



13 Traffic and Transport

13.1 Introduction

Transport Insights has been commissioned by Kilcarrig Quarries Limited to prepare a remedial Environmental Impact Assessment Report (rEIAR) Traffic and Transport Chapter in relation to the historic operation of a quarry at a site at Clogrennane, Co. Carlow.

13.1.1 Statement of Authority

The Traffic and Transportation Chapter of the rEIAR was prepared by Eoin Munn as Project Director and Tom Fitzgerald as Consultant Transport Planner (both of Transport Insights Limited). Details of their experience and qualifications are provided within the following Table 13.1.

Project Director /Author	Eoin Munn (Director)
Relevant Experience and Qualification	<u>Experience</u> Over 14 years' experience working within Transport Planning and Engineering, including project director of a variety of small to large sized projects from feasibility to detailed design stage. Recent experience in providing transport planning support (including production of EIAR Traffic and Transport Chapters and acting as Project Director) for a sand and gravel quarry at a site at Coolnapish, Co. Carlow, a quarry infill development (inert soil and stone) at a site at Powerstown, Co. Carlow, and an infill development at Scratenagh, Arklow, Co. Wicklow. <u>Qualifications and Professional Membership</u> MSc Business Analytics, University College Dublin (2007-2008) BSc Transport Operations, Technological University Dublin (2003-2007) Member, Transport Planning Society (MTPS)
Second Author	Tom Fitzgerald (Consultant Transport Planner)
Relevant Experience and Qualification	<u>Experience</u> Tom has 2 years' experience working within Transport Planning and Engineering, on a variety of public and private sector projects. Tom has recent experience of drafting EIAR Traffic and Transport Chapters including for a sand and gravel quarry in Kill, Co. Kildare, an anaerobic digestion facility in Loughmorne, Co. Monaghan and a sand and gravel pit at Kilmeague, Co. Kildare.



	<u>Qualifications</u> B.A in Urban Planning, Geography and Environmental Planning, University College Dublin (2021) MSc in Spatial Planning Land and Real Estate Development, Radboud Universiteit (2023)
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Table 13.1: Competency of Chapter Authors

13.1.2 Description of the Subject Site Location and Existing Quarry

The development site is located to the west of L7134 (a local road which connects Clogrenanne to the north, with Ballinabrannagh to the south), and immediately to the west of L7130 (a local road which connects Clogrenanne to the north, with Boolyrathornan to the south). Carlow Town is located approximately 6 kilometres (straight line distance) to the north-east of the site and accessible via the R448. The M9 motorway is located approximately 5 kilometres away and can be accessed at Junction 6 via the R448 regional road (to the south). Clogrennane Woods is located to the east of the site.

The existing site is now a disused quarry and is subject to a (separate) application for a new quarry development.

13.2 Methodology

This section of the rEIAR outlines the methodology followed in order to carry out the Traffic and Transport Assessment set out within this Chapter. The approach pursued in undertaking the Assessment has been guided by and is consistent with national best practice, namely Transport Infrastructure Ireland's (TII's) Traffic and Transport Assessment Guidelines (TTA Guidelines, May 2014).

The existing conditions on the surrounding road network were informed by a comprehensive site assessment undertaken on 18 March 2025 and a classified junction turning count (JTC) survey of the L50022/L7134/L7130 Crossroads. The traffic survey was undertaken on 03 April 2025.

A comprehensive list of guidance documents that have informed specific parts of the Assessment is set out in Section 13.11 of this rEIAR Chapter.

13.3 Assessment Criteria

13.3.1 Construction Phase

The abovementioned TTA Guidelines are the appropriate construction phase assessment criteria.

13.3.2 Operational Phase

The abovementioned TTA Guidelines are also deemed to be the appropriate operational phase assessment criteria.

