

CLONASLEE FLOOD RELIEF SCHEME

Environmental Impact Assessment Report Chapter 6: Traffic and Transport



rpsgroup.com

CHAPTER 6 - TRAFFIC & TRANSPORTATION

Document status					
Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
S5 P01	Issue for Planning	BG	KM	ROC	27 Feb. 25

Approval for issue	
BC	25 February 2025

© Copyright RPS Group Limited. All rights reserved.

The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by RPS Group Limited no other party may use, make use of or rely on the contents of this report.

The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS Group Limited for any use of this report, other than the purpose for which it was prepared.

RPS Group Limited accepts no responsibility for any documents or information supplied to RPS Group Limited by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made.

RPS Group Limited has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy.

No part of this report may be copied or reproduced, by any means, without the written permission of RPS Group Limited.

Prepared by:

Prepared for:

RPS

Laois County Council

Dublin | Cork | Galway | Sligo | Kilkenny rpsgroup.com

RPS Group Limited, registered in Ireland No. 91911 RPS Consulting Engineers Limited, registered in Ireland No. 161581 RPS Engineering Services Limited, registered in Ireland No. 99795 The Registered office of each of the above companies is West Pier Business Campus, Dun Laoghaire, Co. Dublin, A66 N6T7



Contents

6	TRAF	FIC AN	D TRANSPORT	1
	6.1	Introdu	ction	1
	6.2	Method	lology	1
		6.2.1	Legislation, Policy and Guidance	1
		6.2.2	Zone of Influence	2
		6.2.3	Sources of Information to Inform the Assessment	3
		6.2.4	Key Parameters for Assessment	3
		6.2.5	Assessment Criteria and Significance	4
		6.2.6	Data Limitations	6
		6.2.7	Consultations	6
	6.3	Descrip	otion of the Existing Environment	8
		6.3.1	Baseline Environment - Road Network	8
		6.3.2	Baseline Sightlines at Construction Compounds	.12
	6.4	Descrip	otion of the Likely Significant Effects	.13
		6.4.1	Do Nothing Scenario	.13
		6.4.2	Construction Phase	.13
		6.4.3	Operational Phase	.16
	6.5	Mitigati	on Measures	.17
		6.5.1	Construction Phase	.17
		6.5.2	Operational Phase	.18
	6.6	Residu	al Impacts	.18
		6.6.1	Construction Phase	.18
		6.6.2	Operational Phase	.18
	6.7	Monito	ring	.19
		6.7.1	Construction Phase	.19
		6.7.2	Operational Phase	.19
	6.8	Interac	tions and Cumulative Effects	.19
		6.8.1	Interactions	.19
		6.8.2	Cumulative Effects	.19
	6.9	Conclu	sion	.19
	6.10	Chapte	r References	.20

Tables

Table 6-1: Summary of Laois County Development Plan 2021-2027 policy provisions relevant to traffic	
and transport	1
Table 6-2: Sources of Information	3
Table 6-3: TII Traffic Growth Factors (Central) — Laois	4
Table 6-4: Future Year Background AADT Volumes	4
Table 6-5: Definition of Terms Relating to the Magnitude of an Impact	5
Table 6-6: Definition of Terms Relating to the Sensitivity of the Receptor	5
Table 6-7: Matrix Used for the Assessment of the Significance of the Effect	6
Table 6-8: Summary of Key Consultations	6
Table 6-9: Profile of Chapel Street / L2006 Daily Traffic Flows	.10
Table 6-10: Profile of R422 (Birr) Daily Traffic Flows	.11
Table 6-11: Profile of R422 (Mountmellick) Daily Traffic Flows	.11
Table 6-12: Profile of L6002 Brittas Wood Road Daily Traffic Flows	.11
Table 6-13: AADT Volume Calculations	.12
Table 6-14: Traffic Generated During Construction (Delivery of Materials to Site)	.14
Table 6-15: Magnitude of Impact - Construction Phase	.14
Table 6-16: Sensitivity of the Receptor – Construction Phase	.15

CHAPTER 6 - TRAFFIC & TRANSPORTATION

Table 6-17: Significance of Effect – Construction Phase	16
Table 6-18 Significance of effects post mitigation	18

Figures

Figure 6-1: TTA Study Area / ZoI (Mapping by Open Street Map)	3
Figure 6-2: R422 Birr / Mountmellick Road (looking east)	8
Figure 6-3: Chapel Street (looking south)	9
Figure 6-4: L2006 Tullamore Road (looking south) at ICW entrance	9
Figure 6-5: L6002 Brittas Wood Road (adjacent to forest walk entrance)	10

6 TRAFFIC AND TRANSPORT

6.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) presents the Traffic and Transportation Assessment (TTA) of the potential impacts of the Clonaslee Flood Relief Scheme (FRS) (hereafter referred to as 'the Proposed Scheme'). Specifically, this chapter considers the potential impact of the Proposed Scheme on traffic and transport during the construction and operational and maintenance phases.

This chapter describes the likely effects of the Proposed Scheme on the existing road network. From a transport perspective, the key components of the Proposed Scheme are:

- The traffic generated by the staff and plant machinery associated with the construction works.
- The trips generated by staff and maintenance machinery during the future operation of the Proposed Scheme.

The TTA presented is informed and supported by the following EIAR Technical Appendices:

- Appendix 6.1: Traffic Survey Data.
- Appendix 6.2: Construction Traffic Management Plan (CTMP).

6.2 Methodology

6.2.1 Legislation, Policy and Guidance

6.2.1.1 Legislation

The key legislation and guidance referenced in the preparation of the EIAR is outlined in **Chapter 1** - **Introduction** (Sections 1.5 and 1.6).

