PURSER

Volume 2:

14

Traffic and Transportation

14.0 Traffic and Transport

14.1 Introduction

This chapter of the EIAR has been prepared to assess the effects of the proposed development in terms of traffic and transport. The chapter provides the following:

- A description of the receiving environment;
- An assessment of the potential effects of the proposed development during both the short-term construction phase and long-term operational phase;
- An assessment of potential cumulative impacts; and
- Details of mitigation measures to ensure significant effects are minimised or avoided.

This Chapter has been prepared by Glen Moon MA (Hons) TPP, a Principal Engineer with SYSTRA. Glen is a Chartered Member of the Chartered Institute of Highways and Transportation, with 15 years of industry experience, specializing in the field of Development Planning, Traffic & Transportation Assessments and EIAR appraisal. In addition he has spent five years in the renewables industry as an EIA Senior Project Manager, managing a multi-disciplinary team, overseeing the delivery of the full suite of planning documents.

For this project, Glen was the primary author of the Traffic and Transportation chapter.

This document should be read in conjunction with the Transport Assessment (TA) which accompanies the planning application, and which is included as **Appendix 14.1**.

14.2 Consultation

Pre-Application advice was sought from Tipperary County Council (TCC). A Scoping Report was submitted to TCC in July 2024. TCC's response, dated 29/07/11, raised the following points:

- Traffic surveys will be required to inform the baseline assessment. It was subsequently agreed with TCC that Automatic Traffic Count (ATC) surveys could be carried out in August, as set out in Section 14.6.3;
- The Transport Assessment should identify existing traffic volumes, traffic from permitted developments, and the impact of traffic from the proposed development;
- The traffic routes to be used by development traffic should be identified in the TA, and assessed for their suitability; and
- Speed limits on all local roads in the area will reduce to 60kph by November 2024, as part of the National Speed Limit Review.

14.3 Legislation, Policy and Guidance

This chapter has been prepared having regard to, inter alia, the following guidelines:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022);
- Transport Infrastructure Ireland's (TII's) Traffic & Transport Assessment Guidelines (2014); and
- Institute of Environmental Management and Assessment (IEMA) publication - "Environmental Assessment of Traffic and Movement", 2023 ("the IEMA Guidelines").

There are also a number of relevant national and regional policies which have guided the assessment These include the following documents:

- Project Ireland 2040 – National Planning Framework;
- Regional Spatial and Economic Strategy for the Southern Region, Project Ireland 2040;
- Tipperary County Development Plan (TCDP) 2022-2028;
- National Sustainable Mobility Policy 2022;
- Design Manual for Urban Roads and Streets (DMURS, updated 2019); and
- Cycle Design Manual 2023.

14.4 Methodology

The methodology for describing the effects of the proposed development is in accordance with the EPA Guidelines (2022). Further details on the specific methodology employed in this chapter is provided below.

14.4.1 Assessment of Potential Effects

The assessment is structured around the consideration of potential environmental effects relating to traffic and transport. The EPA EIAR guidelines (2022) outlines a number of definitions that can be used to describe effects, as set out in **Figure 14.1**.

a) 'the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
b) the nature of the impact;
c) the transboundary nature of the impact;
d) the intensity and complexity of the impact;
e) the probability of the impact;
f) the expected onset, duration, frequency and reversibility of the impact;
g) the cumulation of the impact with the impact of other existing and/or approved projects;
h) the possibility of effectively reducing the impact.'

Figure 14.1: EPA effects Criteria (Extract from EPA Guidelines 2022, Section 3 p48

Potential traffic effects as identified by the IEMA Guidelines including the following:

- Noise;
- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Accidents and safety;
- Hazardous loads (e. g. nuclear products); and
- Dust and dirt

The IEMA guidance suggests that in order to determine the scale and extent of the assessment and the level of effect the Proposed Development will have on the surrounding road network, the following two 'rules' should be followed:

- Rule 1 – Include highway links where flows are predicted to increase by more than 30% (10% if affecting a sensitive area) or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%; and
- Rule 2 – Include any other specifically sensitive area where traffic flows are predicted to increase by 10% or more.

Paragraph 2. 5 of the IEMA Guidelines identifies groups, locations and special interests which may be sensitive to changes in traffic conditions as follows:

- People at home;
- People in work places;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e. g. hospitals, churches, schools, historic buildings;
- People walking or cycling;
- Open spaces, recreational sites, shopping areas;
- Sites of ecological / nature conservation value; or
- Tourist attractions.

Significance of effects is usually understood to mean the importance of the outcome of the effects (the consequences of the change). Significance is determined by a combination of (objective) scientific and subjective (social) concerns

The significance of each effect is considered against the criteria within the IEMA Guidelines, where possible, however the guidelines state that:

> *"For many effects there are no simple rules or formulae which define the thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed-up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing a change in environmental impact as well as the assessment of the damage to various natural resources."*

14.4.2 Sensitivity

The sensitivity to a change in traffic levels of any given road segment or at a junction is generally assessed by considering the residual capacity of the network under existing conditions, and the sensitivity of any receptors in the vicinity.

The criteria that have been used to make judgements on the sensitivity of the receptor(s) and the magnitude of change are presented in **Table 14.1**.

Sensitivity	Description
High	The receptor / resource has little ability to absorb change without fundamentally altering its present character is of international or national importance. Local residents whose daily activities depend upon unrestricted movement within their environment. Receptors such as schools, colleges, hospitals and accident hotspots. Roads with low carrying capacity, such as single track roads.
Medium	The receptor / resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor / resource is tolerant of change without detriment to its character, or is of low / local importance. Areas such as trunk road or 'A' class roads constructed to accommodate significant HGV volumes.
Negligible	Users not sensitive to transport effects. Includes very small settlements and roads with no significant settlements including new strategic trunk roads or motorways.