13.4 Existing Environment

13.4.1 Existing Site Access and Layout

The site is currently accessed via 2 no. locations from an internal access road. The existing established access road connects the L7130 to the east of the subject site (illustrated in Figure 13.1 below) with the internal access junctions. The site access is ca. 25 metres wide where it interfaces with the public road (L7130). The access is currently unpaved and accommodates vehicular movements to/from the existing access road directly to the 2 no. access locations to internal site roads. The layout of the site features internal access roads and historical quarried areas.

The site's access and layout arrangements are shown at Figure 13.1, which follows.

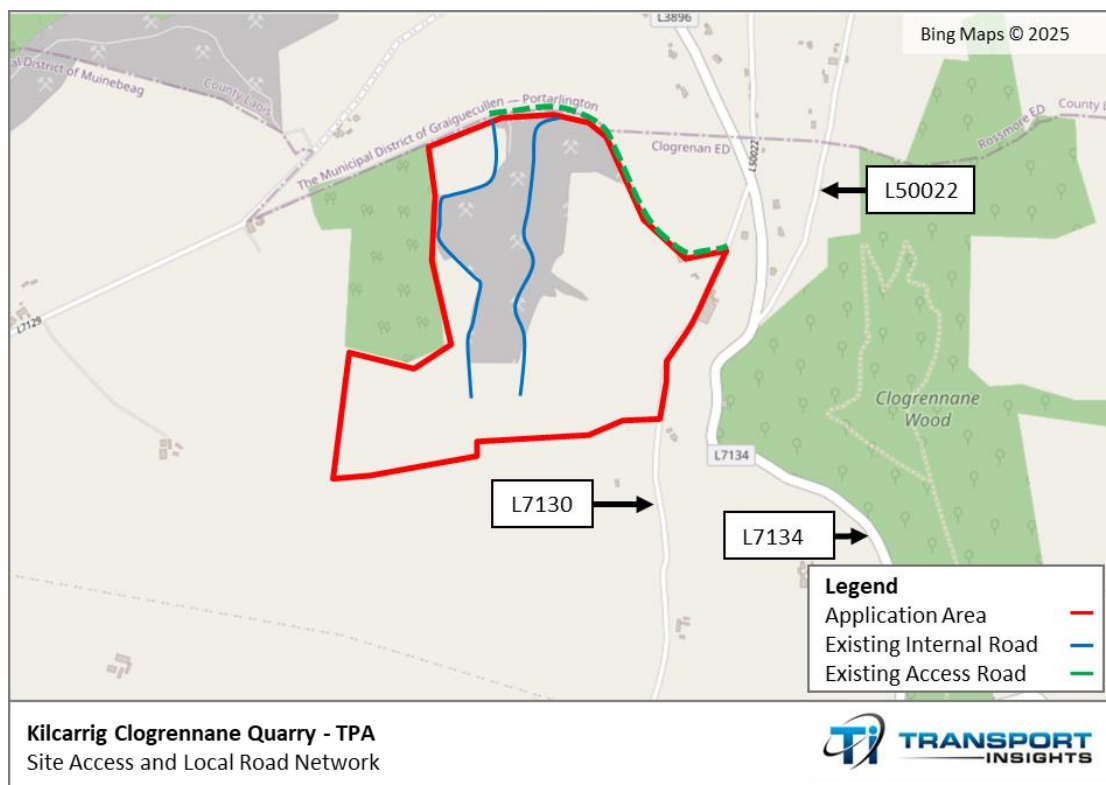


Figure 13.1: Site Location and Access



Figure 13.2: Site Access (From L7130)

13.4.2 Local Road Network

The layout of the local road network in the proximity of the proposed development site is shown in Figure 13.3. The technical characteristics, layout and operation of these roads are described further in the following sections.

