CHAPTER 14

TRAFFIC

CONTENTS

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Glossary of Terms

Road Network:	The existing and proposed public and private roads within the study area.
Traffic Growth:	The normal expected growth in traffic over time.
Trip:	One movement, in or out of the study area by foot, cycle or vehicle.
Thresholds:	Minimum intervention levels at which Transport and Traffic Assessments are to be conducted.
Generated Trips:	Additional trips made as a result of the presence of a development.
Peak Time:	Time of day at which the transport demands from a development are greatest.
Capacity Calculations:	Standardised methods of estimating traffic capacity on links and at junctions.
Trip Distribution:	The estimated directional distribution of the estimated traffic at each junction in the study area.

Trip Assignment:	The final estimated flows of traffic for each direction of travel at each junction and along each link within the study area.
TRICS:	A database containing empirically obtained trip generation data for a wide range of different types of developments.
AADT:	Annual Average Daily Traffic – The mean daily traffic volume over the course of a year on a particular route.
Level of Service:	Level of Service (LOS) is a measure of the capacity of a road related to the average vehicular speed and level of congestion on the road. It is ranges from LOS A to LOS F, with A representing free flow and F representing stop/start traffic. LOS C represents stable flow conditions

Introduction

General

14.1 PMCE Ltd. were commissioned by Lagan Materials Ltd. to undertake an assessment of the traffic impacts associated with the recommencement / deepening of the existing quarry and the recommencement of aggregate processing activities at Aghamore Near, Aghamore Far and Carrownamaddoo townlands, Co. Sligo, within an overall application area of c. 22.5ha.

14.2 A Traffic and Transport Assessment has been prepared in support of this Environmental Impact Assessment Report for the proposed development.

Information Reviewed

14.3 In preparing this assessment, reference has been made to the following documents: -

- "Traffic and Transport Assessment Guidelines" (September 2014) published by Transport Infrastructure Ireland (TII);
- Unit 5.3 (Travel Demand Projections) of the "Project Appraisal Guidelines" (2019) published by Transport Infrastructure Ireland);
- Traffic Count Survey Data, collected by NDC (Nationwide Data Collection); andTII Publications document DN-GEO-03031, "Rural Road Link Design" (June 2017) published by Transport Infrastructure Ireland (TII);TII Publications document DN-GEO-03060, "Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade-separated and compact grade-separated junctions)" (June 2017) published by Transport Infrastructure Ireland (TII); andUnit 16.1 (Expansion Factors for Short Period Traffic Counts) of the "Project Appraisal Guidelines" (2016) published by Transport Infrastructure Ireland.

Scope

14.4 The objective of this assessment is to examine the traffic implications associated with the proposed development in terms of its integration with existing traffic in the area. The report determines and quantifies the extent of additional trips generated by the proposed development, and the impact on operational performance of such trips on the local road network.

14.5 In addition, an assessment has been undertaken of the cumulative traffic impacts arising from the proposed development in combination with the existing asphalt plant at the site.

Methodology

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

- A site visit, conducted on the 19th November 2020, during which the weather was dry, and the ground surface was dry.
- Classified traffic turning counts undertaken on the 21st February 2018 at two locations: the R287/L3603/L36025 and the R284/L3603 junctions. This traffic count data was projected using TII Growth Factors to determine the background traffic data for the year 2020. The Growth Factors used are conservative and are considered to adequately reflect typical traffic volumes, which are currently lower than usual due to the Covid-19 pandemic. Obtaining current traffic count data was considered, but deemed unsuitable, as it may not adequately reflect the likely post-pandemic traffic volumes.
- Existing Traffic Assessment – The traffic count data was used to develop 'Junctions 9' models for the quarry access, the quarry/processing plant crossroads junction, the R287/ L3603/L36025 and the R284/L3603 junctions.
- Trip Generation and Trip Assignment – Development traffic volumes were derived and the likely distribution on the adjacent road network determined based on the predicted routes vehicles will travel to/from the quarry.
- Future Year Assessments – The estimated future year volumes on the study area network, as a result of the increase in background traffic and any development related traffic, was used to assess the future operational performance of the junctions and surrounding road network for 2022 (assumed year of opening) and at two future assessment years, the opening year +5 (2027) and the opening year +15 (2037).

ADDITIONAL INFORMATION

14.7 As outlined in Chapter 1, a planning application was submitted to Sligo County Council (Plan File Ref. No. 18/345 / ABP Ref. 305821-19) in August 2018 for similar development to that proposed as part of this application. In October 2019 Sligo County Council granted planning permission for the development (subject to 23 no. conditions). 2 no. third party appeals of the decision by Sligo County Council to grant permission for the proposed quarry development were made to An Bord Pleanala (ABP-305821-19). An Bord Pleanala refused permission for the proposed development on the 30th June 2020 for the 2 no. reasons – refer to Chapter 1 for further details.

14.8 In order to comprehensively address the reasons for refusal, and further comments contained within the An Bord Pleanala Inspectors Report a number of additional surveys / site investigations, field work and assessments have been carried out. This Chapter 14 of the EIAR has been updated as follows: This assessment takes account of the revised planning application area and considers all activities associated with the revised application area, such as the recommencement of aggregate processing activities; The assessment takes account of cumulative impacts associated with the existing asphalt plant on-site. This assessment takes account of the response to further information

made to Sligo County Council in respect of the traffic aspects of the previous planning application (planning ref. 18/345).

14.9 A further site visit was carried out on 19th November 2020.

Location Plan

14.10 Figure 14.1 shows the existing quarry / processing area and surrounding area.

Figure 14.1: LOCATION PLAN (Source OpenStreetMap)

Existing Conditions

The Site

14.11 The lands which are the subject of this application comprise c. 22.5 hectares and are located in the townlands of Aghamore Near, Aghamore Far and Carrownamaddoo, Co. Sligo (refer to Figure 14.1). The proposed development is located wholly within the existing quarry and associated processing area (located on the eastern side of the local road that bisects the application site) and no lateral extension of the development is proposed.

14.12 The application site is located near two regional roads, the R287 to the South and the R284 to the East. The site occupies ground with elevations ranging between -21m OD (Quarry Floor) and 34m

OD. The lower quarry floor is currently at -21 m OD, with the previous planning permission (Plan File Ref. No 02/271) authorising extraction to -34.5m OD. The application area forms the existing quarry area, along with the associated processing area located on the eastern site of the local road that bisects the application site. The processing area occupies ground with elevations at c. 15 mOD.

14.13 The existing quarry has historically been used for the extraction of limestone and the applicant intends to recommence limestone extraction from the existing quarry area in addition to the recommencement of aggregate processing activities within the existing aggregate processing area on-site.

