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# **APPENDIX 13-1**

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TRAFFIC AND TRANSPORT ASSESSMENT

ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS

## PROPOSED LOMAUNAGHBAUN QUARRY

## Lomaunaghbaun, Tuam, County Galway

## **Traffic and Transport Assessment**

Alan Lipscombe Traffic & Transport Consultants Ltd Claran, Headford, Co Galway

> Email <u>-Info@alipscombetraffic.ie</u> Tel – 093 34777 Mob – 087 9308134

## FINAL VERSION B - 18/12/23

Client: Newtown Farming Ltd December 19<sup>th</sup> 2023 Project No: 10320

Lomaunaghbaun Quarry, Lomaunaghbaun, Tuam, Co Galway - Traffic and Transport Assessment | 1

ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS

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#### 1 INTRODUCTION

#### 1.1 Purpose of report

KIVED. 09/07/2024 A planning application is being submitted to Galway County Council for planning permission to operate a guarry for the purpose of sand extraction on a 6.2 ha site, located at Lomaunaghbaun, Tuam, County Galway.

**ALAN LIPSCOMBE** 

**TRAFFIC & TRANSPORT CONSULTANTS** 

This report presents the method and results of a *Traffic and Transport Assessment* undertaken to assess the likely traffic impacts of the proposed guarry on the local highway network.

The study was commissioned by MKO on behalf of the Applicant Newtown Farming Ltd and was undertaken by Alan Lipscombe Traffic and Transportation Consultants Ltd.

#### 1.2 Method and report structure

The report adopts the guidance for such assessments set out by Transport Infrastructure Ireland (TII) in the document "Guidelines for Traffic and Transport Assessments" May 2014, and is set out as follows:

- A review of the existing transport infrastructure in the vicinity of the Proposed Lomaunaghbaun Quarry, including an assessment of existing and future background traffic flows (Section 2 - Receiving Environment),
- A description of the nature of the proposed quarry, the traffic volumes that will be generated, a description of the access junction, including a swept path analysis for traffic accessing and exiting the site (Section 3 – Proposed Development),
- A review of the impact of the proposed guarry on the surrounding network (Section 4 Impact of the proposed quarry on the study network),
- A detailed swept path analysis of the potential access routes to the proposed quarry (Section 5 – Geometric Assessment of Access Routes A and B),
- A review of conditions for sustainable modes of travel (Section 6 Provision for sustainable modes of travel).

The key findings of the assessment are summarised in the concluding Section 7.

#### 2 **RECEIVING ENVIRONMENT**

#### 2.1 Location and network summary

ELLED. 09/07/2028 The proposed guarry site is located within the townland of Lomaunaghbaun in County Galway and is approximately 8.6 kms northeast of Tuam and 4.7kms west of Clonberne.

The proposed guarry is situated on the west side of the L-2232 and may be accessed from 2 routes from the R328 regional road, shown as Routes A and B in Figure 1. The following is based on a preliminary site visit with a detailed assessment of the routes presented in Section 5 of this report. A preliminary site visit was undertaken on the 30<sup>th</sup> March 2022 with and additional visits undertaken on 24th February and 4th August 2023. The site visits are recorded in Plates 1 to 11 appended to the back of this report.

#### Route A

From the R328, Route Option A is the most direct route to the site, which is located approximately 4.0km south on the L-2232 from the junction with the R328 at Gorteen Cross.

At the junction between R328 and the L2232 at Gorteen Cross it is noted that visibility along the R328 is constrained and is less than the 160m x 3m that would be required for the 80 km/h speed limit to be in accordance with TII requirements, as shown in Plates 1 and 2. There is potential to improve visibility to the south by removing an existing grass mound adjacent to the junction as shown in Plate 1. Visibility to the north is particularly constrained, as shown in Plate 2. The approach on the R328 to the junction from this direction is downhill and traffic speeds were observed to be relatively fast. It is noted that remedial measures would be required to accommodate an intensification of traffic movements through this exiting junction.

Between the R328 junction and the proposed site access, over the approximately 4.0km route to the site, the L2232 narrows to a width of 3.0m at locations, but is generally between 4.0, to 5.0m wide. At locations where the carriageway is narrowest, it was noted that there were passing opportunities close by and in general, it was observed that clear forward visibility for driver was available for vehicles approaching in opposite directions to accessing passing opportunities without the need for a vehicle to reverse (See Plate 3).

It was noted that there is one location located 350 metres north of the proposed guarry access junction where a narrow stretch of road is on an incline where the lack of forward visibility could

result in 2 vehicles meeting with one requiring to reverse. This location is discussed further in Section 5.

Following the preliminary review a subsequent site visit was held with an Engineer from Galway County Councils Road Section. The following points were discussed in principal;

- There was a general agreement that remedial works would be required at R328 / L-2232
   junctions. It was stated that these would not form part of the current planning application.
- It was agreed that a detailed assessment of the section of the L-2232 between the R328 and the proposed site should be undertaken based on a topographical survey base and autotrack. This assessment was subsequently undertaken and is discussed in Section 5.

#### Route B

From the proposed quarry access travelling south on the L-2232 the carriageway varies in width with ample opportunities for vehicles to pass, and with good forward visibility (See Plate 7) all the way to the junction with the L-2232 approximately 1.5kms to the south.

The L-2232 the joins the L-2223 at a simple priority junction which has adequate geometry and good visibility (See Plates 4 to 5).

From this junction the route travels east for approximately 3kms on the L-2223 to the Mahanagh Bridge. On this section the carriageway width also varies between 4.0 to 5.0m, with in general good forward visibility for opposing traffic and many opportunities for vehicles to pass. (See Plates 6 and 7). Travelling east on the L-2223 there is one pinch point on this route, which is the location of Mahanagh Bridge, as indicated on Figure 1. It is noted on site, however, that there is good forward visibility at this location for drivers to observe opposing vehicles, providing adequate opportunity for drivers to stop at a location wide enough for 2 vehicles to pass. This location is discussed further in Section 5.

From the Mahanagh Bridge the route heads east for a further 2 kms. Driving east from the bridge there is a series of bends in the L-2223 although this section is wide enough for vehicles to pass. From this point eastwards to the junction with the R328, the L2223 is a minimum of 5.0 metres wide and is able to accommodate 2 way traffic flow.

The junction between the L-2223 and the R328 has adequate geometry with 160m visibility splays provided in both directions for traffic accessing the regional road, as shown in Plates 8 to 10. It is noted that forward visibility on the R328 is constrained due to the bend, but visibility to observe oncoming traffic is relatively clear.

A detailed autotrack assessment of Route B is also discussed in Section 5.



#### Figure 1 – Site location and potential access routes

#### 2.2 Existing and future flows

#### **Observed 2023 flows**

All traffic flows and junction turning movements referred to in this report are set out in Figures A1 to A18, which are included as Appendix A.

Classified traffic counts were undertaken at the R328 / L-2232 junction at Gorteen Cross, and at the R328 / L-2223 junction, with the locations shown in Figure 1, in order to provide base year 2023 traffic data for the assessment. The traffic counts were undertaken over a 12 hour period between the hours of 07:00 to 19:00 by Traffinomics Ltd on Tuesday, 3<sup>rd</sup> of October 2023.

The turning counts observed in 2023 are shown for the AM, PM and 12 hour periods for each vehicle category in Figure A1 (cars /lgvs), Figure A2 (hgvs), and Figure A3 (pcus). The 2-way link flows are summarised in Table 1, with the main points to note as follows;

- The AM peak hour was observed to be between the hours 08:00 and 09:00, with the PM peak hour determined to be 17:00 to 18:00,
- In terms of pcus (passenger car equivalent units) where HGVs are given a weighting of 2.4 in accordance with TII guidelines, in the survey month of October 2023, a maximum hourly flow of 47 pcus was observed on Route A on the L-2232 between Gorteen Cross and the proposed quarry site (observed during the PM peak hour comprising of 35 cars /lgvs and 5 hgvs). A 12-hour flow of 307 pcus, comprising of 230 cars/lgvs and 32 hgvs, was observed at the same location.
- For Route B on the L-2223 just to the west of the R328, a maximum hourly flow of 16 pcus was observed (observed during the AM peak hour comprising of 11 cars /lgvs and 2 hgvs). A 12-hour flow of 148 pcus, comprising of 117 cars/lgvs and 13 hgvs, was observed at the same location.
- A maximum hourly traffic volume of 115 pcus was observed on the R328 at Gorteen Cross with a 12 hour flow of 988 pcus observed at the same location
- For the R328 adjacent to the L-2223 a maximum hourly traffic volume of 105 pcus was observed with a corresponding 2 hour flow of 1,107 pcus.

Data from a continuous traffic counter maintained by TII on the N83 between Tuam and Dunmore in County Galway, which is the closest source of continuous traffic data to the site, was used to determine the seasonal variation in traffic volumes in the proximity of the proposed quarry delivery routes. Traffic count data for this site from the year 2022 reveals that the survey month of October was observed to have the second highest average traffic flows, with the month of September having the highest. Based on the survey date of 3<sup>rd</sup> of October it was considered that no seasonal adjustment was required to be applied to the observed 2023 traffic counts.

Again, using data from the count site maintained by TII on the N83 it may be determined that the 24 hour count at that site was a factor of 1.22 times the 12 hour count observed between the hours of 07:00 to 19:00. If this is applied to the maximum 12 hour flows observed on the links in the study network the following maximum all-day flows are as follows;

•	L-2232	- 12 hr = 307 pcus,	- 24 hr = 371 pcus
•	L-2223	- 12 hr = 148 pcus,	- 24 hr = 179 pcus
•	R328 at Gorteens Cross	- 12 hr = 988 pcus,	- 24 hr = 1,195 pcus
•	R328 at Gorteens Cross	- 12 hr = 1,107 pcus,	- 24 hr = 1,339 pcus

While there are no link capacities set out for local roads in the TII publication Rural Road link Design DN-GEO-03031, the R328 approaches the standard of a Type 3 Single Carriageway, which has an all-day link capacity of 5,000 pcus. Based on this, and the maximum 24 hours flow of 1,339 pcus and 371 pcus on the regional and local roads respectively, it is considered that existing traffic volumes on the study network are low.

A full listing of the traffic count data collected by Traffinomics Ltd, together with the data from the TII automatic count site on the N83, is included as Appendix B.

Table 1 Observ 2023	ved 2-way traffic flows	by time period, jun	ction ar	nd vehi	cle typ	e, year
Time period	Junction	Link		Veh	icle type	-
			cars	hgvs	pcus	all vehs
AM peak hour	Quarry access junction	1 - L2232 (north)	21	3	28	24
(08:00 to 09:00)	on L2232	2 - Quarry access	0	0	0	0
		3 - L2232 (south)	21	3	28	24
	Gorteen Cross	4 - R328 (west)	83	4	93	87
		5 - L2232	21	3	28	24
		6 - R328 (east)	63	5	75	68
	R328 / L2232	7 - R328 (north)	76	6	90	82
	junction	8 - L2223	11	2	16	13
		7 - R328 (south)	81	6	95	87
M peak hour	Quarry access junction	1 - L2232 (north)	35	5	47	40
7:00 to 18:00)	on L2232	2 - Quarry access	0	0	0	0
		3 - L2232 (south)	35	5	47	40
	Gorteen Cross	4 - R328 (west)	96	8	115	104
		5 - L2232	35	5	47	40
		6 - R328 (east)	81	6	95	87
	R328 / L2232	7 - R328 (north)	96	3	103	99
	junction	8 - L2223	6	0	6	6
		7 - R328 (south)	98	3	105	101
hour	Quarry access junction	1 - L2232 (north)	230	32	307	262
7:00 to 19:00)	on L2232	2 - Quarry access	0	0	0	0
		3 - L2232 (south)	230	32	307	262
	Gorteen Cross	4 - R328 (west)	830	66	988	896
		5 - L2232	230	32	307	262
		6 - R328 (east)	669	73	844	742
	R328 / L2232	7 - R328 (north)	867	75	1,047	942
	junction	8 - L2223	117	13	148	130
		7 - R328 (south)	910	82	1,107	992

#### Opening year 2024 and future year 2034 traffic forecasts

For the purpose of the traffic assessment, it is assumed that the proposed quarry will commence operation in the year 2024. In addition to the opening year, in accordance with TII guidelines, the capacity assessment was also based on traffic conditions forecast for a future year, which in this instance will be for a 10 period of operation, with a future year of 2034.

Commencement year 2024 and future year 2034 traffic volumes on the study area network were derived by applying a growth factor to the counts observed in 2023. Annual growth indices were updated in 2021 by TII as presented in the publication Travel Demand Projections, PE-PAG-02017. October 2021, with annual indices and cumulative growth forecasts for County Galway shown for cars and Igvs in Table 2, and for HGVs in Table 2. The derived growth factors applied to 2023 flows to determine background traffic flows for the study years are shown in Table 3. Based on TII growth factors for cars and light vehicles for the medium growth scenario, traffic is forecast to grow by 2.6% between the years 2023 and 2024, and by 24.9% between 2023 and 2034. In terms of HGVs, background volumes are forecast to grow by 4.5% between the years 2023 and 2024, and by 46.8% between 2023 and 2034.

