.85	0.013	1.26	0.0	0.0	9.129	A
C-AB	7.10	7.10	167.47	0.042	7.10	0.0	0.0	5.611	A
C-A	64.08	64.08			64.08				
A-B	8.68	8.68			8.68				
A-C	75.29	75.29			75.29				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	147.64	0.006	0.87	0.0	0.0	6.131	A
B-A	1.26	1.26	104.71	0.012	1.26	0.0	0.0	8.700	A
C-AB	7.10	7.10	172.19	0.041	7.10	0.0	0.0	5.450	A
C-A	57.60	57.60			57.60				
A-B	8.68	8.68			8.68				
A-C	58.49	58.49			58.49				

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2031+ GAA Phase 2+ Mine Traffic+ DG, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2031+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:30	18:00	90	15	✓	Simple	D4+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - GAA Complex access		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:30 - 16:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	2.90	54.19
	B - GAA Complex access	7.19	0.00	5.00
	C - R179 West	92.79	2.38	0.00

Demand (Veh/TS)

16:45 - 17:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	2.90	61.55
	B - GAA Complex access	7.19	0.00	5.00
	C - R179 West	82.54	2.38	0.00

Demand (Veh/TS)

17:00 - 17:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	49.12
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	86.64	1.63	0.00

Demand (Veh/TS)**17:15 - 17:30**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	70.84
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	75.06	1.63	0.00

Demand (Veh/TS)**17:30 - 17:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	73.11
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	84.58	1.63	0.00

Demand (Veh/TS)**17:45 - 18:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	59.06
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	56.68	1.63	0.00

Vehicle Mix**Heavy Vehicle Percentages****16:30 - 16:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	8
	B - GAA Complex access	0	0	0
	C - R179 West	16	0	0

Heavy Vehicle Percentages**16:45 - 17:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages**17:00 - 17:15**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	0	0	0
	C - R179 West	2	0	0

Heavy Vehicle Percentages**17:15 - 17:30**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	4
	B - GAA Complex access	0	0	0
	C - R179 West	7	0	0

Heavy Vehicle Percentages**17:30 - 17:45**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	5
	B - GAA Complex access	0	0	0
	C - R179 West	4	0	0

Heavy Vehicle Percentages**17:45 - 18:00**

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	6
	B - GAA Complex access	0	0	0
	C - R179 West	14	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.04	6.51	0.0	A	5.21	31.28
B-A	0.08	9.67	0.1	A	7.50	45.02
C-AB	0.01	5.30	0.0	A	1.88	11.26
C-A					79.71	478.28
A-B					2.29	13.76
A-C					61.31	367.87

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	148.41	0.034	4.96	0.0	0.0	6.272	A
B-A	7.19	7.19	101.78	0.071	7.12	0.0	0.1	9.493	A
C-AB	2.38	2.38	176.77	0.013	2.36	0.0	0.0	5.160	A
C-A	92.79	92.79			92.79				
A-B	2.90	2.90			2.90				
A-C	54.19	54.19			54.19				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	147.13	0.034	5.00	0.0	0.0	6.331	A
B-A	7.19	7.19	103.45	0.070	7.19	0.1	0.1	9.349	A
C-AB	2.38	2.38	175.27	0.014	2.38	0.0	0.0	5.205	A
C-A	82.54	82.54			82.54				
A-B	2.90	2.90			2.90				
A-C	61.55	61.55			61.55				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	150.40	0.035	5.32	0.0	0.0	6.202	A
B-A	7.66	7.66	107.05	0.072	7.66	0.1	0.1	9.054	A
C-AB	1.63	1.63	179.43	0.009	1.63	0.0	0.0	5.061	A
C-A	86.64	86.64			86.64				
A-B	1.99	1.99			1.99				
A-C	49.12	49.12			49.12				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	144.48	0.037	5.32	0.0	0.0	6.466	A
B-A	7.66	7.66	102.64	0.075	7.65	0.1	0.1	9.475	A
C-AB	1.63	1.63	172.50	0.009	1.63	0.0	0.0	5.266	A
C-A	75.06	75.06			75.06				
A-B	1.99	1.99			1.99				
A-C	70.84	70.84			70.84				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	143.54	0.037	5.32	0.0	0.0	6.510	A
B-A	7.66	7.66	100.68	0.076	7.66	0.1	0.1	9.675	A
C-AB	1.63	1.63	171.45	0.009	1.63	0.0	0.0	5.299	A
C-A	84.58	84.58			84.58				
A-B	1.99	1.99			1.99				
A-C	73.11	73.11			73.11				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	147.29	0.036	5.32	0.0	0.0	6.341	A
B-A	7.66	7.66	107.74	0.071	7.66	0.1	0.1	8.992	A
C-AB	1.63	1.63	175.70	0.009	1.63	0.0	0.0	5.171	A
C-A	56.68	56.68			56.68				
A-B	1.99	1.99			1.99				
A-C	59.06	59.06			59.06				

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2041+ GAA Phase 2+ Mine Traffic+ DG, AM

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Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2041+ GAA Phase 2+ Mine Traffic+ DG	AM	DIRECT	07:30	09:00	90	15	✓	Simple	D5+D7+D9

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - GAA Complex access		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	5.13	75.57
	B - GAA Complex access	0.34	0.00	0.24
	C - R179 West	59.31	4.20	0.00

Demand (Veh/TS)

07:45 - 08:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	5.13	107.28
	B - GAA Complex access	0.34	0.00	0.24
	C - R179 West	72.89	4.20	0.00

Demand (Veh/TS)

08:00 - 08:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	8.68	83.65
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	71.06	7.10	0.00

Demand (Veh/TS)**08:15 - 08:30**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	8.68	80.46
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	67.67	7.10	0.00

Demand (Veh/TS)**08:30 - 08:45**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	8.68	78.60
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	67.06	7.10	0.00

Demand (Veh/TS)**08:45 - 09:00**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	8.68	61.69
	B - GAA Complex access	1.26	0.00	0.87
	C - R179 West	60.27	7.10	0.00

Vehicle Mix**Heavy Vehicle Percentages****07:30 - 07:45**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	10	0	0

Heavy Vehicle Percentages**07:45 - 08:00**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	11
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages**08:00 - 08:15**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	6
	B - GAA Complex access	0	0	0
	C - R179 West	9	0	0

Heavy Vehicle Percentages**08:15 - 08:30**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	8
	B - GAA Complex access	0	0	0
	C - R179 West	9	0	0

Heavy Vehicle Percentages**08:30 - 08:45**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	11
	B - GAA Complex access	0	0	0
	C - R179 West	3	0	0

Heavy Vehicle Percentages**08:45 - 09:00**

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0	0	17
	B - GAA Complex access	0	0	0
	C - R179 West	4	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.01	6.68	0.0	A	0.66	3.97
B-A	0.01	10.00	0.0	B	0.95	5.71
C-AB	0.04	5.86	0.0	A	6.13	36.80
C-A					66.38	398.26
A-B					7.50	44.98
A-C					81.21	487.25

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.24	0.24	144.94	0.002	0.24	0.0	0.0	6.218	A
B-A	0.34	0.34	101.91	0.003	0.34	0.0	0.0	8.861	A
C-AB	4.20	4.20	169.26	0.025	4.17	0.0	0.0	5.452	A
C-A	59.31	59.31			59.31				
A-B	5.13	5.13			5.13				
A-C	75.57	75.57			75.57				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.24	0.24	135.01	0.002	0.24	0.0	0.0	6.677	A
B-A	0.34	0.34	90.33	0.004	0.34	0.0	0.0	10.000	B
C-AB	4.20	4.20	157.64	0.027	4.20	0.0	0.0	5.864	A
C-A	72.89	72.89			72.89				
A-B	5.13	5.13			5.13				
A-C	107.28	107.28			107.28				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	142.27	0.006	0.87	0.0	0.0	6.364	A
B-A	1.26	1.26	96.82	0.013	1.25	0.0	0.0	9.417	A
C-AB	7.10	7.10	165.88	0.043	7.08	0.0	0.0	5.667	A
C-A	71.06	71.06			71.06				
A-B	8.68	8.68			8.68				
A-C	83.65	83.65			83.65				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	142.73	0.006	0.87	0.0	0.0	6.343	A
B-A	1.26	1.26	97.81	0.013	1.26	0.0	0.0	9.320	A
C-AB	7.10	7.10	166.44	0.043	7.10	0.0	0.0	5.647	A
C-A	67.67	67.67			67.67				
A-B	8.68	8.68			8.68				
A-C	80.46	80.46			80.46				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	142.52	0.006	0.87	0.0	0.0	6.353	A
B-A	1.26	1.26	98.33	0.013	1.26	0.0	0.0	9.272	A
C-AB	7.10	7.10	166.20	0.043	7.10	0.0	0.0	5.656	A
C-A	67.06	67.06			67.06				
A-B	8.68	8.68			8.68				
A-C	78.60	78.60			78.60				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.87	0.87	146.55	0.006	0.87	0.0	0.0	6.177	A
B-A	1.26	1.26	103.23	0.012	1.26	0.0	0.0	8.827	A
C-AB	7.10	7.10	170.92	0.042	7.10	0.0	0.0	5.493	A
C-A	60.27	60.27			60.27				
A-B	8.68	8.68			8.68				
A-C	61.69	61.69			61.69				

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2041+ GAA Phase 2+ Mine Traffic+ DG, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	GAA ACCESS	T-Junction	Two-way		0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2041+ GAA Phase 2+ Mine Traffic+ DG	PM	DIRECT	16:30	18:00	90	15	✓	Simple	D6+D8+D10

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - R179 East		DIRECT	✓	100.000
B - GAA Complex access		DIRECT	✓	100.000
C - R179 West		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

16:30 - 16:45

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	2.90	56.91
	B - GAA Complex access	7.19	0.00	5.00
	C - R179 West	98.14	2.38	0.00

Demand (Veh/TS)

16:45 - 17:00

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	2.90	64.42
	B - GAA Complex access	7.19	0.00	5.00
	C - R179 West	86.20	2.38	0.00

Demand (Veh/TS)

17:00 - 17:15

		To		
From		A - R179 East	B - GAA Complex access	C - R179 West
	A - R179 East	0.00	1.99	51.44
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	90.07	1.63	0.00

Demand (Veh/TS)

17:15 - 17:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	74.27
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	78.23	1.63	0.00

Demand (Veh/TS)

17:30 - 17:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	76.74
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	88.01	1.63	0.00

Demand (Veh/TS)

17:45 - 18:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0.00	1.99	62.03
	B - GAA Complex access	7.66	0.00	5.32
	C - R179 West	59.73	1.63	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:30 - 16:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	8
	B - GAA Complex access	0	0	0
	C - R179 West	17	0	0

Heavy Vehicle Percentages

16:45 - 17:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages

17:00 - 17:15

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	3
	B - GAA Complex access	0	0	0
	C - R179 West	2	0	0

Heavy Vehicle Percentages

17:15 - 17:30

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	4
	B - GAA Complex access	0	0	0
	C - R179 West	8	0	0

Heavy Vehicle Percentages

17:30 - 17:45

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	6
	B - GAA Complex access	0	0	0
	C - R179 West	4	0	0