14.14 It is proposed to maintain extraction rates in line with previously permitted levels, i.e. up to 300,000 tonnes of rock per year, resulting in a maximum of 50 loads per day from the development. However, it is expected that extraction rates will vary from 150,000 to 300,000 tonnes per annum, depending on market demand.

14.15 In addition to the quarry, the production of asphalt from the existing asphalt plant will be considered as part of the estimation of projected cumulative impacts.

14.16 The development will directly employ approximately 6 full time staff and it is assumed that staff arrivals and departures will primarily occur during the peak hours.

14.17 Traffic to and from the development shall be accommodated using the main site access located to the north of the development.

14.18 The quarry and processing area are located on opposite sides of the L3603. Traffic to and from the quarry/processing area will use an existing haul route crossing located south of the main site access. Vehicle movements between the quarry and the processing area would primarily be associated with the haulage of aggregates from the quarry to the processing area for further processing (crushing / screening / stockpiling), resulting in a maximum of 31 loads per day.

Existing Road Network

L3603 Local Road

14.19 In the vicinity of the development site the L3603 Local Road extends in a predominantly northeast to southwest direction between its junctions with the R287 Regional Road to the northeast, and the R287 Regional Road to the southwest. It has an approximate carriageway width ranging between 4.8m and 6.0m with no hard shoulder or pedestrian facilities.

14.20 The L3603 has a posted speed limit of 80kph which reduces to 60kph on the approach to its junctions with the R284 and R287.

R287 Regional Road

14.21 In the vicinity of the development site, the R287 Regional Road extends south-eastwards, from its junction with the N4 National Road, through Aghamore to its junction with the R280.

14.22 The R287 meets the L3603 at a crossroad junction formed by the L36025 to the east, the L3603 to the west and the R287 to the north & south of the junction. This junction is to the south of Aghamore on the R287, and approximately 250m east of the quarry access on the L3603.

14.23 The R287 has a posted speed limit of 60kph at the junction and a paved width between 5.3m and 5.7m.

14.24 There are no hard shoulders or pedestrian facilities along the R287 in the vicinity of its junction with the L3603.

R284 Regional Road

14.25 The R284 Regional Road extends in a north to south direction from its junction with the R287 to the north, to its junction with the R280 in Leitrim village to the south.

14.26 The R284 meets the L3603 at a crossroad junction approximately 1.2km west of the quarry access along the L3603. The R284 has a posted speed limit of 60kph in the vicinity of the junction and a paved width of approximately 6.0m.

14.27 The R287 has hard shoulders on both sides in the vicinity of its junction with the L3603, with flexible bollards located in the hard shoulder on the northern arm of the junction.

Study Area

14.28 The study area for this assessment is shown on Figure 1 1, and includes: -

- Junction 1 – the R287/L3603/L36025 Junction;
- Junction 2 – the Quarry Access;
- Junction 2A - Haul Route crossing of L3603, which caters for the transport of quarry materials to the processing area;
- Junction 3 – the R284/L3603 Junction; and
- The L3603.

Traffic Volumes

14.29 Classified traffic turning counts were carried out on Wednesday 21st February 2018 at the R287/L3603/L36025 junction and at the R284/L3603 junction. The counts were carried out between 7:00am and 7:00pm, this time period encompassing the proposed main operating hours of the quarry and also the peak hours on the adjacent road network. This traffic count data was projected using TII Growth Factors to determine the background traffic data for the year 2020. The Growth Factors used are conservative and are considered to adequately reflect typical traffic volumes, which are currently lower than usual due to the Covid-19 pandemic. Obtaining current traffic count data was considered, but deemed unsuitable, as it may not adequately reflect the likely post-pandemic volumes.

Surveyed vehicles were split into two categories, LV (Light Vehicles) & HV (Heavy Vehicles).

14.30 The traffic count data has been converted to Annual Average Daily Traffic (AADT) values using the methods described in "Expansion Factors for Short Period Traffic Counts" (Unit 16.1 "Project Appraisal Guidelines" 2016). Annexes A to C of this document were used in the expansion of traffic counts to AADT.

14.31 A combined factor of 0.802 was arrived at by combining the individual hourly factors for the count duration. This factor was then used to determine the 24-hour traffic flow, which was then converted to a Weekly Average Daily Traffic (WADT) using a factor of 0.98 for a Wednesday traffic count. Finally, the WADT was converted to AADT using a factor of 1.08 for the month of February. These factors were used to calculate the AADT on the roads at each of the junctions.

14.32 The results of the traffic survey at the R287/L3603/L36025 junction are summarised in Table 14.1 . From the survey data the peak hours at this junction have been established as: -

- 07:45hrs to 08:45hrs – Weekday AM Peak Hour; and
- 17:00hrs to 18:00hrs – Weekday PM Peak Hour.

Table 14.1 JUNCTION 1 (R287/L3603/L36025 CROSSROADS)

Hour Ending	R287 (SE)	L3603	R287 (NW)	L36025
08:00	103	14	95	4
09:00	206	31	189	40
10:00	182	24	161	33
11:00	128	20	119	27
12:00	113	22	107	22
13:00	138	18	115	25
14:00	138	25	133	38
15:00	128	21	128	27
16:00	171	22	153	32
17:00	185	23	155	37
18:00	223	23	191	55
19:00	178	12	155	41

Period Total	**1893**	**255**	**1701**	**381**
Period Total HGVs	***45***	***31***	***60***	***2***
% HGVs	***2%***	***12%***	***4%***	***1%***
AADT	**2498**	**337**	**2245**	**503**

14.33 The results of the traffic survey at the R284/L3603 junction are summarised in Table 14.2 . From the survey data, the peak hours at the junction have been established as: -

- 08:15hrs to 09:15hrs – Weekday AM Peak Hour; and
- 17:00hrs to 18:00hrs – Weekday PM Peak Hour.

Table 14.2 JUNCTION 3 (R284/L3603 CROSSROADS)

Hour Ending	R284	L3603 (E)	R284 (S)	L3603 (W)
08:00	128	17	122	21
09:00	273	37	311	71
10:00	194	35	191	42
11:00	161	26	155	28
12:00	175	26	174	33
13:00	155	33	145	31
14:00	160	27	158	43
15:00	181	31	169	37
16:00	202	36	201	31
17:00	251	42	242	55
18:00	298	48	295	55
19:00	224	22	217	37
Period Total	2402	380	2380	484
Period Total HGVs	*83*	*32*	*88*	*35*
% HGVs	*3%*	*8%*	*4%*	*7%*
AADT	3170	501	3141	639

Proposed Development

General - Quarry

14.34 The proposed development consists of the recommencement / deepening of the existing quarry and recommencement of aggregate processing activities in the existing processing area, within an overall application area of c. 22.5ha.