These growth estimates were adopted for the purpose of this assessment. Background traffic forecasts are shown for the commencement year of 2024 in Figure A4 (cars /lgvs), Figure A5 (hgvs), and Figure A6, and for the future year 2034 in Figure A7 (cars /lgvs), Figure A8 (hgvs), and Figure A9.

#### 2.3 Future environment

At the time of compiling this report there are no significant schemes being considered by Galway County Council that will impact on traffic volumes on the study road network.

Table 2	TII Traffic g	rowth rates, ca	rs and Igvs (	County Gal	lway)	
Year	Cars	and Igvs - Annual I	actor	Cars ar	nd Igvs - Cumulati	ve index
	low	Medium	High	low	Medium	High
2023	1.0243	1.0259	1.0294	1.000	1.000	1.000
2024	1.0243	1.0259	1.0294	1.024	1.026	1.029
2025	1.0243	1.0259	1.0294	1.049	1.052	1.060
2026	1.0243	1.0259	1.0294	1.075	1.080	1.091
2027	1.0243	1.0259	1.0294	1.101	1.108	1.123
2028	1.0243	1.0259	1.0294	1.128	1.136	1.156
2029	1.0243	1.0259	1.0294	1.155	1.166	1.190
2030	1.0243	1.0259	1.0294	1.183	1.196	1.225
2031	1.0087	1.0109	1.0148	1.193	1.209	1.243
2032	1.0087	1.0109	1.0148	1.204	1.222	1.261
2033	1.0087	1.0109	1.0148	1.214	1.236	1.280
2034	1.0087	1.0109	1.0148	1.225	1.249	1.299
2035	1.0087	1.0109	1.0148	1.235	1.263	1.318
2036	1.0087	1.0109	1.0148	1.246	1.276	1.338
2037	1.0087	1.0109	1.0148	1.257	1.290	1.358
2038	1.0087	1.0109	1.0148	1.268	1.304	1.378
2039	1.0087	1.0109	1.0148	1.279	1.319	1.398
2040	1.0087	1.0109	1.0148	1.290	1.333	1.419

Table 2 TII Traffic growth rates, cars and Igvs (County Galway)

Source: TII Project Appraisal Guidelines - Unit 5.3, October 2021

Table 3	TII Traffic	growth rates, h	avs (County	Galwav)		
Year		ngvs - Annual facto	or	h	gvs - Cumulative	index
	low	Medium	High	low	Medium	High
2023	1.043	1.0446	1.048	1.000	1.000	1.000
2024	1.043	1.0446	1.048	1.043	1.045	1.048
2025	1.043	1.0446	1.048	1.088	1.091	1.098
2026	1.043	1.0446	1.048	1.135	1.140	1.151
2027	1.043	1.0446	1.048	1.183	1.191	1.206
2028	1.043	1.0446	1.048	1.234	1.244	1.264
2029	1.043	1.0446	1.048	1.287	1.299	1.325
2030	1.043	1.0446	1.048	1.343	1.357	1.388
2031	1.0177	1.0198	1.0236	1.367	1.384	1.421
2032	1.0177	1.0198	1.0236	1.391	1.411	1.455
2033	1.0177	1.0198	1.0236	1.415	1.439	1.489
2034	1.0177	1.0198	1.0236	1.440	1.468	1.524
2035	1.0177	1.0198	1.0236	1.466	1.497	1.560
2036	1.0177	1.0198	1.0236	1.492	1.527	1.597
2037	1.0177	1.0198	1.0236	1.518	1.557	1.635
2038	1.0177	1.0198	1.0236	1.545	1.588	1.673
2039	1.0177	1.0198	1.0236	1.572	1.619	1.713
2040	1.0177	1.0198	1.0236	1.600	1.651	1.753

Table 3 TII Traffic growth rates, hgvs (County Galway)

Source: TII Project Appraisal Guidelines - Unit 5.3, October 2021

Table 4 TII derived growth rates by vehicle type

Vehicle type	Period	Factor				
		low	Medium	High		
Cars / Igvs	2023 - 2024	1.024	1.026	1.029		
	2023 - 2034	1.225	1.249	1.299		
hgvs	2023 - 2024	1.043	1.045	1.048		
	2023 - 2034	1.440	1.468	1.524		

#### 3 PROPOSED DEVELOPMENT

#### 3.1 Proposed development content and trip generation

KILED. 09/07/2C Details of the Proposed Quarry are provided in Chapter 3 of this EIAR, including the volumes of materials that will be excavated and delivered to the site during the construction and operation of the Proposed Quarry.

In terms of traffic movements, the following trips will be generated during the construction, operation and decommissioning phases;

#### Construction (5.5 days)

It is estimated that 15 HGV movements will travel to and from the site per day for 5.5 days (total of 83 loads), with an additional 4 car trips to and from the site per day for construction staff.

#### Operation (10 years)

As for the construction stage, a total of 15 HGV trips will travel to and from the site per day. This will result in an average of 1.5 HGV movements travelling to and from the Proposed Quarry per hour between the hours of 08:00 to 18:00, with 2 HGVs movements assumed to travel to and from the site during the AM and PM peak hours.

It is also estimated that a maximum of 4 staff members will be employed on the site, with 4 car trips travelling to the site during the AM peak hour and 4 leaving the site during the PM peak hour.

#### Decommissioning (5.5 days)

This will be as for the construction stage as above.

The additional traffic movements that will be generated by the Proposed Quarry are shown for the AM, PM and 12 hour periods for each vehicle category in Figure A10 (cars /lgvs), Figure A11 (hgvs), and Figure A12 (pcus) and are summarised for the study network in Table 5.

The "with development" flows required for the junction capacity assessments discussed in Section 4.2 are shown for the commencement year 2024 in Figure A13 (cars /lgvs), Figure A14 (hgvs), and Figure A15 (pcus) and for the future year 2034 in Figure A16 (cars /lgvs), Figure A17 (hgvs), and Figure A18 (pcus).

Table 5 Develo	opment generated 2-wa	ay traffic flow by tim	e period,	junctior	and ve	ehicle
.)   0						
Time period	Junction	Link	Develo	pment gen	erated tra	iffic flows
			cars	hgvs	pcus	all vehs
M peak hour	Quarry access junction	1 - L2232 (north)	2	2	7	4
8:00 to 09:00)	on L2232	2 - Quarry access	4	4	14	8
		3 - L2232 (south)	2	2	7	4
	Gorteen Cross	4 - R328 (west)	1	2	6	3
		5 - L2232	2	2	7	4
		6 - R328 (east)	1	0	1	1
	R328 / L2232	7 - R328 (north)	1	0	1	1
	junction	8 - L2223	2	2	7	4
		7 - R328 (south)	1	2	6	3
peak hour	Quarry access junction	1 - L2232 (north)	2	2	7	4
00 to 18:00)	on L2232	2 - Quarry access	4	4	14	8
		3 - L2232 (south)	2	2	7	4
	Gorteen Cross	4 - R328 (west)	1	2	6	3
		5 - L2232	2	2	7	4
		6 - R328 (east)	1	0	1	1
	R328 / L2232	7 - R328 (north)	1	0	1	1
	junction	8 - L2223	2	2	7	4
		7 - R328 (south)	1	2	6	3
our	Quarry access junction	1 - L2232 (north)	4	16	42	20
00 to 19:00)	on L2232	2 - Quarry access	8	30	80	38
		3 - L2232 (south)	4	14	38	18
	Gorteen Cross	4 - R328 (west)	2	16	40	18
		5 - L2232	4	16	42	20
		6 - R328 (east)	2	0	2	2
	R328 / L2232	7 - R328 (north)	1	0	1	1
	junction	8 - L2223	2	14	36	16
		7 - R328 (south)	1	14	35	15

#### 3.2 Development access

The proposed quarry access is located on the west side of the L-2232 and is shown in plan in Figure 2.

The proposed junction designed is in accordance with TII DN-GEO-03060 guidelines for access junctions providing for HGV movements, with junction radii of 13m and 1:10 tapers provided over a distance of 25m. STOP road markings and signs are proposed in accordance with Figure 7.35 of the Traffic Signs Manual.

An autotrack of a large tipper truck (10.2m long by 2.5m wide) turning into and out of the access is shown in Figure 3. The figure shows that the proposed junction will accommodate the vehicle types that will be generated by the proposed quarry.

Visibility requirements for junctions are set out the Galway County Council Development Plan 2023 – 2028, Chapter 15 Development Management Standards Table 3. The default speed limit on the L-2232 is 80 km/h with a Y distance visibility requirement of 160m. For local roads with conditions similar to the L-2232 the Development Management Standards state that;

"On narrow local roads with poor horizontal and vertical alignment and where the 80 km/h speed limit applies, the design speed applied for access visibility requirements should be the speed (km/h) that one can drive the road in a safe manner. This can be assessed as the 85th percentile speed drivers travel on the road. The visibility will then be assessed on the 85th percentile speed for that road".

When driving the L-2232 in the proximity of the proposed access junction it is clear that the safe speed to drive taking account of local conditions is significantly lower than 80 km/h and that based on a number of trips 50 km/h was considered to be a reasonable safe speed. Based on an assumed operational speed of 60 km/h a visibility splay of 2.4m x 90m is proposed, as shown in Figure 4.

A vertical section of the L-2232 in the proximity of the proposed access junction is shown in Figure 5 and Plate 11. The points to note are as follows;

- The location of the proposed access junction is on a local crest on the L-2232. Visibility splays of 90m taken from a 1.05m driver height to an on object height of the same are therefore available in both directions, as shown in Figure 5.
- With respect to forward visibility for general traffic on the L-2232, the 90m forward visibility taken from a driver height of 1.05m above ground level to an object height of the same, is shown through the crest at the location of the L-2232 in Figure 6. The figure shows that in

order to provide forward visibility of 90m for traffic generated by the proposed quarry, and for existing traffic on the L-2232 the existing crest will require to be reduced by 0.6m.

Based on the above it is proposed that as part of the works that will be undertaken to provide the access junction to the proposed quarry, the L-2232 will be re-aligned vertically over a short section in order to provide adequate forward visibility on the L-2232. It is considered that the improvement to the vertical alignment at this location will improve traffic safety for all vehicles travelling on this section of the L-2232.

#### 4 IMPACT OF THE PROPOSED QUARRY ON THE STUDY NETWORK

#### 4.1 Impact on link flows

09/07/27 The impact that the proposed guarry is forecast to have on link flows on the surrounding road network during the AM peak hour. PM peak hour and during the 12 hour period between the hours of 07:00 to 19:00 are shown in terms of pcus for year 2024 and 2034 in Tables 6 and 7, with the percentage increase forecast by vehicle type set out for years 2024 and 2034 in Tables 8 and 9 respectively. The main points to note are as follows;

- On the R328, in the opening year of 2024 the proposed quarry is forecast to have a maximum percentage increase on the study area links of;
  - AM peak hour = + 6%, PM peak hour = +5%, 12 hr = +4%,
- On the L-2232 adjacent to the proposed access junction, in the opening year of 2024 the ٠ proposed guarry is forecast to have a maximum percentage increase on the study area links of:
  - AM peak hour = + 23%, PM peak hour = +14%, 12 hr = +13%,
- On the L-2223 just west of the R328, in the opening year of 2024 the proposed quarry is forecast to have a maximum percentage increase on the study area links of;
  - AM peak hour = + 42%, PM peak hour = +110%, 12 hr = +23%. •

Similar, but slightly lower percentage increases, are forecast for the future year 2034.

It is noted that the relatively high percentage increases in traffic forecast to result from the proposed quarry are due to the very low volumes of background traffic.

TII guidelines suggest that a detailed capacity assessment should be undertaken at junctions where the proposed development is forecast to result in an increase in traffic volumes of +10%, or +5% at locations where conditions are already congested. Based on this, the capacity of the R328 / L-2232 junction and the R328 / L-2223 junction are included in the junction capacity assessment presented in section 4.2 of this report. It is clear that the small number of trips that will be generated at the development access junction will be accommodated at the proposed access junctions without the need to include in the detailed junction capacity assessment.

