AtkinsRéalis

Environmental Impact Assessment Report (EIAR) Volume 2 - Chapter 15 - Roads, Traffic & Transportation

Uisce Éireann

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BALLINA AND LOUGH TALT WATER SUPPLY UPGRADE

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Contents

Abbreviations **15-i**

Glossary **15-ii**

15. Roads, Traffic & Transportation **15-1**

15.1 Introduction 15-1

15.2 Study Area 15-1

15.3 Study Assessment and Methodology 15-4
15.3.1 Defining Significance 15-11
15.3.2 Impact assessment criteria and significance of effects 15-11
15.3.3 Transport Effects Matrix 15-14
15.3.4 Traffic Survey 15-14
15.3.5 Mode Share 15-18
15.3.6 Background Growth 15-19
15.3.7 Road Capacity 15-20
15.3.8 Committed Developments – Cumulative Effects 15-20
15.3.9 Baseline Information and Transport Review 15-21

15.4 Receiving Environment 15-21
15.4.1 Site Location 15-21
15.4.2 Sensitive Receptors 15-23
15.4.3 Road Network 15-25
15.4.4 Active Travel Facilities 15-27
15.4.5 Public Transport Facilities 15-31

15.5 Characteristics of the Proposed Development 15-33

15.6 Establishing Baseline Traffic Flow Conditions 15-34
15.6.1 2026 Baseline Traffic 15-34
15.6.2 2028 Construction Year Traffic 15-35

15.7 Potential Effects of the Proposed Development 15-38
15.7.1 Construction Stage 15-38
15.7.2 Operation and Maintenance 15-48

15.8 Mitigation Measures 15-49
15.8.1 Construction Phase Mitigation 15-49
15.8.2 Operation Phase Mitigation 15-52

15.9 Cumulative Effects 15-52
15.9.1 Cumulative Construction Development 15-53
15.9.2 Summary of Cumulative Effects 15-53

15.10 Residual Effects 15-58
15.10.1 Construction Phase 15-58
15.10.2 Operational Phase 15-58

15.11 Worst Case Scenario 15-58

15.12 Monitoring Requirements 15-58
15.12.1 Construction Phase 15-58

15.12.2 Operational Phase 15-59
15.13 Do Nothing Scenario 15-59
15.14 Interactions 15-59
15.15 Difficulties encountered during preparation of this chapter 15-60
15.16 References 15-61

Tables

Table 15-1 — Summarised list of key roads affected during construction phase 15-6
Table 15-2 — Sensitivity and Description of Effect (Source: 2022 EPA Guidelines) 15-12
Table 15-3 — Magnitude of Effects Assessment Criteria (Source: 2022 EPA Guidelines) 15-12
Table 15-4 — Significance of Effect Description (Source: 2022 EPA Guidelines) 15-12
Table 15-5 — Traffic and Transport Significance of Effect Matrix (Source: 2022 EPA Guidelines) 15-13
Table 15-6 — Magnitude Ratings adopted for the Proposed Development 15-14
Table 15-7 — Survey Reference and Locations 15-16
Table 15-8 — Existing Traffic Volumes for the surveyed year 2026 – in PCU (Source: 2026 Traffic Survey) 15-17
Table 15-9 — AADT Volumes in vehicular trips (Source: 2026 Traffic Survey) 15-18
Table 15-10 — Growth Factors: TII Alternate (Source: Project Appraisal Guidelines) 15-20
Table 15-11 — Growth Factors: TII Alternate (Source: Project Appraisal Guidelines) 15-20
Table 15-12 — Weekday Average Daily Traffic - in vehicles trips (Source: 2026 Traffic Survey Data) 15-35
Table 15-13 — Operational Cumulative Effects 15-37
Table 15-14 — Adjusted Traffic Volumes for the construction year 2028 - in PCU 15-38
Table 15-15 — Assumed Construction Staff Arrival and Departure Profile 15-39
Table 15-16 — Staff Trips By Hour 15-40
Table 15-17 — Construction Material Delivery Vehicle Movements and Assessment Assumptions 15-41
Table 15-18 — Two-Way Construction Trips on Weekdays (in PCU) 15-42
Table 15-19 — Two-Way Capacity for respective ATC counters 15-43
Table 15-20 — % Construction trips effect analysis (in PCU) (2028 construction year background traffic) 15-44
Table 15-21 — % Operational trips effect analysis (In PCU) (2026 background traffic flows) 15-48
Table 15-22 — % Cumulative effect analysis (In PCU) (2028 construction year background traffic) 15-54

Figures

Figure 15-1 — Proposed Development Key Locations and Pipeline Sections 15-3

Figure 15-2 — Automatic Traffic Counter (ATC) Locations 15-15

Figure 15-3 — Baseline LEA (contextual data) 15-19

Figure 15-4 — Proposed Route Overview 15-22

Figure 15-5 — Sensitive Receptors along the expected construction works corridor 15-24

Figure 15-6 – Road Network in the vicinity of the Proposed Development 15-26

Figure 15-7 — Proposed County Cycle Network Mayo County Area (Source: Draft Mayo Cycle Network) 15-28

Figure 15-8 — Existing Active Travel network in the Ballina Town Centre 15-30

Figure 15-9 — Bus Routes in proximity to site locations 15-32

Figure 15-10 — Effect of Construction Trips along Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111) 15-45

Figure 15-11 — Effect of Construction Trips along R314 N, R314 S, R294 W, R294 E 15-46

Figure 15-12 — Effect of Construction Trips along N59 E, N59 W 15-47

Figure 15-13 — Example of ‘Stop/Go’ system (Source: AtkinsRéalis Onsite images) 15-51

Figure 15-14 — Example of ‘Traffic Lights’ system (Source: AtkinsRéalis Onsite images) 15-51

Figure 15-15 — Example of ‘Lane Closure and Diversion’ system (Source: AtkinsRéalis Onsite images) 15-52

Figure 15-16 — 2028 Cumulative Traffic Effects along Mullafarry Road (L1111), Knockfree Road(L5110), Wherrew Road(L5111) 15-55

Figure 15-17 — 2028 Cumulative Traffic Effects along R314 N, R314 S, R294 W, R294 E 15-56

Figure 15-18 — 2028 Cumulative Traffic Effects along N59 E, N59 W 15-57

Abbreviations

Abbreviation	Term
PCU	Passenger Car Unit
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
PD	Proposed Development
TII	Transport Infrastructure Ireland
TTA	Traffic and Transport Assessment
SAPMAP	Small Areas Population Map
ATC	Automatic Traffic Count
JTC	Junction Turning Count
AADT	Annual Average Daily Traffic
LV	Light Vehicles
HV	Heavy Vehicles

Glossary

Term	Meaning
Annual Average Daily Traffic (AADT)	Average number of vehicles using a road per day over a year.
Automatic Traffic Count (ATC)	Automated survey used to record traffic volumes and classifications.
Junction Turning Count (JTC)	Survey recording vehicle turning movements at a junction.
Passenger Car Unit (PCU)	Traffic measurement unit used to express different vehicle types as equivalent passenger cars.
Traffic and Transport Assessment (TTA)	Assessment of the transport and traffic effects of a proposed development.
Construction Traffic Management Plan (CTMP)	Plan detailing how construction traffic will be managed to minimise impacts.
Traffic Management Plan (TMP)	Plan defining traffic control measures during works.
Construction Environmental Management Plan (CEMP)	Framework for managing environmental effects during construction.
Heavy Goods Vehicle (HGV)	Large goods vehicle used for transporting materials or equipment.
Light Goods Vehicle (LGV)	Light commercial vehicle used for deliveries and operational activities.
Horizontal Directional Drilling (HDD)	Trenchless construction technique used to install pipelines beneath obstacles.
Active Travel	Walking, cycling and other non-motorised modes of transport.
Sensitive Receptor	Person, property, facility or location that may be affected by traffic changes.
Link Capacity Assessment	Assessment of a road's ability to accommodate traffic demand.
Diversion Route	Alternative route used when roads are restricted or closed.
Stop/Go System	Temporary traffic control using manual or automated signals.
Lane Closure	Temporary closure of one or more traffic lanes.
Road Closure	Temporary restriction preventing traffic from using a road section.
Traffic Management Measures	Measures implemented to maintain safety and traffic flow during works.
Local Electoral Area (LEA)	Administrative area used for demographic and travel pattern analysis.
Mode Share	Proportion of people using each transport mode.
Peak Hour	Period with the highest traffic demand.
Theoretical Road Capacity	Estimated maximum traffic volume a road can accommodate.
Cumulative Traffic Effects	Combined traffic impacts from multiple developments or activities.
Trenchless Crossing	Pipeline installation method avoiding open-cut excavation across constraints.

15. Roads, Traffic & Transportation

15.1 Introduction

This Traffic chapter has been prepared by Peter Foley, a Senior Transport Planning Engineer working for AtkinsRéalis. Peter Foley is a Planner with 17 years of experience in the Transport Planning and Engineering. Peter has provided transport planning services for clients in both the public and private sectors, including development management, strategic projects, masterplans, desktop studies and EIAR preparation. He has managed several strategic projects and masterplans at local and regional levels. Peter has a MSc in Urban and Regional Planning from Herriot-Watt University, Edinburgh (2007); a Higher Diploma in Computer Science from University College Cork (2002); and a BSc in Earth Science, University College Cork (1997).

This Chapter of the Environmental Impact Assessment Report (EIAR) assesses the likely significant effects of the Ballina and Lough Talt Water Supply Upgrade (herein referred to as 'the Proposed Development') on Roads, Traffic & Transportation during construction and operation phases.

This Chapter also summarises the related regulatory and policy framework, describes the methods used to assess the identified effects, outlines the existing baseline conditions, and identifies the proposed mitigation measures required to prevent, reduce or offset any significant adverse effects. The chapter also presents the likely residual effects following the implementation of mitigation measures.

This chapter should be read alongside other relevant chapters of the EIAR. In particular, reference should be made to Chapter 6 (Population and Human Health), which assesses potential effects on residents and other sensitive receptors; Chapter 13 (Noise and Vibration), which evaluates potential noise and vibration disturbance impacts; and Chapter 19 (Risk of Major Accidents and Disasters), which considers safety-related risks and associated effects.

Given the strategic importance of the Proposed Development for water supply to the Ballina region, Uisce Éireann has no plans to decommission the proposed infrastructure. The infrastructure will be maintained and repaired as required throughout its operational life. Accordingly, decommissioning has not been assessed further in this chapter.

The site location and project description are presented in Chapter 3 (Project Description) of this EIAR. Some key elements of the Proposed Development, together with the traffic and transport infrastructure relevant to this assessment are summarised in the sections below.

15.2 Study Area

The Proposed Development study area, subject to detail design, comprises of seven "key locations" and 5 discrete pipeline sections as illustrated in the Figure 15-1 below. The primary elements are as follows:

- **Key Locations**
  - Upgrade to the existing Wherrew Raw Water Intake & Pumping Station (RWI&PS), Wherrew, Ballina, Co. Mayo;
  - Upgrade to the existing Lisglennon Raw Water Storage and Pumping Station (RWS&PS), Lisglennon, Ballina, Co. Mayo;
  - Upgrade to the existing Lisglennon Water Treatment Plant (WTP), Lisglennon, Ballina, Co. Mayo;
  - Proposed Bonniconlon Booster Pumping Station (BPS) located at Bonniconlon, Ballina, Co. Mayo;
  - Proposed Windy Gap Break Pressure Tank (BPT) located at the Windy Gap, Ballina, Co. Mayo;
  - Repurposing the existing Lough Talt Water Treatment Plant (WTP), Co. Sligo;

- Proposed Treated Water Reservoir at the existing Bonniconlon Reservoir site, Ballina, Co. Mayo

- **Pipeline Sections**
  - Pipeline A – Lisglennon RWPS to Lisglennon WTP;
  - Pipeline B – Lisglennon WTP to River Moy Pipeline Crossing;
  - Pipeline C – River Moy Pipeline Crossing to Bonniconlon BPS;
  - Pipeline D – Bonniconlon BPS to Windy Gap BPT;
  - Pipeline E – Windy Gap BPT to Lough Talt WTP;
- Includes all permanent and temporary works, such as: construction compounds, access routes, pipeline corridors, and trenchless crossings within the identified townlands and waterbodies.