Heavy Vehicle Percentages

17:45 - 18:00

	To			
		A - R179 East	B - GAA Complex access	C - R179 West
From	A - R179 East	0	0	7
	B - GAA Complex access	0	0	0
	C - R179 West	15	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.04	6.56	0.0	A	5.21	31.28
B-A	0.08	9.84	0.1	A	7.50	45.02
C-AB	0.01	5.34	0.0	A	1.88	11.26
C-A					83.40	500.38
A-B					2.29	13.76
A-C					64.30	385.80

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	147.55	0.034	4.96	0.0	0.0	6.310	A
B-A	7.19	7.19	99.90	0.072	7.12	0.0	0.1	9.692	A
C-AB	2.38	2.38	175.82	0.014	2.36	0.0	0.0	5.188	A
C-A	98.14	98.14			98.14				
A-B	2.90	2.90			2.90				
A-C	56.91	56.91			56.91				

16:45 - 17:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.00	5.00	146.32	0.034	5.00	0.0	0.0	6.367	A
B-A	7.19	7.19	102.02	0.071	7.19	0.1	0.1	9.490	A
C-AB	2.38	2.38	174.35	0.014	2.38	0.0	0.0	5.232	A
C-A	86.20	86.20			86.20				
A-B	2.90	2.90			2.90				
A-C	64.42	64.42			64.42				

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	149.74	0.036	5.32	0.0	0.0	6.231	A
B-A	7.66	7.66	105.89	0.072	7.66	0.1	0.1	9.161	A
C-AB	1.63	1.63	178.69	0.009	1.63	0.0	0.0	5.082	A
C-A	90.07	90.07			90.07				
A-B	1.99	1.99			1.99				
A-C	51.44	51.44			51.44				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	143.49	0.037	5.32	0.0	0.0	6.513	A
B-A	7.66	7.66	101.14	0.076	7.65	0.1	0.1	9.627	A
C-AB	1.63	1.63	171.37	0.010	1.63	0.0	0.0	5.301	A
C-A	78.23	78.23			78.23				
A-B	1.99	1.99			1.99				
A-C	74.27	74.27			74.27				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	142.46	0.037	5.32	0.0	0.0	6.561	A
B-A	7.66	7.66	99.09	0.077	7.66	0.1	0.1	9.842	A
C-AB	1.63	1.63	170.22	0.010	1.63	0.0	0.0	5.337	A
C-A	88.01	88.01			88.01				
A-B	1.99	1.99			1.99				
A-C	76.74	76.74			76.74				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	5.32	5.32	146.39	0.036	5.32	0.0	0.0	6.381	A
B-A	7.66	7.66	106.29	0.072	7.66	0.1	0.1	9.127	A
C-AB	1.63	1.63	174.67	0.009	1.63	0.0	0.0	5.200	A
C-A	59.73	59.73			59.73				
A-B	1.99	1.99			1.99				
A-C	62.03	62.03			62.03				

RECEIVED: 11/04/2023

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site 3- T Junction Mine Access.j9

Path: W:\UDC-Traffic Files\P22-069\PSW5\Modelling\2.Operation years

Report generation date: 22/02/2023 10:57:27

- »2026, AM
- »2026, PM
- »2031, AM
- »2031, PM
- »2041, AM
- »2041, PM
- »2026+ GAA Phase 2+ Mine Traffic, AM
- »2026+ GAA Phase 2+ Mine Traffic, PM
- »2031+ GAA Phase 2+ Mine Traffic, AM
- »2031+ GAA Phase 2+ Mine Traffic, PM
- »2041+ GAA Phase 2+ Mine Traffic, AM
- »2041+ GAA Phase 2+ Mine Traffic, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2026								
Stream B-C	0.0	0.00	0.00	A	0.0	5.75	0.02	A
Stream B-A	0.0	12.21	0.04	B	0.2	13.75	0.15	B
Stream C-AB	0.0	6.25	0.01	A	0.0	0.00	0.00	A
2031								
Stream B-C	0.0	0.00	0.00	A	0.0	5.77	0.02	A
Stream B-A	0.0	12.26	0.05	B	0.2	13.88	0.16	B
Stream C-AB	0.0	6.26	0.01	A	0.0	0.00	0.00	A
2041								
Stream B-C	0.0	0.00	0.00	A	0.0	5.79	0.02	A
Stream B-A	0.1	12.33	0.05	B	0.2	14.02	0.17	B
Stream C-AB	0.0	6.27	0.01	A	0.0	0.00	0.00	A
2026+ GAA Phase 2+ Mine Traffic								
Stream B-C	0.0	0.00	0.00	A	0.0	6.06	0.02	A
Stream B-A	0.2	8.20	0.19	A	0.4	8.68	0.26	A
Stream C-AB	0.0	6.54	0.01	A	0.0	0.00	0.00	A
2031+ GAA Phase 2+ Mine Traffic								
Stream B-C	0.0	0.00	0.00	A	0.0	6.08	0.02	A
Stream B-A	0.2	8.25	0.20	A	0.4	8.77	0.27	A
Stream C-AB	0.0	6.55	0.01	A	0.0	0.00	0.00	A
2041+ GAA Phase 2+ Mine Traffic								
Stream B-C	0.0	0.00	0.00	A	0.0	6.11	0.02	A
Stream B-A	0.2	8.33	0.20	A	0.4	8.89	0.27	A
Stream C-AB	0.0	6.56	0.01	A	0.0	0.00	0.00	A

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

File summary

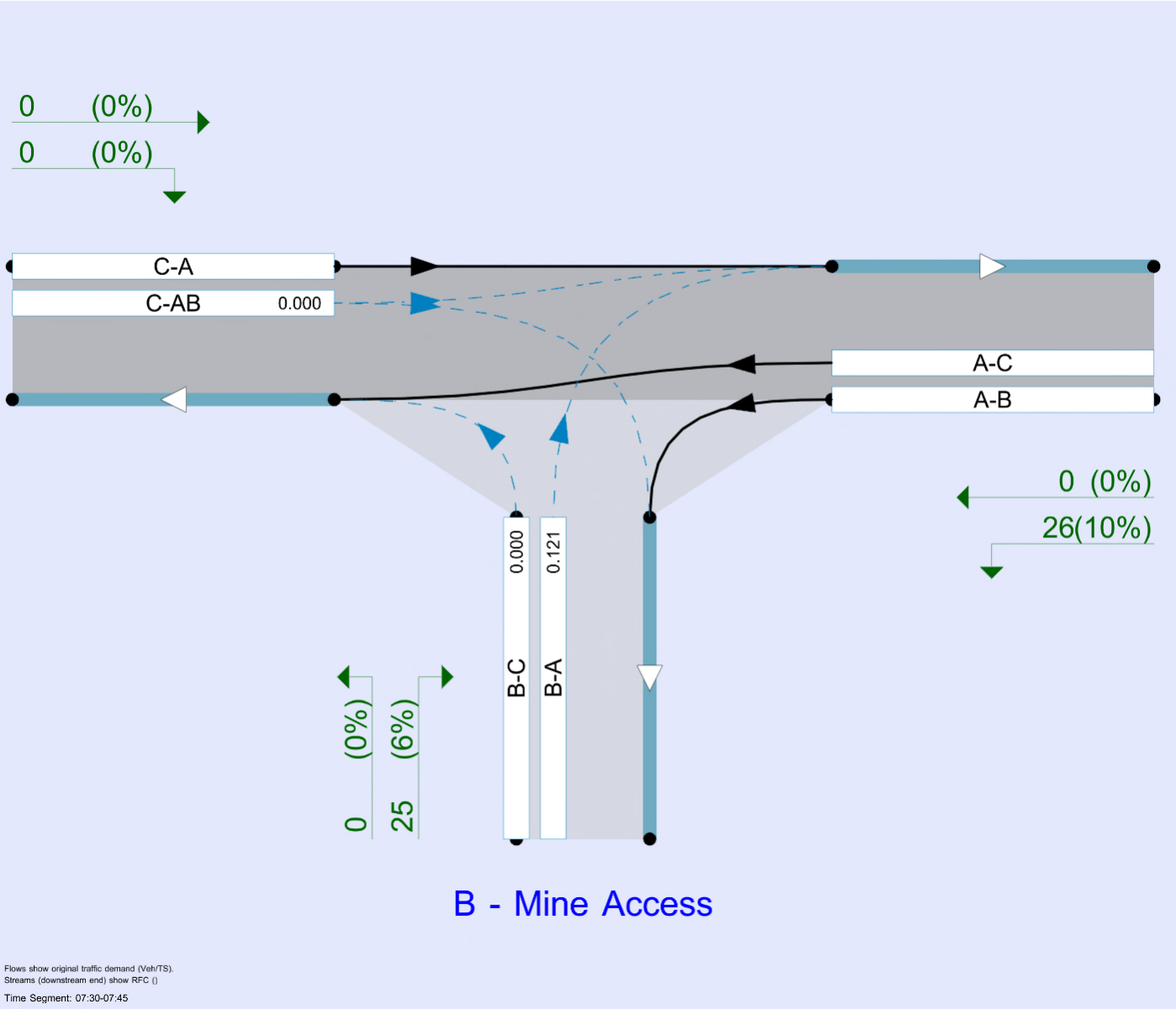
File Description

Title	
Location	
Site number	
Date	22/02/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	PMCE\papadakisa
Description	

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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	perTimeSegment	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2026	AM	DIRECT	07:30	08:30	60	15	✓		
D2	2026	PM	DIRECT	17:00	18:00	60	15	✓		
D3	2031	AM	DIRECT	07:30	08:30	60	15	✓		
D4	2031	PM	DIRECT	17:00	18:00	60	15	✓		
D5	2041	AM	DIRECT	07:30	08:30	60	15	✓		
D6	2041	PM	DIRECT	17:00	18:00	60	15	✓		
D7	Mine Traffic	AM	DIRECT	07:30	08:30	60	15			
D8	Mine Traffic	PM	DIRECT	17:00	18:00	60	15			
D9	GAA Phase 2	AM	DIRECT	07:30	08:30	60	15			
D10	GAA Phase 2	PM	DIRECT	17:00	18:00	60	15			
D11	2026+ GAA Phase 2+ Mine Traffic	AM	DIRECT	07:30	08:30	60	15	✓	Simple	D1+D7+D9
D12	2026+ GAA Phase 2+ Mine Traffic	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D2+D8+D10
D13	2031+ GAA Phase 2+ Mine Traffic	AM	DIRECT	07:30	08:30	60	15	✓	Simple	D3+D7+D9
D14	2031+ GAA Phase 2+ Mine Traffic	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D4+D8+D10
D15	2041+ GAA Phase 2+ Mine Traffic	AM	DIRECT	07:30	08:30	60	15	✓	Simple	D5+D7+D9
D16	2041+ GAA Phase 2+ Mine Traffic	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D6+D8+D10

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		2.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	L4816 North		Major
B	Mine Access		Minor
C	L4816 South		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - L4816 South	7.00			30.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Mine Access	One lane plus flare	10.00	6.80	4.60	3.60	3.40		1.00	30	130

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	156.017	0.109	0.275	0.173	0.393
1	B-C	163.490	0.096	0.242	-	-
1	C-B	147.834	0.219	0.219	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2026	AM	DIRECT	07:30	08:30	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	11.69	4.19
	B - Mine Access	1.10	0.00	0.00
	C - L4816 South	2.09	1.05	0.00

Demand (Veh/TS)

07:45 - 08:00

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	6.28	0.00
	B - Mine Access	1.10	0.00	0.00
	C - L4816 South	6.34	1.05	0.00