Specific to traffic and transport, the principal legislation relevant to the assessment is set out in the following:

EU Legislation

EU Directive 2008/96/EU on Road Infrastructure Safety Management.

6.2.1.2 Policy

The assessment has had due regard to relevant policy that include the following:

Laois County Development Plan 2021-2027 (Laois County Council, 2022).

A summary of the policy provisions relevant to Traffic and Transportation are provided in Table 6-1 below.

Table 6-1: Summary of Laois County Development Plan 2021-2027 policy provisions relevant to traffic and transport.

Summary of relevant policy framework	How and where considered in the EIAR
TRANS 7 - Subject to availability of resources, provide for and carry out improvements to sections of local roads that are deficient in respect of realignment, structural condition or capacity, and to maintain that standard thereafter.	The Proposed Scheme includes measures to improve Chapel Street over the extent of works in Area 2.
TRANS 36 - Encourage walking and cycling through the provision of the necessary infrastructure and also provide a mix of land uses which generate short trip distances to combat sedentary transport patterns. All new development proposals shall be required to provide for well-integrated pedestrian and cycling networks.	Brittas Wood (Area 1) includes a publicly accessible amenity trail which is used by walkers and cyclists from the local area. It is proposed to construct a flood relief embankment on a portion of this amenity trail. The crest of the embankment will be paved for use by walkers, cyclists and Coillte and Uisce Eireann vehicles. As such, the structural integrity of the walking area in this portion of Brittas Wood will be improved and also protected from flooding.

Summary of relevant policy framework	How and where considered in the EIAR
	A new footpath will be installed in Area 2 Chapel Street in front of proposed flood wall which will both enhance the public realm space and provide a safe walking area for pedestrians.

6.2.1.3 Guidance

The assessment of impacts has been undertaken, as appropriate, in accordance with, or with reference to, the following guidance documents:

- Spatial Planning and National Roads Guidelines for planning authorities 2012.
- TII Publication PE-PDV-02045 Traffic and Transport Assessment Guidelines (2014).

The TTA has followed the methodology set out in the following guidance documents:

- TII Traffic and Transport Assessment Guidelines May 2014 (Doc No: PE-PDV-02045) (hereafter 'TII Guidelines').
- PE-PAG-02017, Project Appraisal Guidelines, Unit 5.3, Travel Demand Projections, Transport Infrastructure Ireland, October 2021
- Department of Transport (DoT) Design Manual for Urban Roads and Streets (DMURS) May 2019.
- Department of Transport (DoT) Traffic Signs Manual August 2019.
- PAG for National Roads Unit 16.1 Expansion Factors for Short Period Traffic Counts, Transport Infrastructure Ireland, October 2016,
- GE-STY-01024, Road Safety Audit Guidelines, December 2017.
- TII Climate Action Roadmap June 2024.

6.2.2 Zone of Influence

The proposed Zone of Influence (ZoI) as shown in **Figure 6.1** is Clonaslee Village and in particular the approach roads and junctions impacted by the Proposed Scheme.

The TTA Zol was developed by considering where the highest percentage of potential impact will be on background traffic flows and the routes within Clonaslee Village that will be used by both construction vehicles and employees. Regard was also had to the Transport Infrastructure Ireland (TII) Traffic and Transport Assessment Guidelines (Table 2.1) (2014) where a 5% impact threshold was considered when developing the TTA Zol.



Figure 6-1: TTA Study Area / Zol (Mapping by Open Street Map)

6.2.3 Sources of Information to Inform the Assessment

Information on traffic and transportation within the TTA ZoI was collected through a site survey carried out in May 2023 and February 2024, and traffic surveys carried out in April 2022 and November 2023. **Table 6-2** provides a summary of the surveys undertaken to inform the TTA.

Survey	Extent	Overview	Survey Contractor	Date	Reference to Further Information
Walkover Survey	Clonaslee Village and approach roads	Road / lane widths recorded, and photos taken at junctions	RPS Project Team	February 2024	Section 6.3
Traffic Surveys	Clonaslee crossroads, entrance to School and GAA grounds and Forest Walk entrance	Cameras were positioned at the junctions to record the turning movements and volumes between 7am to 7pm on a single day.	Idaso Ltd.	November 2023 April 2022	Section 6.3

Table 6-2: Sources of Information

6.2.4 Key Parameters for Assessment

A description of the Proposed Scheme is provided in **Chapter 5: Project Description**. The key activities that have potential to result in likely significant effects on traffic and transport are outlined below.

6.2.4.1 Construction Phase

Construction traffic will include Heavy Vehicles (HV) and construction staff cars / vans (Light Vehicles (LV)). Construction traffic will travel on roads that are located adjacent to residential and retail development and which also serve pedestrian movement. The scale of trips generated during the construction phase over a 24-month programme has been estimated to ensure that the receiving environment has ample capacity to cater for the HV trips and construction staff trips, and to ensure there are no safety risks to road and footpath users. This analysis is presented in Section 6.4.

6.2.4.2 Operational and Maintenance Phase

An operation and maintenance programme will be agreed with the Office of Public Works (OPW) post construction works and implemented by LCC/agents on behalf of LCC for the completed FRS. Traffic will arise during the operational and maintenance phase of the Proposed Scheme. The primary type of trips will be car and ad hoc Heavy Vehicles (HV) trips, which will not have significant impact on road width/capacity.

Chapter 5: Project Description includes a description of the anticipated maintenance activities anticipated to be required over the lifetime of the Proposed Scheme.