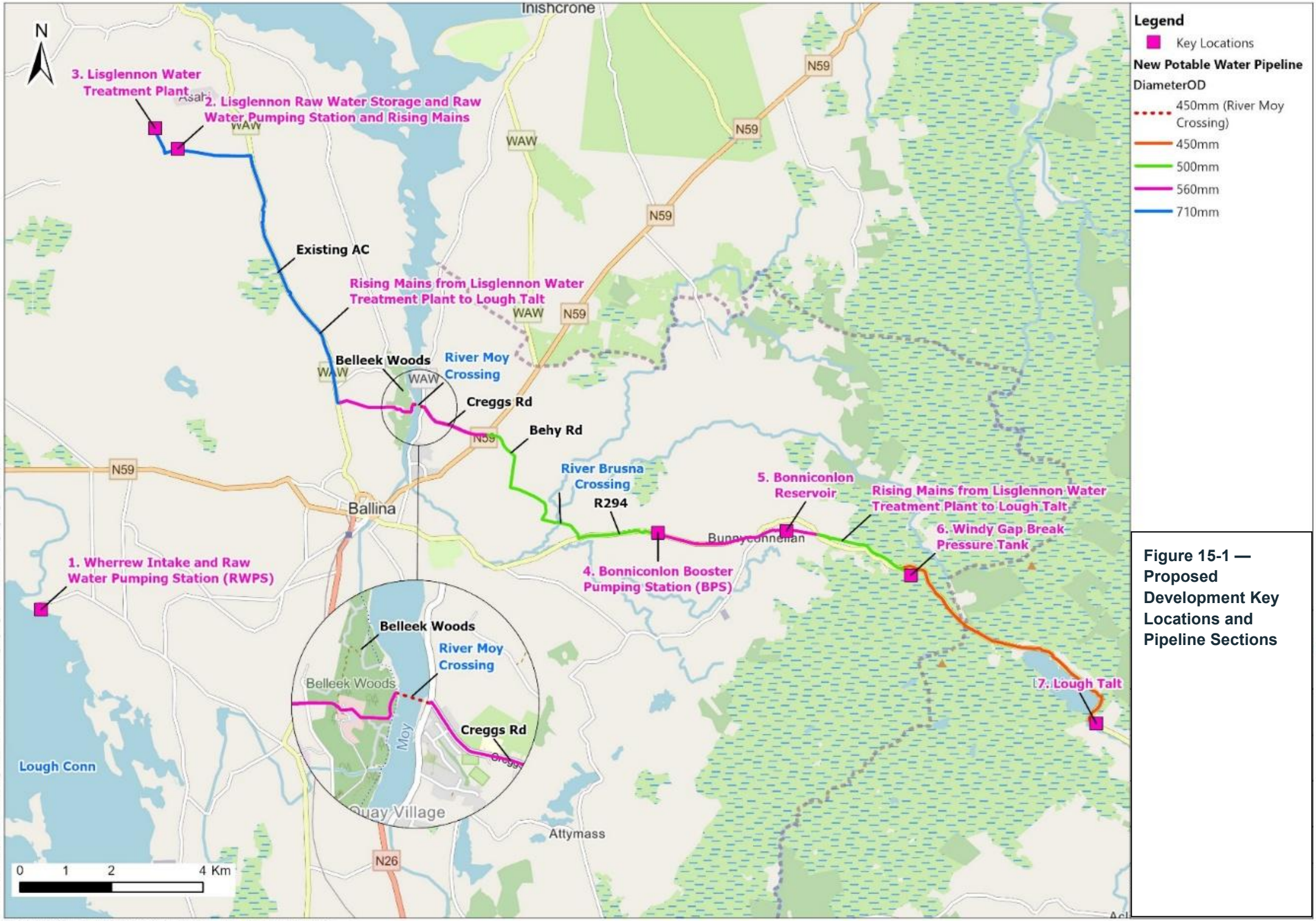


Figure 15-1 — Proposed Development Key Locations and Pipeline Sections

For the purposes of this Roads, Traffic and Transportation chapter, a focused study area has been defined based on those sections of the local and regional road network that are expected to experience measurable changes in traffic conditions during the construction and operational phases of the proposed development. The selected road links are as follows:

- **National Road**
  - N59
- **Regional Road**
  - R294
  - R314
- **Local Roads**
  - Mullafarry Road (L1111)
  - Knockfree Road (L5110)
  - Wherrew Road (L5111)

These links were identified as the primary haulage and access routes connecting the various construction compounds, work areas, pipeline corridors, and key locations associated with the Proposed Development. These roads are anticipated to accommodate the majority of construction-related vehicle movements, including staff travel, deliveries, plant movements, and material transportation, and therefore represent the links most likely to experience temporary changes in traffic volumes and associated traffic and transport effects.

Accordingly, traffic surveys and link capacity assessments were undertaken on these routes to evaluate the potential traffic and transport effects of the Proposed Development. Roads outside the identified study area (above-mentioned links) have not been assessed individually, as they are predominantly local roads that are expected to experience traffic effects of a similar nature and magnitude. Furthermore, any traffic-related impacts on these roads are anticipated to be temporary and short term in nature, occurring primarily during the construction phase.

Based on the scale and nature of the Proposed Development, only limited operational traffic generation is anticipated. Consequently, no significant traffic and transport effects are expected on the surrounding road network during the operational phase.

The above selected road links are considered representative of the wider area within which traffic and transport effects may occur. The selected road links therefore provide a reasonable, proportionate and robust basis for the assessment presented in this chapter.

15.3 Study Assessment and Methodology

The TII Traffic and Transport Assessment Guidelines (PE-PDV-02045) provide a framework for assessing the traffic and transport effects arising from development proposals and support an integrated approach to land use and transport planning. The Guidelines seek to promote the efficient use of existing transport infrastructure, minimise unnecessary travel demand and improve road safety. The Guidelines identify that a Traffic and Transport Assessment (TTA) should consider existing traffic conditions together with future assessment scenarios, where appropriate.

Table 2.2 of the Guidelines sets out the advisory thresholds for Traffic and Transport Assessment where national roads are affected. A TTA is generally required where a proposed development is expected to generate more than 100 two-way vehicle trips during the AM or PM peak hours.

Traffic surveys undertaken by TRACSIS, the details of which are presented in Section 15.3.4, were analysed as part of the baseline assessment. The analysis identified that traffic conditions on the study road network typically peak during the following periods:

- AM Peak – 08:00 to 09:00,
- PM Peak – 17:00 to 18:00.

Having regard to the scale and nature of the Proposed Development, relatively low levels of development-generated traffic are anticipated during both the construction and operational phases. Furthermore, the majority of construction-related vehicle movements, including workforce travel and material deliveries, are expected to occur outside the identified network peak periods, in accordance with the proposed working hours described in Section 15.7.1.2.

Based on AtkinsRéalis' experience of projects of a similar scale and nature, construction personnel are expected to arrive outside peak traffic periods to facilitate site inductions, mobilisation activities and the commencement of daily works. Similarly, departures generally occur following completion of the working day. Accordingly, the majority of workforce-related vehicle movements are anticipated to occur outside the identified AM and PM network peak periods.

The following assessment periods have therefore been adopted for the evaluation of traffic and transport effects:

- AM period from 06:00 to 09:00;
- Off-peak period from 09:00 to 17:00; and,
- PM period from 17:00 to 20:00.

These assessment periods have been selected to reflect the anticipated timing of development-related traffic movements while also including the observed AM and PM network peak hours.

While anticipated operational traffic generation is expected to remain below the advisory thresholds identified within the TII Guidelines, a link capacity assessment of both construction and operational traffic and transport effects has nevertheless been undertaken to inform this EIAR.

It is acknowledged that, given the extensive Study Area, a number of roads are expected to experience varying levels of construction-related traffic activity. Table 15-1 below with reference to the Preliminary Construction Works Traffic Management Plan (CWTMP) (0089328DG0047, Appendix 15-1, Volume 3 of this EIAR) identifies key roads and links that will be affected during construction across different pipeline sections and key development locations.

Table 15-1 — Summarised list of key roads affected during construction phase

Proposed Development	Roads Impacted	Nearby Traffic Counters Reference	Traffic Management Measure	Diversion Route	Impacted Road Type	Additional Note
			Key Locations			
Lisglennon Water Treatment Plant (WTP)	R314 & Mullafarry Rd (L1111)	ATC1 & ATC2	N/A	N/A	Regional and Local Road	Upgrade works to the existing site. Access required via these roads
Lisglennon Raw Water Storage and Pumping Station (RWS&PS)	L11109	ATC2	N/A	N/A	Local Road	Upgrade works to the existing site. Access required via this road
Bonniconlon Booster Pumping Station (BPS)	R294, L5132 Behy Road, L51321, L5133, L5132, L5134	ATC4 & ATC5	N/A	N/A	Regional and Local Road	Site Access Road
Bonniconlon Treated Water Reservoir Site	R294, L51172, L5117, L51357, L53135	ATC4 & ATC5	N/A	N/A	Regional and Local Road	A proposed treated reservoir at the existing site
Windy Gap Break Pressure Tank (BPT)	R294	ATC4 & ATC5	N/A	N/A	Regional Road	Site Access Road

Proposed Development	Roads Impacted	Nearby Traffic Counters Reference	Traffic Management Measure	Diversion Route	Impacted Road Type	Additional Note
Lough Talt Water Treatment Plant (WTP)	R294	ATC4 & ATC5	N/A	N/A	Regional Road	Upgrade/Repurposing works to the existing site. Access required via these roads
Wherrew Raw Water Intake & Pumping Station (RWI&PS)	N59, Knockfree Rd (L5110), & Wherrew Rd (L5111)	ATC6 & ATC7	N/A	N/A	National and Local Road	Upgrade works to the existing site. Access required via these roads
Pipeline Sections						
Pipeline A – Lisglennon RWPS to Lisglennon WTP (till Rathglass East) (Section 1, 2 & 3 from Preliminary CWTMP)	L11109	ATC1 & ATC2	Full Road Closure with Diversion	To the north via L1111 & L5147 & To the south via L1110 & L5147	Local Roads	Link Capacity assessment has been undertaken for R314 Regional Road
Pipeline B – Lisglennon WTP to River Moy Pipeline Crossing (from Rathglass East) (Section 4 from Preliminary CWTMP)	R314	ATC2 & ATC3	Lane Closure and Stop & Go System	N/A	Regional Road	Same as above

Proposed Development	Roads Impacted	Nearby Traffic Counters Reference	Traffic Management Measure	Diversion Route	Impacted Road Type	Additional Note
Pipeline B (Section 5, 6 & 7 from Preliminary CWTMP)	R314, L1120 Belleek Road, and Private Roads	ATC2 & ATC3	Full Road Closure with Diversion, Partial lane Closure, and Stop & Go System	Via R314, N59, Nally St and Castle Road	Regional, Local and Private Roads	Priority for local access will be maintained. Contractor will determine if a full road closure with diversion is required
Pipeline C – River Moy Pipeline Crossing to Bonniconlon BPS; (Section 8, 9 & 10 from Preliminary CWTMP)	Quay Road (L1100) & Creggs Rd (L1101)	ATC4	Full Road Closure with Diversion, and Stop & Go System	Via Quay Road, River Grove and N59	National and Local Roads	Works are not permitted during school drop-off and pick-up times. Pedestrian access will be maintained throughout the section.
Pipeline C (Section 11 & 12 from Preliminary CWTMP)	N59, Creggs Rd (L1101), L10112 & L5132 Behy Road	ATC4	Full Road Closure with Diversion, Partial lane Closure, and Stop & Go System	Via Behy Road and N59	National and Local Roads	Link Capacity assessment has been undertaken for N59 National Road
Pipeline C (Section 13 & 14 from Preliminary CWTMP)	L5132 Behy Road & L5133 Behy More	ATC4	Full Road Closure with Diversion, Partial lane Closure, and Stop & Go System	Via L5132 Behy Road, L51341Coirmila South and R294	Regional and Local Roads	Link Capacity assessment has been undertaken for R294 Regional Road

Proposed Development	Roads Impacted	Nearby Traffic Counters Reference	Traffic Management Measure	Diversion Route	Impacted Road Type	Additional Note
Pipeline D Bonniconlon BPS to Windy Gap BPT; (Section 15, 16, 17, 18, 19 & 20 from Preliminary CWTMP)	R294, L5135 Carrownlabaun & L51172 Bunnyconnellan West	ATC4 & ATC5	Full Road Closure with Diversion, Partial lane Closure, and Stop & Go System	Via L5117 Newtown Road and R294	Regional and Local Roads	Same as above
Pipeline D (Section 21, 22, 23 & 24 from Preliminary CWTMP)	R294, L51357 & L53135	ATC4 & ATC5	Full Road Closure with Diversion, Partial lane Closure, and Stop & Go System	To the South via R294 and To the North via L51357 and L53135	Regional and Local Roads	Same as above
Pipeline E – Windy Gap BPT to Lough WTP; (Section 25 & 26 from Preliminary CWTMP)	R294	ATC5	Full Road Closure with Diversion	Potential diversions will be via National Roads	Regional Road	Contractor will determine the final diversion route if a full road closure is required

Adopting a precautionary and robust approach, a link capacity assessment has been undertaken for the road links identified in Section 15.2. These routes were selected following a review of the key development locations and pipeline sections, the road hierarchy, their strategic importance and potential effects, as well as an estimation of likely construction haulage routes. While final routing will be determined by the appointed Contractor, it is anticipated that the majority of HGV movements will utilise these routes.