Demand (Veh/TS)

08:00 - 08:15

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	4.36	2.09
	B - Mine Access	0.00	0.00	0.00
	C - L4816 South	1.05	1.05	0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	1.05	4.30
	B - Mine Access	3.26	0.00	0.00
	C - L4816 South	5.23	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	28	0
	B - Mine Access	100	0	0
	C - L4816 South	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.04	12.21	0.0	B	1.37	5.47
C-AB	0.01	6.25	0.0	A	0.80	3.21
C-A					3.66	14.64
A-B					5.84	23.38
A-C					2.65	10.58

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Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.45	0.000	0.00	0.0	0.0	0.000	A
B-A	1.10	1.10	76.23	0.014	1.09	0.0	0.0	11.977	B
C-AB	1.06	1.06	145.05	0.007	1.05	0.0	0.0	6.249	A
C-A	2.08	2.08			2.08				
A-B	11.69	11.69			11.69				
A-C	4.19	4.19			4.19				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	162.12	0.000	0.00	0.0	0.0	0.000	A
B-A	1.10	1.10	76.82	0.014	1.10	0.0	0.0	11.886	B
C-AB	1.09	1.09	150.35	0.007	1.09	0.0	0.0	6.029	A
C-A	6.29	6.29			6.29				
A-B	6.28	6.28			6.28				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	162.44	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	77.12	0.000	0.01	0.0	0.0	0.000	A
C-AB	1.05	1.05	146.86	0.007	1.05	0.0	0.0	6.172	A
C-A	1.04	1.04			1.04				
A-B	4.36	4.36			4.36				
A-C	2.09	2.09			2.09				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.60	0.000	0.00	0.0	0.0	0.000	A
B-A	3.26	3.26	76.89	0.042	3.21	0.0	0.0	12.211	B
C-AB	0.00	0.00	146.60	0.000	0.01	0.0	0.0	0.000	A
C-A	5.23	5.23			5.23				
A-B	1.05	1.05			1.05				
A-C	4.30	4.30			4.30				

Data Errors and Warnings

No errors or warnings

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Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		7.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2026	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15

From	To			
		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.05	6.28
	B - Mine Access	1.10	0.00	1.05
	C - L4816 South	3.14	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

From	To			
		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.00	4.19
	B - Mine Access	3.20	0.00	0.00
	C - L4816 South	1.05	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45

From	To			
		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.10	3.14
	B - Mine Access	3.14	0.00	0.00
	C - L4816 South	5.23	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

From	To			
		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.00	1.05
	B - Mine Access	11.57	0.00	3.14
	C - L4816 South	4.19	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - L4816 North	B - Mine Access	C - L4816 South
A - L4816 North		0	0	0
B - Mine Access		100	0	0
C - L4816 South		0	0	0

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	5.75	0.0	A	1.05	4.19
B-A	0.15	13.75	0.2	B	4.75	19.02
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					3.40	13.61
A-B					0.54	2.15
A-C					3.66	14.66

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.05	1.05	172.11	0.006	1.04	0.0	0.0	5.260	A
B-A	1.10	1.10	76.31	0.014	1.09	0.0	0.0	11.965	B
C-AB	0.00	0.00	146.23	0.000	0.00	0.0	0.0	0.000	A
C-A	3.14	3.14			3.14				
A-B	1.05	1.05			1.05				
A-C	6.28	6.28			6.28				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.80	0.000	0.01	0.0	0.0	0.000	A
B-A	3.20	3.20	77.34	0.041	3.17	0.0	0.0	12.131	B
C-AB	0.00	0.00	146.92	0.000	0.00	0.0	0.0	0.000	A
C-A	1.05	1.05			1.05				
A-B	0.00	0.00			0.00				
A-C	4.19	4.19			4.19				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.94	0.000	0.00	0.0	0.0	0.000	A
B-A	3.14	3.14	77.06	0.041	3.14	0.0	0.0	12.176	B
C-AB	0.00	0.00	146.90	0.000	0.00	0.0	0.0	0.000	A
C-A	5.23	5.23			5.23				
A-B	1.10	1.10			1.10				
A-C	3.14	3.14			3.14				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.14	3.14	159.65	0.020	3.12	0.0	0.0	5.749	A
B-A	11.57	11.57	76.75	0.151	11.44	0.0	0.2	13.754	B
C-AB	0.00	0.00	147.60	0.000	0.00	0.0	0.0	0.000	A
C-A	4.19	4.19			4.19				
A-B	0.00	0.00			0.00				
A-C	1.05	1.05			1.05				

2031, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		2.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2031	AM	DIRECT	07:30	08:30	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	12.40	4.37
		B - Mine Access	1.22	0.00	0.00
		C - L4816 South	2.19	1.09	0.00

Demand (Veh/TS)

07:45 - 08:00		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	6.56	0.00
		B - Mine Access	1.22	0.00	0.00
		C - L4816 South	6.68	1.09	0.00

Demand (Veh/TS)

08:00 - 08:15		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	4.74	2.19
		B - Mine Access	0.00	0.00	0.00
		C - L4816 South	1.09	1.09	0.00

08:15 - 08:30

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.09	4.62
	B - Mine Access	3.53	0.00	0.00
	C - L4816 South	5.47	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - L4816 North	B - Mine Access	C - L4816 South	
A - L4816 North	0	29	0	
B - Mine Access	100	0	0	
C - L4816 South	0	0	0	

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Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.05	12.26	0.0	B	1.49	5.96
C-AB	0.01	6.26	0.0	A	0.84	3.36
C-A					3.84	15.36
A-B					6.20	24.80
A-C					2.80	11.18

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.25	0.000	0.00	0.0	0.0	0.000	A
B-A	1.22	1.22	76.13	0.016	1.20	0.0	0.0	12.008	B
C-AB	1.11	1.11	144.85	0.008	1.10	0.0	0.0	6.260	A
C-A	2.17	2.17			2.17				
A-B	12.40	12.40			12.40				
A-C	4.37	4.37			4.37				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	162.02	0.000	0.00	0.0	0.0	0.000	A
B-A	1.22	1.22	76.75	0.016	1.22	0.0	0.0	11.914	B
C-AB	1.14	1.14	150.49	0.008	1.14	0.0	0.0	6.025	A
C-A	6.63	6.63			6.63				
A-B	6.56	6.56			6.56				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	162.36	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	77.06	0.000	0.02	0.0	0.0	0.000	A
C-AB	1.10	1.10	146.75	0.008	1.10	0.0	0.0	6.178	A
C-A	1.09	1.09			1.09				
A-B	4.74	4.74			4.74				
A-C	2.19	2.19			2.19				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.37	0.000	0.00	0.0	0.0	0.000	A
B-A	3.53	3.53	76.82	0.046	3.48	0.0	0.0	12.264	B
C-AB	0.00	0.00	146.51	0.000	0.01	0.0	0.0	0.000	A
C-A	5.47	5.47			5.47				
A-B	1.09	1.09			1.09				
A-C	4.62	4.62			4.62				

2031, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		7.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2031	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.09	6.56
	B - Mine Access	1.22	0.00	1.09
	C - L4816 South	3.28	0.00	0.00

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.00	4.37
	B - Mine Access	3.40	0.00	0.00
	C - L4816 South	1.09	0.00	0.00

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.22	3.28
	B - Mine Access	3.28	0.00	0.00
	C - L4816 South	5.47	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.00	1.09
	B - Mine Access	12.15	0.00	3.28
	C - L4816 South	4.37	0.00	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - L4816 North	B - Mine Access	C - L4816 South	
A - L4816 North	0	0	0	
B - Mine Access	100	0	0	
C - L4816 South	0	0	0	

RECEIVED: 11/04/2023

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	5.77	0.0	A	1.09	4.37
B-A	0.16	13.88	0.2	B	5.01	20.05
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					3.55	14.22
A-B					0.58	2.31
A-C					3.83	15.31

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.09	1.09	171.21	0.006	1.09	0.0	0.0	5.289	A
B-A	1.22	1.22	76.55	0.016	1.20	0.0	0.0	11.941	B
C-AB	0.00	0.00	146.16	0.000	0.00	0.0	0.0	0.000	A
C-A	3.28	3.28			3.28				
A-B	1.09	1.09			1.09				
A-C	6.56	6.56			6.56				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.64	0.000	0.01	0.0	0.0	0.000	A
B-A	3.40	3.40	77.31	0.044	3.37	0.0	0.0	12.164	B
C-AB	0.00	0.00	146.88	0.000	0.00	0.0	0.0	0.000	A
C-A	1.09	1.09			1.09				
A-B	0.00	0.00			0.00				
A-C	4.37	4.37			4.37				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.82	0.000	0.00	0.0	0.0	0.000	A
B-A	3.28	3.28	77.02	0.043	3.28	0.0	0.0	12.204	B
C-AB	0.00	0.00	146.85	0.000	0.00	0.0	0.0	0.000	A
C-A	5.47	5.47			5.47				
A-B	1.22	1.22			1.22				
A-C	3.28	3.28			3.28				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.28	3.28	159.23	0.021	3.26	0.0	0.0	5.770	A
B-A	12.15	12.15	76.73	0.158	12.01	0.0	0.2	13.879	B
C-AB	0.00	0.00	147.59	0.000	0.00	0.0	0.0	0.000	A
C-A	4.37	4.37			4.37				
A-B	0.00	0.00			0.00				
A-C	1.09	1.09			1.09				

2041, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		2.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2041	AM	DIRECT	07:30	08:30	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	13.26	4.58
		B - Mine Access	1.37	0.00	0.00
		C - L4816 South	2.29	1.14	0.00

Demand (Veh/TS)

07:45 - 08:00		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	6.87	0.00
		B - Mine Access	1.37	0.00	0.00
		C - L4816 South	7.09	1.14	0.00

Demand (Veh/TS)

08:00 - 08:15		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	5.25	2.29
		B - Mine Access	0.00	0.00	0.00
		C - L4816 South	1.14	1.14	0.00

08:15 - 08:30

Demand (Veh/TS)

	To			
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.14	5.02
	B - Mine Access	3.88	0.00	0.00
	C - L4816 South	5.72	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	31	0
	B - Mine Access	100	0	0
	C - L4816 South	0	0	0

RECEIVED: 11/04/2023

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.05	12.33	0.1	B	1.65	6.61
C-AB	0.01	6.27	0.0	A	0.88	3.52
C-A					4.04	16.16
A-B					6.63	26.52
A-C					2.97	11.89

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	159.99	0.000	0.00	0.0	0.0	0.000	A
B-A	1.37	1.37	76.01	0.018	1.35	0.0	0.0	12.051	B
C-AB	1.16	1.16	144.59	0.008	1.15	0.0	0.0	6.274	A
C-A	2.27	2.27			2.27				
A-B	13.26	13.26			13.26				
A-C	4.58	4.58			4.58				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	161.89	0.000	0.00	0.0	0.0	0.000	A
B-A	1.37	1.37	76.68	0.018	1.37	0.0	0.0	11.949	B
C-AB	1.20	1.20	150.66	0.008	1.20	0.0	0.0	6.021	A
C-A	7.03	7.03			7.03				
A-B	6.87	6.87			6.87				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	162.27	0.000	0.00	0.0	0.0	0.000	A
B-A	0.00	0.00	77.00	0.000	0.02	0.0	0.0	0.000	A
C-AB	1.15	1.15	146.60	0.008	1.15	0.0	0.0	6.189	A
C-A	1.14	1.14			1.14				
A-B	5.25	5.25			5.25				
A-C	2.29	2.29			2.29				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.08	0.000	0.00	0.0	0.0	0.000	A
B-A	3.88	3.88	76.74	0.051	3.83	0.0	0.1	12.334	B
C-AB	0.00	0.00	146.40	0.000	0.01	0.0	0.0	0.000	A
C-A	5.72	5.72			5.72				
A-B	1.14	1.14			1.14				
A-C	5.02	5.02			5.02				