14.35 It is proposed to maintain extraction rates in line with previously permitted levels, i.e. up to 300,000 tonnes of rock per year, resulting in a maximum of 50 loads per day from the development. However, it is expected that extraction rates will vary from 150,000 to 300,000 tonnes per annum, depending on market demand.

Trip Generation and Assignment

Aggregate extraction and export

14.36 A maximum of 300,000 tonnes shall be extracted per annum, which equates to approximately 50 loads per day (see Table 14.3 *E*) based upon the following assumptions: -

- The facility will operate for 50 weeks per year.
- Material will be transported from the site in 20 tonne and 28 tonne loads (24 tonnes average assumed).
- The facility will operate 5.5 days per week (Monday to Saturday) inclusive.
- The facility opening times will be 07:00 to 18:00 Monday to Friday and 08:00 to 14:00 on Saturday.

Table 14.3 *E*XPORTED LIMESTONE

Exported Quantities of Material	
Quantity per annum	300,000
Quantity per week (50 operational weeks / year)	6,000
Loads per week (24 tonnes / load)	250
Loads per Hour (61 working hours / week)	5 (4.09)
Loads per Day (11 working hours / weekday)	50 (45.0)

14.37 It is anticipated that the development will employ approximately 6 full time staff. Staff movements will generate 12 peak hour trips, 6 trips inbound during the morning peak hour and 6 trips outbound during the evening peak hour

14.38 10 trips have been assumed to occur daily to cater for possible miscellaneous trips associated with the site. These miscellaneous trips allow for operations meetings, site inspections, maintenance operations for plant and machinery, etc. It is not considered that these trips would coincide with the peak hours, however, for a robust traffic assessment they have been included in the development's peak hour traffic.

Derived Trip Rate (Limestone extraction and export)

14.39 Table 14.4Table 14.9: contains a summary of trips associated with the proposed development. The figure of 50 loads per day was used to calculate the total predicted daily trips for exported material. Using these figures (with staff and miscellaneous trips), the total number of trips is expected to be 132, based on the figures outlined in Table 14.4: .

Table 14.4: SUMMARY OF PREDICTED DAILY TRIPS

	Predicted Daily Trips		
	Arrivals	**Departures**	**Total**
Exported Limestone	50	50	**100**
Staff	6	6	**12**
Miscellaneous	10	10	**20**
Total	**66**	**66**	**132**

Cumulative Impacts

14.40 An assessment has been undertaken of the cumulative traffic impacts arising from the proposed development in combination with the existing asphalt plant at the site.

14.41 Production rates of 60,000 tonnes of asphalt per annum have been adopted for the purposes of this cumulative assessment. The limestone required for this production would be sourced on-site, while the remaining materials required for production would be imported (e.g. Sand, High PSV stone and Bitumen).

14.42 Table 14.5 to Table 14.8 detail the required quantities of materials for the production of asphalt.

Table 14.5: EXPORTED ASPHALT

Exported Quantities of Asphalt		
Quantity per annum	14.43	60,000
Quantity per week (50 operational weeks / year)	14.44	1,200
Quantity per Day (weekday) (5 working Day / load)	14.45	240
Loads per Day (24 tonnes / weekday)	14.46	10

Table 14.6: IMPORTED PSV STONE (ASPHALT PRODUCTION)

Imported Quantities of PSV Stone		
Quantity per day	14.47	76
Loads per Day (24 tonnes /Day)	14.48	4 (3.16)

Table 14.7: IMPORTED BITUMEN (ASPHALT PRODUCTION)

Imported Quantities of Bitumen		
Quantity per day	14.49	11
Loads per Day (30 tonnes Day)	14.50	1 (0.36)

Table 14.8: IMPORTED SAND (ASPHALT PRODUCTION)

Imported Quantities of Sand	
Quantity per day	14.51 4
Loads per Day (24 tonnes/Day)	14.52 1 (0.16)

Derived Trip Rate (Cumulative Impacts)

14.53 Table 14.9: contains a summary of trips associated with the cumulative impacts of the proposed development. The figure of 64 loads per day was used to calculate the total predicted daily trips for exported and imported material. Using these figures (with staff and miscellaneous trips), the total number of trips is expected to be 164, based on the figures outlined in Table 14.9: .

Table 14.9: SUMMARY OF PREDICTED DAILY TRIPS (CUMULATIVE ASSESSMENT)

	Predicted Daily Trips		
	Arrivals	**Departures**	**Total**
Exported Limestone	50	50	**100**
Exported Asphalt	10	10	**20**
Imported PSV Stone (Asphalt Production)	4	4	**8**
Imported Bitumen (Asphalt Production	1	1	**2**
Imported Sand (Asphalt Production)	1	1	**2**
Staff	6	6	**12**
Miscellaneous	10	10	**20**
Total	**82**	**82**	**164**

Trip Distribution and Assignment

Trip Distribution

14.54 Appendix 14.A contains extracts from the TRICS database giving the forecast arrivals/departures distribution for quarry sites. Movements to and from quarries tend to have a short turnaround within the sites, e.g. that vehicles generally arrive and depart within a short time period, likely to be less than an hour.

14.55 These trips have been distributed throughout the day according to trip rates derived from the Trip Rate Information Computer System (TRICS) database which is based on surveyed traffic for similar types of developments in similar locations.

Trip Assignment

14.56 The assignment of the development traffic on the adjacent road network is based on an assessment of the existing traffic flows at nearby junctions derived from the traffic count data. Traffic assignment at the Site access junction is based on the historical traffic distribution pattern, as advised by the applicant, with most traffic departing to, and arriving from, the direction of the R287 (Aghamore).

14.57 Figure 14-2 and Figure 14-3 illustrate the trip assignment that has been applied to the development traffic as part of the junction capacity analysis. The trip distribution has been examined for: -

- Cars and Light Goods Vehicles (Figure 14.2); and
- Heavy Goods Vehicles (Figure 14.3).