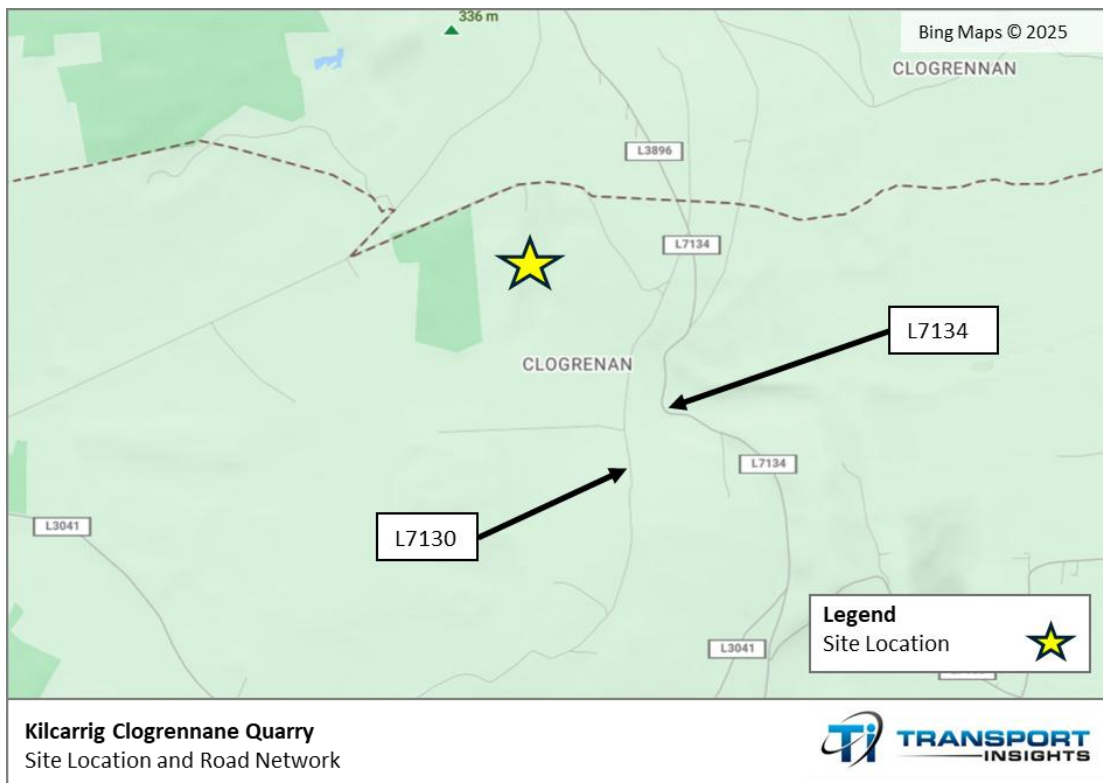


Figure 13.3: Local Road Network

13.4.3 L7130

The L7130 is a two-way local road that runs in an approximate north-south alignment to the east of the subject site between the L7134 to the north and the L3041 to the south.

L7130 features numerous changes to both its vertical and horizontal alignment throughout its length. The L7130 joins the L7134 to the north approximately 250 metres north of the current site access. A series of notable bends are located on L7130 to the south of the site access, however this does not fall within the haul route for the site as HGV traffic access and egress along L7130 to the north.

There are no road markings, footpaths or public lighting present on L7130 in the vicinity of the existing site access.



Figure 13.4: L7130

13.4.4 L7134

The L7134 is a two-way local road that runs in an approximately north-south alignment to the east of the subject site.

In the vicinity of the subject site, the L7134 has an initial straight alignment in the north, with a series of bends in the road approximately 400 metres to the south. This is followed by another relatively straight alignment for approximately 450 metres.

There is a continuous centre line present, indicating overtaking is prohibited. No footpaths or public lighting is present on L7130 in the vicinity of the site.