Table 14.1: Framework for Determining Sensitivity of Receptors

14.4.3 Magnitude of Effects

The magnitude of effects has been assessed as a function of:

- The percentage and / or absolute change in traffic volumes increase and change due to the proposed development
- Changes in the type of traffic and the temporal distribution of traffic (day of week, time of day). For example, increases in the number of HGVs on a particular road will have a larger effect on receptors than smaller vehicles would.

The criteria that has been used to make judgement on the magnitude of the effect on the receptor(s) is presented in **Table 14. 2**.

Magnitude	Description
Major	Total loss of, or major / substantial alteration to, key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed. Generally a rule of >90% (or >70% at sensitive receptors) change in traffic is considered to be a major magnitude.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character / composition / attributes of the baseline will be materially changed. Generally, a rule of 60% - 90% (or 40% - 70% at sensitive receptors) change in traffic is considered to be a moderate magnitude.
Minor	A minor shift away from baseline conditions. Change arising from the loss / alteration will be discernible/detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-development circumstances / situation. Generally, a rule of 30 – 60% (or 10% - 40% at sensitive receptors) change in traffic is considered to be a minor magnitude.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. Generally, a rule of <30% (or <10% at sensitive receptors) change in traffic is considered to be a negligible magnitude.

Table 14.2: Framework for Determining Magnitude of Effects

14.4.3 Significance of Effects

The criteria used for determining the significance of traffic related effects are set out in **Figure 14.2**, which is extracted from the EPA Guidelines.

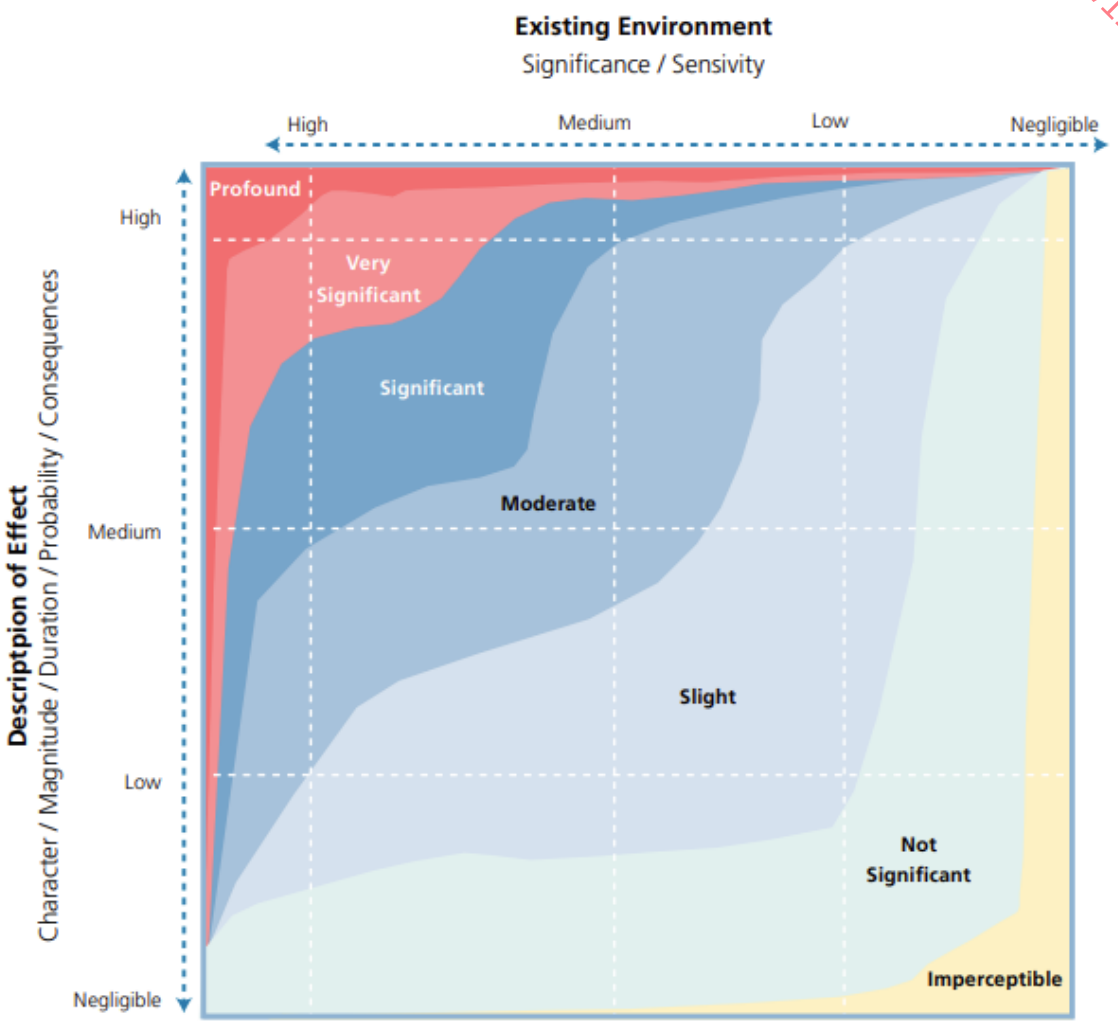

Figure 14.2: Assessment of Significance. (Source: EPA Guidelines)

As per the EPA Guidelines, Significance has been categorised on a seven-point scale, from Profound to Imperceptible. Effects that have a Significance of Effect of 'Significant', 'Very Significant' or 'Profound' are those which have been considered to be 'Significant'.