2041, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		7.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2041	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.14	6.87
	B - Mine Access	1.37	0.00	1.14
	C - L4816 South	3.43	0.00	0.00

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.00	4.58
	B - Mine Access	3.66	0.00	0.00
	C - L4816 South	1.14	0.00	0.00

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.37	3.43
	B - Mine Access	3.43	0.00	0.00
	C - L4816 South	5.72	0.00	0.00

17:45 - 18:00

Demand (Veh/TS)

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.00	1.14
	B - Mine Access	12.81	0.00	3.43
	C - L4816 South	4.58	0.00	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - L4816 North	B - Mine Access	C - L4816 South	
A - L4816 North	0	0	0	
B - Mine Access	100	0	0	
C - L4816 South	0	0	0	

RECEIVED: 11/04/2023

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	5.79	0.0	A	1.14	4.58
B-A	0.17	14.02	0.2	B	5.32	21.27
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					3.72	14.88
A-B					0.63	2.51
A-C					4.01	16.03

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.14	1.14	170.06	0.007	1.14	0.0	0.0	5.327	A
B-A	1.37	1.37	76.88	0.018	1.35	0.0	0.0	11.913	B
C-AB	0.00	0.00	146.08	0.000	0.00	0.0	0.0	0.000	A
C-A	3.43	3.43			3.43				
A-B	1.14	1.14			1.14				
A-C	6.87	6.87			6.87				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.46	0.000	0.01	0.0	0.0	0.000	A
B-A	3.66	3.66	77.27	0.047	3.63	0.0	0.0	12.215	B
C-AB	0.00	0.00	146.83	0.000	0.00	0.0	0.0	0.000	A
C-A	1.14	1.14			1.14				
A-B	0.00	0.00			0.00				
A-C	4.58	4.58			4.58				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	160.69	0.000	0.00	0.0	0.0	0.000	A
B-A	3.43	3.43	76.97	0.045	3.44	0.0	0.0	12.241	B
C-AB	0.00	0.00	146.78	0.000	0.00	0.0	0.0	0.000	A
C-A	5.72	5.72			5.72				
A-B	1.37	1.37			1.37				
A-C	3.43	3.43			3.43				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.43	3.43	158.74	0.022	3.41	0.0	0.0	5.794	A
B-A	12.81	12.81	76.71	0.167	12.66	0.0	0.2	14.021	B
C-AB	0.00	0.00	147.58	0.000	0.00	0.0	0.0	0.000	A
C-A	4.58	4.58			4.58				
A-B	0.00	0.00			0.00				
A-C	1.14	1.14			1.14				

2026+ GAA Phase 2+ Mine Traffic, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		2.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2026+ GAA Phase 2+ Mine Traffic	AM	DIRECT	07:30	08:30	60	15	✓	Simple	D1+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To		
07:30 - 07:45	From		A - L4816 North	B - Mine Access
		C - L4816 South		
		A - L4816 North	0.00	38.10
		B - Mine Access	26.39	0.00
		C - L4816 South	2.09	1.05
				0.00

Demand (Veh/TS)

		To		
07:45 - 08:00	From		A - L4816 North	B - Mine Access
		C - L4816 South		
		A - L4816 North	0.00	32.69
		B - Mine Access	26.39	0.00
		C - L4816 South	6.34	1.05
				0.00

Demand (Veh/TS)

		To		
08:00 - 08:15	From		A - L4816 North	B - Mine Access
		C - L4816 South		
		A - L4816 North	0.00	29.90
		B - Mine Access	1.63	0.00
		C - L4816 South	1.05	1.05
				0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	26.58	4.30
	B - Mine Access	4.88	0.00	0.00
	C - L4816 South	5.23	0.00	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To		
	A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	16
	B - Mine Access	10	0
	C - L4816 South	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.19	8.20	0.2	A	14.83	59.30
C-AB	0.01	6.54	0.0	A	0.80	3.21
C-A					3.66	14.64
A-B					31.82	127.27
A-C					2.65	10.58

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	150.55	0.000	0.00	0.0	0.0	0.000	A
B-A	26.39	26.39	135.70	0.195	26.16	0.0	0.2	8.196	A
C-AB	1.06	1.06	138.71	0.008	1.05	0.0	0.0	6.537	A
C-A	2.08	2.08			2.08				
A-B	38.10	38.10			38.10				
A-C	4.19	4.19			4.19				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	152.08	0.000	0.00	0.0	0.0	0.000	A
B-A	26.39	26.39	136.70	0.193	26.39	0.2	0.2	8.158	A
C-AB	1.10	1.10	143.92	0.008	1.10	0.0	0.0	6.303	A
C-A	6.29	6.29			6.29				
A-B	32.69	32.69			32.69				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	159.12	0.000	0.00	0.0	0.0	0.000	A
B-A	1.63	1.63	137.33	0.012	1.85	0.2	0.0	6.653	A
C-AB	1.05	1.05	140.52	0.008	1.06	0.0	0.0	6.455	A
C-A	1.04	1.04			1.04				
A-B	29.90	29.90			29.90				
A-C	2.09	2.09			2.09				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	158.07	0.000	0.00	0.0	0.0	0.000	A
B-A	4.88	4.88	136.87	0.036	4.86	0.0	0.0	6.818	A
C-AB	0.00	0.00	140.15	0.000	0.01	0.0	0.0	0.000	A
C-A	5.23	5.23			5.23				
A-B	26.58	26.58			26.58				
A-C	4.30	4.30			4.30				

RECEIVED: 11/04/2023

2026+ GAA Phase 2+ Mine Traffic, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		6.91	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2026+ GAA Phase 2+ Mine Traffic	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D2+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	1.47	6.28
		B - Mine Access	26.32	0.00	1.05
		C - L4816 South	3.14	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	0.42	4.19
		B - Mine Access	28.42	0.00	0.00
		C - L4816 South	1.05	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	1.52	3.14
		B - Mine Access	28.36	0.00	0.00
		C - L4816 South	5.23	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	0.42	1.05
	B - Mine Access	36.79	0.00	3.14
	C - L4816 South	4.19	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	29	0
	B - Mine Access	10	0	0
	C - L4816 South	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	6.06	0.0	A	1.05	4.19
B-A	0.26	8.68	0.4	A	29.97	119.90
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					3.40	13.61
A-B					0.96	3.83
A-C					3.66	14.66

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.05	1.05	154.04	0.007	1.04	0.0	0.0	5.882	A
B-A	26.32	26.32	139.47	0.189	26.09	0.0	0.2	7.923	A
C-AB	0.00	0.00	146.04	0.000	0.00	0.0	0.0	0.000	A
C-A	3.14	3.14			3.14				
A-B	1.47	1.47			1.47				
A-C	6.28	6.28			6.28				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	152.87	0.000	0.01	0.0	0.0	0.000	A
B-A	28.42	28.42	140.85	0.202	28.40	0.2	0.3	8.000	A
C-AB	0.00	0.00	146.80	0.000	0.00	0.0	0.0	0.000	A
C-A	1.05	1.05			1.05				
A-B	0.42	0.42			0.42				
A-C	4.19	4.19			4.19				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	154.25	0.000	0.00	0.0	0.0	0.000	A
B-A	28.36	28.36	140.31	0.202	28.36	0.3	0.3	8.038	A
C-AB	0.00	0.00	146.72	0.000	0.00	0.0	0.0	0.000	A
C-A	5.23	5.23			5.23				
A-B	1.52	1.52			1.52				
A-C	3.14	3.14			3.14				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.14	3.14	151.56	0.021	3.12	0.0	0.0	6.063	A
B-A	36.79	36.79	140.31	0.262	36.69	0.3	0.4	8.679	A
C-AB	0.00	0.00	147.49	0.000	0.00	0.0	0.0	0.000	A
C-A	4.19	4.19			4.19				
A-B	0.42	0.42			0.42				
A-C	1.05	1.05			1.05				

RECEIVED: 11/04/2023

2031+ GAA Phase 2+ Mine Traffic, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		2.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2031+ GAA Phase 2+ Mine Traffic	AM	DIRECT	07:30	08:30	60	15	✓	Simple	D3+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To		
07:30 - 07:45	From		A - L4816 North	B - Mine Access
		C - L4816 South		
		A - L4816 North	0.00	38.81
		B - Mine Access	26.51	0.00
		C - L4816 South	2.19	1.09
				0.00

Demand (Veh/TS)

		To		
07:45 - 08:00	From		A - L4816 North	B - Mine Access
		C - L4816 South		
		A - L4816 North	0.00	32.97
		B - Mine Access	26.51	0.00
		C - L4816 South	6.68	1.09
				0.00

Demand (Veh/TS)

		To		
08:00 - 08:15	From		A - L4816 North	B - Mine Access
		C - L4816 South		
		A - L4816 North	0.00	30.28
		B - Mine Access	1.63	0.00
		C - L4816 South	1.09	1.09
				0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	26.63	4.62
	B - Mine Access	5.16	0.00	0.00
	C - L4816 South	5.47	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To		
	A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	16
	B - Mine Access	10	0
	C - L4816 South	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.20	8.25	0.2	A	14.95	59.80
C-AB	0.01	6.55	0.0	A	0.84	3.36
C-A					3.84	15.35
A-B					32.17	128.69
A-C					2.80	11.18

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	150.35	0.000	0.00	0.0	0.0	0.000	A
B-A	26.51	26.51	135.06	0.196	26.27	0.0	0.2	8.255	A
C-AB	1.11	1.11	138.51	0.008	1.10	0.0	0.0	6.549	A
C-A	2.17	2.17			2.17				
A-B	38.81	38.81			38.81				
A-C	4.37	4.37			4.37				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	151.96	0.000	0.00	0.0	0.0	0.000	A
B-A	26.51	26.51	136.11	0.195	26.51	0.2	0.2	8.211	A
C-AB	1.15	1.15	144.05	0.008	1.15	0.0	0.0	6.299	A
C-A	6.63	6.63			6.63				
A-B	32.97	32.97			32.97				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	159.04	0.000	0.00	0.0	0.0	0.000	A
B-A	1.63	1.63	136.74	0.012	1.86	0.2	0.0	6.685	A
C-AB	1.10	1.10	140.39	0.008	1.10	0.0	0.0	6.460	A
C-A	1.08	1.08			1.08				
A-B	30.28	30.28			30.28				
A-C	2.19	2.19			2.19				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	157.89	0.000	0.00	0.0	0.0	0.000	A
B-A	5.16	5.16	136.26	0.038	5.13	0.0	0.0	6.861	A
C-AB	0.00	0.00	140.04	0.000	0.01	0.0	0.0	0.000	A
C-A	5.47	5.47			5.47				
A-B	26.63	26.63			26.63				
A-C	4.62	4.62			4.62				