Access to the Bonniconlon BPS, Bonniconlon reservoir, Windy Gap BPT, and other proposed site access locations have been considered as part of the preliminary and detail design process. These access arrangements are capable of achieving the visibility and geometric requirements of Mayo County Council, Sligo County Council, and relevant TII standards. Further details are provided in the Engineering Report.

It is recognised that a number of additional local roads, as outlined in Table 15-1 above, may also be affected due to temporary road closures and diversions. However, as the precise construction phasing and associated diversion routes will be determined by the appointed Contractor at a later stage, it is not feasible at this time to assess every local road individually.

Notwithstanding this, having regard to the hierarchy, nature, function, characteristics and typical cross-sections of these roads, it is expected that any effects would be broadly comparable to those identified for the road links included within the link capacity assessment described in Section15.2. The results of the assessment are therefore considered representative of the wider road network that may be affected by the Proposed Development.

It should also be noted that the link capacity assessment presented in the following sections is based on a worst-case scenario. This approach assumes that all trips generated by the Proposed Development during both construction and operation are fully assigned to the assessed road links and directly compared against relevant assessment year traffic flows. As such, the resulting percentage effects represent an upper-bound estimate of the maximum likely impact on the assessed road network.

In practice, actual traffic effects are likely to be lower, as construction activities will be distributed across multiple locations, and traffic will similarly be dispersed across the network. A similar pattern is expected during the operational phase. By assessing this worst-case scenario, it can be demonstrated that if the network can accommodate these conditions, it will perform adequately under more realistic circumstances.

In line with both TII and EPA guidelines, the assessment has been undertaken using a combination of desktop research, site visits, and traffic surveys. This evaluation has been carried out with regard to the requirements of key legislative and policy documents. The principal legislation and guidance considered during the assessment are outlined below.

- **Traffic and Transport Policy and Guidance**
  - TII Traffic and Transport Assessment Guidelines (PE-PDV-02045), May 2014;
  - TII Project Appraisal Guidelines for National Roads (2021), including Unit 5.3: Travel Demand Projections October 2021;
  - Traffic Capacity of Urban Roads, TA79/99 by DMRB, UK, 1999.
  - Design Manual for Urban Roads and Streets (DMURS) (as amended);
  - Traffic Signs Manual (as amended);
  - Cycle Design Manual, 2023; and,
- **National, Regional, and Local Planning Policy**
  - National Planning Framework (NPF),2025;
  - Project Ireland 2040: The National Development Plan 2021-2030;
  - Mayo County Development Plan 2022-2028;
  - Sligo County Development Plan 2024-2030;

- Ballina Local Area Plan 2024-2030;
- Ballina Local Transport Plan 2025;

- **Legislative and EIA Guidance Framework**
  - Planning and Development Act, 2000 (as amended);
  - Planning and Development Regulations 2001 (as amended);
  - European Union (EU) Environmental Impact Assessment (EIA) Directive 2011/92/EU as amended by Directive 2014/52/EU (hereafter referred to as the "EIA Directive");
  - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (hereafter referred to as the "EIA Regulations");
  - Guidelines on the information to be contained in Environmental Impact Assessment Reports, Environmental Protection Agency (EPA), 2022;
  - The EIA Regulations 2018 (Government of Ireland 2018);
- **Baseline Data and Reference Sources**
  - Traffic Survey Data (TRACSIS, 2026); and,
  - Central Statistics Office SAPMAP (Small Areas Population Map), 2022.

15.3.1 Defining Significance

The 2022 Environmental Protection Agency (EPA) Guidelines on the Information to be contained in Environmental Impact Assessment Reports, identify that significance of effects as:

"Is usually understood to mean the importance of the outcome of effects (consequences of the change). Significance is determined by a combination of (objective) scientific and subjective (social) concerns". (Section 3 page 49)

In general, 'significance' is defined using a combination of sensitivity (e.g. high, medium and low) of the environmental feature and the magnitude of effect (e.g. major, moderate, slight and negligible).

The criteria for assessing sensitivity and magnitude level have been defined in Table 15-2, Table 15-3 and Table 15-4. The overall significance of an effect, taking the relationship between sensitivity and the magnitude level into consideration, is set out in Table 15-5.

The significance level attributed to each effect has been assessed based on the magnitude of change due to the Proposed Development and the sensitivity of the affected receiving environment to change.

15.3.2 Impact assessment criteria and significance of effects

15.3.2.1 Traffic Sensitivity Effects

The criteria for assessing the traffic and transport sensitivity effects are defined according to the matrix as set out in Table 15-2 below.

Table 15-2 — Sensitivity and Description of Effect (Source: 2022 EPA Guidelines)

Sensitivity Description of Effects	Criteria
High	Receptors of greatest sensitivity to change such as highly congested links or junctions, which have a low capacity to accommodate change without significant effect arising.
Medium	Links and junctions which have a moderate capacity to accommodate change without significant effects arising.
Low	Links and junctions which have a high capacity to accommodate change without significant effects arising
Negligible	Receptors with low sensitivity to traffic flows, those sufficiently distant from affected links and junctions and those that are very lightly used (relative to other modes within the study area) which have a very high capacity to accommodate change without significant effects arising.

15.3.2.2 Determining the Magnitude of the Effect

The criteria used to assess the magnitude of effects are set out in Table 15-3 below. These criteria were used to identify the magnitude of change for quantitative assessment and were supported by professional judgement taking into account the specific context in the study area.

Table 15-3 — Magnitude of Effects Assessment Criteria (Source: 2022 EPA Guidelines)

Magnitude of Effect	Criteria
High / Major	Changes which are perceptible and would result in significant alterations to conditions.
Medium	Changes which are perceptible and would alter conditions which otherwise prevail.
Low / Small	Changes which are perceptible but would not alter conditions which otherwise prevail.
Negligible	Changes that is unlikely to be perceptible.

15.3.2.3 Determining significance of effect

The 2022 EPA guidance on information to be contained in EIAR has been used to categorise the significance of effect as shown in Table 15-4 below.

Table 15-4 — Significance of Effect Description (Source: 2022 EPA Guidelines)

Significance of Effect	Descriptions
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.

Significance of Effect	Descriptions
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration and intensity significantly alters most of a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of sensitive aspects of the environment.
Profound Effects	An effect which obliterates sensitive characteristics.
Neutral	No effect or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.

15.3.2.4 Traffic and Transport Effect Matrix

The significance of effects for the traffic and transport assessment of the Proposed Development was based on the receptor sensitivity and the magnitude of effect. This is defined in Table 15-5 below.

Table 15-5 — Traffic and Transport Significance of Effect Matrix (Source: 2022 EPA Guidelines)

Magnitude of Effect	High	Medium	Low	Negligible
High	Profound	Very Significant	Moderate / Slight	Not Significant
Medium	Very Significant	Moderate	Moderate / Slight	Slight / Not Significant
Low	Significant / Moderate	Moderate / Slight	Slight / Not Significant	Not Significant
Negligible	Not Significant	Not Significant	Not Significant	Imperceptible

In accordance with the EPA EIAR Guidelines (2022), effects are generally considered significant (and in need of mitigation) if they are profound, very significant, significant or moderate. Slight and imperceptible effects are not considered to be significant.

Effects have been described as:

- Beneficial, neutral or adverse.
- Permanent or temporary.
- Short (<5years), medium (5-10 years), or long term (10+ years).

Temporary effects are those associated with the demolition and construction activity, while permanent effects are those associated with the operation of the development.

15.3.3 Transport Effects Matrix

The significance of effects for the traffic and transport assessment of the Proposed Development was based on the receptor sensitivity and the magnitude of effect on various transport modes. The effect to the general traffic is assessed against the thresholds of 10% according to Table 2.1 of Traffic and Transport Assessment Guidelines (PE-PDV-02045).

These magnitude ratings have also been adopted to evaluate the potential effects of the Proposed Development under the criteria set out in Table 15-6 below.

Table 15-6 — Magnitude Ratings adopted for the Proposed Development

Effect level	Roads (National / Regional / Local)	General Traffic	Public Transport - Bus	Pedestrians	Cyclists
Imperceptible	Minor change on Local or Regional roads; no effect on National roads	<5% traffic change; no closures	<1 min delays	Minimal perceived risk	Minimal perceived risk
Not Significant	Noticeable change on Regional or Local roads; still no functional effect on National roads	5–10% traffic change; short-duration lane closures	Minor timetable disruption	Increased perceived risk; temporary inconvenience	Increased perceived risk
Significant	Any effect that affects a National Road's function; significant change on Regional roads	>10% traffic change or significant closure	Significant delay or route disruption	Infrastructure loss or major safety concern	Loss of cycle facilities or major safety concern

The matrix above defines the criteria used to categorise potential effects on each receptor. Some categories including general traffic delays, bus delays, changes in pedestrian's and cyclist's perceived safety are not quantitively assessed for this development due to the nature of the works. These are included for completeness as part of the overall significance framework.

15.3.4 Traffic Survey

15.3.4.1 Survey Locations

Automatic Traffic Counts (ATCs) were carried out by TRACSIS at nine locations along the route of the proposed construction works. The surveys were undertaken over three consecutive weekdays (Tuesday, Wednesday, and Thursday) during the week of 19th January 2026.

For improved clarity, the road names listed in Table 15-7 will be used throughout this report to reference the locations. The corresponding survey locations are illustrated in Figure 15-2, and summarised in Table 15-7. The raw survey results are provided in Appendix 15-2 of Volume 3 of this EIAR.