14.5 Receiving Environment

The following section provides a summary of the proposed development's receiving environment. Full details are included in Chapter 2 of the Traffic and Transport Assessment.

14.5.1 Site Location

The site is located 7.5km to the north-west of Urlingford in County Tipperary, and ~7km to the north-west of the M8, which ultimately connects Dublin and Cork. The site location is shown in **Figure 14.3.**

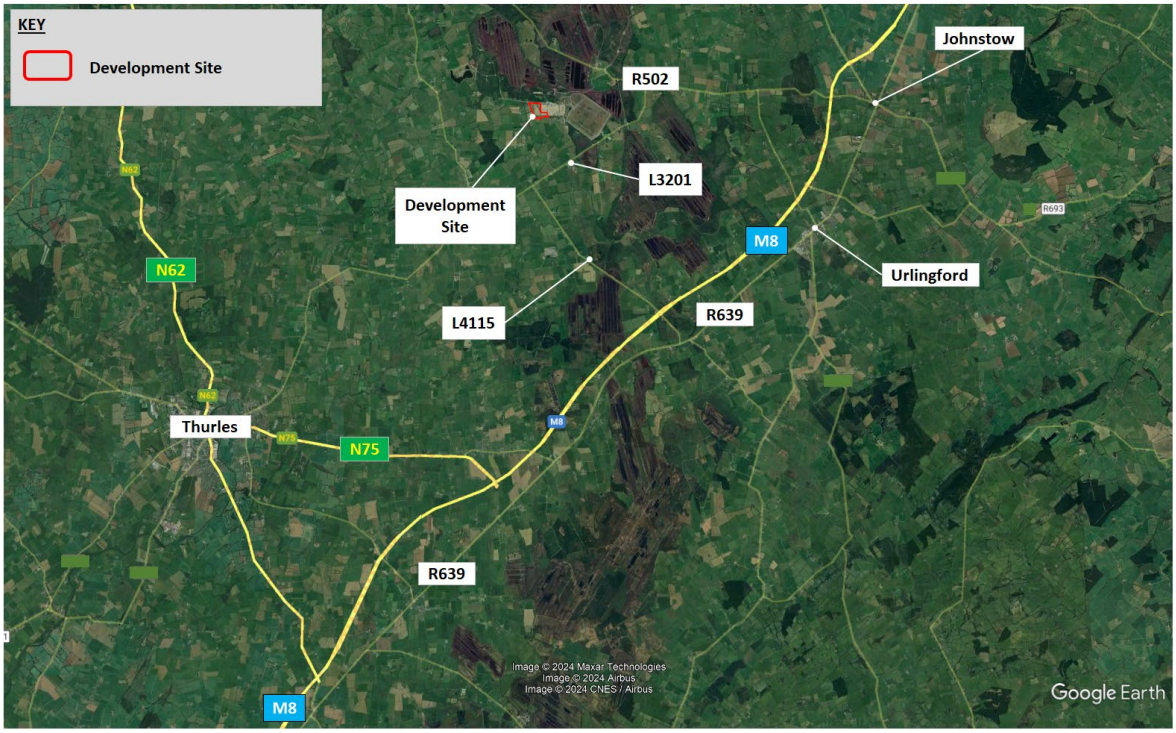

Figure 14.3: Site Location and Road Network. (Source: Google Earth, annotated by SYSTRA)

The key road links of relevance to the site are:

- The M8, which is the key strategic link between Dublin and Cork. The nearest junction to the site is Junction 4, which provides all-movements access;
- The R639, which runs parallel to the M8, linking Johnstown, Urlingford and Littleton. It has a speed limit of 100km/h;
- The R502, which runs broadly east to west to the north of the site, linking Templemore and Johnstown;
- The L3201, a minor road that runs to the south of the Lisheen Mine site, linking the R502 to the L4115. It has a speed limit of 80km/h; and

- The L4115, a minor road that runs north-south between the L3201 and the R639. It has a speed limit of 80km/h.

The site would be accessed using a private road that served the Lisheen Mine, prior to its closure in 2015. This road runs south-east from the site, and meets the L3201 at the priority junction.

14.5.2 Study Area

The Traffic and Transport EIAR study area has been defined by SYSTRA, and agreed with TCC through scoping as the local road network between the M8 and the site. These specific roads have been selected as they are the roads which would be used by HGVs travelling between the M8 and the site. These routes are shown in **Figure 14.4**, and are:

- To / from the north-east via the R639 and M8 J4; and
- To / from the south-west via M8 J6.

The L3201 and L4115 were previously used as the HGV route between the Lisheen Mine and the R639. At its peak, the mine employed around 400 people, and produced over 1 million tonnes of ore each year.