Figure 13.5: L7134

13.4.5 L7130/L7134/L50022 Junction

The L7130/L7134/L50022 priority-controlled junction is a 4-arm junction located ca. 250 metres to the north of the application site access road. The L7134 forms the major arms (northwestern and southeastern) arms of the junction. The northeastern arm which is the L50022 features a stop line, and the arm is ca. 8.75 metres wide. The L7130 features no road markings and the arm width is ca. 30 metres wide at the junction. There is a change in vertical alignment onto the L7130 as can be seen in the figure below (Figure 13.6).



Figure 13.6: L7130/L7134/L50022 Junction

13.4.6 Historic Road Network Development

Upgrades to the road network have been undertaken periodically over the lifetime of the historic development. This includes restoration/maintenance of surface dressing (denoted RM in red in Figure 13.7 below) and restoration improvement overlay / edge strengthening (denoted RI in green in Figure 13.7 below). A record of these works in the vicinity of the application site between the years 2005-2013 are shown in Figure 13.7

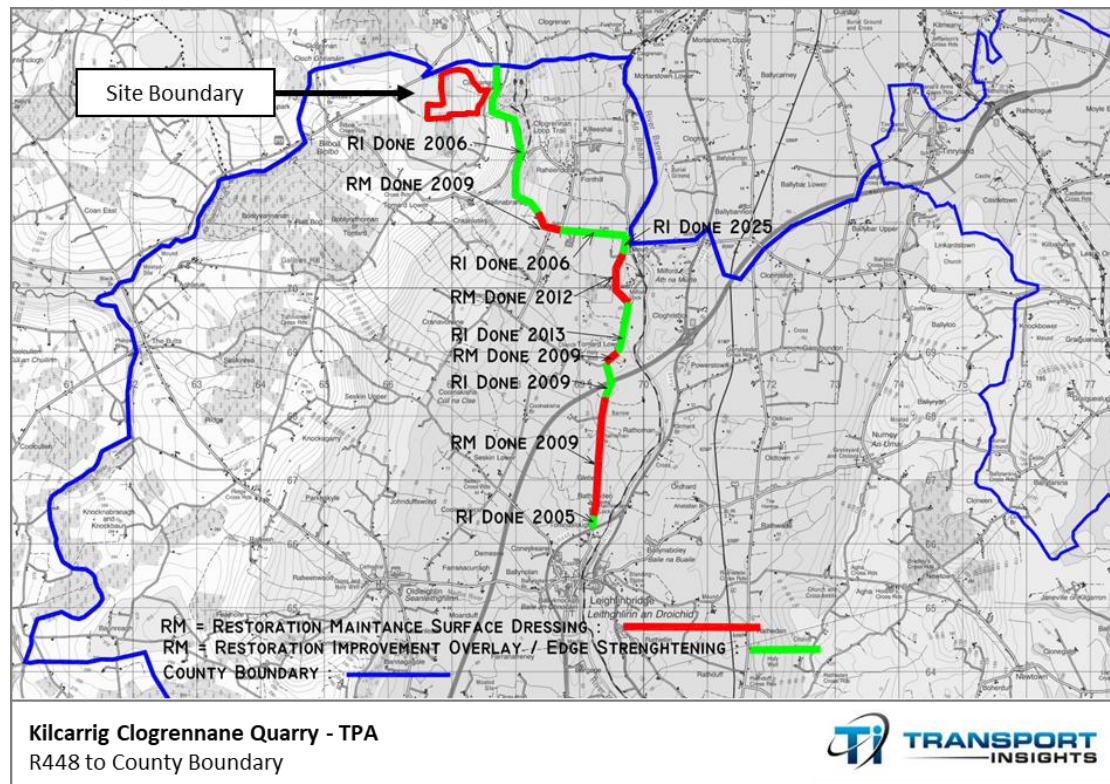


Figure 13.7: Historic Road Network Development

13.4.7 Existing Traffic Flows

To determine baseline traffic conditions in the vicinity of the site, a classified junction turning count survey was undertaken on the 03 April 2025 at the L7130/L7134/L50022 Crossroads.