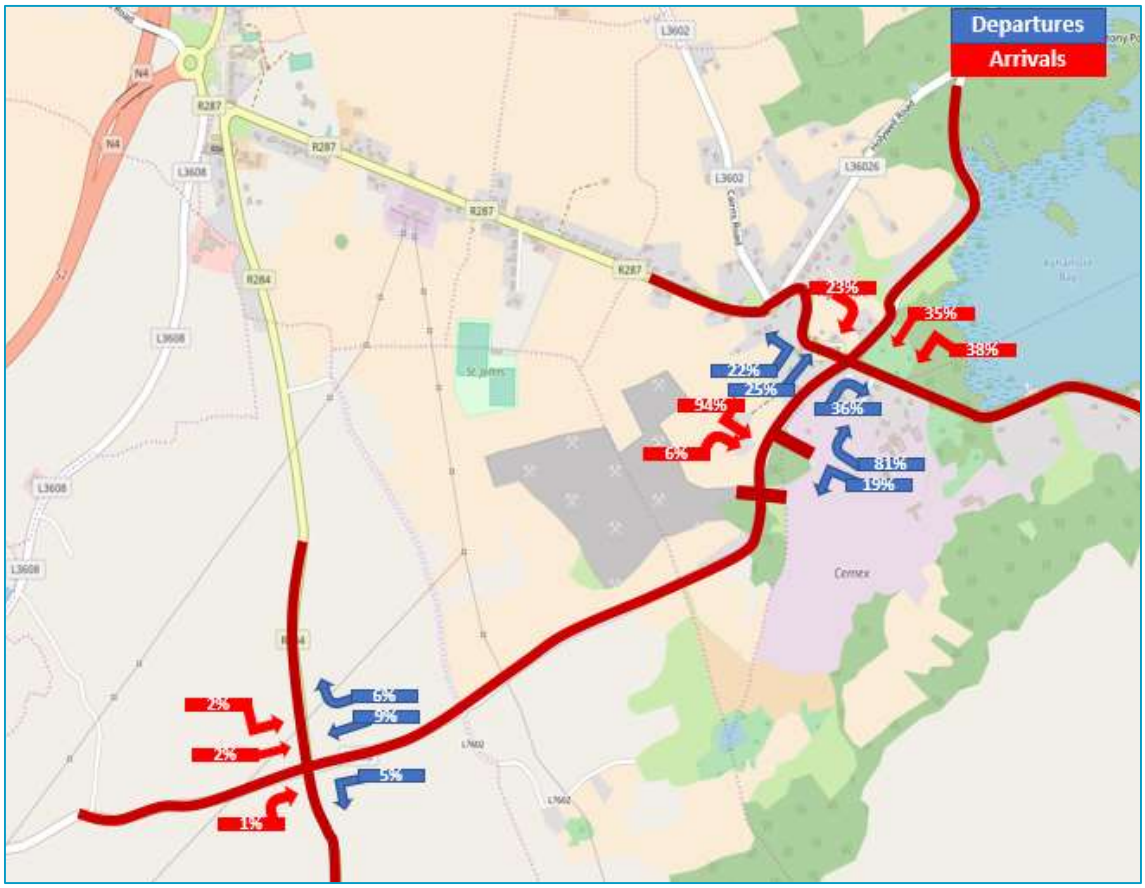


Figure 14.2: Assignment of Quarry Traffic onto the Road Network (LVs)

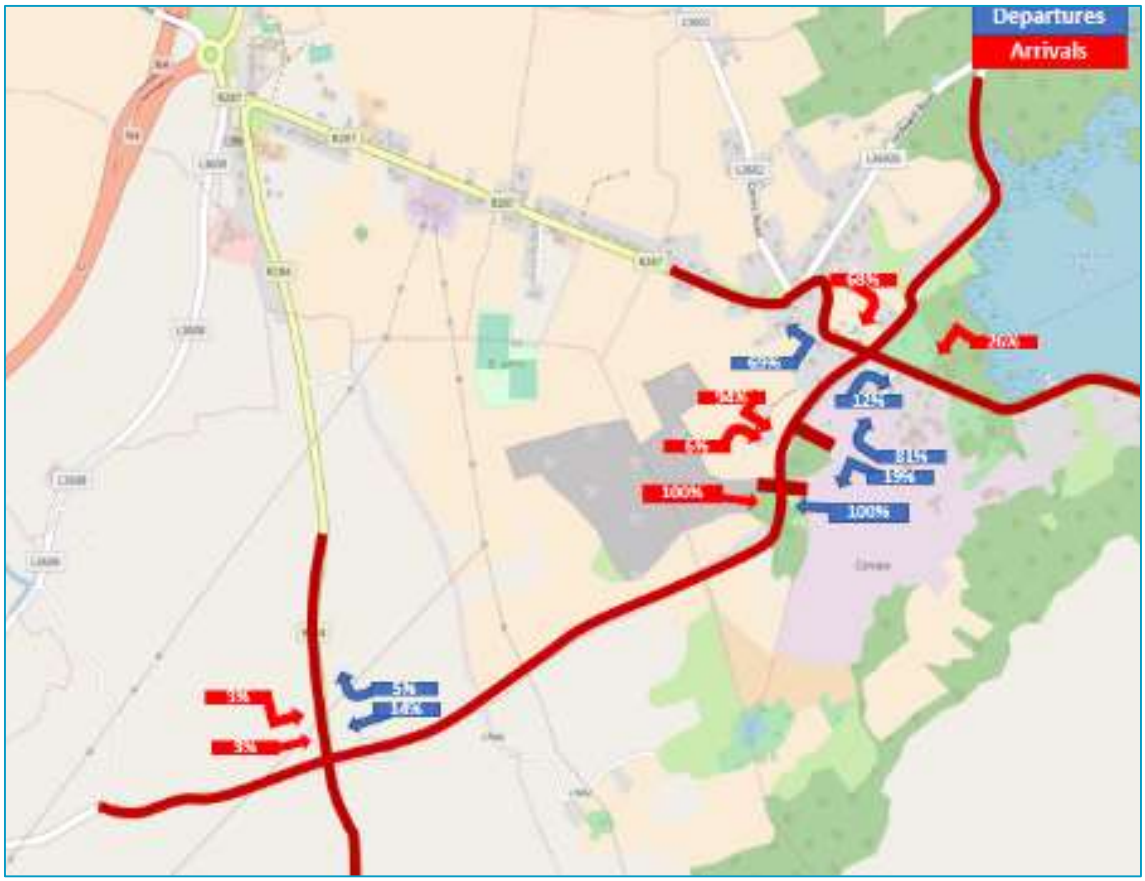


Figure 14.3: Assignment of Quarry Traffic onto the Road Network (HGVs)

Road Impacts

Assessment Years

14.58 The "Traffic and Transport Assessment Guidelines" published by Transport Infrastructure Ireland recommend the assessment of traffic in the Opening Year, for the Opening Year +5 years and the Opening Year +15 years. The assessment years for the impact assessment are therefore 2022 for the Opening Year, 2027 and 2037 for the Future Assessment Years.

Traffic Growth

14.59 Unit 5.3 (Travel Demand Projections) of the "Project Appraisal Guidelines" (2016) published by Transport Infrastructure Ireland has been used to determine future year traffic flows on the network from the 2018 traffic count data. Table 14.10: contains a summary of the traffic growth factors in the "Project Appraisal Guidelines". For this assessment, a central growth scenario has been adopted (a 'central' growth scenario was assumed given the site location and scale).