6.2.4.3 Growth Rates

Forecast future traffic volumes on the roads in the vicinity of the Proposed Scheme have been estimated using growth factors from TII Publication PE-PAG-02017 – *Project Appraisal Guidelines (PAG) for National Roads Unit 5.3, Travel Demand Projections*, October 2021. The guidelines provide various growth rate factors for County Laois that are applicable to the periods 2016-2030, 2030-2040 and 2040-2050. Growth rate factors are provided for low sensitivity, central and high sensitivity growth rate scenarios with factors provided for both Heavy (HV) and Light Vehicles (LV). The Central Growth factors have been applied to the 2026 Annual Average Daily Traffic (AADT) data to estimate future year traffic flows on the receiving road network. Given the location and function of the local roads the application of national growth rates is considered a robust approach. The growth factors applied are set out in **Table 6-3** for LV and HV.

Table 6-3: TII Traffic Growth Factors (Central) - Laois

Year	Annual Growth Factor - LV	Annual Growth Factor - HV
2016-2030	1.0147	1.0280

6.2.4.4 Assessment Periods

Forecast background network traffic levels were accordingly derived for the assessment year and are shown in **Table 6-4**. The forecast background network traffic levels are provided for the following:

- Construction year of operation (2026-2028); 2027 taken for peak assessment of construction traffic.
- Year of Opening (YoO), assumed to be Q4 of 2028.

Table 6-4: Future Year Background AADT Volumes

Road Name	Construction Year 2027 AADT	Opening Year 2028 AADT
L2006 (Tullamore Road)	1,607	1,641
R422 (to Birr)	2,708	2,766
R422 (to Mountmellick)	3,419	3,492
L6002 (Brittas Wood)	173	177

6.2.5 Assessment Criteria and Significance

The significance of effects is determined using a two-stage process that involves defining the magnitude of the impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors.

Table 2.1 in the TII Traffic and Transport Assessment Guidelines (2014) provides a number of thresholds for when a Traffic and Transport Assessment is automatically required. One of these thresholds relates to the percentage impact that a new development would have on the adjoining road network, where it states the following:

'Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road. Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive'.

It is considered standard practice to reference the scale of percentage thresholds when assessing the likely long-term operational effects of large-scale trip generators such as resident, educational, health or commercial developments. Although the Proposed Scheme is not considered a large-scale trip generator, it is proposed to still take cognisance of the percentage thresholds, stated in Table 2.1 of the TII Guidelines when establishing the potential magnitude of impacts.

In addition to establishing the magnitude of impact it is also considered that the sensitivity of the receptors (receptors being the receiving road network in the context of this assessment) should be included when establishing the level of significance of the traffic impact generated by the additional construction vehicles.

The criteria for defining magnitude in this chapter are outlined in **Table 6-5**. The breakdown of the magnitude of impacts is based on an expert judgement of the scale of percentage impacts of the additional traffic flows on the local road network.

Magnitude of Impact	Definition
High	The scale of additional traffic exceeds 10% of the background traffic flow on the receiving road network.
Medium	The scale of additional traffic is between 5% and 10% of the background traffic flow on the receiving road network.
Low	The scale of additional traffic is between 1.5% and 5% of the background traffic flow on the receiving road network.
Negligible	The scale of additional traffic is less than 1.5% of the background traffic flow on the receiving road network.

Table 6-5: Definition of Terms Relating to the Magnitude of an Impact

The criteria for defining sensitivity in the TTA are outlined in Table 6-6 below.

Table 6-6: Definition of Terms Relating to the Sensitivity of the Receptor

Sensitivity	Definition
High	High importance and rarity, national scale and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

The significance of the effect upon traffic and transportation is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is aligned with the EPA *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (2022) and is presented in Table 6-7, where a range of effects are presented and the final assessment for each effect is based upon expert judgement. For the purposes of this assessment, any effects with a significance level of slight or less have been concluded to be not significant in terms of the EIA Regulations.

			Magnitude of in	npact	
		Negligible	Low	Medium	High
ty of or	Negligible	Imperceptible	Imperceptible or slight	Imperceptible or slight	Slight
sitivi cept	Low	Imperceptible or slight	Imperceptible or slight	Slight	Slight or moderate
Sens	Medium	Imperceptible or slight	Slight	Moderate	Moderate or major
	High	Slight	Slight or moderate	Moderate or major	Major or Profound

Table 6-7: Matrix Used for the Assessment of the Significance of the Effect

6.2.6 Data Limitations

This chapter of the EIAR has been prepared based upon the best available information and in accordance with current best practice and relevant guidelines.

There were no technical difficulties or otherwise encountered in the preparation of this chapter of the EIAR.

6.2.7 Consultations

Meetings and follow up consultations were arranged with stakeholders at all phases of the project. No specific traffic and transport comments and queries were raised during those meetings and consultations.

A summary of the key issues relevant to this assessment raised during consultation is presented in **Table 6-8**.

Date	Consultee	Issues Raised	Locations where comments were addressed
June 2024	ТІІ	 Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes. 	Consultations are ongoing with LCC with in this regard
		 Potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development. 	See Section 6.4 for Description of Significant Effects.
		 Regard to TII Publications (formerly the Design Manual for Roads and Bridges (DMRB) and the Manual of Contract Documents for Road Works). 	There will be no material alterations to roads or bridges within the scheme. TII guidance has been considered in reinstatement of the roads. See Chapter 5: Project Description.
		 The developer is reminded of the requirements of TII Publications DN- STR-03001- Technical Acceptance of Road Structures on Motorways and Other National Roads for structures. This Standard specifies the procedures to be followed to obtain Technical Acceptance for structures on motorway and other national road schemes and for the submission of as built records. 	Not applicable to the Proposed Scheme.
		 The Technical Acceptance requirements, if any, for the assessment, alteration, modification, strengthening and repair of all road structures (national roads) shall 	Not applicable to the Proposed Scheme.