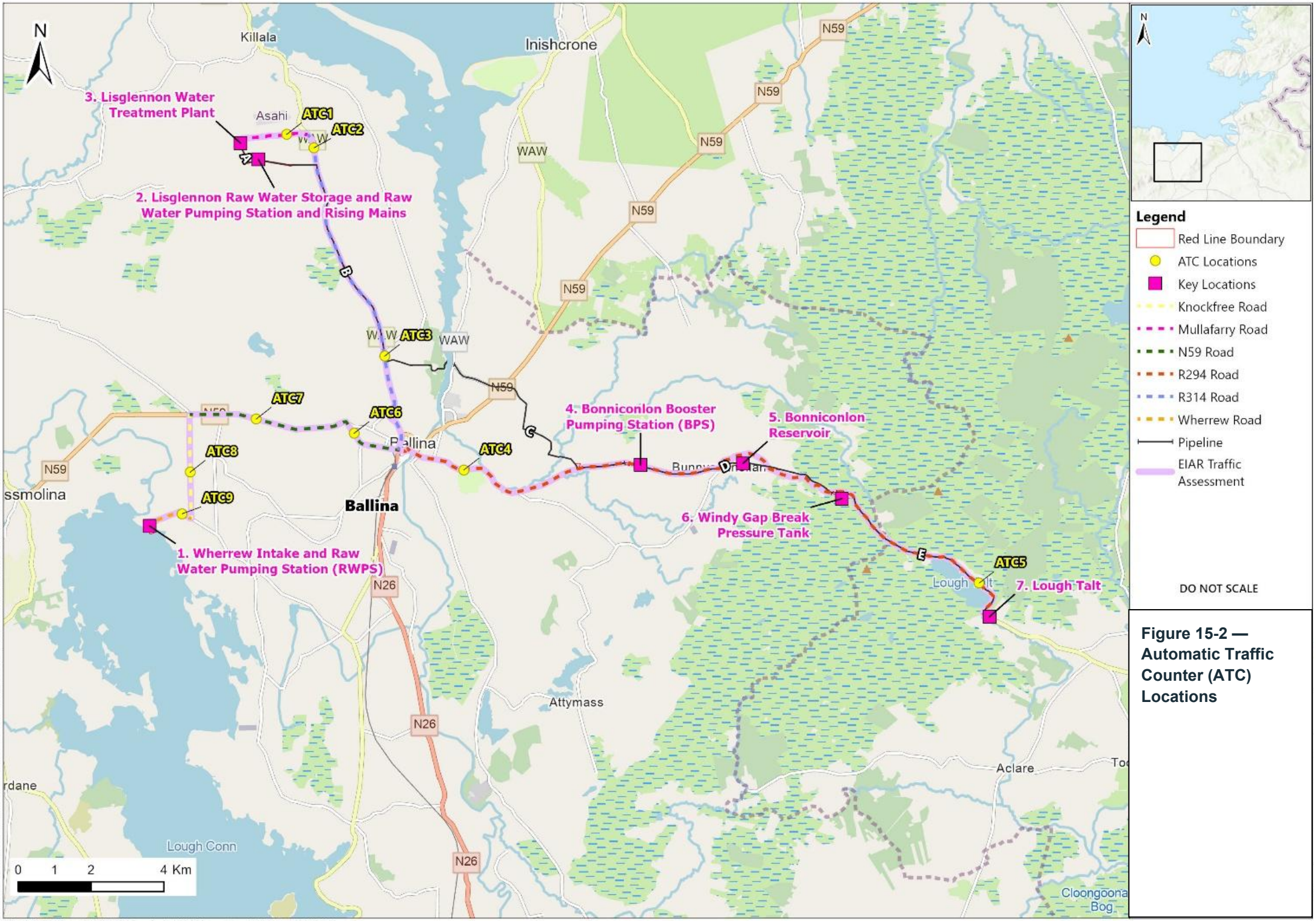


Figure 15-2 — Automatic Traffic Counter (ATC) Locations

Table 15-7 — Survey Reference and Locations

Survey Reference	Road Name	Location	Coordinates
ATC 1	Mullafarry Road (L1111)	Along Mullafarry Road (L1111) after Tawnaghmore Junction	54.190415, -9.2084098
ATC 2	R314 N	Along R314 after R314/Oaklawn Road Junction	54.187230, -9.1968039
ATC 3	R314 S	Along R314, 250m away from Certa Ballina	54.136197, -9.1655990
ATC 4	R294 W	Along R294, after Ballina Golf Club	54.108441, -9.1315860
ATC 5	R294 E	Along R294, after Lough Talt viewpoint	54.082379, -8.9146757
ATC 6	N59 E	Along N59, 120m away from Top Oil Ballina Depot	54.117034, -9.1779077
ATC 7	N59 W	Along N59, 200m away from N59/ Knocksbarre road	54.120143, -9.2190930
ATC 8	Knockfree Road (L5110)	Along Knockfree Road(L5110) after Keel Castle	54.106776, -9.2464167
ATC 9	Wherrew Road (L5111)	Along Wherrew Road(L5111) after Knockfree Road/Wherrew Road Jn	54.096475, -9.2494476

15.3.4.2 Traffic Survey Results

The traffic survey volumes in PCUs (Passenger Car Unit) for the surveyed year 2026 is presented in the Table 15-8 below. In accordance with Section 15.3, the following peak hours were analysed, as it is anticipated that the arrival and departure of construction personnel, staff, and deliveries associated with the Proposed Development will predominantly occur within these periods:

- AM period from 06:00 to 09:00;
- Off-peak period from 09:00 to 17:00; and,
- PM period from 17:00 to 20:00.

In addition, the maximum off-peak hour traffic volume (16:00 to 17:00) was used in the assessment, as it represents the worst-case scenario for material deliveries and associated construction traffic.

Table 15-8 — Existing Traffic Volumes for the surveyed year 2026 – in PCU (Source: 2026 Traffic Survey)

Time	Mullafarry Road (L1111)	R314 N	R314 S	R294 W	R294 E	N59 E	N59 W	Knockfree Road (L5110)	Wherrew Road (L5111)
06:00	6	99	209	97	25	122	181	2	1
07:00	31	239	433	224	88	298	454	6	1
08:00	35	389	753	591	142	494	748	20	8
Off-peak Period (Max)	58	378	767	493	126	599	696	26	7
17:00	23	356	725	510	119	636	719	19	5
18:00	9	251	603	435	85	446	547	11	7
19:00	7	191	416	304	45	341	370	13	3
Total	**168**	**1903**	**3905**	**2654**	**631**	**2935**	**3715**	**96**	**33**
Tot 12hr (07:00-19:00)	**461**	**3996**	**8289**	**5394**	**1135**	**6325**	**7404**	**168**	**75**
Total 24hr (00:00-00:00)	**489**	**4476**	**9289**	**6027**	**1250**	**7076**	**8273**	**205**	**92**

15.3.4.3 Annual Average Daily Traffic (AADT) Analysis

The existing weekday traffic volumes derived from traffic surveys have been used to assess the effect of the Proposed Development as outlined in the Table 15-9 below. The analysis focuses solely on weekday traffic, as it represents worst case scenario in terms of volume. Where cumulative weekday flows remain within acceptable capacity thresholds, it can reasonably be assumed that weekend traffic, which is typically lower in volume, will also operate within these thresholds.

Table 15-9 — AADT Volumes in vehicular trips (Source: 2026 Traffic Survey)

Reference	Name	Weekday Daily Traffic (24 hour)
ATC 1	Mullafarry Road (L1111)	373
ATC 2	R314 N	3837
ATC 3	R314 S	8065
ATC 4	R294 W	5283
ATC 5	R294 E	1052
ATC 6	N59 E	6061
ATC 7	N59 W	7057
ATC 8	Knockfree Road (L5110)	183
ATC 9	Wherrew Road (L5111)	78

15.3.5 Mode Share

An analysis of the Central Statistics Office's SAPMAP (Small Areas Population Map) data has been conducted to assess travel patterns in the vicinity of the Proposed Development. The broader Local Electoral Area of Ballina was examined to identify typical travel behaviours, which were then used to estimate mode share - particularly the proportion of car usage. This information helps in forecasting the number of trips likely to be made by construction staff commuting to the development site. Specifically, the **"by Means of Travel to Work"** data was considered to derive these estimates.

It should be noted that this dataset reflects general commuting patterns across the Ballina Local Electoral Area and does not account for site-specific factors such as shift patterns or the use of temporary accommodation. Accordingly, the data has not been used to assess road network capacity or junction performance, which are instead based solely on site-specific traffic surveys and construction traffic assumptions.

The resulting mode share distribution is presented in the graph below.

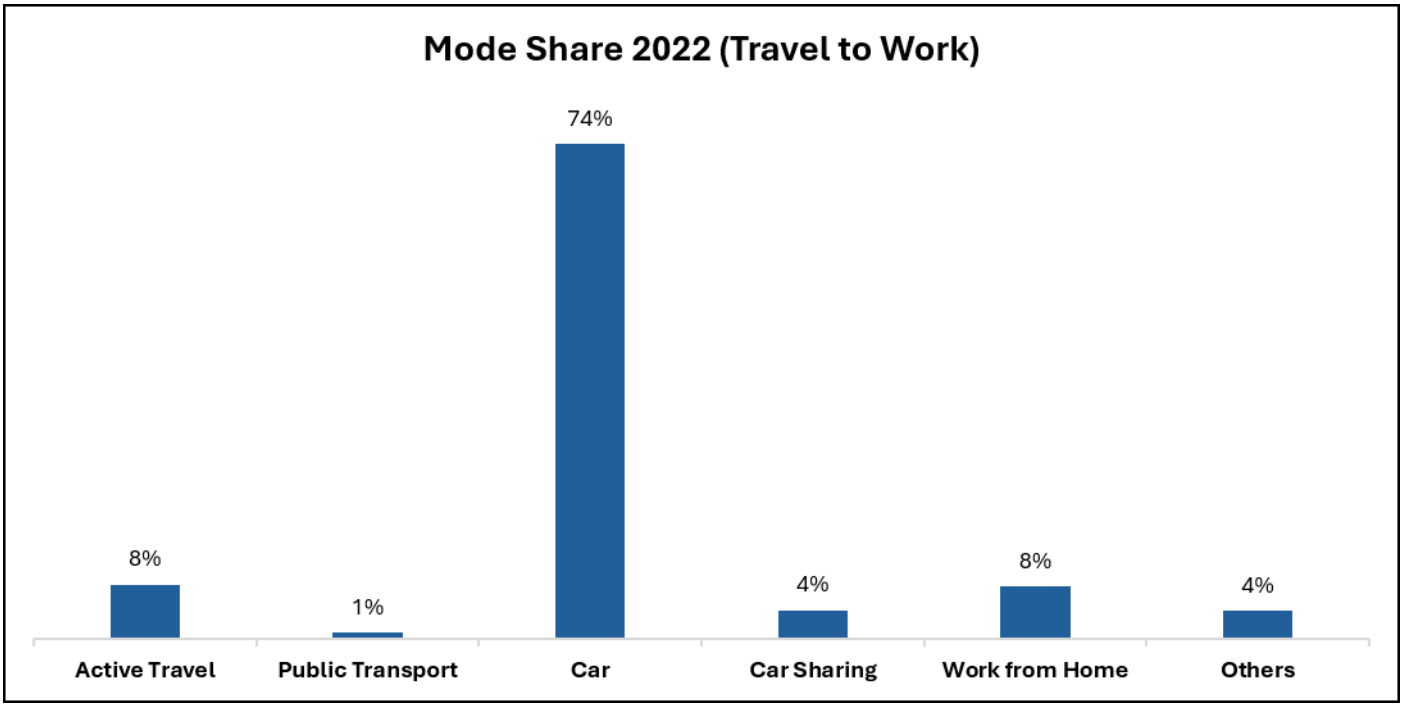


Figure 15-3 — Baseline LEA (contextual data)

15.3.6 Background Growth

As part of this assessment, background traffic for the 2026 count year was established using the traffic surveys undertaken (described in the following section). Pre-construction activities are expected to commence in Q3 2027. The construction programme for the Proposed Development is anticipated to extend over approximately two years, with the majority of earthworks activities taking place during the first year of construction.

To evaluate the potential construction-phase impacts on the surrounding road network, the 2026 traffic flows were projected forward to the 2028 construction year. Given the relatively small difference in forecast traffic conditions between 2027 and 2028, and the low traffic-generating nature of the proposed works, assessment against the 2028 projected baseline is considered representative of a reasonable worst-case scenario for the construction phase.

Background traffic has been forecasted to grow in accordance with TII's Alternate Growth Factors included in the Project Appraisal Guidelines – Travel Demand Projections (PE-PAG-02017), published in October 2021.

The Proposed Development is predominantly located within County Mayo, with a small portion of works in proximity to the Lough Talt area falling within County Sligo. Accordingly, the County Mayo growth rate has been adopted for the analysis and is summarised in Table 15-10 and Table 15-11.

Table 15-10 — Growth Factors: TII Alternate (Source: Project Appraisal Guidelines)

Period	County Mayo	
	Light Vehicles (LV)	Heavy vehicles (HV)
2016-30 (2027)	1.0102	1.033
2016-30 (2028)	1.0205	1.0671
2016-30 (2029)	1.0309	1.1023
2030-40 (2034)	1.0531	1.2076
2040-50 (2044)	1.0821	1.4231

The net percentage growth of traffic compared to the count year (2026) for the assessment year (2028) is summarised in Table 15-11 below.

Table 15-11 — Growth Factors: TII Alternate (Source: Project Appraisal Guidelines)

Period	County Mayo	
	LV	HV
2028	2%	7%

15.3.7 Road Capacity

The capacity of the roads was determined in accordance with the "*Design Manual for Roads and Bridges*, Volume 5, Section 1, Part 3: *Traffic Capacity of Urban Roads"* (May 1999). Road capacities were derived having regard to the classification, function and geometric characteristics of each route within the study area, informed by a review of available mapping, aerial imagery and engineering judgement.