Table 14.10: FUTURE YEAR TRAFFIC GROWTH FIGURES (BORDER)

Year	Low Growth		Central Growth		High Growth	
	LV	HV	LV	HV	LV	HV
2016-2030	1.0133	1.0307	**1.0147**	**1.0323**	1.0178	1.0357
2030-2040	1.0028	1.0118	**1.0045**	**1.0136**	1.0082	1.0173

Link Capacity Assessment

General

14.60 Table 6.1 of the TII Publications document DN-GEO-03031 provides guidance on the capacity, for a Level of Service D (LOS D), of different road types by cross-section. It advises that the capacity of a Type 3 Single Carriageway road with 6.0m cross-section is 5,000 AADT for a Level of Service D. The following are the approximate carriageway widths of the roads which are part of this study:

- L3603 - Average cross-section width of between 4.8 to 6.0m with no hard shoulders present.
- R287 - Average cross-section width between 5.3 and 5.7m with no hard shoulders present.
- R284 - Average cross-section width of between 6.0m and 6.2m with no hard shoulders present.

14.61 It is considered that the roads which are part of this study are most similar to the Type 3 Single Carriageway cross-section in this document with a capacity of 5,000 AADT for Level of Service D.

14.62 The link roads were assessed reflecting two scenarios, as follows:

- Scenario 1: assessment of the traffic related impacts associated with the recommencement and deepening of the existing quarry with extraction rates of limestone in line with the previously permitted output of 300,000 tonnes per annum; and
- Scenario 2: assessment of the traffic related impacts associated with the cumulative impacts of future quarry operations in combination with the existing asphalt plant.

L3603 Local Road

14.63 The combined background and Site Traffic volumes on the L3603, outlined in Table 14.11: , and Table 14.12: for each of the assessment years, is less than the LOS D capacity of 5,000 AADT for a Type 3 Single Carriageway. It is considered that the L3603 will operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 22.08% and 25.05% of the total traffic on the L3603 during the assessment years 2022 to 2037 for scenario 1, and between 24.78% and 27.98% of the total traffic on the L3603 during the assessment years 2022 to 2037 for scenario 2.

Table 14.11: COMBINED AADT FOR EACH ASSESSMENT YEAR (L3603)- SCENARIO 1

	Assessment Year			
	2018	2022	2027	2037
Background Traffic	337	368	400	434
Additional Development Traffic	-	123	123	123
Combined Traffic (Background + Additional Dev. Traffic)	337	491	523	557
Additional Traffic as % of Combined Traffic	-	25.05%	23.52%	22.08%

Table 14.12: COMBINED AADT FOR EACH ASSESSMENT YEAR (L3603)- SCENARIO 2

	Assessment Year			
	2018	2022	2027	2037
Background Traffic	337	368	400	434
Additional Development Traffic	-	143	143	143
Combined Traffic (Background + Additional Dev. Traffic)	337	511	543	577
Additional Traffic as % of Combined Traffic	-	27.98%	26.34%	24.78%

R287 Regional Road

14.64 The combined background and Site Traffic volumes on the R287, outlined in Table 14.13: , and Table 14.14: for each of the assessment years, is less than the LOS D capacity of 5,000 AADT for a Type 3 Single Carriageway. It is considered that the R287 will operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 1.04% and 1.20% of the total traffic on the R287 during the assessment years 2022 to 2037 for scenario 1, and between 1.17% and 1.35% of the total traffic on the R287 during the assessment years 2022 to 2037 for scenario 2.

Table 14.13: COMBINED AADT FOR EACH ASSESSMENT YEAR (R287)- SCENARIO 1

	Assessment Year			
	2018	2022	2027	2037
Background Traffic	2,498	2,708	2,920	3,126
Additional Development Traffic	-	33	33	33
Combined Traffic (Background + Additional Dev. Traffic)	2,498	2,741	2,953	3,159
Additional Traffic as % of Combined Traffic	-	1.20%	1.12%	1.04%

Table 14.14: COMBINED AADT FOR EACH ASSESSMENT YEAR (R287)- SCENARIO 2

	Assessment Year			
	2018	2022	2027	2037
Background Traffic	2,498	2,708	2,920	3,126
Additional Development Traffic	-	37	37	37
Combined Traffic (Background + Additional Dev. Traffic)	2,498	2,745	2,957	3,163
Additional Traffic as % of Combined Traffic	-	1.35%	1.25%	1.17%

R284 Regional Road

14.65 The combined background and Site Traffic volumes on the R284, outlined in Table 14.15: , and Table 14.16: for each of the assessment years, is less than the LOS D capacity of 5,000 AADT for a Type 3 Single Carriageway. It is considered that the R284 will operate within capacity for each of the assessment years. The traffic associated with the proposed development represents between 0.13% and 0.15% of the total traffic on the R284 during the assessment years 2022 to 2037 for scenario 1, and between 0.15% and 0.17% of the total traffic on the R284 during the assessment years 2022 to 2037 for scenario 2.

Table 14.15: COMBINED AADT FOR EACH ASSESSMENT YEAR (R284)- SCENARIO 1

	Assessment Year			
	2018	2022	2027	2037
Background Traffic	3,170	3,439	3,712	3,980
Additional Development Traffic	-	5	5	5
Combined Traffic (Background + Additional Dev. Traffic)	3,170	3,444	3,717	3,985
Additional Traffic as % of Combined Traffic	-	0.15%	0.13%	0.13%

Table 14.16: COMBINED AADT FOR EACH ASSESSMENT YEAR (R284)- SCENARIO 2

	Assessment Year			
	2018	2022	2027	2037
Background Traffic	3,170	3,439	3,712	3,980
Additional Development Traffic	-	6	6	6
Combined Traffic (Background + Additional Dev. Traffic)	3,170	3445	3,718	3,986
Additional Traffic as % of Combined Traffic	-	0.17%	0.16%	0.15%

Junction Capacity Analysis

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

14.67 Junction performance is measured as a ratio between the flow and capacity (RFC). The capacity analysis has been carried out for a period of 12 - hours for each of the assessment years (2022, 2027 and 2037). A rural junction with an RFC below 0.85 is considered to be operating within capacity, and an RFC of 0.85 indicates a junction operating at capacity.

14.68 The Junctions were assessed reflecting two modelling scenarios, as follows:

- Scenario 1: assessment of the traffic related impacts associated with the recommencement and deepening of the existing quarry with extraction rates of limestone in line with the previously permitted output of 300,000 tonnes per annum; and
- Scenario 2: assessment of the traffic related impacts associated with the cumulative impacts of future quarry operations in combination with the existing asphalt plant.