Table 6-8: Summary of Key Consultations

Date	Consultee	Issues Raised	Locations where comments were addressed
		 be agreed with the Bridge Management Section of TII. It would be important that, where appropriate, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site, with reference to impacts on the national road network and 	A Traffic and Transport assessment has carried out as part of this chapter using Transport Infrastructure Ireland (TII) – Traffic and Transport Assessment Guidelines – May 2014
		junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the National Roads Authority (NRA)/TII TTA Guidelines which addresses requirements for sub- threshold TTA.	The construction and operation of the Proposed Scheme does not necessitate new access junctions on the national road network; just temporary widening of existing entrances on local roads to accommodate machinery and construction materials. Therefore, a Road Safety Audit has not been undertaken at this stage but can be undertaken at detailed design stage if requested.
		 In the interests of maintaining the safety and standard of the national road network, methods/techniques proposed for any works traversing/in proximity to the national road network should be identified. 	
		 The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required. 	See Section 6.5 for mitigation measures.
		 In relation to haul route identification, the applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed. 	See Appendix 6.2 Construction Traffic Management Plan. No abnormal loads are proposed.
July 2024	Department of Transport	 The applicant/developer should ensure that all proposed haul routes to be traversed are suitable to accommodate construction traffic and the transport of materials without damaging the condition of the road. 	See Appendix 6.2 Construction Traffic Management Plan.
		 The applicant/developer should also ensure that the proposed works will not adversely damage the integrity of any existing bridge structure hydraulically or by traffic loading. 	Not applicable to the Proposed Scheme.
		 Separate structure approvals/permits, and other licences to be obtained where required in connection with all proposed haul routes. 	

6.3 Description of the Existing Environment

6.3.1 Baseline Environment - Road Network

These following sections describe the pertinent key roads in the TTA ZoI in terms of road network, public transport, traffic flows and AADT.

The Proposed Scheme, as detailed in **Chapter 5 Project Description**, is mainly concerned with works to three distinct locations around the village of Clonaslee as follows:

- Area 1: Brittas Wood
- Area 2: Chapel Street
- Area 3: Tullamore Rd and Uisce Éireann Integrated Constructed Wetlands (ICW)

6.3.1.1 R422 Regional Road

The road network in Clonaslee comprises local and regional roads. The primary road access to Clonaslee village is via the R422 regional road, which runs west-east from the R421 north of the Slieve Bloom Mountains to the R445 at New Inn (east of Emo) and is the main artery for traffic entering and leaving the village. This road accommodates two-way traffic. The street has a straight horizontal alignment affording good forward visibility. The paved width of the street is approximately 7.0 m. The street has footpaths on both sides approximately 2.0 m wide with on-street parking also available.



Figure 6-2: R422 Birr / Mountmellick Road (looking east)

6.3.1.2 Chapel Street / L2006 Tullamore Road

Chapel Street (L2006) will be directly impacted by the Proposed Scheme, with construction activities taking place at the existing roadside wall adjacent to the Clodiagh River. Two-way traffic will be maintained at the Integrated Constructed Wetland (ICW) entrance on the L2006 Tullamore Road.

Chapel Street runs in parallel to the Clodiagh River in Clonaslee and connects the village to the town of Tullamore. It is predominately a residential street with access to a school, GAA grounds and a Church. This road accommodates two-way traffic and has a straight alignment throughout the village and beyond the entrance to the ICW. The paved width of the road is approximately 7.8 m. The street has a 2.3 m wide

footpath on the western side only from the crossroads junction to 180 m from the junction where footpaths are introduced on both sides of the road for the extent on the village approach.

Chapel Street transitions into the L2006 Tullamore Road at the change in speed limit location from 50 kmh to 80 kmh some 550m from its junction with the 422 Regional Road.



Figure 6-3: Chapel Street (looking south)



Figure 6-4: L2006 Tullamore Road (looking south) at ICW entrance

6.3.1.3 L6002 Local Road

The L6002 is a local road with access to the Brittas Wood forest walk. This road accommodates two-way traffic albeit without the provision of road markings. From the crossroads junction there is a short section of

straight alignment changing to curvilinear type alignment with reduced forward visibility. There are no dedicated footpaths on this section of road.



Figure 6-5: L6002 Brittas Wood Road (adjacent to forest walk entrance)

6.3.1.4 Public Transport

Transport for Ireland (TFI) run a number of bus services that can be used to travel to and from Clonaslee to various local destinations.

6.3.1.5 Baseline Traffic Flows

Traffic surveys were carried out in Clonaslee in November 2023 and April 2022. The traffic surveys recorded the volumes and type of vehicles travelling in all directions (see further detail on traffic count data in Appendix 6.1: Traffic Survey Data). These surveys provide a profile of the traffic flow over a seven day timeframe and provide adequate baseline data to establish the AADT on each of the roads. **Table 6.7** to **Table 6.10** show the profile of the daily traffic flows recorded in November 2023 on the following roads on the approach to the Proposed Scheme:

- Chapel Street / L2006
- R422 to Birr
- R422 to Mountmellick
- L6002 Brittas Wood Road

Day	Northbound	Southbound	WADT*
Tuesday 21 November 2023	869	852	1,721
Wednesday 22 November 2023	854	831	1,685
Thursday 23 November 2023	863	848	1,711

Table 6-9: Profile of Chapel Street / L2006 Daily Traffic Flows

Day	Northbound	Southbound	WADT*
Friday 24 November 2023	873	872	1,745
Saturday 25 November 2023	760	736	1,496
Sunday 26 November 2023	560	566	1,126
Monday 27 November 2023	827	830	1,657
Average WADT	801	791	1,592