Full traffic survey data is included in Appendix 13.1 of this document. A summary of the survey results for the total survey period as ascertained from the survey data is presented in the following Table 13.2.



Junction	Link	12-hour Link Flows (07:00-18:59hrs)		
		LV	HV	Total
L50022/L7134/ L7130 Crossroads	L50022	25	0	25
	L7134 (S)	732	37	769
	L7130	75	5	80
	L7134 (N)	721	39	760

Table 13.2: Traffic Survey Summary Table

Based on the results of the traffic surveys set out in the preceding Table 13.2, the local road network peak hours, in terms of maximum flow were identified to be 09:00-10:00hrs (AM Peak), and 16:00-17:00hrs (PM Peak).

13.4.8 Annual Average Daily Traffic

In order to further understand the traffic flows on the local road network and establish a baseline to assess the historic traffic impact of the development, the survey data summarised in preceding sections was expanded in accordance with TII's Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts – PE-PAG-02039 (October 2016), to derive Annual Average Daily Traffic (AADT) on the local road network.

The following Table 13.3 outlines the expansion factors used in expanding the survey data to AADT using data for the South-East (Carlow County) Region.

Variable	Hour of Day	Day of Week	Month of Year
	12 hour (07:00-19:59hrs)	Thursday	April
Factor	1.175	0.95	0.98

Table 13.3: AADT Factors

Based on the recorded two-way 12-hour traffic flows, 24-hour, weekly average daily traffic (WADT) and AADT have been calculated using the factors in Table 13.3 above. AADT data for roads in the vicinity of the site are presented in the following Table 13.4.



Junction	Link	AADT		
		Total Vehicles	Of which Heavy Vehicles	% HGV
L50022/L7134/ L7130 Crossroads	L50022	27	0	0%
	L7134 (S)	841	40	5%
	L7130	88	5	6%
	L7134 (N)	831	43	5%

Table 13.4: AADT

The data set out in Table 13.4 above is used in Section 13.6.2 as a baseline in order to assess the impact of the historic development under the different prescribed scenarios.

13.5 Characteristics of the Historic Development

13.5.1 Site Access Arrangements

For the purposes of this rEIAR, it is understood that the site arrangements would have as per those set out within the existing situation, i.e. set out within Section 13.4.1, and illustrated within Figure 13.2.

13.5.2 Historic Development Description and Site Layout

The historic development has resulted in the removal of materials over an area of approximately 8.66 hectares. The exact quantum of development per annum is not currently known, however evidence of a quarry is shown on a map dated 1906 and commercial extraction at the quarry ceased no later than the 2014.

The quarry, which was formally registered in 2005, may have had an output of ca. 300,000-500,000 tonnes per annum.

The layout of the site is as per Section 13.4.1 of this rEIAR chapter. The development would have accommodated staff and visitor car parking, staff welfare, relevant machinery (potentially static and mobile), and a weighbridge. Further details are not currently available.

13.6 Impacts of the Historic Development

13.6.1 Construction Phase

As noted in the preceding section, full details of the historic development are not currently available, however given the land use, it is assumed that construction phase impacts would have been minimal.



13.6.2 Operational Phase

For the purposes of this assessment, two separate scenarios will be analysed and their impacts reported. These scenarios are as follows;

- The Do-Nothing scenario will reflect traffic on the surrounding road network.
- The Do-Something scenario builds on the Do Nothing scenario and includes the assessment of historic development related traffic on the surrounding road network. This is considered the 'worst case' scenario.

Due to the unavailability of historic traffic survey data, and information relating to how much development traffic would have been generated, the above scenarios have been assessed using the latest traffic survey data (from 2025).

Operational Period

During the operational period, 3 no. staff would have been expected to be present on site with core work hours assumed as follows;

- 07:00hrs to 18:00hrs - Monday to Friday
- 07:00hrs to 13:00hrs - Saturday

This equates to an estimated approximately 275 no. operational days per year (taking into account anticipated annual leave of staff).