RECEIVED: 11/04/2023

2031+ GAA Phase 2+ Mine Traffic, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		6.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2031+ GAA Phase 2+ Mine Traffic	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D4+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.51	6.56
	B - Mine Access	26.44	0.00	1.09
	C - L4816 South	3.28	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	0.42	4.37
	B - Mine Access	28.62	0.00	0.00
	C - L4816 South	1.09	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	1.64	3.28
	B - Mine Access	28.50	0.00	0.00
	C - L4816 South	5.47	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	0.42	1.09
	B - Mine Access	37.37	0.00	3.28
	C - L4816 South	4.37	0.00	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	28	0
	B - Mine Access	10	0	0
	C - L4816 South	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	6.08	0.0	A	1.09	4.37
B-A	0.27	8.77	0.4	A	30.23	120.93
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					3.55	14.22
A-B					1.00	3.99
A-C					3.83	15.31

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.09	1.09	153.91	0.007	1.09	0.0	0.0	5.888	A
B-A	26.44	26.44	138.87	0.190	26.20	0.0	0.2	7.973	A
C-AB	0.00	0.00	145.97	0.000	0.00	0.0	0.0	0.000	A
C-A	3.28	3.28			3.28				
A-B	1.51	1.51			1.51				
A-C	6.56	6.56			6.56				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	152.69	0.000	0.01	0.0	0.0	0.000	A
B-A	28.62	28.62	140.30	0.204	28.60	0.2	0.3	8.055	A
C-AB	0.00	0.00	146.76	0.000	0.00	0.0	0.0	0.000	A
C-A	1.09	1.09			1.09				
A-B	0.42	0.42			0.42				
A-C	4.37	4.37			4.37				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	154.13	0.000	0.00	0.0	0.0	0.000	A
B-A	28.50	28.50	139.74	0.204	28.50	0.3	0.3	8.090	A
C-AB	0.00	0.00	146.66	0.000	0.00	0.0	0.0	0.000	A
C-A	5.47	5.47			5.47				
A-B	1.64	1.64			1.64				
A-C	3.28	3.28			3.28				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.28	3.28	151.22	0.022	3.26	0.0	0.0	6.082	A
B-A	37.37	37.37	139.76	0.267	37.27	0.3	0.4	8.773	A
C-AB	0.00	0.00	147.48	0.000	0.00	0.0	0.0	0.000	A
C-A	4.37	4.37			4.37				
A-B	0.42	0.42			0.42				
A-C	1.09	1.09			1.09				

RECEIVED: 11/04/2023

2041+ GAA Phase 2+ Mine Traffic, AM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		2.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2041+ GAA Phase 2+ Mine Traffic	AM	DIRECT	07:30	08:30	60	15	✓	Simple	D5+D7+D9

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:30 - 07:45	To			
	From	A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	39.67	4.58
	B - Mine Access	26.66	0.00	0.00
	C - L4816 South	2.29	1.14	0.00

Demand (Veh/TS)

07:45 - 08:00	To			
	From	A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	33.28	0.00
	B - Mine Access	26.66	0.00	0.00
	C - L4816 South	7.09	1.14	0.00

Demand (Veh/TS)

08:00 - 08:15	To			
	From	A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0.00	30.78	2.29
	B - Mine Access	1.63	0.00	0.00
	C - L4816 South	1.14	1.14	0.00

Demand (Veh/TS)

08:15 - 08:30

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	26.68	5.02
	B - Mine Access	5.51	0.00	0.00
	C - L4816 South	5.72	0.00	0.00

RECEIVED: 11/04/2023

Vehicle Mix

Heavy Vehicle Percentages

	To		
	A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0	17
	B - Mine Access	11	0
	C - L4816 South	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0.00	0.00
B-A	0.20	8.33	0.2	A	15.11	60.45
C-AB	0.01	6.56	0.0	A	0.88	3.52
C-A					4.04	16.16
A-B					32.60	130.41
A-C					2.97	11.89

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	150.09	0.000	0.00	0.0	0.0	0.000	A
B-A	26.66	26.66	134.23	0.199	26.41	0.0	0.2	8.330	A
C-AB	1.16	1.16	138.25	0.008	1.16	0.0	0.0	6.564	A
C-A	2.27	2.27			2.27				
A-B	39.67	39.67			39.67				
A-C	4.58	4.58			4.58				

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	151.82	0.000	0.00	0.0	0.0	0.000	A
B-A	26.66	26.66	135.34	0.197	26.66	0.2	0.2	8.280	A
C-AB	1.20	1.20	144.19	0.008	1.20	0.0	0.0	6.295	A
C-A	7.03	7.03			7.03				
A-B	33.28	33.28			33.28				
A-C	0.00	0.00			0.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	158.93	0.000	0.00	0.0	0.0	0.000	A
B-A	1.63	1.63	135.99	0.012	1.86	0.2	0.0	6.720	A
C-AB	1.15	1.15	140.23	0.008	1.15	0.0	0.0	6.470	A
C-A	1.14	1.14			1.14				
A-B	30.78	30.78			30.78				
A-C	2.29	2.29			2.29				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	157.66	0.000	0.00	0.0	0.0	0.000	A
B-A	5.51	5.51	135.47	0.041	5.48	0.0	0.0	6.921	A
C-AB	0.00	0.00	139.89	0.000	0.01	0.0	0.0	0.000	A
C-A	5.72	5.72			5.72				
A-B	26.68	26.68			26.68				
A-C	5.02	5.02			5.02				

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2041+ GAA Phase 2+ Mine Traffic, PM

RECEIVED: 11/04/2023

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mine Access Junction	T-Junction	Two-way		6.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2041+ GAA Phase 2+ Mine Traffic	PM	DIRECT	17:00	18:00	60	15	✓	Simple	D6+D8+D10

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - L4816 North		DIRECT	✓	100.000
B - Mine Access		DIRECT	✓	100.000
C - L4816 South		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	1.56	6.87
		B - Mine Access	26.59	0.00	1.14
		C - L4816 South	3.43	0.00	0.00

Demand (Veh/TS)

17:15 - 17:30		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	0.42	4.58
		B - Mine Access	28.88	0.00	0.00
		C - L4816 South	1.14	0.00	0.00

Demand (Veh/TS)

17:30 - 17:45		To			
	From		A - L4816 North	B - Mine Access	C - L4816 South
		A - L4816 North	0.00	1.79	3.43
		B - Mine Access	28.65	0.00	0.00
		C - L4816 South	5.72	0.00	0.00

Demand (Veh/TS)

17:45 - 18:00

	To			
		A - L4816 North	B - Mine Access	C - L4816 South
From	A - L4816 North	0.00	0.42	1.14
	B - Mine Access	38.03	0.00	3.43
	C - L4816 South	4.58	0.00	0.00

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Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - L4816 North	B - Mine Access	C - L4816 South
	A - L4816 North	0	27	0
	B - Mine Access	11	0	0
	C - L4816 South	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-C	0.02	6.11	0.0	A	1.14	4.58
B-A	0.27	8.89	0.4	A	30.54	122.15
C-AB	0.00	0.00	0.0	A	0.00	0.00
C-A					3.72	14.88
A-B					1.05	4.19
A-C					4.01	16.03

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	1.14	1.14	153.74	0.007	1.14	0.0	0.0	5.897	A
B-A	26.59	26.59	138.11	0.193	26.35	0.0	0.2	8.036	A
C-AB	0.00	0.00	145.89	0.000	0.00	0.0	0.0	0.000	A
C-A	3.43	3.43			3.43				
A-B	1.56	1.56			1.56				
A-C	6.87	6.87			6.87				

17:15 - 17:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	152.48	0.000	0.01	0.0	0.0	0.000	A
B-A	28.88	28.88	139.60	0.207	28.85	0.2	0.3	8.124	A
C-AB	0.00	0.00	146.71	0.000	0.00	0.0	0.0	0.000	A
C-A	1.14	1.14			1.14				
A-B	0.42	0.42			0.42				
A-C	4.58	4.58			4.58				

17:30 - 17:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	0.00	0.00	153.99	0.000	0.00	0.0	0.0	0.000	A
B-A	28.65	28.65	139.00	0.206	28.65	0.3	0.3	8.155	A
C-AB	0.00	0.00	146.58	0.000	0.00	0.0	0.0	0.000	A
C-A	5.72	5.72			5.72				
A-B	1.79	1.79			1.79				
A-C	3.43	3.43			3.43				

17:45 - 18:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	3.43	3.43	150.81	0.023	3.41	0.0	0.0	6.106	A
B-A	38.03	38.03	139.05	0.274	37.92	0.3	0.4	8.890	A
C-AB	0.00	0.00	147.47	0.000	0.00	0.0	0.0	0.000	A
C-A	4.58	4.58			4.58				
A-B	0.42	0.42			0.42				
A-C	1.14	1.14			1.14				

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Appendix G- Stage 1 Road Safety Audit Report



Title: **STAGE 1 ROAD SAFETY AUDIT**
For;
Proposed Knocknacran West Open Cast Mine.

Client: **PMCE**

Date: **October 2022**

Report reference: **1642R01**

VERSION: **DRAFT**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
Clogherhead
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CONTENTS SHEET

Contents

1.0	Introduction	2
2.0	Background	3
3.0	Issues Identified in This Road Safety Audit.	5
3.1	Proposed Temporary Diversion of the R179.....	5
3.1.1	Problem.....	5
3.1.2	Problem.....	5
3.1.3	Problem.....	6
3.2	Proposed Permanent Reinstatement of the R179.....	6
3.3	Proposed New Mine Access.....	6
3.3.1	Problem.....	6
3.4	Existing L4816/R179 Stop Sign.....	7
3.0	Audit Statement.....	8
	Appendix A.....	9
	Appendix B - Problem Location Map	10
	Appendix C.....	0

RECEIVED: 11/04/2023

1.0 Introduction

This report was prepared in response to a request from Mr. Peter Monahan, PMCE Ltd, for a Stage 1 Road Safety Audit of a proposed temporary and permanent works associated with the Knocknacran Open Cast Mine.

The Road Safety Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

TII Auditor Approval no. NB 168446

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval no. OO 1291756

The Road Safety Audit comprised an examination of the drawings and a site visit by the Audit Team, on the 15th of October 2022.

The weather at the time of the daytime site visit was dry and the road surface was also dry.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

A list of the documents provided to the Audit Team is contained in **Appendix A**.

A Problem Location Map is contained in **Appendix B**.

A feedback Form is contained in **Appendix C**.

RECEIVED: 11/04/2023

2.0 Background

It is proposed to provide a temporary diversion on the R179 to facilitate the construction of a tunnel under the existing R179 for the proposed Knocknacran West Open cast mine.

The scope of this Road Safety Audit included;

1. The proposed temporary diversion of the R179;
2. The permanent reinstatement of the R179;
3. The proposed new mine access on the L4816; and
4. The visibility to the Stop sign for mine traffic on the L4816 approaching the R179/L4816 Junction.

It is proposed to have a 60km/hr speed limit on the temporary diversion. The R179 has a permanent speed limit of 80km/hr.

The site location is shown in the map below.