* Weekly Average Daily Traffic

Table 6-10: Profile of R422 (Birr) Daily Traffic Flows

Day	Eastbound	Westbound	WADT
Tuesday 21 November 2023	1,449	1,376	2,825
Wednesday 22 November 2023	1,488	1,376	2,864
Thursday 23 November 2023	1,484	1,390	2,871
Friday 24 November 2023	1,589	1,478	3,064
Saturday 25 November 2023	1,218	1,242	2,460
Sunday 26 November 2023	960	1,009	1,969
Monday 27 November 2023	1,384	1,332	2,716
Average WADT	1,367	1,315	2,682

Table 6-11: Profile of R422 (Mountmellick) Daily Traffic Flows

Day	Eastbound	Westbound	WADT
Tuesday 21 November 2023	1,783	1,774	3,557
Wednesday 22 November 2023	1,830	1,799	3,629
Thursday 23 November 2023	1,812	1,783	3,595
Friday 24 November 2023	1,938	1,933	3,871
Saturday 25 November 2023	1,514	1,499	3,013
Sunday 26 November 2023	1,249	1,310	2,559
Monday 27 November 2023	1,704	1,768	3,472
Average WADT	1,690	1,696	3,386

Table 6-12: Profile of L6002 Brittas Wood Road Daily Traffic Flows

Day	Total	Weekly Flow Indices - Midland Region	WADT
Tuesday 21 November 2023	171	1.00	171

6.3.1.6 Annual Average Daily Traffic (AADT)

AADT is the term used to describe the average traffic volume in both directions on a section of road, adjusted for seasonal variation. It is a standard industry recognised parameter for assessing traffic volumes. The traffic survey data gathered allowed a Weekly Average Daily Traffic (WADT) flow to be determined as indicated in the previous tables. This data was expanded in accordance with TII's *PAG for National Roads Unit 16.1 — Expansion Factors for Short Period Traffic Counts* (October 2016), to derive the AADT on the key sections of the road.

As the surveys were undertaken in November an index factor of 1.01 (from TII PAG Unit 16.1 Annex C – Midland Region) was conservatively applied to the WADT to estimate the AADT. The conversion factor recognizes the seasonal variation that can occur in traffic flow across the year. The AADT volume calculations are presented in **Table 6-13** below.

Table 6-13: AADT Volume Calculations

Road	WADT	Monthly Index Factor (from TII PAG Unit 16.1 Annex C) – Midland Region	AADT
Chapel Street / L2006	1,592	1.01	1,607
R422 to Birr	2,682	1.01	2,708
R422 to Mountmellick	3,386	1.01	3,419
L6002 Brittas Wood Road	171	1.01	173

6.3.2 Baseline Sightlines at Construction Compounds

A sightline assessment of the proposed compound accesses for the scheme . The accesses were checked in accordance with TII Publication DN-GEO-03060 and DMURS for 80km/h and 50km/h areas.

A sightline assessment of the proposed compound accesses onto the local road network has been undertaken and the result of this analysis is summarised below and presented in **Appendix 6-2 CTMP**. The accesses were checked in accordance with TII Publication DN-GEO-03060 - Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) (June 2017) and the Department of Transport standard - Design Manual for Urban Roads and Streets (May 2019).

Compound A

The sightline assessment demonstrates that the required junction visibility splay of 45 m is achievable from the 2.4m setback in the northbound direction. It is not achievable however in the southwest direction from 2.4m setback or the 2.0m relaxation setback.

Compound B

The sightline assessment demonstrates that the required junction visibility splay of 45 m is achievable from the 2.4m setback in both directions.

Area 3 ICW/Tullamore Road

The sightline assessment demonstrates that the required junction visibility splay of 160 m is achievable from the 2.4m setback in the northbound direction. It is not achievable however in the southwest direction from 2.4m setback or the 2.0m relaxation setback.

6.4 Description of the Likely Significant Effects

This section describes the significant effects which are likely to arise due to traffic and transport from the construction and operational phases of the Proposed Scheme.

6.4.1 Do Nothing Scenario

In the scenario where the Proposed Scheme does not proceed, the baseline environment conditions described in **Section 6.3.1** would continue. A negligible increase in road traffic volumes as a result of population growth would be expected as categorised in **Table 6-5** above.

6.4.2 Construction Phase

6.4.2.1 Magnitude of Impact

The construction phase of the Proposed Scheme will comprise a number of activities including:

- Ground investigation, site clearance, utility diversion works, excavations and demolition works (of
 existing road on Chapel St),
- Construction of flood defences i.e. flood walls, embankments, debris trap, culvert remediation and reinstatement of adjacent areas required for the construction of such defences, and
- Establishment of compound areas providing welfare facilities for site staff and storage areas for materials and spoil.

A description of the construction stage specific methodologies for each of the Works Areas (i.e. Area 1 Brittas Wood, Area 2 Chapel St and Area 3 Tullamore Rd/ICW) is discussed in detail in **Chapter 5 Project Description**.

It is anticipated that the construction phase of the Proposed Scheme will take approximately 24 months. This phase will give rise to additional traffic on the local road network to and from the site. This will include:

- HVs importing construction materials, including general fill material and wall construction materials;
- HVs exporting waste/spoil materials;
- HVs delivering plant and fuel; and

General traffic associated with workforce cars and vans. It is anticipated that 15 to 18 persons will be involved in the construction activities with 5 to 6 persons working in the three different areas of the Proposed Scheme simultaneously using six vehicles (cars/vans) per area.

The construction works will take place at three distinct locations around the village of Clonaslee. The temporary construction compound (Compound A) for Area 1 Brittas Wood is located approx. 150m north of the works area in a greenfield site off the L6002 road. Temporary construction compound (Compound B) located along the Tullamore Rd, adjacent to Area 2 and approx. 250 south of Area 3 will serve both of these construction sites. It is therefore assumed that all construction traffic will travel to and from these locations on public roads, whilst small numbers of vehicles and plant will travel through the site and works areas on a daily basis. These movements will generally occur outside of the peak hours and will be detailed for each construction area in the CTMP (Appendix 6-2).