14.69 The detailed junction capacity analysis outputs for all of the junctions for all the future forecast assessment years are contained within Appendix 14.C to this report.

Junction 1 - R287/L3603/L36025 Crossroads

14.70 A summary of the junction capacity analysis results for the junction of the R287/L3603/L36025 Crossroads are shown in Table 14.17: and Table 14.21: . The results indicate that the junction will continue to operate within capacity for both scenarios for each of the assessment years 2022, 2027 and 2037.

Junction 2 - Main Access

14.71 A summary of the junction capacity analysis results for the junction of the Quarry access are shown in Table 14.18: and Table 14.22: . The results indicate that the junction will continue to operate within capacity for both scenarios for each of the assessment years 2022, 2027 and 2037.

Junction 2A- Haul Route crossing

14.72 A summary of the junction capacity analysis results for the junction of the Haul Route Crossing are shown in Table 14.19: and Table 14.23: Table 14.22: . The results indicate that the junction will continue to operate within capacity for both scenarios for each of the assessment years 2022, 2027 and 2037.

Junction 3 - R284/L3603 Crossroads

14.73 A summary of the junction capacity analysis results for the junction of the R284/L3603 Crossroads are shown in Table 14.20: and Table 14.24: . The results indicate that the junction will continue to operate within capacity for both scenarios for each of the assessment years 2022, 2027 and 2037.

Table 14.17: **JUNCTION 1 -R287/L3603/L36025 CROSSROADS (SCENARIO 1)**

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	**Base Year**		
L3603 - R287 (NW)/L36025	0.0	8.22	0.02
L3603 - R287 (SE)/ L36025	0.0	7.88	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.0	5.09	0.04
L36025 - R287 (SE)/L3603	0.1	7.38	0.06
L36025 - L3603/R287 (NW)	0.0	9.21	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.47	0.02
Stream	**Opening Year Without Development**		
L3603 - R287 (NW)/L36025	0.0	8.26	0.02
L3603 - R287 (SE)/ L36025	0.0	7.97	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.09	0.04
L36025 - R287 (SE)/L3603	0.1	7.40	0.06
L36025 - L3603/R287 (NW)	0.0	9.30	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.48	0.02
Stream	**+5 Without Development**		
L3603 - R287 (NW)/L36025	0.0	8.30	0.03
L3603 - R287 (SE)/ L36025	0.0	8.07	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.10	0.04
L36025 - R287 (SE)/L3603	0.1	7.42	0.06
L36025 - L3603/R287 (NW)	0.0	9.38	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.51	0.02
Stream	**+15 Without Development**		
L3603 - R287 (NW)/L36025	0.0	8.34	0.03
L3603 - R287 (SE)/ L36025	0.0	8.17	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.11	0.05
L36025 - R287 (SE)/L3603	0.1	7.45	0.07
L36025 - L3603/R287 (NW)	0.0	9.47	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.54	0.02
Stream	**Opening Year With Development**		
L3603 - R287 (NW)/L36025	0.0	8.68	0.03
L3603 - R287 (SE)/ L36025	0.0	9.89	0.04
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.10	0.04
L36025 - R287 (SE)/L3603	0.1	7.55	0.06

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
L36025 - L3603/R287 (NW)	0.0	9.32	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	10.00	0.03
Stream	**+5 With Development**		
L3603 - R287 (NW)/L36025	0.0	8.57	0.04
L3603 - R287 (SE)/ L36025	0.0	9.86	0.04
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.11	0.04
L36025 - R287 (SE)/L3603	0.1	7.57	0.06
L36025 - L3603/R287 (NW)	0.0	9.41	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	9.97	0.03
Stream	**+15 With Development**		
L3603 - R287 (NW)/L36025	0.0	8.50	0.04
L3603 - R287 (SE)/ L36025	0.0	9.84	0.04
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.11	0.05
L36025 - R287 (SE)/L3603	0.1	7.60	0.07
L36025 - L3603/R287 (NW)	0.0	9.49	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	9.94	0.04

Table 14.18: **JUNCTION 2 -MAIN ACCESS (SCENARIO 1)**

	12 Hours		
	Queue (Veh)	Delay (s)	RFC
Stream	**Opening Year (With Development)**		
ACCESS- L3603 (W)	0.0	11.89	0.01
ACCESS- L3603 (E)	0.0	13.89	0.05
L3603 (W)- L3603 (E)/ACCESS	0.0	11.28	0.00
Stream	**+5 (With Development)**		
ACCESS- L3603 (W)	0.0	11.90	0.01
ACCESS- L3603 (E)	0.0	13.91	0.05
L3603 (W)- L3603 (E)/ACCESS	0.0	11.28	0.00
Stream	**+15 (Without Development)**		
ACCESS- L3603 (W)	0.0	11.91	0.01
ACCESS- L3603 (E)	0.0	13.93	0.05
L3603 (W)- L3603 (E)/ACCESS	0.0	11.28	0.00

Table 14.19: **JUNCTION 2A – HAUL ROUTE CROSSING (SCENARIO 1)**

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	**Opening Year With Development**		
PROCESSING PLANT - L3603 (W)/QUARRY	0.0	14.44	0.01
PROCESSING PLANT - L3603 (E)/ QUARRY	0.0	14.42	0.01
L3603 (E) - PROCESSING PLANT/L3603 (W)/ QUARRY	0.0	0.00	0.00
QUARRY - L3603 (E)/PROCESSING PLANT	0.0	15.42	0.01
QUARRY - PROCESSING PLANT/L3603 (W)	0.0	15.39	0.01
L3603 (W) - L3603 (E)/PROCESSING PLANT/ QUARRY	0.0	0.00	0.00
Stream	**+5 With Development**		
PROCESSING PLANT - L3603 (W)/QUARRY	0.0	14.46	0.01
PROCESSING PLANT - L3603 (E)/ QUARRY	0.0	14.44	0.01
L3603 (E) - PROCESSING PLANT/L3603 (W)/ QUARRY	0.0	0.00	0.00
QUARRY - L3603 (E)/PROCESSING PLANT	0.0	15.44	0.01
QUARRY - PROCESSING PLANT/L3603 (W)	0.0	15.41	0.01
L3603 (W) - L3603 (E)/PROCESSING PLANT/ QUARRY	0.0	0.00	0.00
Stream	**+15 With Development**		
PROCESSING PLANT - L3603 (W)/QUARRY	0.0	14.48	0.01
PROCESSING PLANT - L3603 (E)/ QUARRY	0.0	14.46	0.01
L3603 (E) - PROCESSING PLANT/L3603 (W)/ QUARRY	0.0	0.00	0.00
QUARRY - L3603 (E)/PROCESSING PLANT	0.0	15.46	0.01
QUARRY - PROCESSING PLANT/L3603 (W)	0.0	15.44	0.01
L3603 (W) - L3603 (E)/PROCESSING PLANT/ QUARRY	0.0	0.00	0.00