Development Traffic Generation

The proposed development is expected to generate a limited number of additional traffic movements on the local network. Based on the number of staff expected to work on site i.e. 3 no., a total of 6 no. staff trips are generated i.e. two LV trips per staff member.

Regarding HV movements, the historic site may have had an extraction output of 300-500,000 tonnes of material per annum. It is assumed for calculation purposes a figure of 400,000 tonnes per annum.

It is noted that a typical payload departing site would have been 25 tonnes. This equates to an average of 58 no. HVs arriving and 58 no. HVs departing the site each day (including ad hoc HV trips).

The operational vehicle movements at the subject site are outlined in the following Table 13.5.

	One-way Flows	Two-way Flows
Staff (LVs)	3	6
HVs	58	116
Total	61	122

Table 13.5: Proposed Development Traffic

Haulage Routes

HVs would access and egress the site via L7130 and L7134 (as illustrated in Figures 13.9 and 13.10). This results in travel to and from the site via one of the following routes:

- From N78 – access to the site via N78 shall travel ca. 3km east to the R430 where they travel to the R430/R431 junction before turning onto the R431 for ca. 500 metres.

The R431 meets the L3896 where vehicles will travel for ca. 7km southbound until reaching the junction with the L7130 where the site can be accessed.

- To N78 – egressing vehicles shall access the N78 in the reverse of the route they used to access the site.
- From M9 – vehicles accessing the site from M9 shall join the R448 at M9 Junction 6 and travel southbound for ca. 3.5km before turning onto the L3038. They will travel northbound on the L3038 and L3039 for ca. 4.7km and turn west onto the L3041. They will continue west through Ballinabrannagh on the L3041 and then L7134 for ca. 4.2km before finally turning onto the L7310 and reaching the site access junction.
- To M9 – egressing vehicles shall access the M9 in the reverse of the route they used to access the site.

Trip Distribution

It is anticipated that all traffic will access and egress the site via the routes outlined above under the following assumed distribution patterns.

To the site (inbound):

- 100% will arrive at the subject site via the L7130;
- 50% will access the identified haul route via the L7134 from the north; and
- 50% will access the identified haul route via the L7134 from the south.

From the site (outbound):

- 100% will leave the site via the L7130 northbound;
- 50% will egress onto the identified haul route via the L7134 to the north; and
- 50% will egress onto the identified haul route via the L7134 to the south.

Figures 13.8 and 13.9 (overleaf) provides a graphical representation of HV haulage routes and trip distribution patterns to/ from the proposed development.