Based on this assessment, theoretical capacities were established for each route and compared with observed traffic flows. The analysis indicates that existing traffic volumes are substantially below the corresponding capacity thresholds, demonstrating that the assessed road network currently operates with a considerable reserve of capacity. The implications and potential effects of the Proposed Development are examined further in Section 15.7.1.3.4

15.3.8 Committed Developments – Cumulative Effects

A review of all committed developments, listed in Appendix 15-3, Volume 3 of this EIAR, was undertaken to determine their potential to contribute to cumulative traffic effects during the construction period of the Proposed Development In addition, a review of the Sligo County Council and Mayo County Council online planning website was carried out to identify relevant developments and to understand the associated traffic effects reported within their respective planning documentation.

Based on the review of planning status, anticipated programme, scale, and traffic generation potential, three developments have been identified as having the greatest potential to contribute to cumulative effects within the assessment period. This selection is based on anticipated overlap with the Proposed Development during the assessment period and the associated potential to generate cumulative traffic effects on the assessed road network.

For developments expected to become operational after the traffic surveys were undertaken, forecast operational traffic has been incorporated into the future year background traffic flows to ensure that the assessment reflects the likely traffic conditions during the assessment period. In addition, developments anticipated to be under construction during the same period as the Proposed Development have been included within the cumulative construction traffic assessment, as construction traffic associated with these developments may combine with construction traffic generated by the Proposed Development and contribute to cumulative effects on the surrounding road network.

The assessment therefore includes the following committed developments:

- **Operational Traffic (Adjusted with the Background Traffic)**
  - Proposed Killala Data Centre Development (Planning Ref. 2460708)
  - Battery Energy Storage System facility (Planning Ref. 2560108)

These developments are expected to be operational during the assessment period but were not operational at the time the baseline traffic surveys were undertaken. Their forecast operational traffic has therefore been added to the background traffic flows to provide a representative future baseline scenario.

- **Construction Traffic (Assessed for Cumulative Effect)**
  - Hydrogen Plant and Energy Centre (Planning Ref. 2360266)

This development is anticipated to be under construction during the same period as the Proposed Development and has therefore been included in the cumulative assessment to account for the potential combined effects of construction traffic on the assessed road network.

Only developments that are permitted and reasonably certain to be operational or under construction within the assessment period have been included in the cumulative assessment, in accordance with EIAR best practice. Further details of these operational committed developments, including traffic assumptions, methodology, and baseline adjustments have been considered in Section 15.6.

15.3.9 Baseline Information and Transport Review

A baseline transport assessment was carried out through a desktop review of current planning policies and objectives, traffic survey 2026, existing public transport services, pedestrian and cycling infrastructure, and the surrounding road network. This review also included an evaluation of relevant committed developments near the Proposed Development site.

15.4 Receiving Environment

15.4.1 Site Location

The extent and routing of the proposed works along and across multiple regional and local roads inform the scope of the traffic assessment presented in this chapter, including the identification of sensitive receptors and potential constraints along the construction corridor. The full details of the Proposed Development are provided in Chapter 3 of this EIAR.

The construction access roads, site locations, and other key components of the Proposed Development are illustrated in the Figure 15-4 below. All proposed site access locations have been considered as part of the preliminary and detailed design process and are capable of achieving the visibility and geometric requirements of Mayo and Sligo Co Co, as well as TII standards.

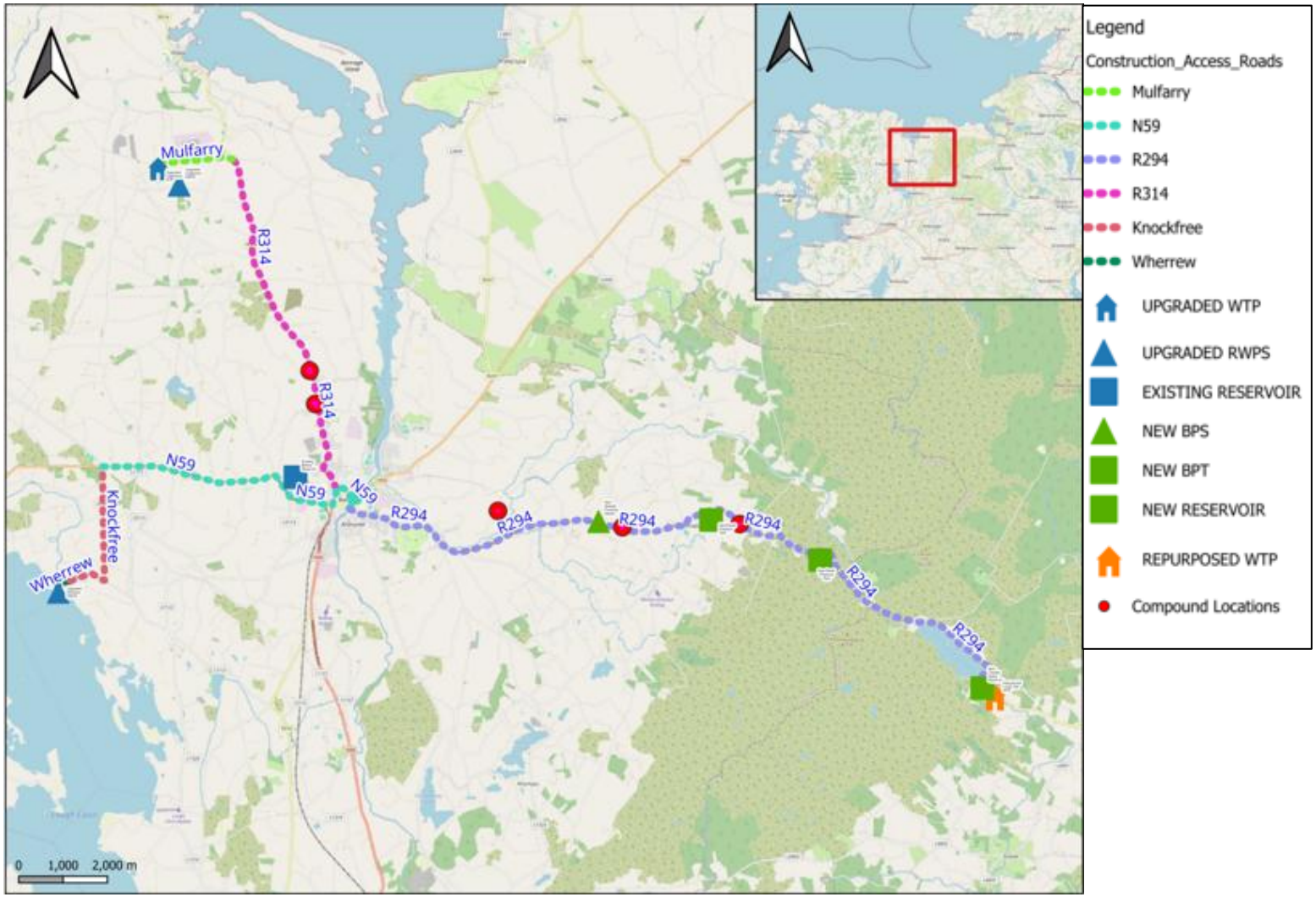


Figure 15-4 — Proposed Route Overview

15.4.2 Sensitive Receptors

The expected construction works corridor; including the N59, R314, R294, Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111), has been examined to identify potential effects arising from construction and operational traffic generated by the Proposed Development. As part of this assessment, schools, hospitals, and medical centres along the route have been identified and considered as sensitive receptors.

The hospitals and medical centres are primarily concentrated within Ballina town centre, whereas schools and residential properties are distributed more widely along the overall expected corridor. The locations of the sensitive receptors including; hospitals, medical centres, schools and colleges are illustrated in Figure 15-5.

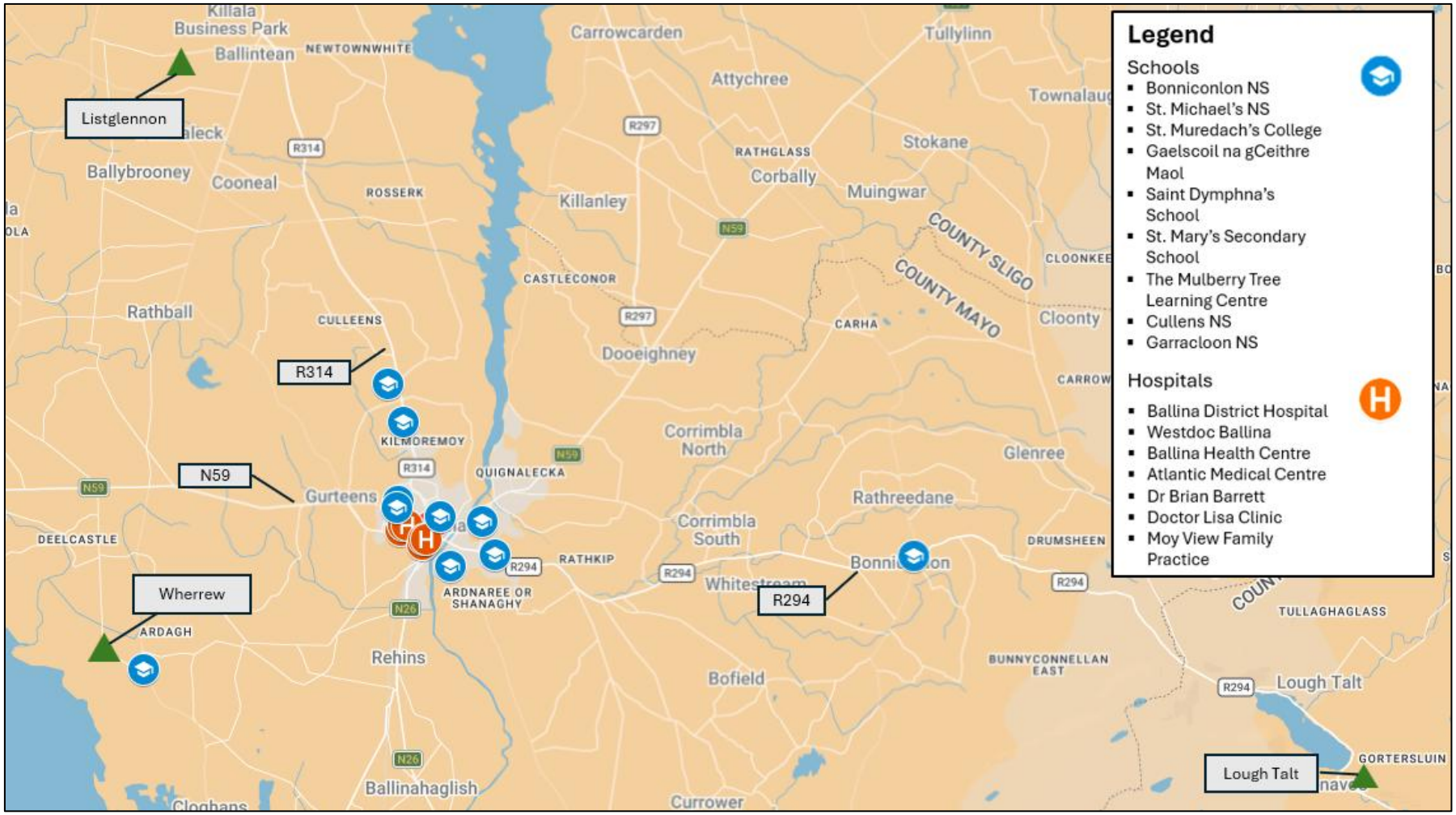


Figure 15-5 — Sensitive Receptors along the expected construction works corridor

The potential effects of construction traffic and, where relevant, operational traffic movements are assessed in relation to these sensitive receptors located along the route where increased vehicle movements could give rise to disturbance. The potential effects of construction activities on local residents and other sensitive receptors in the vicinity of the Proposed Development are assessed separately in Chapter 6 (Population and Human Health) of this EIAR.

Access to residential properties, local communities and other sensitive receptors will, insofar as practicable, be maintained throughout the construction period. The appointed Contractor will be responsible for implementing appropriate traffic management and access arrangements to minimise disruption to local residents, property accesses and road users. A range of mitigation measures will be implemented to reduce potential effects associated with construction traffic and other construction activities. Where practicable, construction activities generating higher traffic volumes will be scheduled during school holiday periods, subject to programme and sequencing constraints, and in consultation with Mayo County Council and Sligo County Council.