Table 14.20: **JUNCTION 3 - R284/L3603 CROSSROADS (SCENARIO 1)**

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	**Base Year**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	8.82	0.03
L3603 (E) - R284 (N)/ L3603 (W)	0.0	9.49	0.03
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.14	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.50	0.02
L3603 (W) - L3603 (E)/R284 (S)	0.0	9.75	0.03
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.02	0.02
Stream	**Opening Year Without Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.01	0.03
L3603 (E) - R284 (N)/ L3603 (W)	0.0	9.67	0.04
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.17	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.57	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	9.87	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.02
Stream	**+5 Without Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.22	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.0	9.87	0.04
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.19	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.64	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.00	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03
Stream	**+15 Without Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.45	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.1	10.08	0.05
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.22	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.71	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.13	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03
Stream	**Opening Year With Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.38	0.03
L3603 (E) - R284 (N)/ L3603 (W)	0.0	10.14	0.04
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.16	0.02

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.71	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	9.94	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.02	0.02
Stream	**+5 With Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.56	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.1	10.31	0.05
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.19	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.80	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.07	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03
Stream	**+15 With Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.77	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.1	10.50	0.05
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.22	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.89	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.21	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03

Table 14.21: JUNCTION 1 -R287/L3603/L36025 CROSSROADS (SCENARIO 2)

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	**Base Year**		
L3603 - R287 (NW)/L36025	0.0	8.22	0.02
L3603 - R287 (SE)/ L36025	0.0	7.88	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.0	5.09	0.04
L36025 - R287 (SE)/L3603	0.1	7.38	0.06
L36025 - L3603/R287 (NW)	0.0	9.21	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.47	0.02
Stream	**Opening Year Without Development**		
L3603 - R287 (NW)/L36025	0.0	8.26	0.02
L3603 - R287 (SE)/ L36025	0.0	7.97	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.09	0.04
L36025 - R287 (SE)/L3603	0.1	7.40	0.06
L36025 - L3603/R287 (NW)	0.0	9.30	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.48	0.02
Stream	**+5 Without Development**		
L3603 - R287 (NW)/L36025	0.0	8.30	0.03
L3603 - R287 (SE)/ L36025	0.0	8.07	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.10	0.04
L36025 - R287 (SE)/L3603	0.1	7.42	0.06
L36025 - L3603/R287 (NW)	0.0	9.38	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.51	0.02
Stream	**+15 Without Development**		
L3603 - R287 (NW)/L36025	0.0	8.34	0.03
L3603 - R287 (SE)/ L36025	0.0	8.17	0.02
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.11	0.05
L36025 - R287 (SE)/L3603	0.1	7.45	0.07
L36025 - L3603/R287 (NW)	0.0	9.47	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	6.54	0.02
Stream	**Opening Year With Development**		
L3603 - R287 (NW)/L36025	0.0	10.31	0.04
L3603 - R287 (SE)/ L36025	0.0	10.49	0.04
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.10	0.04
L36025 - R287 (SE)/L3603	0.1	7.57	0.06

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
L36025 - L3603/R287 (NW)	0.0	9.33	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	11.54	0.04
Stream	**+5 With Development**		
L3603 - R287 (NW)/L36025	0.0	10.15	0.04
L3603 - R287 (SE)/ L36025	0.0	10.40	0.04
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.11	0.04
L36025 - R287 (SE)/L3603	0.1	7.59	0.06
L36025 - L3603/R287 (NW)	0.0	9.42	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.0	11.50	0.04
Stream	**+15 With Development**		
L3603 - R287 (NW)/L36025	0.0	9.97	0.04
L3603 - R287 (SE)/ L36025	0.0	10.33	0.04
R287 (SE) - L3603/R287 (NW)/ L36025	0.1	5.12	0.05
L36025 - R287 (SE)/L3603	0.1	7.62	0.07
L36025 - L3603/R287 (NW)	0.0	9.51	0.02
R287 (NW) - R287 (SE)/L3603/ L36025	0.1	11.45	0.04

Table 14.22: JUNCTION 2 -MAIN ACCESS (SCENARIO 2)

	12 Hours		
	Queue (Veh)	Delay (s)	RFC
Stream	**Opening Year (With Development)**		
ACCESS- L3603 (W)	**0.0**	11.92	0.01
ACCESS- L3603 (E)	**0.0**	13.94	0.05
L3603 (W)- L3603 (E)/ACCESS	**0.0**	11.29	0.00
Stream	**+5 (With Development)**		
ACCESS- L3603 (W)	**0.0**	11.92	0.01
ACCESS- L3603 (E)	**0.0**	13.96	0.05
L3603 (W)- L3603 (E)/ACCESS	**0.0**	11.29	0.00
Stream	**+15 (Without Development)**		
ACCESS- L3603 (W)	**0.0**	11.93	0.01
ACCESS- L3603 (E)	**0.0**	13.98	0.05
L3603 (W)- L3603 (E)/ACCESS	**0.0**	11.29	0.00

Table 14.23: JUNCTION 2A – HAUL ROUTE CROSSING (SCENARIO 2)

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	**Opening Year With Development**		
PROCESSING PLANT - L3603 (W)/QUARRY	0.0	14.44	0.01
PROCESSING PLANT - L3603 (E)/ QUARRY	0.0	14.42	0.01
L3603 (E) - PROCESSING PLANT/L3603 (W)/ QUARRY	0.0	0.00	0.00
QUARRY - L3603 (E)/PROCESSING PLANT	0.0	15.42	0.01
QUARRY - PROCESSING PLANT/L3603 (W)	0.0	15.40	0.01
L3603 (W) - L3603 (E)/PROCESSING PLANT/ QUARRY	0.0	0.00	0.00
Stream	**+5 With Development**		
PROCESSING PLANT - L3603 (W)/QUARRY	0.0	14.46	0.01
PROCESSING PLANT - L3603 (E)/ QUARRY	0.0	14.44	0.01
L3603 (E) - PROCESSING PLANT/L3603 (W)/ QUARRY	0.0	0.00	0.00
QUARRY - L3603 (E)/PROCESSING PLANT	0.0	15.44	0.01
QUARRY - PROCESSING PLANT/L3603 (W)	0.0	15.41	0.01
L3603 (W) - L3603 (E)/PROCESSING PLANT/ QUARRY	0.0	0.00	0.00
Stream	**+15 With Development**		
PROCESSING PLANT - L3603 (W)/QUARRY	0.0	14.49	0.01
PROCESSING PLANT - L3603 (E)/ QUARRY	0.0	14.46	0.01
L3603 (E) - PROCESSING PLANT/L3603 (W)/ QUARRY	0.0	0.00	0.00
QUARRY - L3603 (E)/PROCESSING PLANT	0.0	15.46	0.01
QUARRY - PROCESSING PLANT/L3603 (W)	0.0	15.44	0.01
L3603 (W) - L3603 (E)/PROCESSING PLANT/ QUARRY	0.0	0.00	0.00