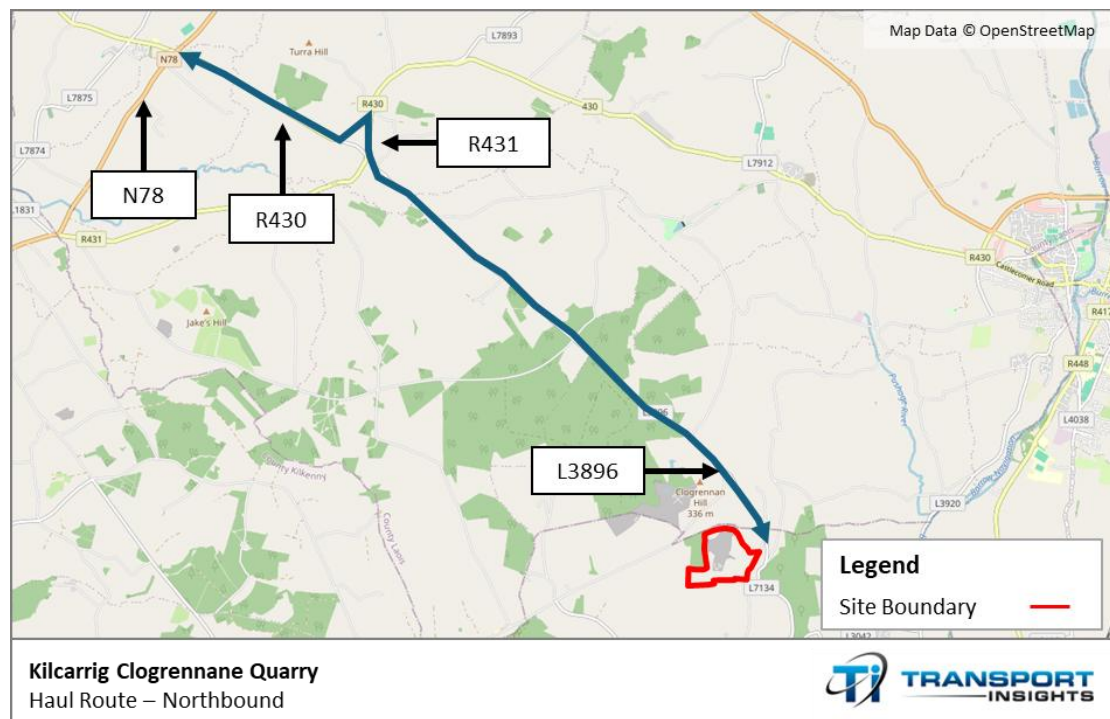


Figure 13.8: Haulage Route Northbound

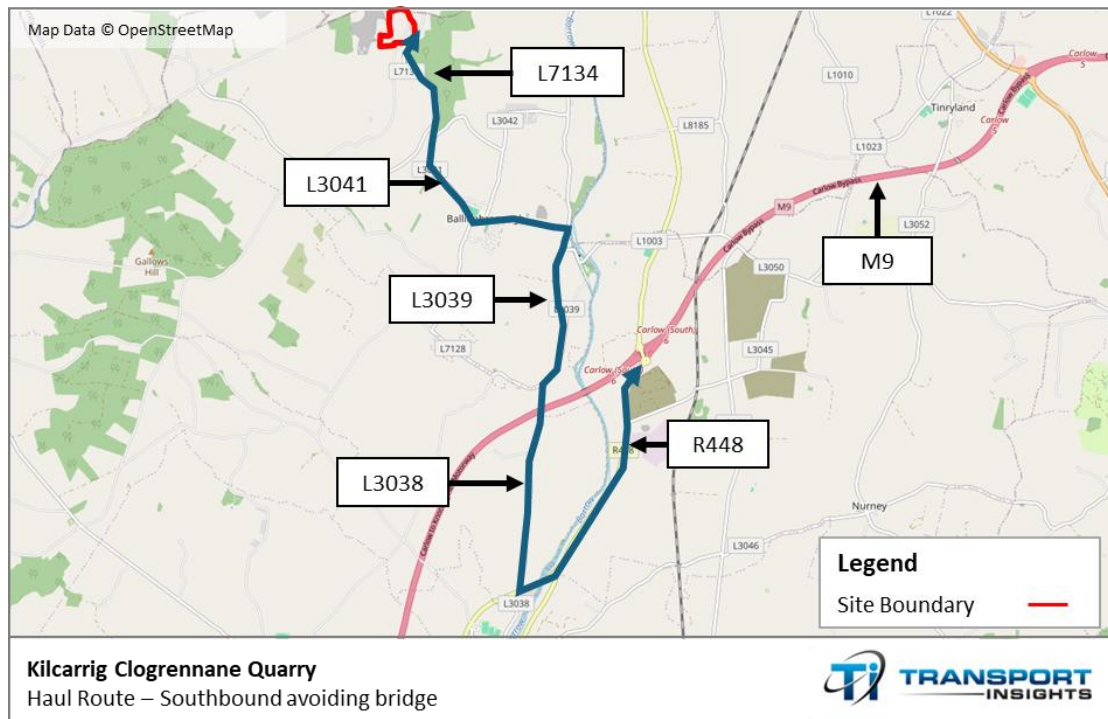


Figure 13.9: Haulage Route Southbound

An on-site assessment of the local road network carried out on 18 March 2025 (described in Section 13.4) indicates that the local and regional roads and motorway which are proposed to form the haul routes to site are appropriate to accommodate traffic associated with both the construction phase and operational phase of the proposed development.