# Table 6 Background, quarry generated and with quarry traffic 2-way traffic flows, by time period and junction, commencement year 2024, pcus

Time period	Junction	Link		Year 20	24	The second secon	
			Background	Development traffic	With dev traffic	% difference	
AM peak hour	Quarry access junction	1 - L2232 (north)	29	7	36	23%	(၁,
(08:00 to 09:00)	on L2232	2 - Quarry access	0	14	14	NA	$\sim$
,		3 - L2232 (south)	29	7	36	23%	
	Gorteen Cross	4 - R328 (west)	95	6	101	6%	
		5 - L2232	29	7	36	23%	
		6 - R328 (east)	77	1	78	1%	
	R328 / L2232	7 - R328 (north)	93	1	94	1%	
	junction	8 - L2223	16	7	23	42%	
		7 - R328 (south)	98	6	104	6%	
PM peak hour	Quarry access junction	1 - L2232 (north)	48	7	55	14%	
(17:00 to 18:00)	on L2232	2 - Quarry access	0	14	14	NA	
,		3 - L2232 (south)	48	7	55	14%	
	Gorteen Cross	4 - R328 (west)	119	6	124	5%	
		5 - L2232	48	7	55	14%	
		6 - R328 (east)	98	1	99	1%	
	R328 / L2232	7 - R328 (north)	106	1	107	1%	
	junction	8 - L2223	6	7	13	110%	
		7 - R328 (south)	108	6	114	5%	
12 hour	Quarry access junction	1 - L2232 (north)	316	42	359	13%	
(07:00 to 19:00)	on L2232	2 - Quarry access	0	80	80	NA	
ŗ		3 - L2232 (south)	316	38	354	12%	
	Gorteen Cross	4 - R328 (west)	1,017	40	1,058	4%	
		5 - L2232	316	42	359	13%	
		6 - R328 (east)	869	2	871	0%	
	R328 / L2232	7 - R328 (north)	1,078	1	1,079	0%	
	junction	8 - L2223	153	36	188	23%	
		7 - R328 (south)	1,139	35	1,174	3%	

Time period	Junction	Link		Year 20	134	The second
			Background	Development traffic	With dev traffic	difference
AM peak hour	Quarry access junction	1 - L2232 (north)	37	7	44	18%
(08:00 to 09:00)	on L2232	2 - Quarry access	0	14	14	NA
		3 - L2232 (south)	37	7	44	18%
	Gorteen Cross	4 - R328 (west)	118	6	124	5%
		5 - L2232	37	7	44	18%
		6 - R328 (east)	96	1	97	1%
	R328 / L2232	7 - R328 (north)	116	1	117	1%
	junction	8 - L2223	21	7	28	33%
		7 - R328 (south)	122	6	128	5%
PM peak hour	Quarry access junction	1 - L2232 (north)	61	7	68	11%
(17:00 to 18:00)	on L2232	2 - Quarry access	0	14	14	NA
		3 - L2232 (south)	61	7	68	11%
	Gorteen Cross	4 - R328 (west)	148	6	154	4%
		5 - L2232	61	7	68	11%
		6 - R328 (east)	122	1	123	1%
	R328 / L2232	7 - R328 (north)	130	1	131	1%
	junction	8 - L2223	7	7	14	91%
		7 - R328 (south)	133	6	139	4%
12 hour	Quarry access junction	1 - L2232 (north)	400	42	442	11%
(07:00 to 19:00)	on L2232	2 - Quarry access	0	80	80	NA
		3 - L2232 (south)	400	38	438	9%
	Gorteen Cross	4 - R328 (west)	1,269	40	1,310	3%
		5 - L2232	400	42	442	11%
		6 - R328 (east)	1,093	2	1,095	0%
	R328 / L2232	7 - R328 (north)	1,347	1	1,348	0%
	junction	8 - L2223	192	36	228	19%
		7 - R328 (south)	1,425	35	1,460	2%

Table 7 Background, quarry generated and with quarry traffic 2-way traffic flows, by time period and junction, future year 2034, pcus

Table 8 Perce	ntage increase due to commencement year	o proposed quarry, b 2024	by time per	iod, june	ction an	id A
volliolo (Jpo, o	enneneenen yeur					°C,
Time period	Junction	Link	% incr	ease due	to propose	ed quarry
			cars	hgvs	pcus	all vehs
AM peak hour	Quarry access junction	1 - L2232 (north)	9%	64%	23%	16%
(08:00 to 09:00)	on L2232	2 - Quarry access	NA	NA	NA	NA
		3 - L2232 (south)	9%	64%	23%	16%
	Gorteen Cross	4 - R328 (west)	1%	48%	6%	3%
		5 - L2232	9%	64%	23%	16%
		6 - R328 (east)	2%	0%	1%	1%
	R328 / L2232	7 - R328 (north)	1%	0%	1%	1%
	junction	8 - L2223	18%	96%	42%	30%
		7 - R328 (south)	1%	32%	6%	3%
M peak hour	Quarry access junction	1 - L2232 (north)	6%	38%	14%	10%
7:00 to 18:00)	on L2232	2 - Quarry access	NA	NA	NA	NA
		3 - L2232 (south)	6%	38%	14%	10%
	Gorteen Cross	4 - R328 (west)	1%	24%	5%	3%
		5 - L2232	6%	38%	14%	10%
		6 - R328 (east)	1%	0%	1%	1%
	R328 / L2232	7 - R328 (north)	1%	0%	1%	1%
	junction	8 - L2223	32%	NA	110%	65%
		7 - R328 (south)	1%	64%	5%	3%
2 hour	Quarry access junction	1 - L2232 (north)	2%	48%	13%	7%
07:00 to 19:00)	on L2232	2 - Quarry access	NA	NA	NA	NA
		3 - L2232 (south)	2%	42%	12%	7%
	Gorteen Cross	4 - R328 (west)	0%	23%	4%	2%
		5 - L2232	2%	48%	13%	7%
		6 - R328 (east)	0%	0%	0%	0%
	R328 / L2232	7 - R328 (north)	0%	0%	0%	0%
	junction	8 - L2223	2%	103%	23%	12%
		7 - R328 (south)	0%	16%	3%	1%

#### Table 9 Percentage increase due to proposed quarry, by time period, junction and vehicle type, commencement year 2034

Table 9 Percer vehicle type, co	ntage increase due to ommencement year 2	proposed quarry, b 2034	y time peri	iod, june	ction an	d Rec
Time period	Junction	Link	% inc	rease due	to propose	ed quarry
			cars	hgvs	pcus	all vehs
AM peak hour	Quarry access junction	1 - L2232 (north)	8%	45%	18%	13%
(08:00 to 09:00)	on L2232	2 - Quarry access	NA	NA	NA	NA
		3 - L2232 (south)	8%	45%	18%	13%
	Gorteen Cross	4 - R328 (west)	1%	34%	5%	3%
		5 - L2232	8%	45%	18%	13%
		6 - R328 (east)	1%	0%	1%	1%
	R328 / L2232	7 - R328 (north)	1%	0%	1%	1%
	junction	8 - L2223	15%	68%	33%	24%
		7 - R328 (south)	1%	23%	5%	3%
PM peak hour	Quarry access junction	1 - L2232 (north)	5%	27%	11%	8%
(17:00 to 18:00)	on L2232	2 - Quarry access	NA	NA	NA	NA
		3 - L2232 (south)	5%	27%	11%	8%
	Gorteen Cross	4 - R328 (west)	1%	17%	4%	2%
		5 - L2232	5%	27%	11%	8%
		6 - R328 (east)	1%	0%	1%	1%
	R328 / L2232	7 - R328 (north)	1%	0%	1%	1%
	junction	8 - L2223	27%	NA	91%	53%
		7 - R328 (south)	1%	45%	4%	2%
12 hour	Quarry access junction	1 - L2232 (north)	1%	34%	11%	6%
(07:00 to 19:00)	on L2232	2 - Quarry access	NA	NA	NA	NA
		3 - L2232 (south)	1%	30%	9%	5%
	Gorteen Cross	4 - R328 (west)	0%	17%	3%	2%
		5 - L2232	1%	34%	11%	6%
		6 - R328 (east)	0%	0%	0%	0%
	R328 / L2232	7 - R328 (north)	0%	0%	0%	0%
	junction	8 - L2223	1%	73%	19%	10%
		7 - R328 (south)	0%	12%	2%	1%

#### 4.2 Junction capacity assessment method

The traffic impact of the proposed development was assessed at the R328 / L-2232 junction and the R328 / L2223 junction using the industry recognised junction analysis programme PICADY5. The programme allows the capacity of junctions to be assessed with respect to existing or forecasts traffic movements and volumes for a given time period. The capacity for each movement possible at the junction being assessed is determined from geometric data with the output used in the assessment as follows:

- Queue This is the average queue forecast for each movement and is useful to ensure that queues will not interfere with adjacent junctions.
- Ratio of flow to capacity (RFC) As suggested, this offers a measure of the amount of available capacity being utilised for each movement. Ideally each movement should operate at a level of no greater than 0.85, or at 85% of capacity.
- Delay Output in minutes, this gives an indication of the forecast average delay during the time period modelled for each movement.

#### 4.3 Scenarios modelled

Tests were undertaken at both junctions for AM and PM peak hours for the following scenarios;

- Proposed opening year 2024, without and with the proposed quarry,
- Proposed opening year 2034, without and with the proposed quarry.

#### 4.4 Capacity assessment test results

#### R328 / L-2232 / Gorteen Road junction

The results of the capacity tests for the R328 / L-2232 / Gorteen Road junction is shown in Tables 10 and 11 for the AM and PM peak hours, with the main points to note set out below;

- It is forecast that the maximum ratio of flow to capacity (RFC) for the no development scenario will be 4.4%, which will apply to the left turn from the L-2232 onto the R328 during the PM peak hour in the year 2034. With the additional traffic generated by the proposed quarry it is forecast that this will increase to 4.9%.
- Delays and queues are forecast to be minimal (a maximum of 0.15 mins, or 9 second, and 0.06 pcus respectively by the year 2034).

It is noted that the junction is forecast to operate well within capacity (and significantly below TII the accepted level of 85%) for all scenarios up to and beyond the future year 2034.

#### R328 / L-2223 junction

The results of the capacity tests for the R328 / L-2223 junction is shown in Tables 12 and 13 for the AM and PM peak hours, for this junctions with the salient points are;

- It is forecast that the maximum RFC for the no quarry scenario will be 2.1%, which will apply to the right turn from the L-2223 onto the R328 during the AM peak hour in the year 2034. With the traffic generated by the proposed quarry it is forecast that this will increase to 2.6%.
- Delays and queues are forecast to be minimal (a maximum of 0.14 mins, or 9 second, and 0.03 pcus respectively by the year 2034).

This junction is therefore also forecast to operate well within capacity (and significantly below TII the accepted level of 85%) for all scenarios up to and beyond the future year 2034.

#### Summary of junction capacity tests

The low levels of capacity forecast for both the R328 / L-2232 junction and the R328 / L-2223 junction reflect the very low volumes of traffic that are forecast for the background traffic scenarios, and with the proposed quarry in place.

Year	Arm	N	o developi	ment	Wit	With development			
		RFC	Q	Delay	RFC	Q	Delay		
2024	From Gorteen Road	2.1	0.02	0.13	2.1	0.02	0.13		
	Left turn from L-2232	1.8	0.02	0.10	2.5	0.03	0.11		
	Right turn from L-2232	2.1	0.02	0.14	2.2	0.02	0.15		
	Right turn from R328 to Gorteen Road	0.0	0.00	0.00	0.0	0.00	0.00		
	Right turn from R328 to L-2232	1.7	0.02	0.11	2.3	0.03	0.11		
2034	From Gorteen Road	2.3	0.02	0.13	2.3	0.02	0.13		
	Left turn from L-2232	2.2	0.02	0.10	2.7	0.03	0.10		
	Right turn from L-2232	2.8	0.03	0.14	2.9	0.03	0.15		
	Right turn from R328 to Gorteen Road	0.0	0.00	0.00	0.0	0.00	0.00		
	Right turn from R328 to L-2232	2.1	0.03	0.11	2.7	0.03	0.11		

# Table 10Junction capacity test results – Route A - Gorteen Cross, R328 / L-2232 junction,AM peak hour, years 2024 and 2034

Year	Arm	No development			With development			
		RFC	Q	Delay	RFC	Q	Delay	0.9
2024	From Gorteen Road	0.4	0.00	0.12	0.4	0.00	0.12	7,5
	Left turn from L-2232	3.4	0.03	0.11	4.0	0.04	0.11	102
	Right turn from L-2232	1.7	0.02	0.14	2.0	0.02	0.15	
	Right turn from R328 to Gorteen Road	0.8	0.01	0.11	0.9	0.01	0.11	
	Right turn from R328 to L-2232	3.2	0.04	0.11	3.8	0.05	0.11	
2034	From Gorteen Road	0.4	0.00	0.12	0.4	0.00	0.12	
	Left turn from L-2232	4.4	0.05	0.11	4.9	0.05	0.11	
	Right turn from L-2232	2.1	0.02	0.15	2.4	0.02	0.15	
	Right turn from R328 to Gorteen Road	1.1	0.01	0.11	1.1	0.01	0.11	
	Right turn from R328 to L-2232	4.3	0.05	0.11	4.7	0.06	0.11	

# Table 11 Junction capacity test results – Route A - Gorteen Cross, R328 / L-2232 junction, PM peak hour, years 2024 and 2034