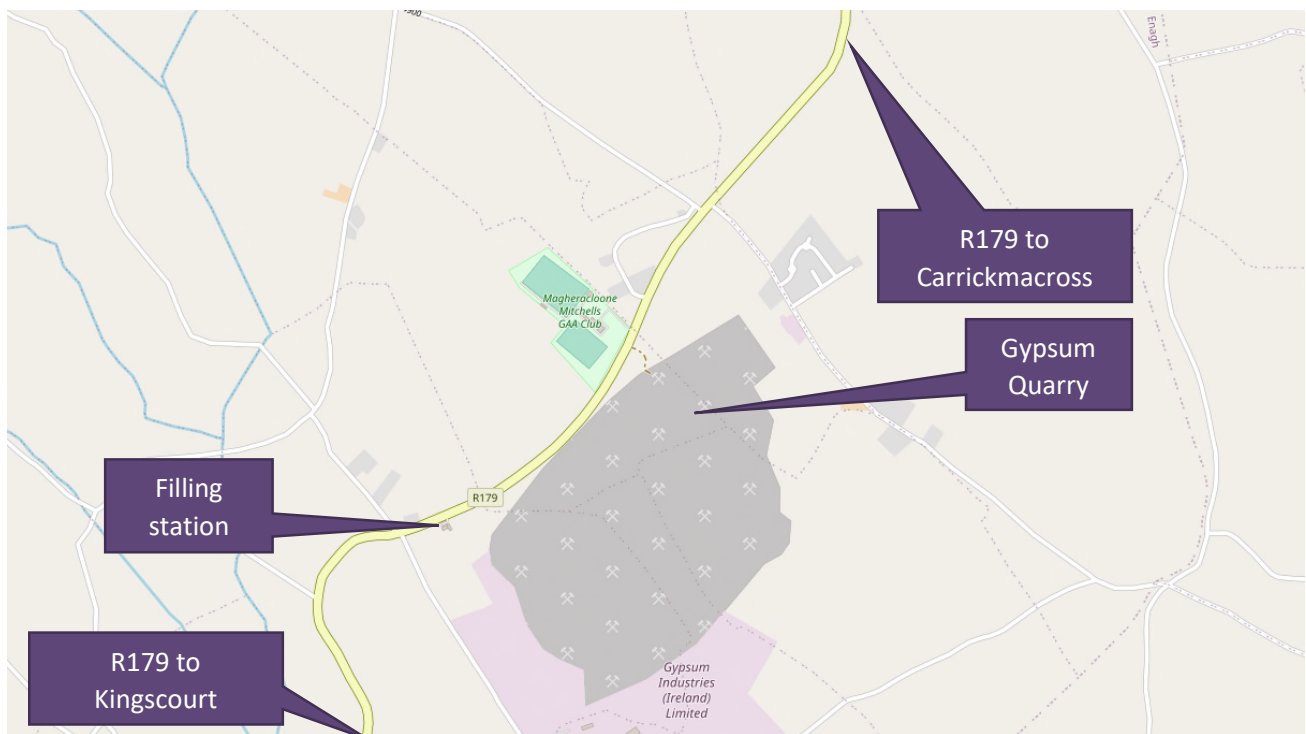
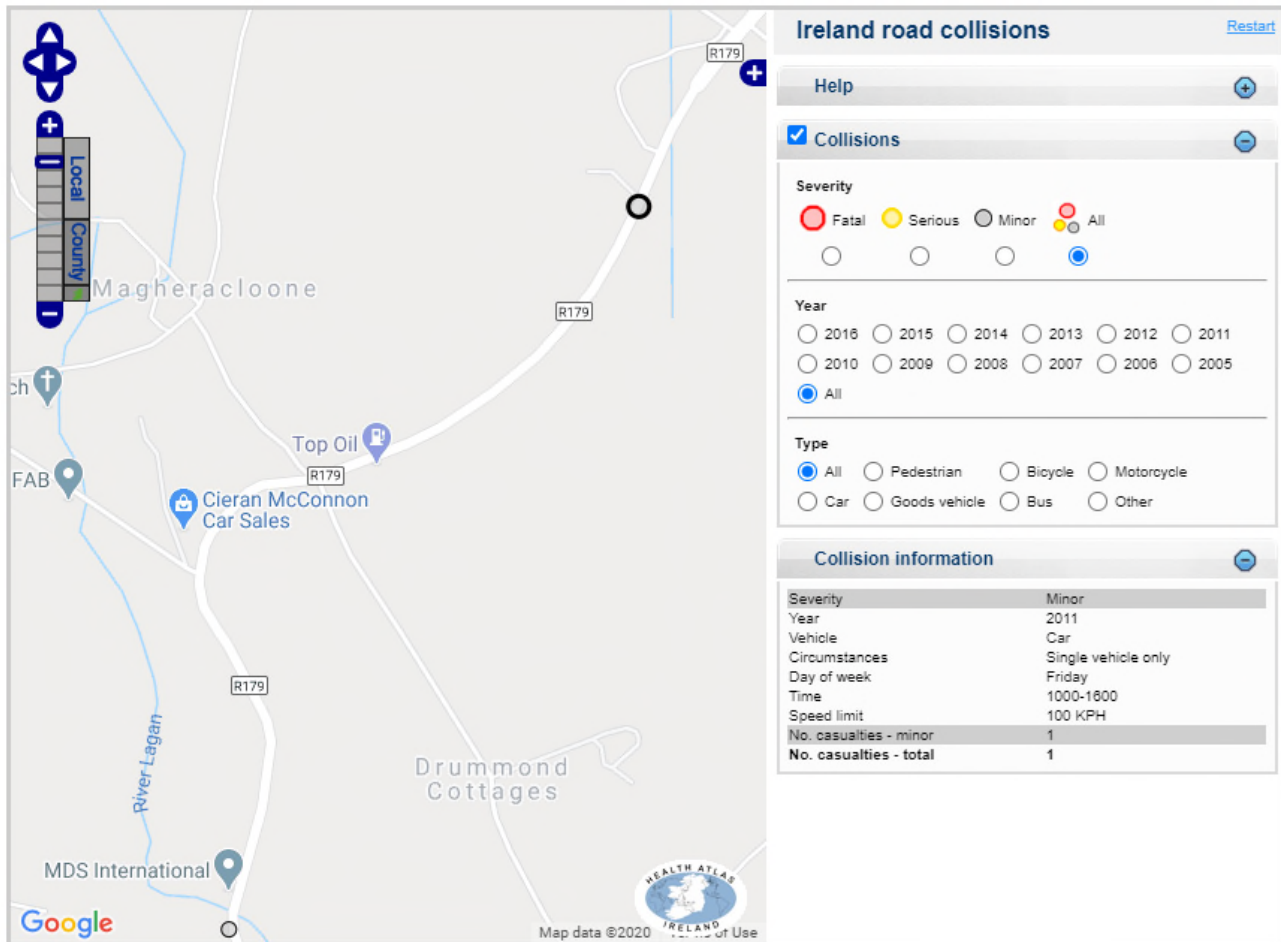


Image courtesy of Openstreetmap.org.

STAGE 1 RSA, KNOCKNACRAN MINE
PMCE

The Road Safety Authority's website shows that there were no recorded injury collisions adjacent to the proposed junction between the years 2005 and 2016. There was one recorded minor injury collision North of the site on the R179 in 2011. That was a single vehicle collision involving a car.



RECEIVED: 11/04/2023

3.0 Issues Identified in This Road Safety Audit.

3.1 Proposed Temporary Diversion of the R179

3.1.1 Problem

LOCATION

Drawing KNCH-WSP-HAW-SW-GN-Z-CH-00001, Temporary diversion alignment.

PROBLEM

The temporary diversion's alignment appears to be broadly based on a design speed of 60km/hr. The construction and finish of the temporary alignment will appear like a permanent realignment and as a result drivers may actually maintain or increase speed. High speeds on this alignment could result in loss of control collisions.

RECOMMENDATION

It is recommended that additional measures be provided to indicate to drivers the temporary nature of the diversion and the need to slow. This may include narrow lane widths.

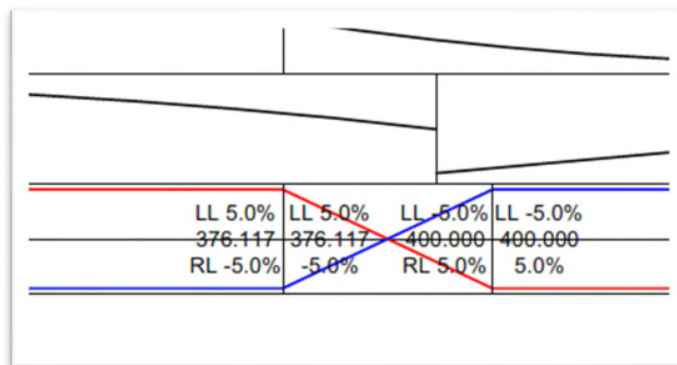
3.1.2 Problem

LOCATION

Drawing KNCH-WSP-HAW-SW-GN-Z-CH-00005, Superelevation

PROBLEM

The change in cross fall at the superelevated sections of the temporary alignment appear to occur over relatively short distances. There is a risk that vehicles will be travelling faster than the posted speed and this may lead to overturning of high sided vehicles.



RECOMMENDATION

It is recommended that rate of change of crossfall be suitable for the anticipated operating speed of the temporary diversion.

STAGE 1 RSA, KNOCKNACRAN MINE PMCE

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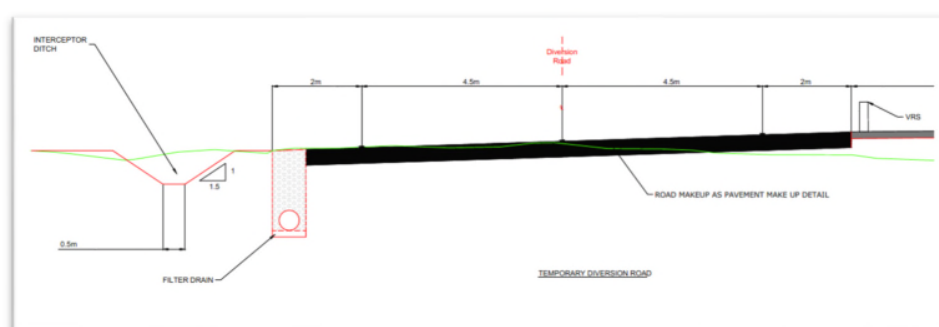
3.1.3 Problem

LOCATION

Drawing KNCH-WSP-HAW-SW-GN-Z-CH-00009, Typical Cross Section – Temporary Diversion.

PROBLEM

The typical cross section shows the VRS on the high side of the carriageway. It is assumed that this is a draughting error. It is unclear how far the VRS will be from the interceptor ditch/cut for the tunnel and if the proposed working width of W4 will be accommodated. A lack of space could lead to errant vehicles not being contained by the VRS resulting in secondary collisions.



RECOMMENDATION

It is recommended that sufficient space be provided to the hazards to allow the proposed VRS to function as intended.

3.2 Proposed Permanent Reinstatement of the R179.

No safety issues Identified.