Do-Something Traffic Forecast

Table 13.6 below details the total AADT and proportion of which comprises HVs on local roads for the Do-Something scenario. The Do Something scenario considered the worst case scenario, whereby the proposed development traffic outlined above are assessed in addition to the factored up background traffic for the 2025 assessment year.

Year*	Road Link	Total AADT	Of which, HGV	%HGV	% increase in AADT over Do-Nothing
2025	L50022	27	-	0%	0%
	L7134 (S)	902	99	1%	7%
	L7130	210	122	58%	140%
	L7134 (N)	893	101	11%	7%

Table 13.6: Do Something Traffic

*year traffic data is available for

The figures set out in Table 13.6 above show that within the Do-Something scenario, traffic volumes on the L7134 are expected to increase by 7%. Traffic on L7130 shall increase by more than this, however this is a reflection of its local access function.



Section 2.1 of TII's Traffic and Transport Assessment Guidelines (May 2014) sets out thresholds for production of a Traffic and Transport Assessment, with thresholds for developments provided in Table 2.1. It is noted from Table 2.1 that where "traffic to and from the development exceeds 10% of the traffic flow on the adjoining road", more detailed analysis of a proposed development's traffic impacts may be required. The historic development will result in a 7% increase on L7134, below the 10% threshold. It is also noted that traffic on the local road adjacent to the site features traffic increases above 10%, however this is a product of its local access function.

13.6.3 Do Nothing Impact

The Do-Nothing impacts of the proposed development are based on the appropriately factored up background traffic. In this scenario, the site remains in its current state and thus generates no additional traffic.

Table 13.7 below details the total AADT and proportion of which comprises HVs on the local road network in the Do-Nothing scenario for the 2025 assessment year.

Year	Road Link	Total AADT	Of which, HGV	%HGV
2025	L50022	27	0	0%
	L7134 (S)	841	40	5%
	L7130	88	5	6%
	L7134 (N)	831	43	5%

Table 13.7: Do Nothing Traffic

The above table provides a baseline from which the proposed development's traffic impacts have been determined, with the outputs of that analysis presented in Table 13.6.

13.7 Mitigation Measures

13.7.1 Construction Phase

Due to the passage of time and lack of information available, construction phase mitigation measures that were used for the historic development are currently unclear.

13.7.2 Operational Phase

Due to the passage of time and lack of information available, operational phase mitigation measures that were used for the historic development are currently unclear.

13.8 Residual Impacts

The residual impacts of the historic development are reflected in the current situation, as explored throughout this rEIAR Chapter.

13.9 Monitoring



13.9.1 Construction Phase

No information on what construction phase monitoring has taken place is currently available.

13.9.2 Operational Phase

No information on what operational phase monitoring has taken place is currently available.

13.10 Interactions and Cumulative Impacts

The analysis contained within this chapter interacts with the Noise Assessments contained within this rEIAR. This is primarily due to the potential for an increase in HV traffic movements on the surrounding road network due to development.

13.11 References

The EIAR Traffic and Transport Assessment has been prepared taking into account the following policy and technical guidance documents:

- EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports.
- Carlow County Development Plan 2022 - 2028
- Transport Infrastructure Ireland (TII) (2014) Traffic and Transport Assessment Guidelines;
- Transport Infrastructure Ireland (TII) Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts (October 2016); and
- Transport Infrastructure Ireland (TII) Publications (Standards).

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