# Table 12Junction capacity test results – Route B - R328 / L-2223 junction, AM peak hour,years 2024 and 2034

Year	Arm	No development			With development			
		RFC	Q	Delay	RFC	Q	Delay	
2024	Right turn from L-2223	1.7	0.02	0.13	2.1	0.02	0.13	
	Left turn from L-2223	0.9	0.01	0.10	1.0	0.01	0.11	
	Right turn from R328 to L-2223	0.2	0.00	0.10	0.4	0.00	0.10	
2034	Right turn from L-2223	2.1	0.02	0.13	2.6	0.03	0.13	
	Left turn from L-2223	1.1	0.01	0.10	1.2	0.01	0.11	
	Right turn from R328 to L-2223	0.2	0.00	0.10	0.4	0.00	0.10	

# Table 13Junction capacity test results – Route B - R328 / L-2223 junction, PM peak hour,years 2024 and 2034

Year	Arm	No development			With development			
		RFC	Q	Delay	RFC	Q	Delay	
2024	Right turn from L-2223	0.2	0.00	0.13	1.0	0.01	0.13	
	Left turn from L-2223	0.4	0.00	0.10	0.5	0.01	0.10	
	Right turn from R328 to L-2223	0.0	0.00	0.00	0.0	0.00	0.00	
2034	Right turn from L-2223	0.2	0.00	0.14	1.2	0.01	0.14	
	Left turn from L-2223	0.4	0.00	0.10	0.6	0.01	0.11	
	Right turn from R328 to L-2223	0.0	0.00	0.00	0.0	0.00	0.00	



09/07/202×

## 5 GEOMETRIC ASSESSMENT OF ACCESS ROUTES A AND B

#### 5.1 Method

During a site visit undertaken with a representative of Galway County Councils Roads Section, it was agreed that the preliminary assessment of the routes A and B presented above should be supplemented with a detailed autotrack assessment. The purpose of the assessment would be to identify the extent of the local road network accessing the proposed quarry site that may accommodate 2-way traffic flow. For this purposed the following as undertaken;

- A drone survey was undertaken by MKO covering routes A and B (a total of 10.5km of local road network) and a survey base of Routes A and B was produced.
- An autotrack assessment for a large tipper truck (10.2m long by 2.5m wide) was run for the full length of routes A and B between the proposed quarry site access site and the R328.
- An autotrack assessment was then run for an estate car (4.7m by 1.8m) in the opposite direction at the locations it may be demonstrated that both vehicles may pass.

#### 5.2 Results of route assessment

The autotrack assessment described above is included for information in Figure 6 while the locations where it was established that both vehicles may pass on the local road are highlighted in Figure 7.

In summary, the autotrack assessment largely confirmed the findings of the preliminary on-site assessment discussed in Section 2.1, as follows:

- While there are many sections of Route A that currently only accommodate one-way traffic flow, there are many opportunities for a large tipper truck and car to pass.
- For the narrow sections of Route A, there is adequate forward visibility for drivers of oncoming vehicles to use available passing opportunities. The exception to this is the location identified in the preliminary site visits located 350m to the north of the proposed access. At this location it is proposed that a passing bay of 50m in length is provided at the southern corner of the straight section on the L-2232, as shown in Figure 8.

• For Route A, there is one additional location where it would be beneficial to introduce an additional passing opportunity, which is on the L-2232 just to the south of the junction with the R328. It is suggested that this would be introduced as part of the junction improvement works to be considered at this location.

For Route B on the L-2223, the assessment shows that most of the route will accommodate 2-way traffic movements. The one significant location where this is not possible is the Mahanagh Bridge. The autotrack assessment, together with on-site observations, however, indicate that there are passing opportunities either side of the bridge and adequate intervisibility for drivers of opposing vehicles to avoid meeting on the bridge. This location is highlighted in Figure 9 and Plates 6 and 7.





## 7 SUMMARY AND CONCLUSIONS

#### 7.1 Summary

A Traffic and Transport Assessment was undertaken to address the traffic related issues with respect to a proposed quarry for the purpose of sand extraction, on a 6.2ha site, located at Lomaunaghbaun, Tuam, County Galway.

It is noted that the local network providing access to the site has geometric constraint in terms of road width from the regional R328 to the proposed site access.

A detailed swept path assessment was therefore undertaken for 2 potential routes to the site in order to determine the potential for each to accommodate the additional traffic that will be generated by the quarry, as follows.

**Route A** is the direct route via the L-2232 and is 4km between the R328 and the proposed site access. There are geometric constraints at the existing R328 / L-2232 which will require to be addressed by Galway County Council. Ther are also sections of the route where the carriageway narrows to one lane. At the narrow sections of Route A, however, it was established there is generally adequate forward visibility for drivers of on-coming vehicles to use available passing opportunities. The exception to this is a section located 350m to the north of the proposed access where it is proposed that a passing bay of 50m in length is provided.

For **Route B** on the L-2223 and L2232, Route B is less direct, and is 6.5kms between the R328 and the site access. The assessment shows that most of the route will accommodate 2-way traffic movements. The one location where this is not possible is the Mahanagh Bridge. The autotrack assessment together with on-site observations, however, indicate that there are passing opportunities either side of the bridge and adequate intervisibility for drivers of opposing vehicles to avoid meeting on the bridge.

The assessment established by means of traffic count surveys undertaken in 2023 that the existing traffic volumes on the surrounding road network are very low. In addition, it is estimated that the additional traffic volumes that will be generated by the proposed Lomaunaghbaun Quarry will be low, equating to 15 HGV trips and 4 car/lgv trips to and from the quarry per day during the 10 year life of the proposed development commencing in 2024.

The assessment indicated that the local road network will operate well within capacity without and with the proposed Lomaunaghbaun Quarry in place, up to the year 2034.

The proposed quarry access junction is designed in accordance with guidelines. As part of the construction of the access junction it is proposed to reduce an existing crest on the L-2232 which currently impedes forward visibility. It is considered that the improvement to the vertical alignment at this location will improve traffic safety for all road uses.

#### 7.2 Conclusions

It is concluded from the above assessment that Route Option B will accommodate the additional traffic that will be generated by the Proposed Quarry. It is noted that Route Option A may be considered in the future with the implementation of improvements to the R348 / L-2232 junction and a passing bay identified on the L-2232.



## **FIGURES**





PROJECT:	PROJECT: Lomaunaghbaun Quarry							
CLIENT:	Newtown Farming L	_td		SCALE:	1:500			
PROJECT NO	: 10320	DATE:	01.11.23	DRAWN BY:	AL	INAFF		

# LIPSCOMBE **IC & TRANSPORT CONSULTANTS**


DATE: 01.11.23 DRAWN BY: AL PROJECT NO: 10320





	Figure 6 Autotrack assessment of Routes A and B - Large tipper truck (10.2m x 2.5m) and estate car (4.								
PLANNING DRAWING UNLY - NUT FOR CONSTRUCTION PURPOSES	PROJECT: CLIENT:	Lomaunaghbaun Q Newtown Farming L	uarry _td	y SCALE: N'			ALAN LIPSCOMBE TRAFFIC & TRANSPORT CONSULTANTS		
	PROJECT NO:	10320	DATE:	26.09.23	DRAWN BY:	AL	THAT TO & THANGT ON TOONSOLIANTS		



NOTES:	Figure 7 Locations where a large tipper truck and car can pass on Routes A and B									
PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES	PROJECT: CLIENT:	Lomaunaghbaun Q Newtown Farming I	uarry _td		ALAN LIPSCOMBE					
	PROJECT NO:	: 10320	DATE:	ATE: 26.09.23		AL	TRAFFIC & TRANSPURT CUNSULIANTS			

























Plate 10 R328 / L-2223 junction looking west along the R328 L-2223





## Appendix A Traffic flow diagrams

	~
	Rec.
	SIL EX
Appendix A	Traffic flow diagrams
Figure A1	Observed traffic flows, AM peak, PM peak & 12 hr, October 2023 – cars / lgvs
Figure A2	Observed traffic flows, AM peak, PM peak & 12 hr, October 2023 – hgvs
Figure A3	Observed traffic flows, AM peak, PM peak & 12 hr, October 2023 – pcus
Figure A4	Forecast traffic flows, AM peak, PM peak & 12 hr, year 2024 – cars / lgvs
Figure A5	Forecast traffic flows, AM peak, PM peak & 12 hr, year 2024 – hgvs
Figure A6	Forecast traffic flows, AM peak, PM peak & 12 hr, year 2024 – pcus
Figure A7	Forecast traffic flows, AM peak, PM peak & 12 hr, year 2034 – cars / lgvs
Figure A8	Forecast traffic flows, AM peak, PM peak & 12 hr, year 2034 – hgvs
Figure A9	Forecast traffic flows, AM peak, PM peak & 12 hr, year 2034 – pcus
Figure A10	Development generated traffic flows, AM peak, PM peak & 12 hr – cars / lgvs
Figure A11	Development generated traffic flows, AM peak, PM peak & 12 hr – hgvs
Figure A12	Development generated traffic flows, AM peak, PM peak & 12 hr – pcus
Figure A13	With development traffic flows, AM peak, PM peak & 12 hr, year 2024 – cars / lgvs
Figure A14	With development traffic flows, AM peak, PM peak & 12 hr, year 2024 – hgvs
Figure A15	With development traffic flows, AM peak, PM peak & 12 hr, year 2024 – pcus
Figure A16	With development traffic flows, AM peak, PM peak & 12 hr, year 2034 – cars / lgvs
Figure A17	With development traffic flows, AM peak, PM peak & 12 hr, year 2034 – hgvs
Figure A18	With development traffic flows, AM peak, PM peak & 12 hr, year 2034 – pcus





































## Appendix B Traffic count data

RECEIVED. 09/07/2028 R328 / L-2252 junction, 07:00 to 19:00, Tuesday 3<sup>rd</sup> October, year 2023 (Traffinomics Ltd)

R328 / L-2223 junction, 07:00 to 19:00, Tuesday 3<sup>rd</sup> October, year 2023 (Traffinomics Ltd)

TII Automatic Traffic Count Data N83 between Tuam and Dunmore, year 2022



#### **TRAFFINOMICS LIMITED**

### LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

01

		мс	VEMEN	NT 1					мс	OVEME	NT 2				MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	2	0	0	0	4	4
07:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	5	0	0	0	0	5	5	2	2	0	0	0	4	4
08:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	1	0	0	0	0	1	1	2	0	0	0	0	2	2	4	2	0	0	0	6	6
09:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	0	3	3
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
09:30	0	2	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	0	2	0	0	0	2	2	2	0	0	0	0	2	2	7	1	0	0	0	8	8
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	1	0	0	3	4
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	0	0	0	0	1	1
н/тот	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2	0	0	0	0	2	2

#### **TRAFFINOMICS LIMITED**

### LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Or Osrd October 2023

SITE:

LOCATION: R328/L2232

01

		мс	OVEMEN	NT 1					мс	OVEME	NT 2										
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	0	1	0	0	0	1	1	1	0	1	0	0	2	3	3	0	0	0	0	3	3
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	0	3	3
15:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	1	0	0	0	0	1	1	2	0	0	0	0	2	2	2	0	0	0	0	2	2
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	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	1	0	0	0	0	1	1	4	0	0	0	0	4	4
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	1	0	2	0	0	3	4	0	0	0	0	0	0	0	6	0	0	0	0	6	6
Р/ТОТ	7	3	2	0	0	12	13	16	0	2	0	0	18	19	35	6	1	0	0	42	43