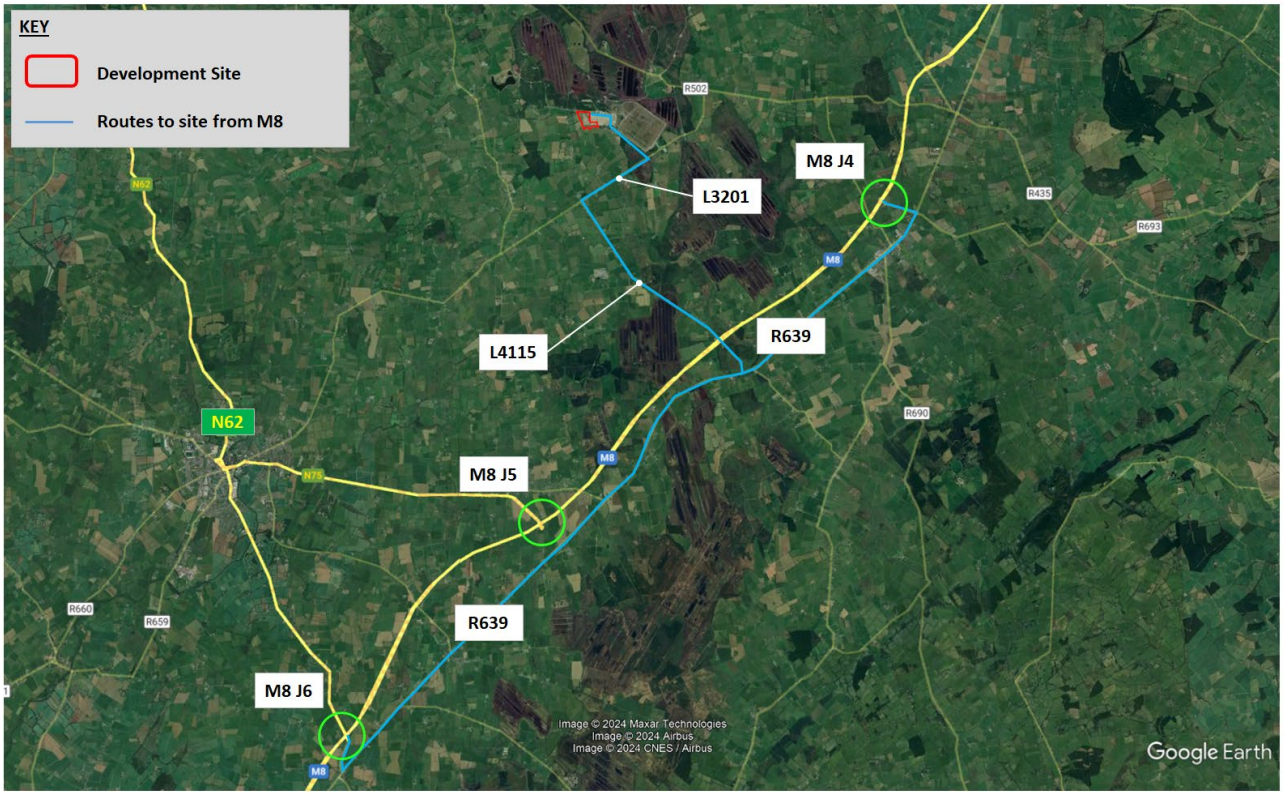

Figure 14.4: HGV Routes to Site. (Source: Google Earth, annotated by SYSTRA)

The road links within the identified Study Area are:

- The R639 between M8 J4 and M8 J6;
- The L4115 between the R639 and the L3201; and
- The L3201 between the L4115 and the Site Access junction.

In terms of Link Sensitivity, in the context of the IEMA Guidelines:

- The R639 is not considered to be particularly sensitive to changes in traffic, apart from the sections that pass through Urlingford and Littleton. To ensure a robust assessment, the **10%** IEMA threshold has been applied to the full length of the R639 in the study area; and
- The L4115 and L3201 are not considered to be sensitive to changes in traffic level. Both pass through relatively un-populated areas, and do not pass any sensitive receptors such as schools. The IEMA threshold of **30%** has therefore been applied in the assessment.

14.5.3 Baseline Traffic Flows

SYSTRA commissioned Nationwide Data Collection Ltd, a specialist survey company, to undertake traffic surveys in August 2024. Survey dates were agreed with TCC's Transport Planning team.

These surveys comprised three Automatic Traffic Counters (ATC) that were in place for a seven-day period, commencing Tuesday 13th August 2024. These recorded hourly traffic flow, composition and speeds, at the following locations:

- On the L3201, 1.6km south-west of Clonsaul, close to the Lisheen Mine access junction;
- On the L4115, 3.6km north-west of the R639 junction; and
- On the R639, 500m west of the L4115 junction.

The location of the ATC's is shown in **Figure 14.5**. A full set of survey results are provided in **Appendix 14.2**.

Figure 14.5: ATC Locations. (Source: Google Earth, annotated by SYSTRA)

Table 14.4 shows the recorded traffic flows at each location.

Site	Road	Base 2024 AADF (veh)			Base 2024 AADF (HGV)		
		NB / EB	SB / WB	Total	NB / EB	SB / WB	Total
1	L3201	267	275	542	23	23	46
2	L4115	484	481	965	37	37	74
3	R639	1,674	1,746	3,420	114	114	228

Table 14.4: Baseline Traffic Flows

Table 14.4 shows that:

- Recorded traffic flows on the L3201 and L4115 were very low, with Average Annual Daily Flow (AADF) totals of 542 vehicles and 965 vehicles respectively; and
- Recorded traffic flows on the R639 were slightly higher, with an AADF of 3,420 vehicles recorded.

14.6 Predicted Effects of the Proposed Development

14.6.1 Construction Phase

Construction traffic will comprise the construction worker's vehicles (vans, cars) and HGVs / LGVs carrying construction materials. No abnormal loads are anticipated.

It is envisaged that the construction of the proposed development shall be a single-phased construction program, involving sub-phases / workflow events as follows:

- Phase 1.1: Site set-up and compound / access - 1 month
- Phase 1.2: Construction of Process Area Run-Off Drainage Lagoon – 1 month
- Phase 1.3: Main construction stage – 18 months

Full details of the activities in each stage are included in **Chapter 6**.

During the Main Construction Stage, approximately 10,000m^3 will be imported to site, equating to a total of 834 inbound HGV journeys (1,668 two-way trips).

In addition, there will be a small number of other deliveries (such as timer or manhole deliveries), which will bring the number of inbound deliveries to around 1,000 HGVs (2,000 two-way trips). No material will be exported from the site.

In addition, around 20 construction staff will be based on site for the duration of the build.