Table 14.24: JUNCTION 3 - R284/L3603 CROSSROADS (SCENARIO 2)

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
Stream	**Base Year**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	8.82	0.03
L3603 (E) - R284 (N)/ L3603 (W)	0.0	9.49	0.03
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.14	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.50	0.02
L3603 (W) - L3603 (E)/R284 (S)	0.0	9.75	0.03
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.02	0.02
Stream	**Opening Year Without Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.01	0.03
L3603 (E) - R284 (N)/ L3603 (W)	0.0	9.67	0.04
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.17	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.57	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	9.87	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.02
Stream	**+5 Without Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.22	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.0	9.87	0.04
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.19	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.64	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.00	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03
Stream	**+15 Without Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.45	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.1	10.08	0.05
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.22	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.71	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.13	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03
Stream	**Opening Year With Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.67	0.03
L3603 (E) - R284 (N)/ L3603 (W)	0.0	10.56	0.04
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.16	0.02

	12 Hours (07:00 – 19:00)		
	Queue (Veh)	Delay (s)	RFC
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.81	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.00	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.02	0.02
Stream	**+5 With Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	9.83	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.1	10.70	0.05
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.19	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.90	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.12	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03
Stream	**+15 With Development**		
L3603 (E) - R284 (S)/L3603 (W)	0.0	10.03	0.04
L3603 (E) - R284 (N)/ L3603 (W)	0.1	10.87	0.05
R284 (N) - L3603 (E)/R284 (S)/ L3603 (W)	0.0	6.22	0.02
L3603 (W) - R284 (N)/L3603 (E)	0.0	7.99	0.03
L3603 (W) - L3603 (E)/R284 (S)	0.0	10.26	0.04
R284 (S) - R284 (N)/L3603 (E)/ L3603 (W)	0.0	5.03	0.03

Road Safety

Site Access

14.74 The site access has a paved width of 25m at the mouth of the junction with the L3603. The existing pavement at the access has recently been renewed (which is not reflected in the adjacent photo).

14.75 There are no warning signs on the L3063 approaches to the quarry access. Warning signs on both approaches to the main quarry access and haul route access will be provided to advise approaching drivers of the upcoming quarry access.

14.76 In relation to Planning Application 18/345 and, in particular, items 18 & 19 of the subsequent Request for Further Information (RFI), a representative from the applicant's team (PMCE Ltd) met with the Area Engineer, Mr Conor McCann, on site on the 30th November 2018 to discuss the roads/traffic related RFI items.

14.77 Following discussions with Mr. McCann, it was agreed that vegetation will be cut back to ensure sufficient visibility is achieved at the existing haul route crossing location and that the verge levels would be reduced to ensure adequate shedding of surface runoff from the carriageway.

14.78 Mr. McCann confirmed that RFI 19 was raised on the understanding that the existing quarry crossroads access would be used for vehicles entering/exiting the quarry. The applicant advised that this access would only be used for machinery crossing the road, and not for access onto, or from, the road. On this basis, it was agreed with Mr. McCann that warning signage would be provided on the approaches to the crossing to alert approaching drivers of crossing machinery.

14.79 The measures agreed with Mr. McCann are included on drawing P20-114-DG-002, which were submitted to Mr. McCann for his review, who subsequently confirmed that they accurately reflect the measures agreed during the site visit on the 30th November 2018.

Sightlines

Main access

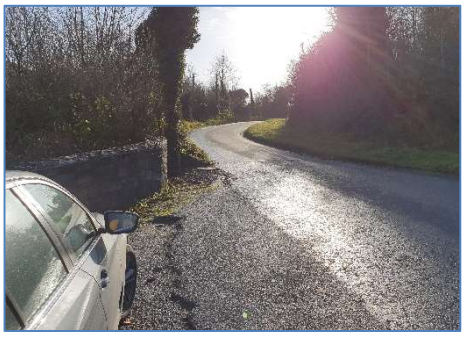
14.80 At present the sightlines at the quarry access are insufficient for a posted speed limit of 80kph due to existing vegetation within the southern verge of the L3603 on both sides of the access.

14.81 Drawing P20-114-DG-001 confirms that the required sightlines of 160m can be achieved to the south, at a set-back of 3.0m from the carriageway edge as per TII DN-GEO-03060 for a posted speed limit of 80kph, by cutting back the existing vegetation on lands within the applicant's ownership.

14.82 Sightlines of 100m will be achieved to the north, at a set-back of 3.0m from the carriageway edge by cutting back existing vegetation. These sightlines, to the north, are considered acceptable as approach speeds are passively limited by the location of the R287/L3603/L36025 crossroad junction within 220m of the site access, which will constrain prevailing vehicle speeds as they approach the access.

Haul Route crossing

14.83 Drawing P20-114-DG-001 demonstrates sightlines of 160m can be achieved, at a set-back of 3.0m from the carriageway edge as per TII DN-GEO-03060 for a posted speed limit of 80kph, on the eastern side at the haul route crossing for both directions.



14.84 On the western side of the L3603 at the haul route crossing, visibility of 160m can be achieved to the north and 140m to the south. These will be achieved by cutting back existing vegetation within land in the applicant's ownership and is considered acceptable as approach speeds are passively limited due to the close proximity of a high demand horizontal alignment on the L3603.

Parking

14.85 Adequate car parking provision for employees and visitors is provided at the existing weighbridge office.

Pedestrians & Cyclists

14.86 There are no pedestrian or cyclist provisions along the L3603. No pedestrians or cyclists were observed along the L3606 during the site visit.

Conclusions

14.87 An assessment has been undertaken of the link capacity for the L3603, R287 and the R284 and the junction capacity of the quarry access, the R287/L3603 junction, the haul route crossing and the R284/L3603/L36025 junction. These assessments have concluded that the links and junctions will operate within capacity for each of the assessment years.

14.88 Warning signs on both approaches to the main quarry access will be provided to advise approaching drivers of the upcoming quarry access.

14.89 The required sightlines at the quarry access will be achieved by cutting back of existing vegetation.