The road network surrounding Clonaslee provides multiple potential haul routes for material to be transported to and from the site. It is currently envisaged that the preferred haul route will be to and from Tullamore via the N80 National Road, L2004 and L2006 Local Roads.

The hauling of material to site will incur the following trips presented below in **Table 6-14** and set out in Section 3.4.2 of the CTMP (Appendix 6.2).

Location	Estimated Number of Trips (Round Trips)	Length of Programme (months)	Total Number of Working Days (5- day week)	Average Number of Trips Per Day
Area 1: Brittas Wood	107	8	8	1
Area 2: Chapel Street	152	15	15	1
Area 3: Tullamore Rd and Integrated Constructed Wetland (ICW)	121	9	9	1

Table 6-14: Traffic Generated During Construction (Delivery of Materials to Site)

The likely construction programme (refer to Chapter 5 Project Description for details) indicates that works will for Area 1 will be carried out between February 2027 and September 2027, works in Area 2 will commence in May 2027 through to February 2028 and works in Area 3 will commence in February 2028 through to October 2028. It is therefore assumed between May 2027 and September 2027 there is potential for peak traffic volumes given the overlap in works and potential for two construction crews operating on site.

Indicative daily movements for two construction crews operating on site are given below:

- Six vehicles (cars/vans) will arrive on site in the morning (07:00 08:00) and depart in the evening (18:00 19:00)
- An average of sixteen Heavy Vehicles (HV) will arrive and depart the site throughout the typical working day (07:00 19:00) with a maximum of 32 HV movements per day

Total traffic movements will depend on construction methodology and actual number of crews during construction stage.

The scale of percentage impacts of the additional traffic flows on local road network were quantified for each assessment year in order to establish a magnitude of impact on each of the key roads in the TTA Study Area and these are shown in **Table 6-15**. Hauling of excavated material, combined with the delivery of materials and work force traffic are assessed below in relation to existing traffic volumes.

Tuble o To: mughtude of mipuot oonotidetion i hube

Magnitude of Impact – Construction Stage					
	Construction Year 2027 AADT	Peak Daily Construction Traffic (Two Way Flows)	Percentage Impact	Magnitude of Impact on Total Traffic Flow during the Construction Year 2027	
Chapel Street / L2006	1,607	76	5%	Medium	
R422 to Birr	2,708	76	3%	Low	
R422 to Mountmellick	3,419	76	2%	Low	
L6002 Brittas Wood Road	173	76	44%	High	

It is noted that higher percentage increases are expected on Chapel Street and the L6002 Road, which is the increases of between 5% and 44% are anticipated; however, these are largely as a result of existing very low volumes, and the actual increases are up to 6 LVs and 2-3 HVs during peak hours.

Across the main road network, it is considered that the scale of magnitude is low due to the low percentage impact of the construction HVs, and staff vehicle trips compared to the background traffic flows in 2027. Due to the low existing AADT on the L6002 local road the scale of magnitude of impact is High.

Other potential impacts and the significant effects of the Proposed Scheme on the road network are summarised as follows:

All Areas

- Localised traffic disruption due to increased construction related traffic on the haulage routes to the Proposed Scheme. It is currently envisaged that the preferred haul route will be to and from the N80 National Road to Tullamore via the L2002 and L2006 Local Roads. All routes are subject to the agreement of Laois County Council and alternative routes maybe considered.
- Temporary impact during construction due to ground investigation, site clearance and utility diversions works which are programmed to be less than 1 year in duration.

Area 1: Brittas Wood

• Temporary impact during construction of Area 1 works including embankment, culvert remediation and debris trap at Brittas Wood on the L6002 local road. Public access to the Brittas Loop Trail will be restricted during the works, and signage erected at the trail head to direct people to the alternative entrance on the eastern side of the Clodiagh River.

Area 2: Chapel Street

- Short term impact during construction of Area 2 works including retaining wall at Chapel Street. It is
 envisaged that the proposed wall works can be completed under a single lane closure of the
 southbound lane will be in place for the duration of the works in this area (approx. 12 months). Full road
 closures may be required to facilitate a delivery for example, but this will be very short duration (1 2
 hours) if required and will occur outside of AM and PM peak hours.
- Short term impact on access to local School, GAA grounds, Church and residential properties along Chapel Street in terms of additional journey times and queuing lengths.

Area 3: Tullamore Road & ICW

• Temporary impact during construction of Area 3 works including embankment and retaining wall on Tullamore Road at the ICW. No closures are expected to be required in this area with two-way traffic to be maintained. Close co-ordination with Uisce Éireann Operations will be required to ensure unhindered access to the ICW.

During the construction phase, the above-mentioned works will have a **potential short term slight negative impact** on transport infrastructure due to works being carried out directly on the infrastructure which could result in damage to existing transport infrastructure.

The Proposed Scheme when constructed will mitigate flood risk in Clonaslee Village. This flood risk affects the Chapel Street, the R422 regional road along with other roads in the area. There is also potential for active travel facilities upgrade along Chapel Street with the possibility to add a pedestrian footpath to the wall alignment.

6.4.2.2 Sensitivity of Receptor

The sensitivity of the receptor is defined through the vulnerability of the receptor, the recoverability of the receptor, and the importance of receptor in the context of national, regional, and localised scale. As roads are categorised as national, regional, and local the simplistic way would be to define the receptors in terms of these categories. However, some of the local roads in the TTA study area go through residential areas and adjacent to retail units so this was considered when defining the sensitivity during the construction phase. **Table 6-16** outlines the sensitivity of the roads during the construction phase.