It is therefore expected that:

- There will be a daily average of 3 HGV deliveries to the site, resulting in 3 inbound, and 3 outbound trips per day. HGV deliveries will be spread relatively evenly throughout the day. During periods of peak construction, it is anticipated that there could be 10 inbound, and 10 outbound HGV trips to the site on a daily basis; and
- Assuming an average vehicle occupancy of two persons, the site will generate 10 inbound, and 10 outbound staff vehicle trips per day. Staff trips to and from the site will generally take place just in advance of the site working hours and following the site close in the evening.

SYSTRA has assumed that all construction traffic will travel on the L3201 and L4115, and that flows on the R639 will be split evenly between east and west. The use of these designated routes can be written into Contractor obligations, and compliance can be assured through observations and monitoring. **Table 14.5** shows the predicted traffic increases during the construction stage.

ID	Location	Base 2024 (AADF)			Construction Traffic (AADF)			% impact		
		Car	HGV	Total	Car	HGV	Total	Car	HGV	Total
1	L3201	496	46	542	20	20	40	4%	43%	8%
2	L4115	891	74	965	20	20	40	2%	27%	4%
3	R639	3,192	228	3,420	10	10	20	0%	4%	1%

Table 14.5: Traffic Increases during Construction Stage

Table 14.5 shows that in absolute terms, the traffic impact during the construction stage will be modest. For example, on the L3201 there will be a daily increase of 40 two-way trips, an average increase of around 5 trips per hour during the working day.

In percentage terms, there will be a high percentage increase, particularly in HGV traffic, on the L3201 and L4115, but this is due to the small numbers of existing HGV trips.

The R639 will see a modest percentage increase in all trips, which will not be particularly noticeable compared to existing flows.

The details of the proposed construction routing will be agreed with TCC, prior to commencement of construction works, with the national road network being used as much as possible.

The L3201, L4115 and the majority of the R639 are assessed as being of Low sensitivity, and to experience a Minor traffic effect during the construction stage. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Short-term (lasting just over a year).

The section of the R639 in Urlingford is assessed as being of Medium sensitivity, and to experience a Minor traffic effect during the construction stage. The overall Significance of Effect on this section of the R639 is assessed as Likely, Negative, **Slight,** and Short-term (lasting just over a year).

All of these construction effects are considered to be **not significant** in EIAR terms.

Given the minor increases in traffic levels during the Construction stage (below 30%, 10% in sensitive locations), as per the IEMA Guidance, a more detailed assessment is not required.

Although not considered to be significant in EIAR terms, if not properly managed then construction traffic does have the potential to impact negatively on local communities and other road users.

Traffic impacts during the construction stage will be mitigated through the implementation of a Construction Traffic Management Plan (CTMP), which will be agreed with TCC. A Framework CTMP, which sets out the principles to be followed, is included as part of the application package.

14.6.2 Operational Phase

14.6.2.1 Trip Generation

The expected levels of traffic that would be generated by the development are set out in Section 4.2 of the Transport Assessment. **Table 14.6** shows the predicted daily vehicle trip generation of the development throughout the year. Many vehicles that will deliver material to the site will also pick up bio-fertilizer for their return journey, a business efficiency that also helps to reduce the number of vehicle trips that are generated on a daily basis.

Month	Trucks Delivering	Trucks Only Collecting	Gas Trucks	Inbound Trips per day	Two-way trips per day	Average Hourly Trips (two-way)
Jan	13	5	4	22	44	6
Feb	13	5	4	22	44	6
Mar	13	5	4	22	44	6
Apr	13	5	4	22	44	6
May	13	5	4	22	44	6
Jun	13	5	4	22	44	6
Jul	18	5	4	27	54	7
Aug	13	5	4	22	44	6
Sep	13	5	4	22	44	6
Oct	13	5	4	22	44	6
Nov	18	5	4	27	54	7
Dec	13	5	4	22	44	6

Table 14.6: Traffic Increases during Operation

Table 14.6 shows that during the busiest month of operation, the development would generate a total of 54 two-way HGV movements per day, plus a small number of vehicle trips related to the three on-site staff members (estimated as 6 two-way movements per day)

14.6.2.3 Traffic Distribution

SYSTRA has assumed that all construction traffic will travel on the L3201 and L4115, and that flows on the R639 will be split evenly between east and west

14.6.2.4 Traffic Impact

As set out in the TA, Base 2024 traffic flows were factored to Base 2026 using guidance set out in the 'Project Appraisal Guidelines for National Roads Unit 5. 3', specifically Table 6. 2 'Link Based Growth Rates' for County Tipperary. The following combined factors were calculated, based upon Central Growth Rates:

- 2024-2026 (Year of Opening) – 1. 027; and
- 2023 – 2041 (YoO + 14) – 1. 134.

Traffic flows have been calculated for the following scenarios:

- Base 2026 (Year of Opening);
- Do Something 2026;
- Base 2041 (Year of Opening + 15); and
- Do Something 2041.

The Do Something scenarios represent the Base scenarios, with traffic from the development added. The development contribution to the future year link flows on the wider local road network is shown in **Table 14. 7**.

Location	Road	Base 2026 AADF (two-way)	DS 2026 AADF (two-way)	% increase (all veh)	% increase (HGV)
1	L3201	556	611	10%	17%
2	L4115	991	1,045	6%	12%
3	R639	3,511	3,538	1%	7%

Table 14.7: Traffic Increases during Operation 2026

The figures in **Table 14.7** indicate that the proposed development would not cause an increase in total traffic, or HGV traffic, above 30% (IEMA Rule 1 Threshold) on any link in the study area. The percentage impacts in 2041 have not been presented. Given the expected growth in background traffic levels, these would be smaller than in 2026.