The appointed Contractor will also be responsible for ensuring that access for emergency vehicles is maintained at all times. For activities requiring abnormal loads or generating higher-than-usual traffic volumes, advance coordination and appropriate traffic management measures will be implemented through the CEMP and a detailed CWTMP, to be agreed in consultation with the relevant road authorities (see Section 3.3.4 of Chapter 3 – Project Description).

15.4.3 Road Network

As outlined in Section 15.3, the key road links identified for capacity assessment, based on their strategic importance, road hierarchy, and the estimated construction haulage routes in the vicinity of the Proposed Development, are listed below. A description of their respective characteristics is also provided.

- **N59 National Road:** A single-carriageway national route with a posted 100 km/h speed limit. The N59 provides a key east-west connection between Galway and Sligo, serving Ballina and surrounding settlements.
- **R314 Regional Road:** A single-carriageway regional road linking Ballycastle, Killala, and Ballina. It carries an 80 km/h speed limit in rural sections and provides important east–west connectivity in north Mayo.
- **R294 Regional Road:** The R294 is the regional road providing the principal connection between Ballina and Boyle, passing through Tubbercurry. It is a single carriageway route with an 80 km/h rural speed limit.
- **Mullafarry Road (L1111)**: A local road running through the Mullafarry area and connecting the R314 with local settlements including Magherabrack and Tawnaghmore.
- **Knockfree Road (L5110):** A local access road within the Knockfree townland, providing connectivity to Wherrew and the wider area near the N59 corridor.
- **Wherrew Road (L5111):** The road is a local road which gives access to existing Wherrew Raw Water Intake site and settlements along its route.

Figure 15-6 below illustrates the road network subject to effects arising from the Proposed Development.

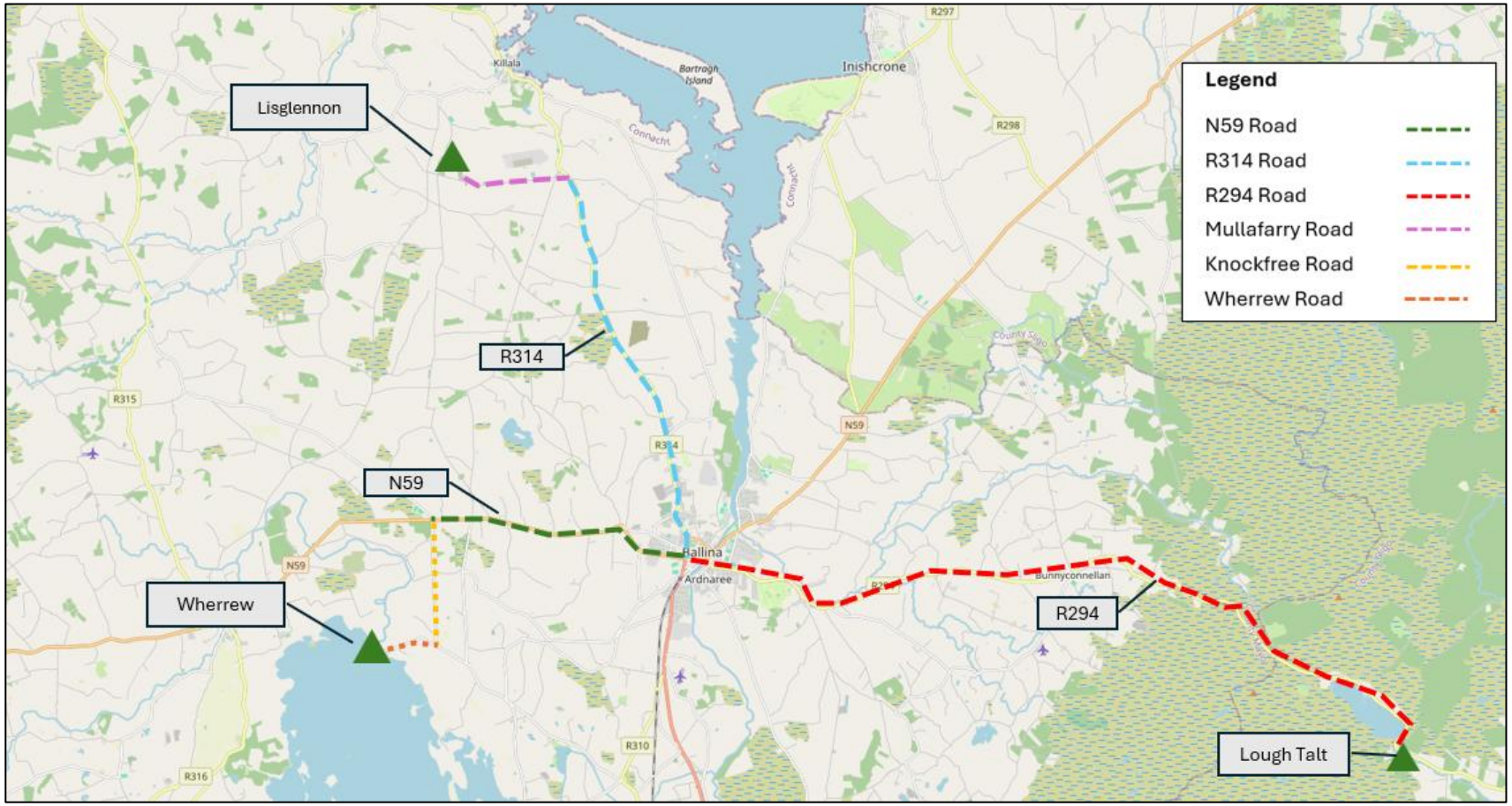


Figure 15-6 – Road Network in the vicinity of the Proposed Development

15.4.4 Active Travel Facilities

A desktop study was undertaken to assess the provision of pedestrian and cycling facilities along the surrounding road network. The review has been undertaken to identify potential interactions between construction traffic and existing or planned pedestrian and cycling networks, particularly in relation to user safety and disturbance. The surrounding routes are predominantly designed for and utilised by private vehicles, reflecting the rural character of the area.

Potential safety-related risks to vulnerable road users, and sensitive receptors are further considered in Chapter 19 (Risk of Major Accidents and Disasters) of this EIAR, while potential disturbance effects, including those associated with construction noise and vibration, are assessed in Chapter 6 (Population and Human Health) and Chapter 13 (Noise and Vibration).

Figure 15-7 is an extract of the 'Proposed County Cycle Network Area – Mayo County Area' as extracted from the 'Cycle Connects: Ireland's Cycle Network' scheme. As shown below, there is an existing greenway (Monasteries of the Moy) running to the north connecting to Ballina to Killala, and a proposed inter-urban cycleway which will connect with the wider Mayo County.

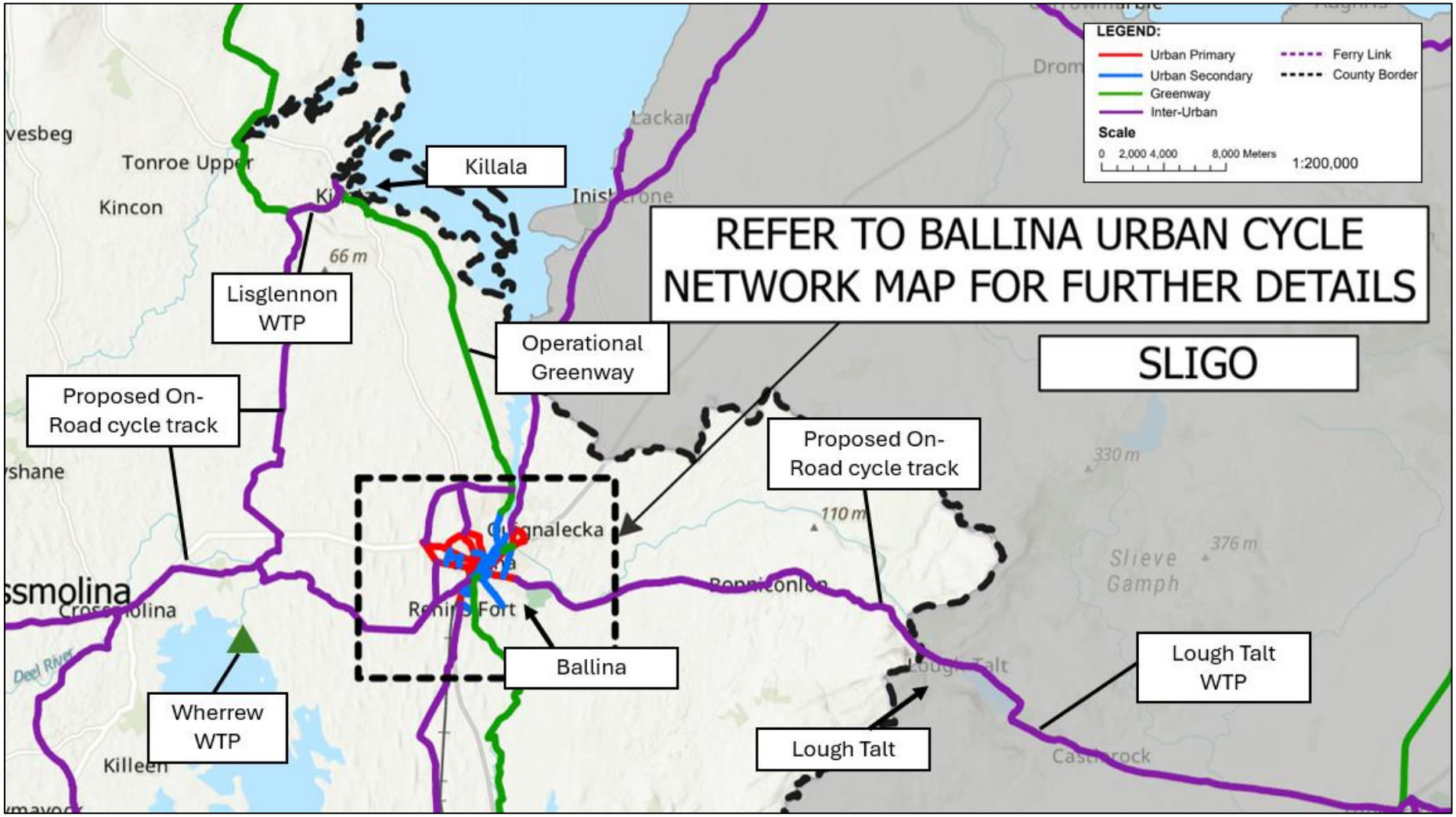


Figure 15-7 — Proposed County Cycle Network Mayo County Area (Source: Draft Mayo Cycle Network)

Surface water feature crossings will be undertaken at the River Moy Estuary, north of Ballina, in proximity to the existing Monasteries of the Moy Greenway. These works will utilise an existing watermain located beneath the estuary between Belleek Woods and Quay Village. As a result, short-term, localised effects on the active travel network are anticipated, and mitigation measures will be adopted.

In addition, the proposed On-Road (inter-urban) cycle track which link all key settlements and destinations outside urban areas, remains incomplete and is therefore not expected to be available for use during the construction or operational phases of the development.

According to Section 4.3.1 (Active Travel Network) of the 2025 Ballina Local Transport Plan, the existing active-travel network within Ballina town centre is shown in the Figure 15-8. In addition to the Monasteries of the Moy Greenway, there is a short greenway section at Salmon Weir Bridge, which provides an active-travel crossing of the River Moy. Although several active-travel routes are proposed across the city as in Figure 15-7, a number of these remain proposed and are similarly not expected to be operational during the construction period of the development.