#### **TRAFFINOMICS LIMITED**

### LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

01

		мс	VEMEN	IT 4					мс	OVEME	NT 5				MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	8	1	0	0	0	9	9	0	0	0	0	0	0	0
07:45	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	16	5	0	0	0	21	21	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	1	2	0	1	0	4	5	0	1	0	0	0	1	1
08:15	0	0	0	0	0	0	0	4	3	1	0	0	8	9	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	9	5	0	0	0	14	14	1	1	1	0	0	3	4
08:45	1	0	0	0	0	1	1	5	2	0	1	0	8	9	2	0	0	0	1	3	4
н/тот	1	0	0	0	0	1	1	19	12	1	2	0	34	37	3	2	1	0	1	7	9
09:00	2	0	0	0	0	2	2	6	0	2	0	0	8	9	1	0	0	0	0	1	1
09:15	3	0	0	0	0	3	3	3	0	0	0	0	3	3	2	2	0	0	0	4	4
09:30	1	1	0	0	0	2	2	6	1	0	0	0	7	7	0	0	0	0	0	0	0
09:45	1	1	0	0	0	2	2	3	3	0	0	0	6	6	1	0	0	0	0	1	1
н/тот	7	2	0	0	0	9	9	18	4	2	0	0	24	25	4	2	0	0	0	6	6
10:00	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	3	0	0	0	0	3	3
10:30	1	0	0	0	0	1	1	4	1	1	0	0	6	7	1	0	0	0	0	1	1
10:45	1	1	0	0	0	2	2	3	1	1	0	0	5	6	1	0	0	0	0	1	1
н/тот	2	1	0	0	0	3	3	16	2	2	0	0	20	21	5	0	0	0	0	5	5
11:00	1	0	0	0	0	1	1	3	1	0	1	0	5	6	2	1	0	0	0	3	3
11:15	0	0	1	0	0	1	2	3	0	1	0	0	4	5	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	3	2	0	1	0	6	7	1	1	0	0	0	2	2
11:45	1	0	0	0	0	1	1	4	1	1	0	0	6	7	0	1	0	0	0	1	1
н/тот	2	0	1	0	0	3	4	13	4	2	2	0	21	25	4	3	0	0	0	7	7
12:00	1	0	0	0	0	1	1	4	2	0	0	0	6	6	0	2	0	0	0	2	2
12:15	2	0	0	0	0	2	2	4	0	0	0	0	4	4	0	1	0	0	0	1	1
12:30	0	0	1	0	0	1	2	3	4	0	0	0	7	7	0	3	0	0	0	3	3
12:45	0	0	0	0	0	0	0	5	2	0	0	0	7	7	0	0	0	0	0	0	0
н/тот	3	0	1	0	0	4	5	16	8	0	0	0	24	24	0	6	0	0	0	6	6
# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 4								мс	OVEME	NT 5					мс	OVEME	NT 6			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	1	0	0	0	0	1	1	6	1	0	0	0	7	7	1	0	0	0	0	1	1
13:15	1	1	0	0	0	2	2	3	2	0	1	0	6	7	2	0	0	0	1	3	4
13:30	0	0	0	0	0	0	0	3	1	2	0	0	6	7	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	6	2	0	0	0	8	8	2	0	0	0	0	2	2
н/тот	2	1	0	0	0	3	3	18	6	2	1	0	27	29	5	0	0	0	1	6	7
14:00	0	1	0	0	0	1	1	3	0	0	0	0	3	3	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	2	2	1	0	0	5	6	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	7	2	1	0	0	10	11	1	1	0	0	0	2	2
14:45	0	0	0	0	0	0	0	7	1	0	1	0	9	10	0	0	0	0	0	0	0
н/тот	0	1	0	0	0	1	1	19	5	2	1	0	27	29	2	1	0	0	0	3	3
15:00	0	0	0	0	0	0	0	1	2	0	0	0	3	3	0	1	0	0	0	1	1
15:15	1	0	0	0	0	1	1	6	1	1	0	0	8	9	1	0	0	0	0	1	1
15:30	1	0	0	0	0	1	1	5	2	0	0	0	7	7	1	0	0	0	0	1	1
15:45	2	0	0	0	0	2	2	6	1	0	0	0	7	7	0	0	1	0	0	1	2
н/тот	4	0	0	0	0	4	4	18	6	1	0	0	25	26	2	1	1	0	0	4	5
16:00	2	0	0	0	0	2	2	3	1	2	0	1	7	9	2	0	0	0	0	2	2
16:15	0	0	0	0	0	0	0	7	0	0	1	0	8	9	5	2	0	0	0	7	7
16:30	0	0	0	0	0	0	0	8	2	0	1	0	11	12	2	0	0	0	0	2	2
16:45	4	1	0	0	0	5	5	8	2	0	0	0	10	10	1	0	0	0	0	1	1
н/тот	6	1	0	0	0	7	7	26	5	2	2	1	36	41	10	2	0	0	0	12	12
17:00	1	0	0	0	0	1	1	6	0	1	0	0	7	8	1	2	1	0	0	4	5
17:15	0	1	0	0	0	1	1	5	2	1	0	0	8	9	4	0	0	0	0	4	4
17:30	2	1	0	0	0	3	3	9	3	1	0	0	13	14	3	0	0	0	0	3	3
17:45	2	0	0	0	0	2	2	3	3	1	0	0	7	8	0	0	1	0	0	1	2
н/тот	5	2	0	0	0	7	7	23	8	4	0	0	35	37	8	2	2	0	0	12	13
18:00	0	0	0	0	0	0	0	7	3	0	0	0	10	10	0	0	1	0	0	1	2
18:15	1	0	0	0	0	1	1	3	4	0	0	0	7	7	1	2	0	0	0	3	3
18:30	0	0	0	0	0	0	0	8	0	0	0	0	8	8	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	1	0	0	0	1	1
н/тот	1	0	0	0	0	1	1	22	7	0	0	0	29	29	1	3	1	0	0	5	6
Р/ТОТ	34	8	2	0	0	44	45	224	72	18	8	1	323	343	44	22	5	0	2	73	78

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

		мс	OVEMEN	NT 7					мс	OVEME	NT 8					мс	OVEMEN	NT 9			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	1	0	1	2	1	0	0	0	0	1	1	0	1	0	0	0	1	1
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	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	2	3
07:45	1	2	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	1	1	2
н/тот	2	2	0	1	0	5	6	2	0	0	0	0	2	2	1	2	0	0	2	5	7
08:00	1	3	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	1	0	2	3
08:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	1	2
08:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
н/тот	7	3	0	0	0	10	10	0	0	0	0	0	0	0	2	1	0	2	0	5	8
09:00	1	0	1	0	0	2	3	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	0	0	0	0	0	0	0
09:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	2	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	3	3	1	0	0	7	8	0	0	0	0	0	0	0	2	0	0	0	0	2	2
10:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	1	1	0	1	0	3	4	0	0	0	0	0	0	0	1	0	0	1	0	2	3
10:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	5	3	0	1	0	9	10	0	0	0	0	0	0	0	3	0	0	1	0	4	5
11:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
11:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	2
11:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	4	1	0	0	0	5	5	2	0	0	0	0	2	2	1	0	1	0	0	2	3
12:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	1	0	2	3
12:15	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	1	0	0	2	3	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	7	1	1	0	0	9	10	1	0	0	0	0	1	1	2	0	0	1	0	3	4

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: OBrd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 7								мс	OVEME	NT 8					мс	OVEMEN	NT 9			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	1	1	0	0	0	2	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:15	2	0	0	0	0	2	2	0	0	1	0	0	1	2	1	0	0	0	0	1	1
13:30	3	0	0	0	0	3	3	0	1	0	0	0	1	1	0	1	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	6	1	0	0	0	7	7	0	2	1	0	0	3	4	1	1	0	0	0	2	2
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	1	3	4
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	2	3
н/тот	5	0	0	0	0	5	5	0	0	0	0	0	0	0	2	2	0	1	1	6	8
15:00	0	2	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	1	0	0	1	2	3
15:45	2	0	1	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	3	3	1	0	0	7	8	2	0	1	0	0	3	4	0	1	0	0	1	2	3
16:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
16:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	1	2	0	0	0	3	3	0	1	0	0	0	1	1	2	0	0	1	0	3	4
17:00	2	3	0	0	0	5	5	1	1	0	0	0	2	2	0	0	0	0	0	0	0
17:15	2	0	1	0	0	3	4	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:30	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:45	0	1	1	0	0	2	3	1	0	0	0	0	1	1	2	1	0	0	0	3	3
н/тот	6	4	2	0	0	12	13	4	1	0	0	0	5	5	3	1	0	0	0	4	4
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	1	1	0	0	0	2	2	3	0	0	0	0	3	3	1	0	0	0	0	1	1
Р/ТОТ	50	24	5	2	0	81	86	14	4	2	0	0	20	21	20	8	1	6	4	39	51

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 10								мо	VEMEN	IT 11					мо	VEMEN	T 12			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	0	0	0	0	5	3	1	2	0	11	14	0	0	0	0	0	0	0
07:15	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	4	2	0	0	0	6	6	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	4	3	1	0	1	9	11	0	0	0	0	0	0	0
н/тот	2	0	0	0	0	2	2	19	10	2	2	1	34	39	0	0	0	0	0	0	0
08:00	1	0	0	0	0	1	1	5	2	0	0	0	7	7	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	6	1	0	0	2	9	11	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	25	5	0	0	2	32	34	0	0	0	0	0	0	0
09:00	1	0	0	1	1	3	5	4	0	0	0	1	5	6	0	0	0	0	0	0	0
09:15	1	0	0	0	0	1	1	5	3	0	0	0	8	8	0	0	0	0	0	0	0
09:30	0	1	0	0	0	1	1	6	0	1	0	0	7	8	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	7	1	3	0	0	11	13	0	0	0	0	0	0	0
н/тот	2	1	0	1	1	5	7	22	4	4	0	1	31	34	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	5	0	0	1	0	6	7	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	3	1	1	0	0	5	6	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
10:45	1	0	0	0	0	1	1	4	2	0	1	0	7	8	0	0	0	0	0	0	0
н/тот	2	0	0	0	0	2	2	18	5	1	2	0	26	29	0	0	0	0	0	0	0
11:00	0	0	0	1	0	1	2	3	0	0	0	0	3	3	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	4	2	0	0	0	6	6	1	0	0	0	0	1	1
11:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
н/тот	0	0	0	2	0	2	5	10	2	0	0	0	12	12	1	0	0	0	0	1	1
12:00	0	0	1	0	0	1	2	3	0	0	0	0	3	3	0	0	0	0	0	0	0
12:15	1	0	1	0	0	2	3	5	3	1	0	0	9	10	0	0	1	0	0	1	2
12:30	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
12:45	2	0	0	0	0	2	2	9	3	2	0	0	14	15	1	0	0	0	0	1	1
н/тот	3	0	2	0	0	5	6	21	6	3	0	0	30	32	1	0	1	0	0	2	3

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: OBrd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 10								мо	VEMEN	IT 11					мо	VEMEN	T 12			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	0	0	0	0	0	0	0	3	0	2	0	0	5	6	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	2	2	0	0	1	5	6	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
13:45	1	0	0	1	0	2	3	3	2	0	1	0	6	7	0	0	0	0	0	0	0
н/тот	2	0	0	1	0	3	4	10	5	2	1	1	19	22	0	0	0	0	0	0	0
14:00	0	1	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	3	2	0	1	0	6	7	0	0	0	0	0	0	0
14:30	1	1	0	0	0	2	2	3	1	1	0	0	5	6	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	1	0	0	0	1	1
н/тот	2	2	0	0	0	4	4	14	6	1	1	0	22	24	0	1	0	0	0	1	1
15:00	0	0	0	0	0	0	0	6	4	1	0	0	11	12	1	0	0	0	0	1	1
15:15	1	0	0	1	0	2	3	4	1	0	1	0	6	7	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	11	0	1	1	0	13	15	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	6	3	0	0	1	10	11	0	0	0	0	0	0	0
н/тот	1	0	0	1	0	2	3	27	8	2	2	1	40	45	1	0	0	0	0	1	1
16:00	0	0	0	1	0	1	2	7	2	0	1	0	10	11	0	1	0	0	0	1	1
16:15	1	0	0	0	0	1	1	2	2	0	0	1	5	6	0	0	0	0	0	0	0
16:30	0	1	0	0	1	2	3	4	2	0	0	0	6	6	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	1	0	0	1	2
н/тот	1	1	0	1	1	4	6	18	7	0	1	1	27	29	0	1	1	0	0	2	3
17:00	1	0	0	1	0	2	3	7	2	0	0	0	9	9	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	8	3	0	0	0	11	11	0	0	0	0	0	0	0
17:30	1	0	0	0	0	1	1	6	4	0	0	0	10	10	1	0	1	0	0	2	3
17:45	2	1	0	0	0	3	3	6	1	0	0	0	7	7	0	0	0	0	0	0	0
н/тот	5	1	0	1	0	7	8	27	10	0	0	0	37	37	1	0	1	0	0	2	3
18:00	0	0	0	0	0	0	0	4	2	1	0	0	7	8	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	2	6	0	0	0	8	8	0	0	0	0	0	0	0
18:30	1	1	0	0	0	2	2	3	0	0	0	0	3	3	0	0	1	0	0	1	2
18:45	0	0	0	0	0	0	0	11	4	0	0	0	15	15	0	0	0	0	0	0	0
н/тот	1	1	0	0	0	2	2	20	12	1	0	0	33	34	0	0	1	0	0	1	2
Р/ТОТ	22	6	2	7	2	39	51	231	80	16	9	7	343	370	4	2	4	0	0	10	12

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 1								мс	OVEMEN	NT 2					мс	OVEMEN	NT 3			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	2	0	0	0	4	4
07:45	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	5	0	0	0	0	5	5	2	2	0	0	0	4	4
08:00	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	1	0	0	0	0	1	1	2	0	0	0	0	2	2	4	2	0	0	0	6	6
09:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	0	3	3
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
09:30	0	2	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	0	2	0	0	0	2	2	2	0	0	0	0	2	2	7	1	0	0	0	8	8
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	1
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	0	1	0	0	3	4
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	0	0	0	0	1	1
н/тот	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2	0	0	0	0	2	2

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Or Osrd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 1								мс	OVEME	NT 2					мс	OVEMEN	NT 3			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	0	1	0	0	0	1	1	1	0	1	0	0	2	3	3	0	0	0	0	3	3
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	0	3	3
15:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	1	0	0	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	1	0	0	0	0	1	1	2	0	0	0	0	2	2	2	0	0	0	0	2	2
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	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
16:45	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	1	0	0	0	0	1	1	4	0	0	0	0	4	4
17:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
18:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
18:45	0	0	1	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	1	0	2	0	0	3	4	0	0	0	0	0	0	0	6	0	0	0	0	6	6
Р/ТОТ	7	3	2	0	0	12	13	16	0	2	0	0	18	19	35	6	1	0	0	42	43