Only the L3201 is predicted to experience an increase in flow of 10% or more, which is due to the extremely low existing traffic flows. The absolute increases in traffic in this road are small, being limited to 55 two-way trips per day.

The L3201, L4115 and the majority of the R639 are assessed as being of Low sensitivity, and to experience a Minor traffic effect during operation. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development).

The section of the R639 in Urlingford is assessed as being of Medium sensitivity, and to experience a Minor traffic effect during operation. The overall Significance of Effect on this section of the R639 is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development).

All of these operational effects are considered to be **not significant** in EIAR terms.

Given the minor increases in traffic levels during the Operational stage (below 30%, 10% in sensitive locations), as per the IEMA Guidance, a more detailed assessment is not required.

14.7 Mitigation Measures

This assessment concludes that the proposed development will not have a significant effect on the local road network during either the construction or operational phases, or in combination with other developments.

A Mobility Management Plan has also been prepared by SYSTRA, and is included as **Appendix 14.3**.

The aim of the Mobility Management Plan is to minimise un-necessary vehicle trips, and to ensure that HGV deliveries to and from the site are safely and efficiently -managed.

SYSTRA has also prepared a Framework CTMP, which forms part of the wider Construction Management Plan, which has been prepared by Donnachadh O'Brien Consulting Engineers (Ref. 2429-DOB-XX-SI-RP-C-0003), and forms part of the wider EIAR.

This sets out the principles by which construction traffic will be planned for, managed, and monitored, to ensure that any impacts on local communities, vulnerable users and road users, will be minimised as far as possible.

Key mitigation steps include reducing dust emissions through regular watering of exposed areas, controlling vehicle speeds, and conducting air quality monitoring to ensure minimal disruption. Additional protocols address water quality, including runoff controls and secure storage for hazardous materials, to prevent contamination of nearby water sources. Waste management practices will ensure the minimisation, reuse, and recycling of materials, with regular waste audits to track compliance. Emergency response measures are also in place to handle any accidental spills or other environmental incidents promptly.

14.8 Residual Effects

Residual impacts are defined as '*effects that are predicted to remain after all assessments and mitigation measures'*. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts. Potential residual impacts from the Proposed Development were considered as part of this environmental assessment.

With the Framework CTMP and Mobility Management Plan in place, the residual impact of the Proposed Development will be **'not significant'**, both in terms of the development itself isolation and cumulatively.

14.9 Monitoring

The site will be staffed at all times during the working day when deliveries are expected. The appointed Site Manager will be responsible for programming and managing deliveries, and ensuring that HGV drivers comply with delivery and safety protocols.

14.10 Interactions

The additional traffic generated by the development will increase noise levels on the streets surrounding the development, and also affect air quality in the area.

These effects are considered in the Noise and Vibration (Chapter 11) and Air Quality and Climate (Chapter 12) assessments. Both of these chapters consider the effects of additional traffic during the Construction and Operational Phases. The potential interaction of effects is summarised in **Table 14.8**.

Source	Interaction	Receptor																									
		Pop & Human Health		Biodiversity		Land and Soils		Hydrology and Hydrogeology		Air Quality		Climate		Noise and Vibration		Traffic and Transportation		Material Assets: Waste		Material Assets: Utilities		Archaeology and Cultural Heritage		Landscape and Visual		Risk Management	
		Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op	Con	Op
	Population & Human Health																										
	Biodiversity																										
	Land, Soils & Geology																										
	Hydrology & Hydrogeology																										
	Air Quality															*	*										
	Climate																										
	Noise and Vibration															*	*										
	Traffic and Transportation									*	*			*	*	*	*										
	Material Assets: Waste																										
	Material Assets: Utilities																										
	Archaeology & Cultural Heritage																										
	Landscape and Visual																										
	Risk Management																										

Table 14.8: Potential Interaction of Effects

14.11 Cumulative Effects

14.11.1 Trip Generation

Any planning applications within a 10km radius listed as granted, or with a decision pending from within the last five years, has been assessed for their potential to act in-combination with the Proposed Development to cause significant effects on traffic and transportation receptors.

Following a screening process, the developments that are reasonably foreseeable, and likely to interact with the proposed development are listed in **Table 14.9.** Traffic information for each development has been taken from planning documentation available on TCC's planning portal.

	Project Name	Planning Ref	Description	Potential for in-combination effects?
1	Acorn Recycling Workshop and Truck Washout	Tipperary Co. Co. Reg. Ref. 2360281	Workshop and Truck Washout Building	Development will generate ~100 two-way vehicle movements per day along the Lisheen Mine HGV route.
2	Irish Bioeconomy Foundation Research and Development Unit	Tipperary Co. Co. Reg. Ref. 211171	Agri-food sector Research and Development Building.	Development will generate ~26 two-way vehicle movements per day along the Lisheen Mine HGV route.
3	Glanbia Biorefinery (1)	Tipperary Co. Co. Reg. Ref. 18601296	Biorefinery facility	Development will generate ~210 two-way vehicle movements per day along the Lisheen Mine HGV route.
4	Revive Environmental	Tipperary Co. Co. Reg. Ref. 21709	Mechanical Assessment Workshop and Administration Block	Development will generate ~32 two-way vehicle movements per day along the Lisheen Mine HGV route.
5	NaringTech	Tipperary Co. Co. Reg. Ref. 2260395	10-year permission for BioProducts Campus.	Development will generate ~32 two-way vehicle movements per day along the Lisheen Mine HGV route.
6	Derryville Environmental Solutions	Tipperary Co. Co. Reg. Ref. 20816	Acceptance and processing of up to 30,000 tonnes per annum of organic wase materials at existing AD facility.	Development will generate ~6 two-way vehicle movements per day along the Lisheen Mine HGV route.