3.3 Proposed New Mine Access

3.3.1 Problem

LOCATION

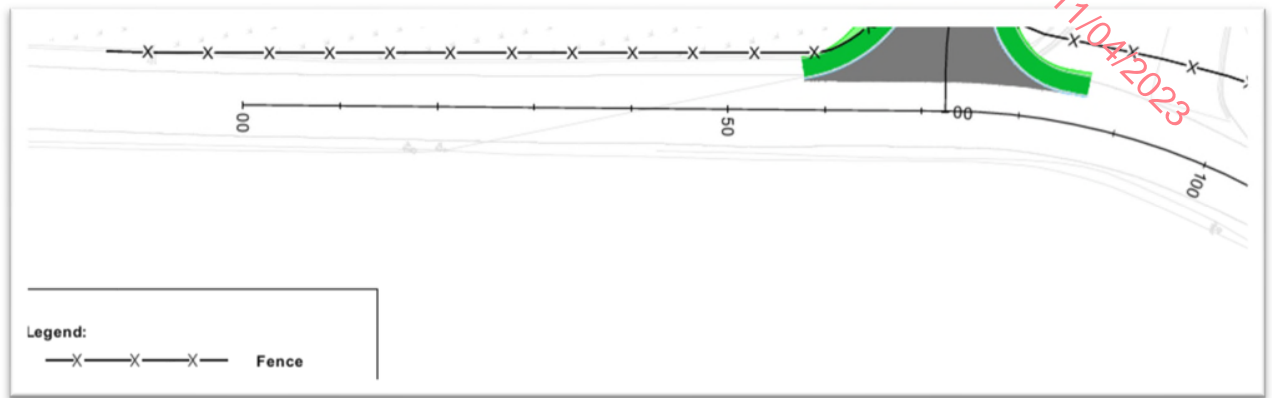
Drawing P21-110-PSW1-P-DG-FE-001 S0 1.0 Fencing.

PROBLEM

The type of proposed fencing at the realigned access has not been provided. There is a risk that fencing with rails could lead to injuries for vehicle occupants if the rails enters the vehicle.

STAGE 1 RSA, KNOCKNACRAN MINE PMCE

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RECOMMENDATION

It is recommended that rail-less fencing with passively safe posts be provided.

3.4 Existing L4816/R179 Stop Sign

No safety issues Identified.

RECEIVED: 11/04/2023

3.0 Audit Statement

We certify that we have examined the material provided and the site. The examination has been carried out with the sole purpose of identifying any aspects of the design which could be added, removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton **Signed:** _____

(Audit Team Leader) **Dated:** _____

Owen O'Reilly. **Signed:** _____

(Audit Team Member) **Dated:** _____

RECEIVED: 11/04/2023

Appendix A

Information Supplied to the Audit Team

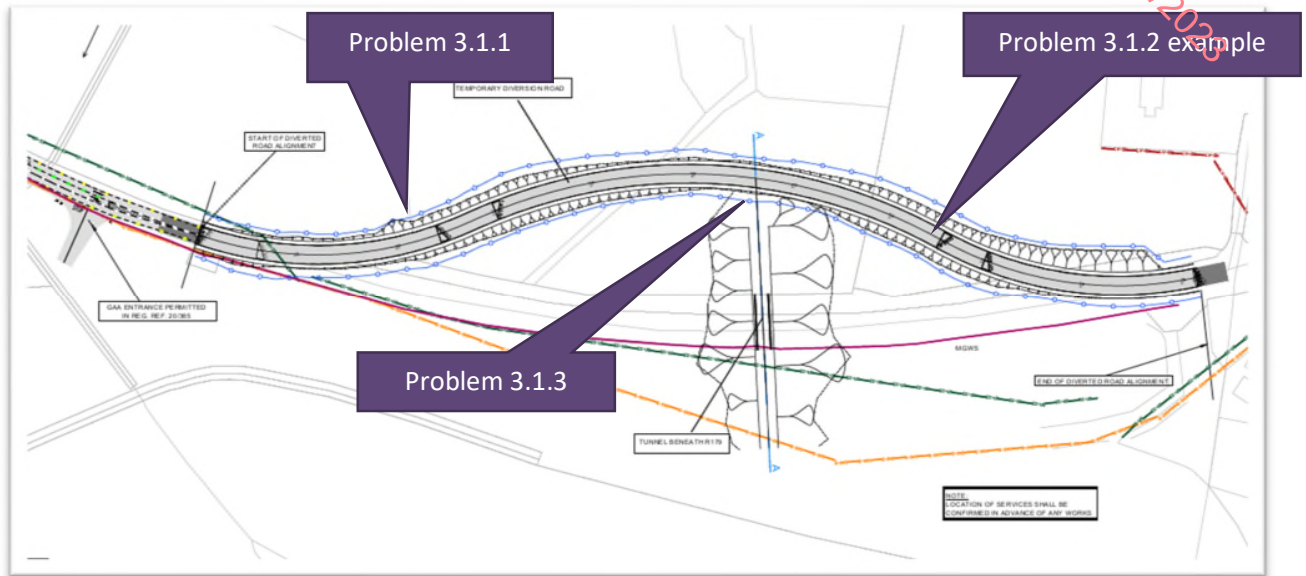
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00001__General Arrangement
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00002__Site Clearance
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00003__VRS Drawing
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00004__Drainage Plan
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00005__Plan & Profile
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00006__Cross Sections
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00007__Road Markings and Signage
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00008__Construction Details - 1 of 2
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00009__Construction Details - 2 of 2
- Drawing P21-110-PSW1-P-DG-GE-001
- Drawing P21-110-PSW1-P-DG-SP-001
- Drawing P21-110-PSW1-P-DG-SP-002
- Drawing P21-110-PSW1-P-DG-SP-003
- Drawing P21-110-PSW1-P-DG-VE-001
- Drawing P21-110-PSW1-P-DG-FE-001

Background Information Supplied to the Audit Team

- Draft Traffic & Transport Assessment, PMCE September 2022.
- Audit Brief.

RECEIVED: 11/04/2023

Appendix B - Problem Location Map



RECEIVED: 11/04/2023

Appendix C

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Knocknacran Mine

Stage: 1 Road Safety Audit

Date Audit (Site Visit) Completed: 15-10-2022

RECEIVED: 11/04/2023

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1.1				
3.1.2				
3.1.3				
3.3.1				

Signed.....
Design Team Leader

Date.....

Signed.....
Audit Team Leader

Date.....

Signed.....
Employer/Developer

Date.....

RECEIVED: 11/04/2023

Appendix H – Stage 2 Road Safety Audit Report



Title: **STAGE 2 ROAD SAFETY AUDIT**
For;
Proposed Knocknacran West Open Cast Mine.

Client: **PMCE**

Date: **October 2022**

Report reference: **1642R02**

VERSION: **DRAFT**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
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Co. Louth.

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W: www.bruntonceng.ie

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CONTENTS SHEET

Contents

1.0 Introduction 2

2.0 Background 3

3.0 Issues Identified in This Road Safety Audit. 5

 3.1 Proposed Temporary Diversion of the R179..... 5

 3.1.1 Problem..... 5

 3.2 Proposed Permanent Reinstatement of the R179..... 5

 3.3 Proposed New Mine Access..... 5

 3.3.1 Problem..... 5

 3.3.2 Problem..... 6

 3.4 Existing L4816/R179 Stop Sign..... 6

3.0 Audit Statement..... 7

Appendix A..... 8

Appendix B - Problem Location Map 9

Appendix C..... 0

RECEIVED: 11/04/2023

1.0 Introduction

This report was prepared in response to a request from Mr. Peter Monahan, PMCE Ltd, for a Stage 2 Road Safety Audit of a proposed temporary and permanent works associated with the Knocknacran Open Cast Mine.

The Road Safety Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

TII Auditor Approval no. NB 168446

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval no. OO 1291756

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The weather at the time of the daytime site visit was dry and the road surface was also dry.

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A Problem Location Map is contained in **Appendix B**.

A feedback Form is contained in **Appendix C**.

RECEIVED: 11/04/2023

2.0 Background

It is proposed to provide a temporary diversion on the R179 to facilitate the construction of a tunnel under the existing R179 for the proposed Knocknacran West Open cast mine.

The scope of this Road Safety Audit included;

1. The proposed temporary diversion of the R179;
2. The permanent reinstatement of the R179;
3. The proposed new mine access on the L4816; and
4. The visibility to the Stop sign for mine traffic on the L4816 approaching the R179/L4816 Junction.

It is proposed to have a 60km/hr speed limit on the temporary diversion. The R179 has a permanent speed limit of 80km/hr.

The site location is shown in the map below.