Sensitivity of the Receptor – Construction Phase			
Chapel Street / L2006 – Area 2 (Reinforced concrete wall construction)	High		
L2006 – Area 3 (Tullamore Road and ICW: Embankment construction and reinforced concrete wall construction)	Medium		
R422 to Birr	Medium		

Table 6-16: Sensitivity of the Receptor – Construction Phase

Sensitivity of the Receptor – Construction Phase			
R422 to Mountmellick	Medium		
L6002 Brittas Wood Road	Low		

6.4.2.3 Significance of the Effect

The significance of the effect is determined by correlating the magnitude of the impact and the sensitivity of the receptor for each of the roads and are based on the method of assessment shown previously in Table 6-7. As the construction phase has a fixed duration, any effects will be temporary and the effects with a significance level of slight or less have been concluded to be not significant in EIA terms.

Table 6-17 outlines the significance of effect during construction phase.

	Table 6-17:	Significance	of Effect -	Construction	Phase
--	-------------	--------------	-------------	--------------	-------

Sensitivity of the Receptor – Construction phase					
	Magnitude of Impact	Sensitivity of Receptor	Significance of Effect		
Chapel Street / L2006 – Area 2 (Reinforced concrete wall construction)	Medium	High	Moderate or Major		
L2006 – Area 3 (Tullamore Road and ICW: Embankment construction and reinforced concrete wall construction)	Medium	Medium	Moderate		
R422 to Birr	Low	Medium	Slight		
R422 to Mountmellick	Low	Medium	Slight		
L6002 Brittas Wood Road	High	Low	Slight or Moderate		

Constitutive of the Recentor Construction phase

The short-term effect on the road network during the construction phase is moderate to major on Chapel Street while the temporary effect is slight and slight or moderate on the R422 Regional Road and L6002 Brittas Wood Road, respectively.

The R442 Birr / Mountmellick Road and Chapel Street / Tullamore Road (L2006) have road widths more than 6.0 m. This is in the upper range of the standard carriageway width for Link Streets with low to moderate design speeds, as stated in the DMURS.

The L6002 Brittas Wood Road has a width of 5.8 m, which exceeds the standard carriageway widths for Local Streets (5.5 m), as stated in the DMURS.

Therefore, these roads have sufficient width to accommodate the HV travelling to the site of the Proposed Scheme.

6.4.3 Operational Phase

As outlined in the **Chapter 5: Project Description** the operational phase of the Proposed Scheme will not require any additional dedicated employees. It is expected that the operation and maintenance activities required will be undertaken by Laois County Council maintenance personnel.

Operational traffic and transport will be limited to periodic maintenance works such as occasional debris removal from the proposed debris trap, bi-annual back drainage improvements and vermin control at the proposed embankments, annual vegetation control at the proposed flood walls and embankments, removal of trash and vegetation from the proposed culverts on a quarterly basis and general repairs as required. Refer to **Chapter 5: Project Description** for details.

As such, operational traffic and transport effects would be negligible and magnitudes would be low, given that the occurrence of maintenance works would be rare and durations brief. Therefore, the significance of effects for the operational phase is assessed as **imperceptible or slight**. Detailed assessment of operational traffic and transport effects is therefore unnecessary and is scoped out of this assessment.

6.5 Mitigation Measures

6.5.1 Construction Phase

A Construction Traffic Management Plan (CTMP) has been prepared and outlines measures in detail to be implemented by the appointed contractor during the construction phase to reduce impacts on local communities and residents adjacent to the Proposed Scheme and wider road network. The information below provides a summary of the mitigation measures stated in the CTMP. Refer to **Appendix 6-2: CTMP** for details.

The construction and reinstatement of the roads proposed as part of the Scheme will be carried out in consultation with the Local Authority and will also follow all relevant publications by the Department of Transport and TII.

The proposed temporary traffic management to facilitate works at Chapel Street will have a southbound lane closure with stop/go or temporary traffic signals for the duration of the works.

The appointed Contractor will develop a complete schedule of lane closures, along with road closures if required for deliveries and will be published in advance of the works commencing to facilitate residents and those attending the School, GAA grounds and Church in making alternative arrangements where necessary.

The following mitigation measures will also be implemented:

- The Contractor shall provide general condition and structural surveys of all transport infrastructure) on all routes, including haulage routes, that may be impacted as a result of the proposed Scheme before works commence on site and after completion.
- Traffic management measures will be designed in accordance with TS4 Guidelines, Certification Scheme and the Specification for the Construction of Traffic Signs (DTTAS 2012) and Chapter 8 of the Department of the Transport Traffic Signs Manual, available at www.trafficsigns.ie, or any amendments thereof for the time being in force.
- The Contractor shall provide construction details of any lay-bys or hardstand if required to facilitate construction traffic during the construction phase of the Proposed Scheme;
- The Contractor shall be obliged to identify locations of any bridges that have weight/ height restrictions along proposed haul routes and comply with these restrictions;
- Site entrance locations off the public road may require a durable bound surface and a secure joint must be formed between the access road and the public road.
- Cleaning regime for plant will be implemented in order to minimise mud/dust on public roads.
- Sightlines:
 - Compound A: The sightline assessment demonstrates that the required junction visibility splay of 45 m is achievable from the 2.4m setback in the northbound direction. It is not achievable however in the southwest direction from 2.4m setback or the 2.0m relaxation setback. A vehicle controller / flagman may be required during the works to facilitate movements in and out of the compound.
 - Compound B: The sightline assessment demonstrates that the required junction visibility splay of 45 m is achievable from the 2.4m setback in both directions.
 - Area 3 ICW/Tullamore Road: The sightline assessment demonstrates that the required junction visibility splay of 160 m is achievable from the 2.4m setback in the northbound direction. It is not achievable however in the southwest direction from 2.4m setback or the 2.0m relaxation setback. A vehicle controller / flagman may be required during the works to facilitate movements in and out of Area 3 ICW/Tullamore Road.