Table 14.9: Potential Cumulative Effects

14.11.2 Traffic Impacts

Table 14.10 shows the predicted traffic flows along the roads in the study area that will be generated by the developments highlighted in **Table 14.9** as having a potential cumulative impact.

	Project Name	Traffic Generation on L3201 and L4115 (AADF, two-way trips)			Traffic Generation on R639 (AADF, two-way trips)			Assumption
		Car	HGV	Total	Car	HGV	Total	
1	Acorn Recycling Workshop and Truck Washout	66	30	96	33	15	48	Assumed all traffic uses the Lisheen Mine Route
2	Irish Bioeconomy Foundation Research and Development Unit	52	0	52	26	0	26	Assumed 50% of traffic uses the Lisheen Mine Route
3	Glanbia Biorefinery (1)	140	70	210	70	35	105	Assumed 50% of traffic uses the Lisheen Mine Route
6	Revive Environmental	95	0	95	48	0	48	Assumed 50% of traffic uses the Lisheen Mine Route
12	NaringTech	15	17	32	8	9	17	Assumed 25% of traffic uses the Lisheen Mine Route
15	Derryville Environmental Solutions	1	5	6	1	3	4	Assumed 25% of traffic uses the Lisheen Mine Route
	TOTAL	**369**	**122**	**491**	**185**	**61**	**246**	

Table 14.10: Cumulative Projects – Traffic Generation

Table 14.10 shows that the identified cumulative developments are predicted to generate a total of 491 two-way trips on the L3201 and L4115, of which 369 will be car trips, and 122 will be HGV trips. Across a typical 8-hour working day, this equates to 60 two-way trips per hour, or an average of 1 trip per minute. The above traffic will be split 50:50 between the R69 to the east and west of the L4115.

Table 14.11 shows the impact of this cumulative traffic on Base 2014 traffic levels, with and without the proposed development.

	Road	Base 2041 AADF (two-way)	Base + Cumulative Traffic		Base + Cumulative + DS	
			Total	% increase from Base	Total	% increase from Base
1	L3201	631	1,122	78%	1,176	86%
2	L4115	1,124	1,615	44%	1,659	48%
3	R639	3,983	4,228	6%	4,272	7%

Table 14.11: Cumulative Impacts

Based upon the results in Table 14,9, and the IEMA guidance thresholds set out in Section 14.4.1, a detailed assessment of the L3201 and L4115 is required.

14.11.3 Assessment of Potential Effects

14.11.3.1 Driver Delay

Some driver delay may be experienced when construction traffic is travelling along the national, regional and local road networks to and between the development sites. The IEMA guidance (IEMA, 2023) advise that "*delays are only likely to be significant when the traffic on the network surrounding the site is already at, or close to, the capacity of the* system".

Delay to non-project related traffic may occur at numerous points on the road network within the study area, primarily at road junctions, but given the expected level of cumulative trip generation, and the observed low traffic levels on local roads, delays are considered unlikely.

The assessment of Driver Delay is set out in **Table 14.10**.

	Road	Sensitivity of Existing Environment	Description of Effect	Significance of Effect	Reasoning
1	L3201	Low	Low	Slight	**Sensitivity** – Two-way road with low traffic flows and few junctions and accesses. It is considered to be of low sensitivity to driver delay. **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 545 vehicles. In percentage terms this is an increase of 86%, but given the low predicted Base AADF of 631, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Effect.
2	L4115	Low	Low	Slight	**Sensitivity** – Two-way road with low traffic flows and few junctions and accesses. It is considered to be of low sensitivity to driver delay. **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 491 vehicles. In percentage terms this is an increase of 48%, but given the low predicted Base AADF of 1,124, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Effect.

Table 14.10: Assessment of Driver Delay Effects

The L3201, L4115 are both assessed as being of Low sensitivity, and to experience a Low daily traffic effect during operation. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development). This is considered to be **not significant** in EIAR terms.

14.11.3.2 Accidents and Safety

The cumulative developments could result in an increase in the number of road accidents within the study area, due to an increase in the number of vehicle-km on the L3201 and L4115.

The likelihood of an accident occurring is commonly expressed in accidents per million vehicle-km. Accidents that are appraised in relation to transport are predominantly those in which personal injury is sustained by those involved, known as Personal Injury Accidents (PIAs).

Accident rates on different road types are provided in TS's Cost Benefit Analysis (COBA) Manual (Table 4.1) (Transport Scotland, 2014).

For the purposes of the assessment, it has been assumed that the L3201 and L4115 are classified as 'Other S2 Roads', according to TII Guidance. Combined link and junction accident rates for this standard of road are:

- Other S2 Roads (60 mph) – 0.404 PIA per mvkm.

The calculated annual change in predicted PIAs on each link as a result of the development are as follows:

- L3201 between L4115 and Site Access: + 0.15 PIA / year; and
- L4115 between L3201 and R3: + 0.44 PIA / year.

The assessment of Accident and Safety effects is set out in **Table 14.11**.

	Road	Sensitivity of Existing Environment	Description of Effect	Significance of Effect	Reasoning
1	L3201	Medium	Low	Slight	**Sensitivity** – The L3201 is of good alignment and width, and there are no particularly sensitive receptors along the assessed section. It is considered to be of medium sensitivity in terms of accidents and safety. **Description of Effect** – +0.15 PIA / year. This is considered to be a low Effect.
2	L4115	Medium	Low	Slight	**Sensitivity** – The L4115 is of good alignment and width, and there are no particularly sensitive receptors along the assessed section. It is considered to be of medium sensitivity in terms of accidents and safety. **Description of Effect** – +0.44 PIA / year. This is considered to be a low Effect.