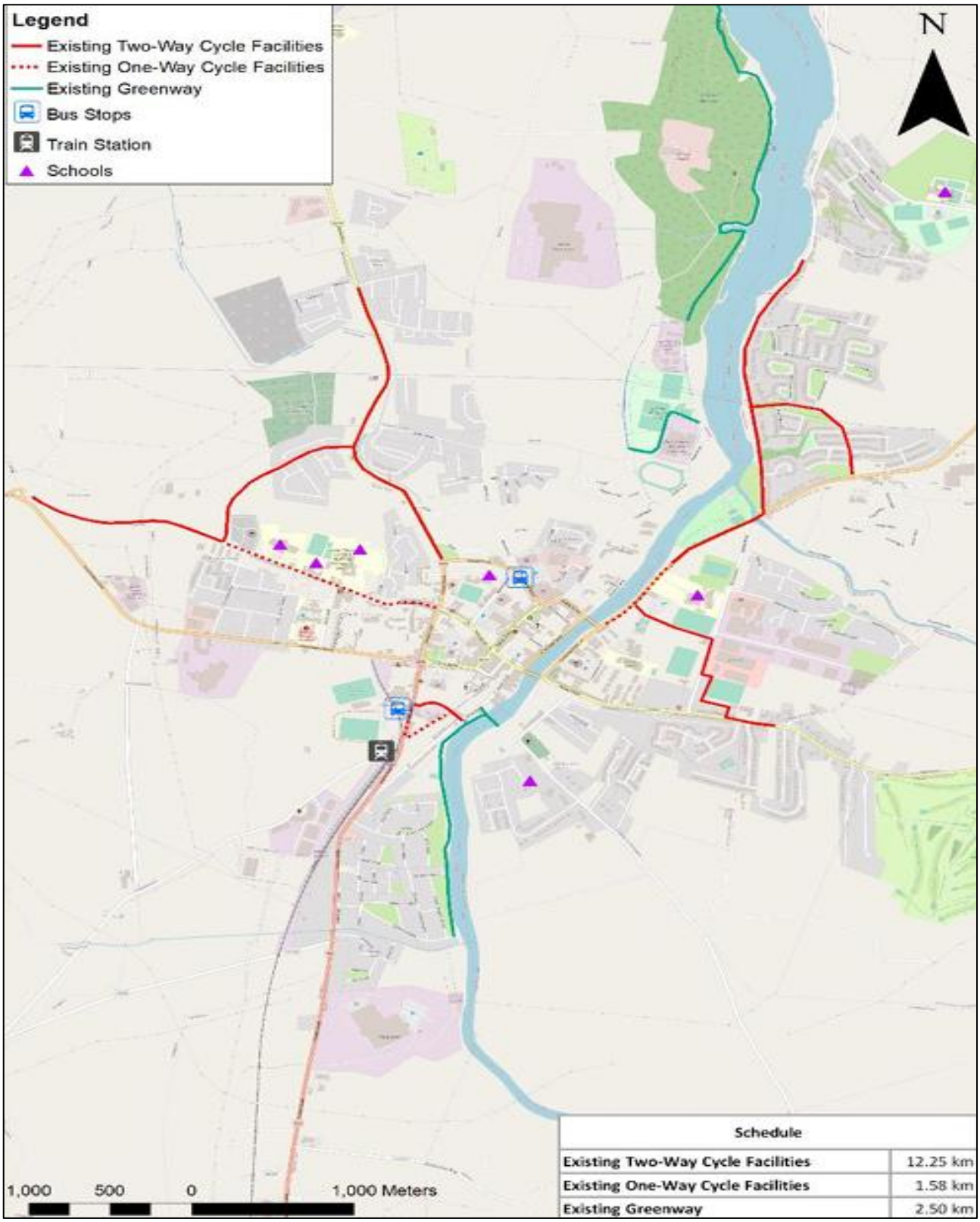


Figure 15-8 — Existing Active Travel network in the Ballina Town Centre

15.4.5 Public Transport Facilities

15.4.5.1 Bus Services

Traffic associated with the Proposed Development is expected to travel along N59, R314, R294, Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111) as stated in Section 15.4.3. As presented in Figure 15-9, public transport services operate along the R314 and N59 from Ballina including;

- **Bus Route 430 (Ballina – Galway):** Operated by Citylink, this service provides connection between Ballina and Galway. The southbound service (Ballina → Galway Cathedral) operates eight times daily, with departures generally spaced at 1.5 to 2-hour intervals throughout the day. Similarly, the northbound service (Galway Cathedral → Ballina) also operates eight times daily, maintaining a similar frequency of approximately 1.5 to 2 hours between services.
- **Bus Route 436 (Ballina - Ballycastle):** It is provided by McGrath Coaches. This service operates once per day, with one off-peak departure (1:15 pm) from Ballina and one peak-hour departure (4:15 pm) from Ballycastle.
- **Bus Route 445 (Ballina - Ballycastle):** It is provided by Bus Éireann. This northbound service (Ballina → Ballycastle) service operates two times per day at 7:55 am and 5:05 pm, and the southbound service (Ballycastle → Ballina) direction operates three times per day at 7:20 am, 4:15 pm, and 6:10 pm.
- **Bus Route 446 (Ballina - An Fód Dubh) :** It is provided by Bus Éireann and operates three times per day. The westbound service (Ballina → An Fód Dubh) direction runs at 1:00 pm, 5:35 pm, and 10:05 pm, and the eastbound service (An Fód Dubh → Ballina) direction runs at 7:15 am, 3:25 pm, and 8:15 pm.
- **Bus Route 454 (Ballina - Castlebar):** It is provided by Bus Éireann and operates three times per day. The southbound service (Ballina → Castlebar) direction runs at 7:00 am, 11:30 am, and 3:59 pm, while the eastbound service (Castlebar → Ballina) direction also runs three times per day at 9:00 am, 2:15 pm, and 6:00 pm.
- **Bus Route 458 (Ballina – Sligo – Enniskillen):** Operated by Bus Éireann, this route serves both regional (Sligo – Enniskillen) and longer-distance (Ballina – Enniskillen) travels. The westbound service (Sligo → Ballina) operates nine times daily, with departures typically occurring every 2 to 2.5 hours. In contrast, the eastbound service (Ballina → Sligo) operates once daily at 10:30 pm. Services extending beyond Sligo to Enniskillen operate from Ballina eight times daily, with an average frequency of approximately two hours between departures.
- **Bus Route 496 (Ballina - Béal An Ghoile Thuaidh):** Operated by McGrath Coaches, this service runs once daily in each direction. The westbound service (Béal an Ghoile Thuaidh → Ballina) departs at 10:15 am, while the eastbound service (Ballina → Béal an Ghoile Thuaidh) departs at 5:15 pm during the PM peak period.
- **Bus Route 499 (Ballina - Béal An Ghoile Thuaidh):** Operated by McGrath Coaches, this service runs once daily in each direction. The westbound service (Béal an Ghoile Thuaidh → Ballina) departs at 10:10 am, while the eastbound service (Ballina → Béal an Ghoile Thuaidh) departs at 5:15 pm during the PM peak period. The route operates west–east in the morning and east–west in the evening.

The bus routes stated above operate along the R314, and the N59 respectively. Figure 15-9 illustrates the key nearby locations in relation to the Proposed Development and their connections to and from Ballina. A relevant extract from the “TFI Regional Public Transport Map 2025” has also been included to provide additional context.

However, there are no immediate bus stops in proximity to the Proposed Development sites including Lisglennon WTP, Wherrew WTP, and Lough Talt WTP.

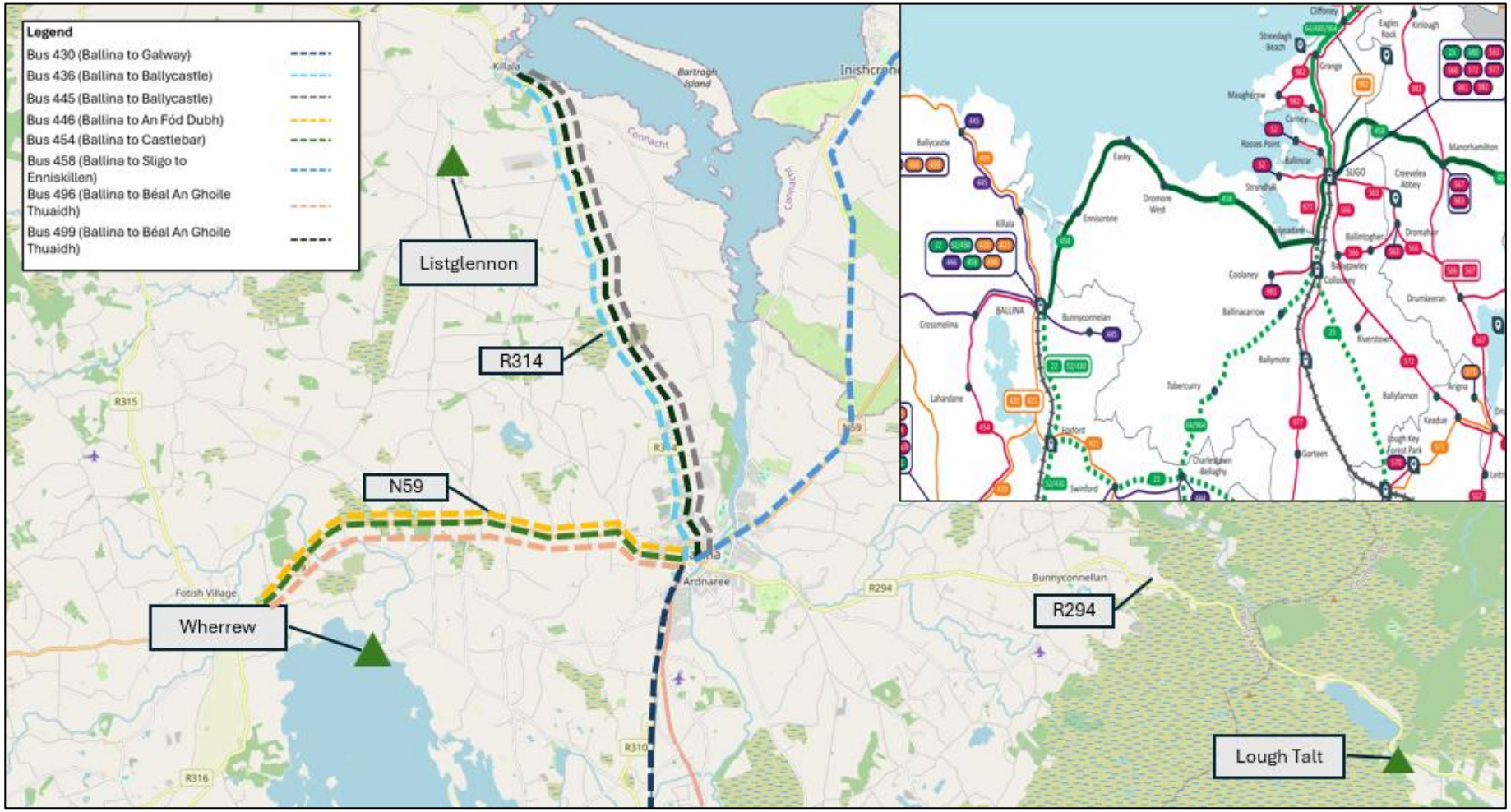


Figure 15-9 — Bus Routes in proximity to site locations

15.4.5.2 Rail Services

There are no rail routes directly servicing the site areas. The nearest station, Ballina, is located 15 km from each location, which will be 15–20-minute drive. Ballina station is on the Dublin Heuston – Westport and Ballina route, with operating hours from 04:30 to 23:00 Monday to Friday, 06:30 to 21:45 on Saturdays, and 07:00 to 22:15 on Sundays.

Although Ballina Station offers a good frequency of train services, it is not located close enough to the site for easy access. Staff commuting by rail would need to use other forms of transportation, such as walking, cycling, or taking a bus, to reach the site. However, as previously mentioned, public bus services are currently very limited, and infrastructure for pedestrians and cyclists in the locality is very limited or largely absent.

15.5 Characteristics of the Proposed Development

The characteristics of the Proposed Development have been discussed in greater detail in the Chapter 3 (Project Description) of this EIAR report. However, some elements relevant to the preparation of this traffic and transport chapter are outlined below.