6.5.2 Operational Phase

As stated earlier in this chapter, there are no likely significant adverse effects due to traffic and transportation for the operational phase of the Proposed Scheme. Consequently, no mitigation measures are necessary, and none are proposed. However, it should be noted that the implementation of the Proposed Scheme, here will have a positive effect on traffic and transport during the operational stage as the flood defences will prevent the flooding of local roads.

6.6 **Residual Impacts**

6.6.1 Construction Phase

Residual effects are those effects which will remain after the proposed mitigation measures have been implemented.

Relatively short, localised delays are likely to be encountered by motorists at the locations of proposed works in the immediate vicinity of the road network at Area 1 and Area 3 due to construction traffic entering and exiting the works areas. This residual effect will be a temporary; only for the duration of the proposed works in those areas and will range from Slight to Imperceptible or Slight.

The temporary lane closure of Chapel Street (Area 2) to facilitate the proposed construction of the retaining wall is likely to cause a temporary, Slight or Moderate residual effect on traffic flow in the vicinity of the works but only for the duration of works in this area. There will be no residual effects once the Proposed Scheme is completed.

Sensitivity of the Receptor – Construction phase				
	Magnitude of Impact	Sensitivity of Receptor	Significance of Effect	Residual Effect post mitigation
Chapel Street / L2006 – Area 2 (Reinforced concrete wall construction)	Medium	High	Moderate or Major	Slight or Moderate
L2006 – Area 3 (Tullamore Road and ICW: Embankment construction and reinforced concrete wall construction)	Medium	Medium	Moderate	Slight
R422 to Birr	Low	Medium	Slight	Imperceptible or Slight
R422 to Mountmellick	Low	Medium	Slight	Imperceptible or Slight
L6002 Brittas Wood Road	High	Low	Slight or Moderate	Slight

Table 6-18 Significance of effects post mitigation

6.6.2 Operational Phase

No mitigation is required for the operational phase; therefore, the effect remains the same as that section 6.5.2. The residual effect for the operational phase is assessed as **imperceptible** on traffic and transport.

6.7 Monitoring

6.7.1 Construction Phase

Prior to the commencement of construction, an updated detailed Construction Traffic Management Plan (CTMP) will be prepared by the selected contractor to ensure construction traffic is appropriately managed with agreement of Laois County Council.

6.7.2 Operational Phase

There is no traffic and transport monitoring proposed for the operational phase of the Proposed Scheme.

6.8 Interactions and Cumulative Effects

6.8.1 Interactions

Interactions between environmental topics with Traffic and Transport has been addressed in **Chapter 18**: **Interactions and Cumulative Effects.**

6.8.2 Cumulative Effects

Other proposed plans or projects may have the potential to exacerbate the magnitude of the effects of the Proposed Scheme. A list of proposed plans and projects within the vicinity of the Proposed Scheme are outlined in **Chapter 18: Interactions & Cumulative Effects**.

6.9 Conclusion

The assessment considered the effects of the proposed Clonaslee Flood Relief Scheme on the surrounding road network and road users in and around the village of Clonaslee.

During the construction phase, relatively short, localised delays are likely to be encountered by motorists at the locations of proposed works in the immediate vicinity of the road network at Area 1 and Area 3 due to construction traffic entering and exiting the works areas. This impact will be a **temporary slight** impact.

The temporary lane closure of Chapel Street to facilitate the proposed construction of the retaining wall is likely to cause a moderate to major short term impact to the flow of traffic in the vicinity of the works. There will be no residual impact once the Proposed Scheme is completed.

With the implantation of a Construction Traffic Management Plan (CTMP) (**Appendix 6-2**) and other measures detailed in section 6.5.1; the potential impacts are reduced for the construction phase.

Due to the limited visits by light goods vehicles for inspections and on occasion, heavy goods vehicles for maintenance during the operational phase, impacts are assessed as **imperceptible to slight** and no mitigation is required.

6.10 Chapter References

DCCAE, 2017. EIS and NIS Guidelines, s.l.: s.n

Department of Transport (DoT), 2019. Design Manual for Urban Roads and Streets (DMURS), Dublin: DoT.

Department of Transport (DoT), 2019. Traffic Signs Manual, Dublin: DoT.

DTTAS 2012. TS4 – Guidelines, Certification Scheme and the Specification for the Construction of Traffic Signs

Laois County Council, 2022. *Laois County Development Plan 2021-2027*. [Online] Available at: https://laois.ie/departments/planning/review-of-laois-county-development-plan-2017-2023-2/

Transport Infrastructure Ireland (TII), June 2024. Climate Action Roadmap.

Transport Infrastructure Ireland (TII), October 2021. *PE-PAG-02017, Project Appraisal Guidelines, Unit 5.3, Travel Demand Projections.*

Transport Infrastructure Ireland (TII), May 2019. *Project Appraisal Guidelines (PAG) for National Roads Unit 5.3, Travel Demand Projections (PE-PAG-02017)*, Dublin: TII.

Transport Infrastructure Ireland (TII), December 2017. GE-STY-01024, Road Safety Audit Guidelines.

Transport Infrastructure Ireland (TII), October 2016. *Project Appraisal Guidelines (PAG) for National Roads Unit 16.1 Expansion Factors for Short Period Traffic Counts (PE-PAG-02039)*, Dublin: TII.

Transport Infrastructure Ireland (TII), May 2014. *Traffic and Transport Assessment Guidelines (PE-PDV-02045)*, Dublin: TII.