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 4								мс	OVEME	NT 5					мс	OVEMEN	NT 6			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	8	1	0	0	0	9	9	0	0	0	0	0	0	0
07:45	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	16	5	0	0	0	21	21	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	1	2	0	1	0	4	5	0	1	0	0	0	1	1
08:15	0	0	0	0	0	0	0	4	3	1	0	0	8	9	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	9	5	0	0	0	14	14	1	1	1	0	0	3	4
08:45	1	0	0	0	0	1	1	5	2	0	1	0	8	9	2	0	0	0	1	3	4
н/тот	1	0	0	0	0	1	1	19	12	1	2	0	34	37	3	2	1	0	1	7	9
09:00	2	0	0	0	0	2	2	6	0	2	0	0	8	9	1	0	0	0	0	1	1
09:15	3	0	0	0	0	3	3	3	0	0	0	0	3	3	2	2	0	0	0	4	4
09:30	1	1	0	0	0	2	2	6	1	0	0	0	7	7	0	0	0	0	0	0	0
09:45	1	1	0	0	0	2	2	3	3	0	0	0	6	6	1	0	0	0	0	1	1
н/тот	7	2	0	0	0	9	9	18	4	2	0	0	24	25	4	2	0	0	0	6	6
10:00	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	2	0	0	0	0	2	2	3	0	0	0	0	3	3
10:30	1	0	0	0	0	1	1	4	1	1	0	0	6	7	1	0	0	0	0	1	1
10:45	1	1	0	0	0	2	2	3	1	1	0	0	5	6	1	0	0	0	0	1	1
н/тот	2	1	0	0	0	3	3	16	2	2	0	0	20	21	5	0	0	0	0	5	5
11:00	1	0	0	0	0	1	1	3	1	0	1	0	5	6	2	1	0	0	0	3	3
11:15	0	0	1	0	0	1	2	3	0	1	0	0	4	5	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	3	2	0	1	0	6	7	1	1	0	0	0	2	2
11:45	1	0	0	0	0	1	1	4	1	1	0	0	6	7	0	1	0	0	0	1	1
н/тот	2	0	1	0	0	3	4	13	4	2	2	0	21	25	4	3	0	0	0	7	7
12:00	1	0	0	0	0	1	1	4	2	0	0	0	6	6	0	2	0	0	0	2	2
12:15	2	0	0	0	0	2	2	4	0	0	0	0	4	4	0	1	0	0	0	1	1
12:30	0	0	1	0	0	1	2	3	4	0	0	0	7	7	0	3	0	0	0	3	3
12:45	0	0	0	0	0	0	0	5	2	0	0	0	7	7	0	0	0	0	0	0	0
н/тот	3	0	1	0	0	4	5	16	8	0	0	0	24	24	0	6	0	0	0	6	6

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 4								мс	OVEME	NT 5					мс	OVEME	NT 6			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	1	0	0	0	0	1	1	6	1	0	0	0	7	7	1	0	0	0	0	1	1
13:15	1	1	0	0	0	2	2	3	2	0	1	0	6	7	2	0	0	0	1	3	4
13:30	0	0	0	0	0	0	0	3	1	2	0	0	6	7	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	6	2	0	0	0	8	8	2	0	0	0	0	2	2
н/тот	2	1	0	0	0	3	3	18	6	2	1	0	27	29	5	0	0	0	1	6	7
14:00	0	1	0	0	0	1	1	3	0	0	0	0	3	3	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	2	2	1	0	0	5	6	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	7	2	1	0	0	10	11	1	1	0	0	0	2	2
14:45	0	0	0	0	0	0	0	7	1	0	1	0	9	10	0	0	0	0	0	0	0
н/тот	0	1	0	0	0	1	1	19	5	2	1	0	27	29	2	1	0	0	0	3	3
15:00	0	0	0	0	0	0	0	1	2	0	0	0	3	3	0	1	0	0	0	1	1
15:15	1	0	0	0	0	1	1	6	1	1	0	0	8	9	1	0	0	0	0	1	1
15:30	1	0	0	0	0	1	1	5	2	0	0	0	7	7	1	0	0	0	0	1	1
15:45	2	0	0	0	0	2	2	6	1	0	0	0	7	7	0	0	1	0	0	1	2
н/тот	4	0	0	0	0	4	4	18	6	1	0	0	25	26	2	1	1	0	0	4	5
16:00	2	0	0	0	0	2	2	3	1	2	0	1	7	9	2	0	0	0	0	2	2
16:15	0	0	0	0	0	0	0	7	0	0	1	0	8	9	5	2	0	0	0	7	7
16:30	0	0	0	0	0	0	0	8	2	0	1	0	11	12	2	0	0	0	0	2	2
16:45	4	1	0	0	0	5	5	8	2	0	0	0	10	10	1	0	0	0	0	1	1
н/тот	6	1	0	0	0	7	7	26	5	2	2	1	36	41	10	2	0	0	0	12	12
17:00	1	0	0	0	0	1	1	6	0	1	0	0	7	8	1	2	1	0	0	4	5
17:15	0	1	0	0	0	1	1	5	2	1	0	0	8	9	4	0	0	0	0	4	4
17:30	2	1	0	0	0	3	3	9	3	1	0	0	13	14	3	0	0	0	0	3	3
17:45	2	0	0	0	0	2	2	3	3	1	0	0	7	8	0	0	1	0	0	1	2
н/тот	5	2	0	0	0	7	7	23	8	4	0	0	35	37	8	2	2	0	0	12	13
18:00	0	0	0	0	0	0	0	7	3	0	0	0	10	10	0	0	1	0	0	1	2
18:15	1	0	0	0	0	1	1	3	4	0	0	0	7	7	1	2	0	0	0	3	3
18:30	0	0	0	0	0	0	0	8	0	0	0	0	8	8	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	1	0	0	0	1	1
н/тот	1	0	0	0	0	1	1	22	7	0	0	0	29	29	1	3	1	0	0	5	6
Р/ТОТ	34	8	2	0	0	44	45	224	72	18	8	1	323	343	44	22	5	0	2	73	78

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

		мс	OVEMEN	NT 7					мс	OVEME	NT 8					мс	OVEMEN	NT 9			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	1	0	1	2	1	0	0	0	0	1	1	0	1	0	0	0	1	1
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	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	2	3
07:45	1	2	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	1	1	2
н/тот	2	2	0	1	0	5	6	2	0	0	0	0	2	2	1	2	0	0	2	5	7
08:00	1	3	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1
08:15	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	1	0	2	3
08:30	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	1	2
08:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1
н/тот	7	3	0	0	0	10	10	0	0	0	0	0	0	0	2	1	0	2	0	5	8
09:00	1	0	1	0	0	2	3	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	0	0	0	0	0	0	0
09:30	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	0	2	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	3	3	1	0	0	7	8	0	0	0	0	0	0	0	2	0	0	0	0	2	2
10:00	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	1	1	0	1	0	3	4	0	0	0	0	0	0	0	1	0	0	1	0	2	3
10:30	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	2	2
н/тот	5	3	0	1	0	9	10	0	0	0	0	0	0	0	3	0	0	1	0	4	5
11:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
11:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	2
11:30	1	1	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	4	1	0	0	0	5	5	2	0	0	0	0	2	2	1	0	1	0	0	2	3
12:00	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	1	0	2	3
12:15	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	1	0	1	0	0	2	3	1	0	0	0	0	1	1	1	0	0	0	0	1	1
12:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	7	1	1	0	0	9	10	1	0	0	0	0	1	1	2	0	0	1	0	3	4

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: OBrd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 7								мс	OVEME	NT 8					мс	OVEMEN	NT 9			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	1	1	0	0	0	2	2	0	1	0	0	0	1	1	0	0	0	0	0	0	0
13:15	2	0	0	0	0	2	2	0	0	1	0	0	1	2	1	0	0	0	0	1	1
13:30	3	0	0	0	0	3	3	0	1	0	0	0	1	1	0	1	0	0	0	1	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	6	1	0	0	0	7	7	0	2	1	0	0	3	4	1	1	0	0	0	2	2
14:00	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	1	3	4
14:15	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
14:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	2	3
н/тот	5	0	0	0	0	5	5	0	0	0	0	0	0	0	2	2	0	1	1	6	8
15:00	0	2	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	0	0
15:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	1	0	1	0	0	2	3	0	1	0	0	1	2	3
15:45	2	0	1	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	3	3	1	0	0	7	8	2	0	1	0	0	3	4	0	1	0	0	1	2	3
16:00	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0
16:15	1	1	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2
16:30	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
н/тот	1	2	0	0	0	3	3	0	1	0	0	0	1	1	2	0	0	1	0	3	4
17:00	2	3	0	0	0	5	5	1	1	0	0	0	2	2	0	0	0	0	0	0	0
17:15	2	0	1	0	0	3	4	1	0	0	0	0	1	1	0	0	0	0	0	0	0
17:30	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1
17:45	0	1	1	0	0	2	3	1	0	0	0	0	1	1	2	1	0	0	0	3	3
н/тот	6	4	2	0	0	12	13	4	1	0	0	0	5	5	3	1	0	0	0	4	4
18:00	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
18:45	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1
н/тот	1	1	0	0	0	2	2	3	0	0	0	0	3	3	1	0	0	0	0	1	1
Р/ТОТ	50	24	5	2	0	81	86	14	4	2	0	0	20	21	20	8	1	6	4	39	51

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: Brd October 2023

SITE:

LOCATION: R328/L2232

	MOVEMENT 10								мо	VEMEN	IT 11					мо	VEMEN	T 12			
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
07:00	0	0	0	0	0	0	0	5	3	1	2	0	11	14	0	0	0	0	0	0	0
07:15	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
07:30	1	0	0	0	0	1	1	4	2	0	0	0	6	6	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	4	3	1	0	1	9	11	0	0	0	0	0	0	0
н/тот	2	0	0	0	0	2	2	19	10	2	2	1	34	39	0	0	0	0	0	0	0
08:00	1	0	0	0	0	1	1	5	2	0	0	0	7	7	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	6	1	0	0	2	9	11	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	0	0	0	0	0
н/тот	1	0	0	0	0	1	1	25	5	0	0	2	32	34	0	0	0	0	0	0	0
09:00	1	0	0	1	1	3	5	4	0	0	0	1	5	6	0	0	0	0	0	0	0
09:15	1	0	0	0	0	1	1	5	3	0	0	0	8	8	0	0	0	0	0	0	0
09:30	0	1	0	0	0	1	1	6	0	1	0	0	7	8	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	7	1	3	0	0	11	13	0	0	0	0	0	0	0
н/тот	2	1	0	1	1	5	7	22	4	4	0	1	31	34	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	5	0	0	1	0	6	7	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	3	1	1	0	0	5	6	0	0	0	0	0	0	0
10:30	1	0	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
10:45	1	0	0	0	0	1	1	4	2	0	1	0	7	8	0	0	0	0	0	0	0
н/тот	2	0	0	0	0	2	2	18	5	1	2	0	26	29	0	0	0	0	0	0	0
11:00	0	0	0	1	0	1	2	3	0	0	0	0	3	3	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	4	2	0	0	0	6	6	1	0	0	0	0	1	1
11:30	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0
н/тот	0	0	0	2	0	2	5	10	2	0	0	0	12	12	1	0	0	0	0	1	1
12:00	0	0	1	0	0	1	2	3	0	0	0	0	3	3	0	0	0	0	0	0	0
12:15	1	0	1	0	0	2	3	5	3	1	0	0	9	10	0	0	1	0	0	1	2
12:30	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0
12:45	2	0	0	0	0	2	2	9	3	2	0	0	14	15	1	0	0	0	0	1	1
н/тот	3	0	2	0	0	5	6	21	6	3	0	0	30	32	1	0	1	0	0	2	3

# LOMAUNAGHBAUN TRAFFIC COUNTS MANUAL CLASSIFIED JUNCTION TURNING COUNTS

# **OCTOBER 2023** DATE: OBrd October 2023

SITE:

LOCATION: R328/L2232

		мо	VEMEN	IT 10					MOVEMENT 11					мо	VEMEN	T 12					
TIME	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU	CAR	LGV	OGV1	OGV2	BUS	тот	PCU
13:00	0	0	0	0	0	0	0	3	0	2	0	0	5	6	0	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	2	2	0	0	1	5	6	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0
13:45	1	0	0	1	0	2	3	3	2	0	1	0	6	7	0	0	0	0	0	0	0
н/тот	2	0	0	1	0	3	4	10	5	2	1	1	19	22	0	0	0	0	0	0	0
14:00	0	1	0	0	0	1	1	6	2	0	0	0	8	8	0	0	0	0	0	0	0
14:15	1	0	0	0	0	1	1	3	2	0	1	0	6	7	0	0	0	0	0	0	0
14:30	1	1	0	0	0	2	2	3	1	1	0	0	5	6	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	2	1	0	0	0	3	3	0	1	0	0	0	1	1
н/тот	2	2	0	0	0	4	4	14	6	1	1	0	22	24	0	1	0	0	0	1	1
15:00	0	0	0	0	0	0	0	6	4	1	0	0	11	12	1	0	0	0	0	1	1
15:15	1	0	0	1	0	2	3	4	1	0	1	0	6	7	0	0	0	0	0	0	0
15:30	0	0	0	0	0	0	0	11	0	1	1	0	13	15	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	6	3	0	0	1	10	11	0	0	0	0	0	0	0
н/тот	1	0	0	1	0	2	3	27	8	2	2	1	40	45	1	0	0	0	0	1	1
16:00	0	0	0	1	0	1	2	7	2	0	1	0	10	11	0	1	0	0	0	1	1
16:15	1	0	0	0	0	1	1	2	2	0	0	1	5	6	0	0	0	0	0	0	0
16:30	0	1	0	0	1	2	3	4	2	0	0	0	6	6	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	5	1	0	0	0	6	6	0	0	1	0	0	1	2
н/тот	1	1	0	1	1	4	6	18	7	0	1	1	27	29	0	1	1	0	0	2	3
17:00	1	0	0	1	0	2	3	7	2	0	0	0	9	9	0	0	0	0	0	0	0
17:15	1	0	0	0	0	1	1	8	3	0	0	0	11	11	0	0	0	0	0	0	0
17:30	1	0	0	0	0	1	1	6	4	0	0	0	10	10	1	0	1	0	0	2	3
17:45	2	1	0	0	0	3	3	6	1	0	0	0	7	7	0	0	0	0	0	0	0
н/тот	5	1	0	1	0	7	8	27	10	0	0	0	37	37	1	0	1	0	0	2	3
18:00	0	0	0	0	0	0	0	4	2	1	0	0	7	8	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	2	6	0	0	0	8	8	0	0	0	0	0	0	0
18:30	1	1	0	0	0	2	2	3	0	0	0	0	3	3	0	0	1	0	0	1	2
18:45	0	0	0	0	0	0	0	11	4	0	0	0	15	15	0	0	0	0	0	0	0
н/тот	1	1	0	0	0	2	2	20	12	1	0	0	33	34	0	0	1	0	0	1	2
Р/ТОТ	22	6	2	7	2	39	51	231	80	16	9	7	343	370	4	2	4	0	0	10	12



# Site Name TMU N83 010.0 N Site ID 00000001831

All Lanes -

Exclude data: None -

	<	Wor	kday	>	<	7 0	)ay	>
Date	12Hr	16Hr	18Hr	24Hr	12Hr	16Hr	18Hr	24Hr
Jan 2022	3224	3720	3798	3901	2910	3371	3446	3537
Feb 2022	3526	4103	4198	4321	3209	3739	3830	3946
Mar 2022	3479	4086	4182	4307	3238	3808	3902	4019
Apr 2022	3580	4269	4385	4514	3299	3932	4046	4167
May 2022	3675	4384	4510	4642	3426	4092	4213	4339
Jun 2022	3550	4235	4363	4508	3242	3876	3998	4136
Jul 2022	3558	4270	4417	4565	3248	3907	4049	4188
Aug 2022	3589	4338	4469	4607	3371	4078	4209	4345
Sep 2022	3908	4626	4735	4874	3595	4268	4377	4510
Oct 2022	3833	4490	4600	4741	3572	4184	4292	4425
Nov 2022	3817	4442	4548	4686	3549	4135	4239	4370
Dec 2022	3494	4039	4148	4283	3203	3712	3814	3946

Site Name TM	IU N83 010.0 N	Site ID 000	000001831	Grid	147488257445	Descri	ption N83 Between Tuam and Dunmore,
	Time Devied	. <b>4</b> baur				Nezz	EL,
All Lanes 👻	Time Period	. 1 nour 👻	Class: Any	•	Exclude data:	None +	\$ <u>\$</u> .
,	Average Daily Flow						· 09
00:00	21						$O_7$
01:00	8						
02:00	6						
03:00	6						
04:00	10						×
05:00	43						
06:00	122						
07:00	198						
08:00	250						
10:00	214						
11:00	203						
12:00	232						
13:00	247						
14:00	258						
15:00	291						
16:00	315						
17:00	312						
18:00	246						
19:00	162						
20:00	110						
21:00	79						
22:00	40						
23.00	20						
07-19	2943						
06-22	3415						
06-24	3492						
00-24	3585						
am Peak	08:00						
Peak Volume	250						
Peak Factor	0.883						
pm Peak	16:00						
Peak Volume	315						
Peak Factor	0.915						



		P.							
	PICADY								
Analy	GUI Version: 5.1 AD sis Program Release: 4.0 (SEPT 2	2008)							
Adapted from PICADY/3 whic	© Copyright TRL Limited, 2008 Adapted from PICADY/3 which is Crown Copyright by permission of the controller of HMSO								
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For sales and distribution TRL Limited Crowthorne House Nine Mile Ride Wokingham, Berks. RG40 3GA, UK The user of this computer program for the solution of an eng	n information, program advice an	d maintenance, contact: Tel: +44 (0)1344 770758 Fax:+44 (0)1344 770864 E-mail: software@trl.co.uk Web: www.trlsoftware.co.uk ved of their responsibility for the correctness of the solution							

# **Run Analysis**

Parameter	Values
File Run	C:\AL Traffic jobs\Picady - Lomaunabaun\R328_L2232 junction\PM 2034 dev.vpi
Date Run	08 November 2023
Time Run	23:47:53
Driving Side	Drive On The Left

# Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)							
Arm A	R328 west	100							
Arm B	Local Road	100							
Arm C	R328 east	100							

Arm D	L2232	100

### Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

### **Run Information**

Parameter	Values						
Run Title	R328 / L2232 junction						
Location	Gorteen Cross						
Date	08 November 2023						
Enumerator	adl [ADL-PC]						
Job Number	10320						
Status	TIA						
Client	Newtown Farming Ltd						
Description	-						

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### **Errors and Warnings**

Parameter	Values
Warning	No Errors Or Warnings

### **Geometric Data**

**Geometric Parameters** 

Parameter	Minor Arm B	Minor Arm D		
Major Road Carriageway Width (m)	6.00	6.00		
Major Road Kerbed Central Reserve Width (m)	0.00	0.00		
Major Road Right Turning Lane Width (m)	2.20	2.20		
Minor Road First Lane Width (m)	3.50	-		
Minor Road Width 0m Back from Junction (m)	-	6.60		
Minor Road Width 5m Back from Junction (m)	-	3.90		
Minor Road Width 10m Back from Junction (m)	-	2.50		
Minor Road Width 15m Back from Junction (m)	-	2.20		
Minor Road Width 20m Back from Junction (m)	-	2.20		
Minor Road Flare Length (veh)	-	1		
Minor Road Visibility To Right (m)	40	20		
Minor Road Visibility To Left (m)	40	20		
Major Road Right Turn Visibility (m)	60	60		
Major Road Right Turn Blocks Traffic	Yes	Yes		



### Slope and Intercept Values

Stream	Intercept for Stream B-AD	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
C-B	608.710	0.236	0.236	-	-	-	-	-	-	-	-	0.236	0.236
A-D	608.710	-	-	0.236	-	-	-	0.236	0.337	-	-	-	-
B-A	535.791	-	0.247	0.247	-	-	-	-	-	-	0.247	0.247	-
B-C	681.612	0.083	0.264	-	-	0.264	-	-	-	-	-	-	-
B-D(L)	535.791	0.098	0.247	0.247	-	-	-	0.155	0.352	0.155	-	-	-

														$\wedge$
D-A	0.000	_	_	_	_	_	_	0.000	_	0.000	-	-	_	
D-B(L)	0.000	0.000	0.000	0.000	-	-	-	0.000	0.000	-	-	-	-	SIL.
D-C	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	] 💫
B-D(R)	535.791	0.098	0.247	0.247	-	-	-	0.155	0.352	0.155	-	-	-	· 00
D-B(R)	0.000	0.000	0.000	0.000	-	-	-	0.000	0.000	0.000	-	-	-	
Note: Str These va Streams	D-B(R) 0.000 0.000 0.000 -													

### **Junction Diagram**



**Demand Data** 

### **Modelling Periods**

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:45-18:15	90	15

### **ODTAB Turning Counts**

**Demand Set:** R328 / L2232 junction **Modelling Period:** 16:45-18:15

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	0.0	9.0	53.0	22.0
Arm B	1.0	0.0	1.0	0.0
Arm C	46.0	5.0	0.0	11.0
Arm D	23.0	6.0	6.0	0.0

### **ODTAB Synthesised Flows**

**Demand Set:** R328 / L2232 junction **Modelling Period:** 16:45-18:15

Arm	<b>Rising Time</b>	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	17:00	1.050	17:30	1.575	18:00	1.050
Arm B	17:00	0.025	17:30	0.038	18:00	0.025
Arm C	17:00	0.775	17:30	1.162	18:00	0.775
Arm D	17:00	0.438	17:30	0.656	18:00	0.438

### **Heavy Vehicles Percentages**



Demand Set: R328 / L2232 junction Modelling Period: 16:45-18:15

From/To	Arm A	Arm B	Arm C	Arm D
Arm A	-	10.0	10.0	10.0
Arm B	10.0	-	10.0	10.0
Arm C	10.0	10.0	-	10.0
Arm D	10.0	10.0	10.0	-



Default proportions of heavy vehicles are used

### **Queue Diagrams**

Queue Interval 1: 16:45-17:00	Queue Interval 2: 17:00-17:15











### **Capacity Graph**

Capaolity Vs Time (Stream D-BC) Capaolty Vs Time (Stream C-ABD) Capaolity Vs Time (Stream A-BCD) Capaolty Vs Time (Stream B-ACD) Capaolty Vs Time (Stream D-AB) .... Capady 5 5 5 Capady Capady Capado 12aa-1 62 .... 62 9<u>+</u> 44 60 망 영승 말는 00 02 00 0.00 1 0.00 08 04 0.0 ---**1** -0.00 100 <u>a 1</u>2 Time Time Time Time Time

PECEINED: 09/07/2028

**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15 **Modelling Period:** 16:45-18:15

### **RFC Graph**



Start Queue Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15 **Modelling Period:** 16:45-18:15



PECEENED. 0907 RODA

### **End Queue Graph**

**Demand Set:** Sum of Demand Sets for Modelling Period: 16:45 - 18:15 **Modelling Period:** 16:45-18:15



### **Delay Graph**



### **Queues & Delays**

Queues &	Delays	5							RECE	
Demand Set Modelling Po	:: Sum of I eriod: 16	Demand Sets :45-18:15	for Modelling	Period	: 16:45 - 18:3	15				RD.
Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Atriving Vehicle Delay (min)
	B-ACD	0.03	8.73	0.003	-	0.00	0.00	-	0.0	0.11
	D-AB	0.33	9.89	0.033	-	0.00	0.03	-	0.5	0.10
	D-BC	0.11	6.94	0.016	-	0.00	0.02	-	0.2	0.15
	C-ABD	0.07	9.43	0.007	-	0.00	0.01	-	0.1	0.11
16:45-17:00	C-A	0.57	-	-	-	-	-	-	-	-
	C-D	0.14	-	-	-	-	-	-	-	-
	A-BCD	0.30	9.55	0.031	-	0.00	0.04	-	0.6	0.11
	A-B	0.11	-	-	-	-	-	-	-	-
	A-C	0.64	-	-	-	-	-	-	-	-
Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
	B-ACD	0.03	8.66	0.003	-	0.00	0.00	-	0.1	0.12
	D-AB	0.39	9.84	0.040	-	0.03	0.04	-	0.6	0.11
	D-BC	0.13	6.87	0.020	-	0.02	0.02	-	0.3	0.15
17.00 17.15	C-ABD	0.08	9.47	0.009	-	0.01	0.01	-	0.1	0.11
17:00-17:15	C-A	0.68	-	-	-	-	-	-	-	-
	C-D	0.16	-	-	-	-	-	-	-	-
	A-BCD	0.36	9.62	0.038	-	0.04	0.05	-	0.7	0.11
	A-B	0.13	_	_	-	-	_	-	_	_



								Ŕ	~	
Segme nt	Strea m	Demand(veh/ min)	Capacity(veh /min)	RFC	Ped.Flow(ped/ min)	Start Queue(v eh)	End Queue(v eh)	Geometric Delay(veh.min/seg ment)	Delay(veh.min/seg	Mean ArrivingVeh icle Delay(min)
	B- ACD	0.04	8.56	0.004	-	0.00	0.00	-	0.1	0.12
	D-AB	0.48	9.77	0.049	-	0.04	0.05	-	0.8	0.11
	D-BC	0.16	6.78	0.024	-	0.02	0.02	-	0.4	0.15
17.15	C- ABD	0.10	9.52	0.011	-	0.01	0.01	-	0.2	0.11
17:15-	C-A	0.84	-	-	-	-	-	-	-	-
	C-D	0.20	-	-	-	-	-	-	-	-
	A- BCD	0.46	9.71	0.047	-	0.05	0.06	-	0.9	0.11
	A-B	0.16	-	-	-	-	-	-	-	-
	A-C	0.93	-	-	-	-	-	-	-	-