Table 14.11: Assessment of Accident and Safety Effects

The L3201, L4115 are both assessed as being of Medium sensitivity to changes in accidents and safety effects, and predicted to experience a Low daily traffic effect during operation. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development). This is considered to be **not significant** in EIAR terms.

14.113.3 Severance

The IEMA Guidelines advise that "*Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery*".

The potential for traffic associated with the proposed development to cause severance is assessed on a case-by-case basis using professional judgement where traffic increases are predicted on roads through residential settlements.

Increased severance can result in the isolation of areas of a settlement or individual properties. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. Severance effects could equally be applied to residents, motorists or pedestrians.

The assessment of Severance effects is set out in **Table 14.12**.

	Road	Sensitivity of Existing Environment	Description of Effect	Significance of Effect	Reasoning
1	L3201	Low	Low	Slight	**Sensitivity** – this section of the L3201 has a small number of accesses that lead to private properties or farms. There are no receptors that would generate crossing demand of the road. It is considered to be of low sensitivity in terms of severance. **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 545 vehicles. In percentage terms this is an increase of 86%, but given the low predicted Base AADF of 631, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Effect.
2	L4115	Low	Low	Slight	**Sensitivity** – this section of the L4115 has a small number of accesses that lead to private properties or farms. There are no receptors that would generate crossing demand of the road. It is considered to be of low sensitivity in terms of severance **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 491 vehicles. In percentage terms this is an increase of 48%, but given the low predicted Base AADF of 1,124, in absolute terms (and using SYSTRA's professional

					judgement) this is considered to be a low Effect.

Table 14.12: Assessment of Severance Effects

The L3201, L4115 are both assessed as being of Low sensitivity to changes in Severance effects, and predicted to experience a Low daily traffic effect during operation. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development). This is considered to be **not significant** in EIAR terms.

14.11.3.4 Pedestrian Delay and Amenity

Traffic volume, composition, speed, pedestrian footways and crossings all contribute to the level of general pleasantness, fear, intimidation and delay experienced by pedestrians and other vulnerable road users.

The assessment of pedestrian effects is set out in **Table 14.13**.

	Road	Sensitivity of Existing Environment	Description of Effect	Significance of Effect	Reasoning
1	L3201	Low	Low	Slight	**Sensitivity** – there are expected to be low, or no pedestrian flows on this section of the L3201. It is considered to be of low sensitivity in pedestrian delay and amenity. **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 545 vehicles. In percentage terms this is an increase of 86%, but given the low predicted Base AADF of 631, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Effect.
2	L4115	Low	Low	Slight	**Sensitivity** – there are expected to be low, or no pedestrian flows on this section of the L4115. It is considered to be of low sensitivity in pedestrian delay and amenity.

					Description of Effect – Cumulative traffic is estimated to result in an AADF increase of 491 vehicles. In percentage terms this is an increase of 48%, but given the low predicted Base AADF of 1,124, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Effect.

Table 14.13: Assessment of Severance Effects

The L3201, L4115 are both assessed as being of Low sensitivity to changes in Pedestrian effects, and predicted to experience a Low daily traffic effect during operation. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development). This is considered to be **not significant** in EIAR terms.

14.11.3.5 Carriageway, Verges and Associated Structures

HGV traffic associated with developments, particularly from heavy vehicles, has the potential to cause attractional damage to road surfaces, to damage verges where vehicles over-run, and potentially to damage structures beneath or close to the road.

This damage is more likely on minor roads, where surfaces may be old and already damaged, and where road widths and junctions are narrower, meaning that the risk of over-run is greater.

In the following assessment, these impacts have been grouped under the term 'Wear and Tear'.

The assessment of 'Wear and Tear' effects is set out in **Table 14.14**.

	Road	Sensitivity of Existing Environment	Description of Effect	Significance of Effect	Reasoning
1	L3201	Medium	Low	Slight	**Sensitivity** – As a single carriageway road, suitable for two way HGV traffic, the L3201 is considered to be of medium sensitivity in pedestrian delay and amenity. **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 545 vehicles. In percentage terms this is an increase of 86%, but given the low predicted Base AADF of 631, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Magnitude of Change.
2	L4115	Medium	Low	Slight	**Sensitivity** – As a single carriageway road, suitable for two way HGV traffic, the L3201 is considered to be of medium sensitivity in pedestrian delay and amenity. **Description of Effect** – Cumulative traffic is estimated to result in an AADF increase of 491 vehicles. In percentage terms this is an increase of 48%, but given the low predicted Base AADF of 1,124, in absolute terms (and using SYSTRA's professional judgement) this is considered to be a low Magnitude of Change.

Table 14.14: Assessment of Severance Effects

The L3201, L4115 are both assessed as being of Medium sensitivity to 'Wear and Tear', and predicted to experience a Low daily traffic effect during operation. The overall Significance of Effect on these roads is assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development). This is considered to be **not significant** in EIAR terms.

14.11.3.6 Summary of Cumulative Effects

A summary of the Cumulative Effects is provided in Table 14.15.

Potential Effect	Sensitivity of Existing Environment	Description of Effect	Significance of Effect
Driver Delay	Low	Low	Slight
Accidents and Safety	Medium	Low	Slight
Severance	Low	Low	Slight
Pedestrian Delay and Amenity	Low	Low	Slight
'Wear and Tear'	Medium	Low	Slight

In conclusion, the overall Significance of Cumulative Effects has been assessed as Likely, Negative, **Slight,** and Long-term (lasting for the duration of development). This is considered to be **not significant** in EIAR terms.

14.12 Conclusion

It is considered that provided the mitigation measures proposed are carried out in full, there will be **no significant effects** in terms of Traffic and Transportation as a result of the proposed development.