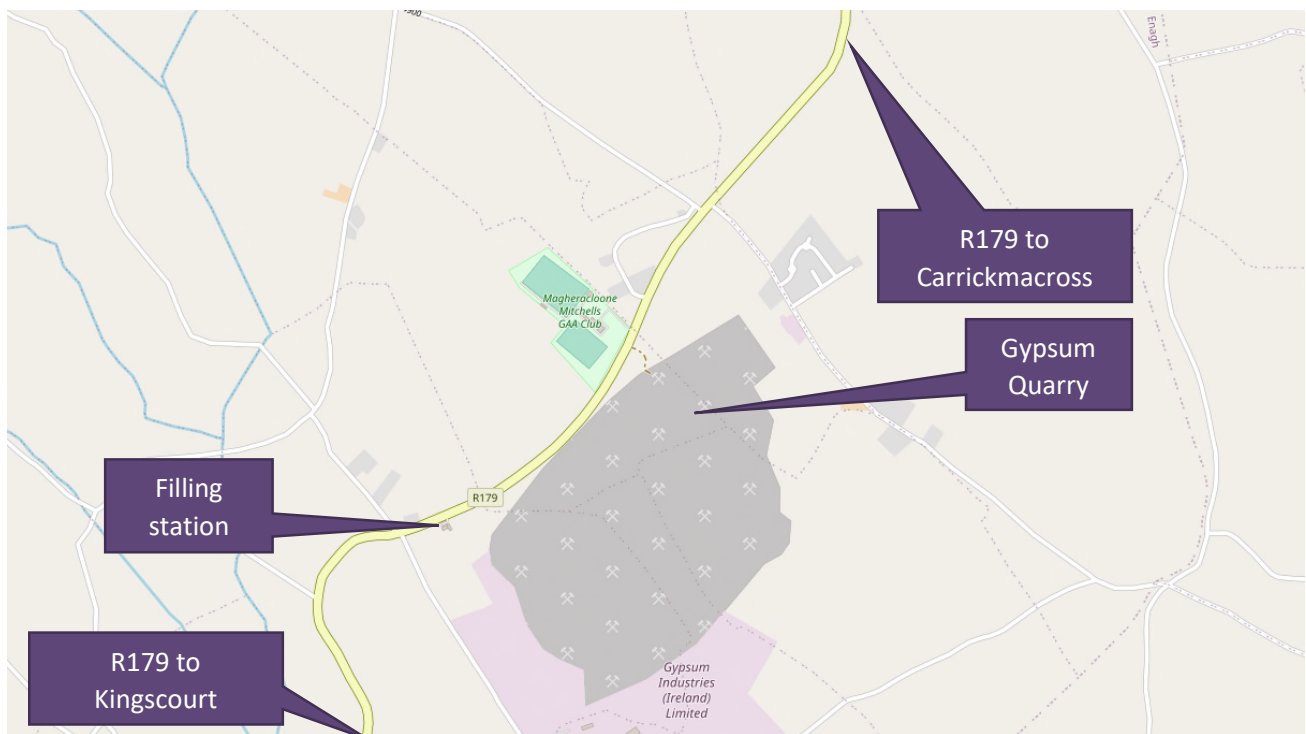
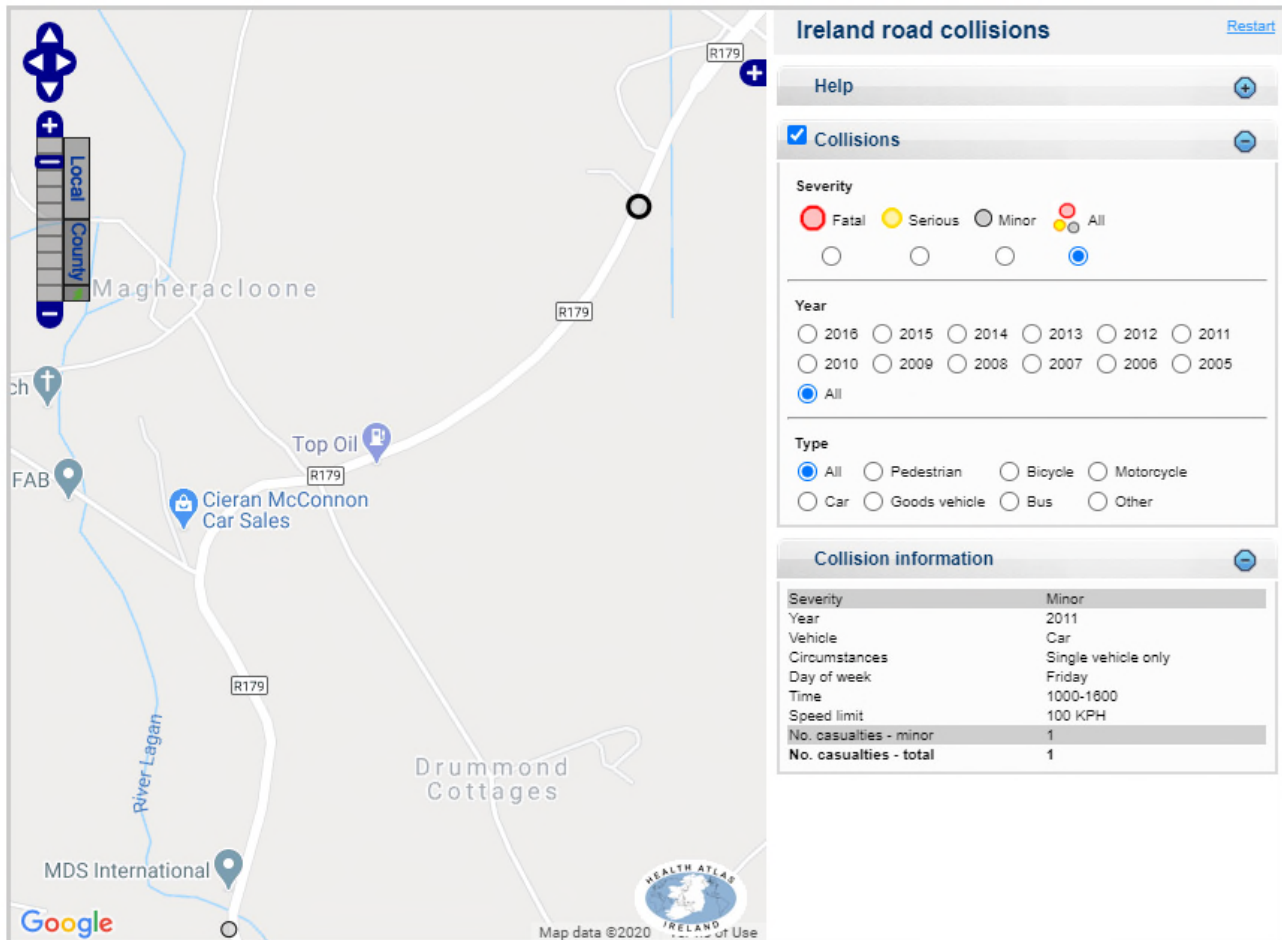


Image courtesy of Openstreetmap.org.

RECEIVED: 17/04/2023

The Road Safety Authority's website shows that there were no recorded injury collisions adjacent to the proposed junction between the years 2005 and 2016. There was one recorded minor injury collision North of the site on the R179 in 2011. That was a single vehicle collision involving a car.



RECEIVED: 11/04/2023

3.0 Issues Identified in This Road Safety Audit.

3.1 Proposed Temporary Diversion of the R179

3.1.1 Problem

LOCATION

Drawing KNCH-WSP-HAW-SW-GN-Z-CH-00007, Temporary diversion alignment

PROBLEM

The horizontal curves on the temporary alignment are relatively tight. Drivers, particularly during the hours of darkness may not be fully aware of the geometry ahead and may slow sufficiently and lose control.

RECOMMENDATION

It is recommended that sharp bend and chevron signs be provided.

3.2 Proposed Permanent Reinstatement of the R179.

No safety issues Identified.

3.3 Proposed New Mine Access

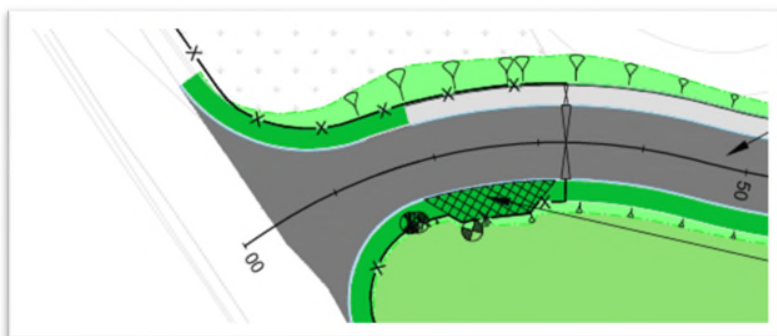
3.3.1 Problem

LOCATION

Drawing P21-110-PSW1-P-DG-GE-001 S4 2.0

PROBLEM

There are no road markings or signage shown on the drawings for the relocated mine access. This may lead to overshoot of the stopping area and side-impact collisions.



RECOMMENDATION

It is recommended that stop road markings and signage be provided at the new access.

STAGE 2 RSA, KNOCKNACRAN MINE PMCE

RECEIVED: 11/04/2023

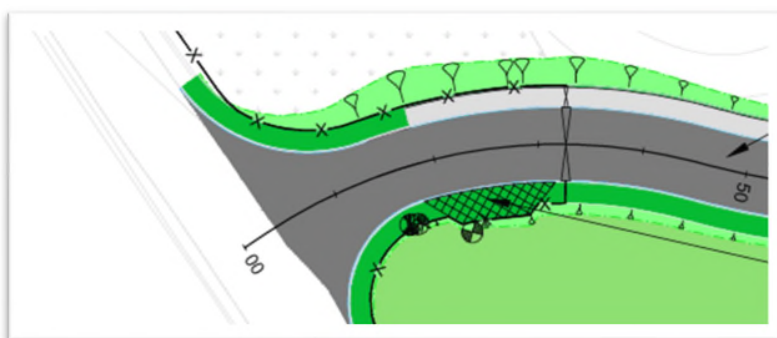
3.3.2 Problem

LOCATION

Drawing P21-110-PSW1-P-DG-GE-001 S4 2.0

PROBLEM

There is no access point provide to the footpath along the access road. This could lead to inaccessibility for the mobility impaired or trips and falls.



RECOMMENDATION

It is recommended that a section of dropped kerb be provided.

3.4 Existing L4816/R179 Stop Sign

No safety issues Identified.

RECEIVED: 11/04/2023

3.0 Audit Statement

We certify that we have examined the material provided and the site. The examination has been carried out with the sole purpose of identifying any aspects of the design which could be added, removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton **Signed:** _____

(Audit Team Leader) **Dated:** _____

Owen O'Reilly. **Signed:** _____

(Audit Team Member) **Dated:** _____

RECEIVED: 11/04/2023

Appendix A

Information Supplied to the Audit Team

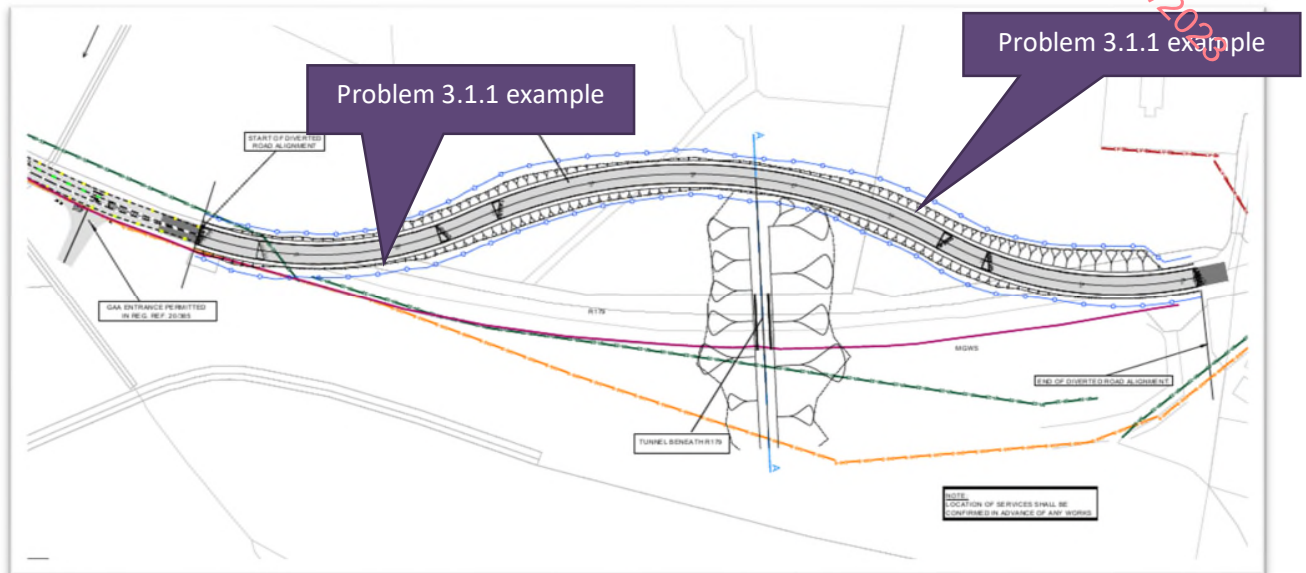
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00001__General Arrangement
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00002__Site Clearance
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00003__VRS Drawing
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00004__Drainage Plan
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00005__Plan & Profile
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00006__Cross Sections
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00007__Road Markings and Signage
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00008__Construction Details - 1 of 2
- Drawing KNCN-WSP-HAW-SW-GN-Z-CH-00009__Construction Details - 2 of 2
- Drawing P21-110-PSW1-P-DG-GE-001
- Drawing P21-110-PSW1-P-DG-SP-001
- Drawing P21-110-PSW1-P-DG-SP-002
- Drawing P21-110-PSW1-P-DG-SP-003
- Drawing P21-110-PSW1-P-DG-VE-001
- Drawing P21-110-PSW1-P-DG-FE-001

Background Information Supplied to the Audit Team

- Draft Traffic & Transport Assessment, PMCE September 2022.
- Audit Brief.

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Appendix B - Problem Location Map



RECEIVED: 11/04/2023

Appendix C

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

RECEIVED: 11/04/2023

Scheme: Knocknacran Mine

Stage: 2 Road Safety Audit

Date Audit (Site Visit) Completed: 15-10-2022

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1.1				
3.3.1				
3.3.2				

Signed.....
Design Team Leader

Date.....

Signed.....
Audit Team Leader

Date.....

Signed.....
Employer/Developer

Date.....