								Ŕ	~	
Segme nt	Strea m	Demand(veh/ min)	Capacity(veh /min)	RFC	Ped.Flow(ped/ min)	Start Queue(v eh)	End Queue(v eh)	Geometric Delay(veh.min/seg ment)	Delay(veh.min/seg	Mean ArrivingVeh icle Delay(min)
	B- ACD	0.04	8.56	0.004	_	0.00	0.00	-	0.1	0.12
	D-AB	0.48	9.77	0.049	-	0.05	0.05	-	0.8 7	0.11
	D-BC	0.16	6.78	0.024	-	0.02	0.02	-	0.4	0.15
17.20	C- ABD	0.10	9.52	0.011	_	0.01	0.01	-	0.2	0.11
17:30-	C-A	0.84	-	-	-	-	-	-	-	-
	C-D	0.20	-	-	-	-	-	-	-	-
	A- BCD	0.46	9.71	0.047	-	0.06	0.06	-	0.9	0.11
	A-B	0.16	-	-	-	-	-	-	-	-
	A-C	0.93	-	-	-	-	-	-	-	-

								Ŕ	~	
Segme nt	Strea m	Demand(veh/ min)	Capacity(veh /min)	RFC	Ped.Flow(ped/ min)	Start Queue(v eh)	End Queue(v eh)	Geometric Delay(veh.min/seg ment)	Delay(veh.min/seg	Mean ArrivingVeh icle Delay(min)
	B- ACD	0.03	8.66	0.003	_	0.00	0.00	-	0.1	0.12
	D-AB	0.39	9.84	0.040	-	0.05	0.04	-	0.6	0.11
	D-BC	0.13	6.87	0.020	-	0.02	0.02	-	0.3	0.15
17.45	C- ABD	0.08	9.47	0.009	_	0.01	0.01	-	0.1	0.11
17:45-	C-A	0.68	-	-	-	-	-	-	-	-
	C-D	0.16	-	-	-	-	-	-	-	-
	A- BCD	0.36	9.62	0.038	-	0.06	0.05	-	0.7	0.11
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	0.76	-	-	-	-	-	-	-	-

Segme nt	Strea m	Demand(veh/ min)	Capacity(veh /min)	RFC	Ped.Flow(ped/ min)	Start Queue(v eh)	End Queue(v eh)	Geometric Delay(veh.min/seg ment)	Delay(veh.min/seg	Mean ArrivingVeh icle Delay(min)
	B- ACD	0.03	8.73	0.003	-	0.00	0.00	_	0.0	0.11
	D-AB	0.33	9.89	0.033	-	0.04	0.03	-	0.5	0.10
	D-BC	0.11	6.94	0.016	-	0.02	0.02	-	0.3	0.15
18.00	C- ABD	0.07	9.43	0.007	-	0.01	0.01	-	0.1	0.11
18:00-	C-A	0.57	-	-	-	-	-	-	-	-
	C-D	0.14	-	-	-	-	-	-	-	-
	A- BCD	0.30	9.55	0.031	-	0.05	0.04	-	0.6	0.11
	A-B	0.11	-	-	_	-	-	_	_	-
	A-C	0.64	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.

In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction. Delays marked with '##' could not be calculated.

### **Overall Queues & Delays**

### **Queueing Delay Information Over Whole Period**

Stream	Total Demand	Total Demand	Queueing Delay	Queueing Delay	Inclusive Delay	Inclusive Delay
	(veh)	(veh/h)	(min)	(min/veh)	(min)	(min/veh)
B-ACD	2.8	1.8	0.3	0.1	0.3	0.1

D-AB	35.8	23.9	3.8	0.1	3.8	0.1
D-BC	12.3	8.2	1.8	0.1	1.8	0.1
C-ABD	7.6	5.1	0.9	0.1	0.9	0.1
C-A	62.7	41.8	-	-	-	-
C-D	15.0	10.0	-	-	-	-
A-BCD	33.7	22.4	4.3	0.1	4.3	0.1
A-B	11.9	7.9	-	-	-	-
A-C	70.1	46.7	-	-	-	-
All	251.9	167.9	11.1	0.0	11.1	0.0

Delay is that occurring only within the time period. Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period. These will only be significantly different if there is a large queue remaining at the end of the time period.

### PICADY 5 Run Successful

Appendix D PICADY output for R328 / L-2223 junction, with proposed quarry, AM peak hour, year 2034

		P <sub>A</sub>	
	PICADY		
GUI Version: 5.1 AD Analysis Program Release: 4.0 (SEPT 2008)			
Adapted from PICADY/3 w	© Copyright TRL Limited, 2008 which is Crown Copyright by permissi	on of the controller of HMSO	
For sales and distribution information, program advice and maintenance, contact:			
TRL Limited Crowthorne House Nine Mile Ride Wokingham, Berks. RG40 3GA, UK		Tel: +44 (0)1344 770758 Fax:+44 (0)1344 770864 E-mail: <u>software@trl.co.uk</u> Web: <u>www.trlsoftware.co.uk</u>	
Wokingham, Berks. RG40 3GA, UK The user of this computer program for the solution of an	engineering problem is in no way reliev	Web: <u>www.trlsoftware.co.uk</u>	

# **Run Analysis**

Parameter	Values	
File Run	C:\AL Traffic jobs\Picady - Lomaunabaun\R328_L2223 junction\AM 2034 dev.vpi	
Date Run	08 November 2023	
Time Run	23:50:50	
Driving Side	Drive On The Left	

# Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	R328 south	100
Arm B	L2223	100
Arm C	R328 north	100
# Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

# **Run Information**

Parameter	Values
Run Title	R328 / L2223 junction
Location	Clonbern
Date	08 November 2023
Enumerator	adl [ADL-PC]
Job Number	10320
Status	TIA
Client	Newtown Farming Ltd
Description	-

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# **Errors and Warnings**

Parameter	Values				
Warning	No Errors Or Warnings				

# **Geometric Data**

**Geometric Parameters** 

Parameter	Minor Arm B
Major Road Carriageway Width (m)	6.00
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road Width 0m Back from Junction (m)	7.80
Minor Road Width 5m Back from Junction (m)	3.50
Minor Road Width 10m Back from Junction (m)	2.60
Minor Road Width 15m Back from Junction (m)	2.50
Minor Road Width 20m Back from Junction (m)	2.50
Minor Road Flare Length (veh)	1
Minor Road Visibility To Right (m)	60
Minor Road Visibility To Left (m)	60
Major Road Right Turn Visibility (m)	70
Major Road Right Turn Blocks Traffic	Yes



## Slope and Intercept Values

Stream	Intercept for Stream B-A	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B	
B-A	0.000	0.000	0.000	0.000	0.000	
B-C	0.000	0.000	0.000	-	-	
C-B	614.501	0.238	0.238	-	-	

Note: Streams may be combined in which case capacity will be adjusted These values do not allow for any site-specific corrections

# **Junction Diagram**

5 metres	
R328 north	 
	R328 south
L2223	



# **Demand Data**

### **Modelling Periods**

Parameter	Period	Duration (min)	Segment Length (min)	
First Modelling Period	07:45-09:15	90	15	

### **ODTAB Turning Counts**

**Demand Set:** R328 / L2232 junction **Modelling Period:** 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	8.0	40.0
Arm B	11.0	0.0	6.0
Arm C	69.0	2.0	0.0

### **ODTAB Synthesised Flows**

**Demand Set:** R328 / L2232 junction **Modelling Period:** 07:45-09:15

Arm	<b>Rising Time</b>	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:00	0.600	08:30	0.900	09:00	0.600
Arm B	08:00	0.213	08:30	0.319	09:00	0.213
Arm C	08:00	0.887	08:30	1.331	09:00	0.887

### **Heavy Vehicles Percentages**

Demand Set: R328 / L2232 junction Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

Default proportions of heavy vehicles are used

### **Queue Diagrams**















# **Capacity Graph**

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15 **Modelling Period:** 07:45-09:15



# **RFC Graph**



**Start Queue Graph** 

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15 **Modelling Period:** 07:45-09:15



# **End Queue Graph**

**Demand Set:** Sum of Demand Sets for Modelling Period: 07:45 - 09:15 **Modelling Period:** 07:45-09:15



# **Delay Graph**





# **Queues & Delays**

Queues &	Delays	;							RECO			
Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15 Modelling Period: 07:45-09:15												
Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)		
	B-A	0.14	7.88	0.018	-	0.00	0.02	-	0.3	0.13		
07:45-08:00	B-C	0.08	9.65	0.008	-	0.00	0.01	-	0.1	0.10		
	C-AB	0.03	9.74	0.003	-	0.00	0.00	-	0.0	0.10		
	C-A	0.86	-	-	-	-	-	-	-	-		
	A-B	0.10	-	-	-	-	-	-	-	-		
	A-C	0.50	-	-	-	-	-	-	-	-		
Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)		
	B-A	0.16	7.83	0.021	-	0.02	0.02	-	0.3	0.13		
	B-C	0.09	9.61	0.009	-	0.01	0.01	-	0.1	0.11		
	C-AB	0.03	9.83	0.003	-	0.00	0.00	-	0.1	0.10		
08:00-08:15	C-A	1.03	-	-	-	-	-	-	-	-		
	A-B	0.12	-	-	-	-	-	-	-	-		
	A-C	0.60	-	-	-	-	-	-	-	-		
Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)		
	B-A	0.20	7.75	0.026	-	0.02	0.03	-	0.4	0.13		
08:15-08:30	B-C	0.11	9.56	0.012		0.01	0.01	-	0.2	0.11		
	C-AB	0.04	9.94	0.004	-	0.00	0.00	-	0.1	0.10		

									PA	
	C-A	1.26	-	-	-	-	-	-	<u> </u>	-
	A-B	0.15	-	-	-	-	-	-	_	-
	A-C	0.73	-	-	-	-	-	-	-	<u> </u>
Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Ariving Vehicle Deray (min)
	B-A	0.20	7.75	0.026	-	0.03	0.03	-	0.4	0.13
	B-C	0.11	9.56	0.012	-	0.01	0.01	-	0.2	0.11
00.20.00.45	C-AB	0.04	9.94	0.004	-	0.00	0.00	-	0.1	0.10
08:30-08:45	C-A	1.26	-	-	-	-	-	-	-	-
	A-B	0.15	-	-	-	-	-	-	-	-
	A-C	0.73	-	-	-	-	-	-	-	-

								Ŕ	<	
Segme nt	Strea m	Demand(veh/ min)	Capacity(veh /min)	RFC	Ped.Flow(ped/ min)	Start Queue(v eh)	End Queue(v eh)	Geometric Delay(veh.min/seg ment)	Deley(veh.min/seg	Mean ArrivingVeh icle Delay(min)
	B-A	0.16	7.83	0.021	-	0.03	0.02	-	0.3	0.13
	B-C	0.09	9.61	0.009	-	0.01	0.01	-	0.1	0.11
08:45-	C-AB	0.03	9.83	0.003	-	0.00	0.00	-	0.1	0.10
09:00	C-A	1.03	-	-	-	-	-	-	-	· C23 -
	A-B	0.12	-	-	-	-	-	-	-	<u> </u>
	A-C	0.60	-	-	_	-	-	-	-	-

Segme nt	Strea m	Demand(veh/ min)	Capacity(veh /min)	RFC	Ped.Flow(ped/ min)	Start Queue(v eh)	End Queue(v eh)	Geometric Delay(veh.min/seg ment)	Delay(veh.min/seg	Mean ArrivingVeh icle Delay(min)	
09:00- 09:15	B-A	0.14	7.88	0.018	-	0.02	0.02	-	0.3	0.13	
	B-C	0.08	9.65	0.008	-	0.01	0.01	-	0.1	0.10	
	C-AB	0.03	9.74	0.003	-	0.00	0.00	-	0.0	<b>0.10</b>	
	C-A	0.86	-	-	-	-	-	-	-	· · · · ·	
	A-B	0.10	-	-	-	-	-	-	-	<u>`\X</u>	
	A-C	0.50	-	-	_	-	-	-	_	-	

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment. In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction. Delays marked with '##' could not be calculated.

# **Overall Queues & Delays**

### **Queueing Delay Information Over Whole Period**

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	15.1	10.1	2.0	0.1	2.0	0.1
B-C	8.3	5.5	0.9	0.1	0.9	0.1
C-AB	3.1	2.1	0.3	0.1	0.3	0.1
C-A	94.6	63.1	-	-	-	-
A-B	11.0	7.3	-	-	-	-
A-C	55.1	36.7	-	-	-	-

AII	187.2	124.8	3.2	0.0	3.2	0.0

Delay is that occurring only within the time period.

Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period. These will only be significantly different if there is a large queue remaining at the end of the time period.

# PICADY 5 Run Successful