- **Background:**
  - Increase in raw water abstraction and conveyance
    - Upgrades to Wherrew Raw Water Intake and Pumping Station
    - Water transferred via existing Rising Mains to existing storage tanks at Lisglennon Raw Water Pumping Station
    - Upgrades to Lisglennon Raw Water Pumping Station
    - Water transferred via upgraded Rising Mains to Lisglennon WTP
  - Lisglennon WTP
    - Lisglennon Water Treatment Plant Expansion and Upgrades
    - New Treated Water Storage at Lisglennon WTP
  - Treated water conveyance
    - New Gravity Trunk Main from Lisglennon WTP to Bonniconlon Booster Pump Station (BPS)
    - New Booster Pumping Station near Bonniconlon
    - New Bonniconlon Treated Water Reservoir
    - New Rising Main from Booster Pump Station to Windy Gap Break Pressure Tank
    - New Transfer Main from Windy Gap to existing Lough Talt WTP Site
    - New Lough Talt Reservoir and existing chlorination tank repurposed for water storage.
- **Construction Compounds:**
  - Temporary works compound areas will be established within Wherrew RWI&PS, Lisglennon RWS&PS, Lisglennon WTP, Lough Talt WTP and New Bonniconlon BPS, New Bonniconlon Reservoir and Laughtadawannagh (on the R319). These compounds will be used for the provision of welfare facilities and temporary construction support activities. Laydown areas for the storage of equipment and materials will be provided at Lisglennon WTP and New Bonniconlon Reservoir.
  - Any existing drains within temporary working areas or which intersect with the construction working width will be recorded, and temporarily culverted, to be restored as part of site reinstatement.
  - The location, size and suitability of the compound(s) will ultimately be at the discretion of the contractor once it is located within the project boundary and is compliant with the Planning Permission, the EIAR and site access approved by the Local Authority.
- **Horizontal Directional Drilling (HDD):**
  - The proposed Lisglennon to Lough Talt Treated Water Pipeline will be installed predominantly online within the existing road corridor, covering an approximate 30.2 km route.

- A total of 19 surface-water crossings will be completed using trenchless construction methods, such as pipe jacking or horizontal directional drilling (HDD), to avoid direct in-stream works.
- The pipeline will be installed in short, controlled sections, typically around 30 m in length, to minimise disruption and reduce the overall construction footprint on the road network.

- **Parking:** Sufficient parking provision will be made for sufficient on-site parking and welfare facilities to accommodate construction staff and avoid on-street parking on public roads.
- **Anticipated Traffic Effects:** Traffic effects during the construction and operation phases are expected to be minimal and will be temporary in nature, reflecting the linear progression of works, limited daily traffic generation, predominately single-lane working with stop/go control, and the use of trenchless construction methods at key constraints.

15.6 Establishing Baseline Traffic Flow Conditions

15.6.1 2026 Baseline Traffic

The weekday average daily traffic data from the survey dataset has been evaluated, alongside the projected traffic generated by the Proposed Development during both the construction and operational phases. This combined assessment illustrates cumulative traffic flows and the corresponding percentage increase in daily volumes during weekdays.

The proposed development facilities are already operational and currently contribute to existing baseline traffic movements, which have been captured within the baseline traffic survey data. During the operational phase, the proposed development is expected to generate an estimated 16 additional two-way vehicle trips per day across all assessed sites. The exceptions are the Wherrew Intake and RWPS sites, which are anticipated to generate only 4 additional two-way vehicle trips per day.

As the baseline traffic surveys already account for the existing operational traffic associated with these facilities, only the additional vehicle trips arising from the proposed development upgrades have been considered as part of this assessment.

This analysis has been detailed in the Table 15-12 below.

Table 15-12 — Weekday Average Daily Traffic - in vehicles trips (Source: 2026 Traffic Survey Data)

Road Name	Weekday Daily Traffic (24 hour)	Proposed Development		Cumulative Flows		Percentage Impact	
		Const. Phase	Oper. Phase	Const. Phase	Oper. Phase	Const. Phase	Oper. Phase
Mullafarry Road (L1111)	373	230	16	603	389	62%	4%
R314 N	3837	230	16	4067	3853	6%	0%
R314 S	8065	230	16	8295	8081	3%	0%
R294 W	5283	230	16	5513	5299	4%	0%
R294 E	1052	230	16	1283	1068	22%	2%
N59 E	6061	230	16	6291	6077	4%	0%
N59 W	7057	230	16	7287	7073	3%	0%
Knockfree Road (L5110)	183	230	4	414	187	126%	2%
Wherrew Road (L5111)	78	230	4	308	82	296%	5%

As stated in section 15.2 above, to assess the worst-case scenario it has been assumed that all trips generated by the Proposed Development during both construction and operation phases are fully assigned to the assessed road links and directly compared against baseline traffic flows.

Table 15-12 above shows that the R294 (East) and the local roads, including Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111), exhibit higher percentage effects (greater than 10%) in Table 15-5. These increases are primarily a function of the low baseline traffic volumes on these roads rather than the absolute number of additional trips generated by the Proposed Development.

The assessment assumes up to 230 two-way trips during the peak construction period and 32 two-way trips during operation. This approach provides a robust assessment of potential traffic effects and demonstrates that all assessed road links retain sufficient capacity to accommodate the additional traffic generated by the Proposed Development, as confirmed by the detailed link capacity assessment presented in the subsequent sections of this report.

15.6.2 2028 Construction Year Traffic

The traffic survey was undertaken in January 2026. Since several committed developments are expected to become operational before the Proposed Development enters its earthwork and construction phase in Q3 2027, it is necessary to account for their effects on future traffic conditions.

The traffic generated by these committed developments has been assessed using a worst-case scenario approach, adopting the highest traffic volumes cited within the respective planning application documents. However, it is anticipated that the actual traffic flow will be lower than these conservative estimates.

For this assessment, background traffic flows in Section 15.6.1 were factored to the construction year 2028 using the Transport Infrastructure Ireland (TII) Alternative Future Growth Factors applicable to County Mayo, as stated in Section 15.3.6 above.

These developments are located in close proximity to the Lisglennon WTP. It is expected that both the Killala Data Centre and Battery Energy Storage System (BESS) facility will be operational during the assessment year. Traffic generated by these developments is anticipated to primarily affect the R314 (north and south sections) and Mullafarry Road (L1111). Further details, including the traffic assessment and adjusted survey results, are provided in following subsections.

15.6.2.1 Proposed Killala Data Centre Development (Planning Reference 2460708)

The Proposed Killala Data Centre Development (Planning Reference 2460708) includes the construction of a single data centre building and the associated works to the east of the Proposed Development. The planning decision was approved in May 2025, with the facility expected to become operational in 2026.

As outlined in Table 4.1 of submitted Traffic & Transport Assessment, the data centre will employ approximately 32 staff per day, operating across three shifts. This results in an estimated **64 daily staff-related trips (32 inbound and 32 outbound)**.

In addition, and in accordance with Section 7 (Service Vehicle Trips), servicing and delivery activities are expected to generate a further **8 HGV/servicing trips per day (4 inbound and 4 outbound)**, assumed to occur during peak periods.

In total, the Proposed Development is expected to generate approximately **83 PCUs (equivalent to 72 vehicle trips)** of operational traffic per day, with most vehicle movements anticipated to use Mullafarry Road (L1111). During peak operational periods, traffic volumes are projected to be lower, with around **63 PCUs** expected during both the morning and evening peak hours. The majority of operational trips are expected to approach from the R314 to the north and south, as well as from the access road connecting to Ballintean.

15.6.2.2 Battery Energy Storage System Facility (Planning Reference 2560108)

Planning Reference 2560108 relates to the installation and operation of a Battery Energy Storage System (BESS), intended to store energy for subsequent export to the National Grid. The site is located to the east of the Proposed Development area. Planning permission was granted in April 2025, with the facility expected to become operational in 2026.

As outlined in Section 5.6 (Traffic Volumes) of the submitted Environmental Report, the operational phase of the BESS will require only **1–2 workers**, all of whom are existing staff from the SSE Thermal Tawnaghmore Power Station. For the purposes of this cumulative assessment, and to provide a robust worst-case scenario, this operational workforce has been assumed to generate 4 PCU per day, with access via the R314 Road.

15.6.2.3 Summary of Operational Cumulative Effects

The operational traffic from the cumulative developments stated above are summarised in the Table 15-13 below. These traffic volumes will be assigned to Mullafarry Road (L1111), R314 N, and R314 S, as these are the roads closest to the committed development sites and are the routes expected to accommodate the additional operational traffic generated by these developments.

Table 15-13 — Operational Cumulative Effects

Committed Development Ref.	Planning Application Description	8AM (AM Peak)	16PM (Off-Peak)
Committed Dev.1	2460708 Proposed Killala Data Centre Development	31	32
Committed Dev.2	2560108 Battery Energy Storage System facility	2	2
Total Operational Trips (in PCU)		**33**	**34**

As outlined in Section 15.3.8, the cumulative assessment has been limited to developments that are permitted and reasonably certain to be operational during the assessment period. Other developments have therefore been excluded from the operational cumulative effect assessment in Table 15-13.

15.6.2.4 Adjusted Survey Results

As outlined in Section 15.6.2.3, the daily operational trips associated with the above listed committed developments have been added to the background traffic network for the construction year 2028 and applied during the time periods specified in the respective planning submission documents.

The table below presents the adjusted combined hourly traffic volumes to reflect these added operational trips on corresponding roads. The detailed existing surveyed traffic and growth-adjusted traffic volumes are provided in the Appendices 15-2 and 15-4, Volume 3 of the EIAR.

Table 15-14 — Adjusted Traffic Volumes for the construction year 2028 - in PCU

Time	Mullafarry Road (L1111)	R314 N	R314 S	R294 W	R294 E	N59 E	N59 W	Knockfree Road (L5110)	Wherrew Road (L5111)
06:00 to 07:00	6	102	216	101	26	126	187	2	1
07:00 to 08:00	32	247	447	233	91	309	471	6	1
08:00 to 09:00	69	435	810	611	147	511	774	20	9
09:00 to 17:00 (Maximum off-peak)	94	423	825	507	130	616	718	27	8
17:00 to 18:00	24	366	746	525	123	655	740	19	5
18:00 to 19:00	10	257	619	446	87	458	562	11	8
19:00 to 20:00	7	196	427	311	46	349	380	13	3
Total Trips	**242**	**2028**	**4089**	**2734**	**651**	**3025**	**3832**	**99**	**34**

15.7 Potential Effects of the Proposed Development

The transport and traffic receiving environment described above will potentially be affected by the development at both the construction, and to a lesser extent during operational phases as detailed below.

15.7.1 Construction Stage

15.7.1.1 Methodology

The potential effect of construction activities on the nearby road network was assessed using the following steps:

- Determining the baseline traffic for the major links to be used;
- Performing a Link Analysis to estimate the road link capacity;
- Estimating the number of trips expected from the works during the construction phase; and,
- Evaluating the potential effect of construction-related traffic.

15.7.1.2 Working Period and Hours

Construction of the Proposed Development is expected to commence in the Q3 of 2027 and continue for approximately two to 2.5 years, with the majority of earthworks and related activities taking place during 2028. As outlined in Section 15.3.6, a 2028 projected baseline has been adopted for the construction traffic assessment. Given the limited variation in forecast background traffic conditions between 2027 and 2028, and the low traffic-generating nature of the Proposed Development, the 2028 baseline is considered representative of a reasonable worst-case construction scenario.

Typical working hours during construction are anticipated to be as follows:

- 07:00 to 19:00 Monday to Friday;
- 08:00 to 13:00 on Saturdays; and,

- No work on Sundays or public holidays.

While these represent the typical construction working hours, the arrival and departure of construction personnel, staff and deliveries associated with the Proposed Development are expected to predominantly occur during the following periods, as outlined in Section 15.3.4.2:

- AM period from 06:00 to 09:00;
- Off-peak period from 09:00 to 17:00; and
- PM period from 17:00 to 19:00.

Exceptions may be required for certain construction activities which would need to be undertaken outside typical working hours. This includes trenchless crossing techniques (see Section 3.2.5.4.2 from PD), surface finishing works, abnormal loads, emergency response and avoidance of significant traffic disruption.

Works to be undertaken outside typical working hours will be agreed with the county councils (Mayo and Sligo) in advance and supported by coordination with the Gardaí and Transport Infrastructure Ireland (TII) as required and communicated to the affected community. The protocol for communication prior to and during the works will be set out in the appropriate construction Management Plans (see Section 3.3.4 of Chapter 3 – Project Description).

15.7.1.3 Trip Generation: Construction Period

This section estimates the number of daily construction trips likely to be generated during the construction period.

15.7.1.3.1 Staff Trips

At peak construction, **120 to 150 workers,** considered as a worst case scenario, are expected to be on-site. Based on AtkinsRéalis experience of undertaking traffic and transport assessments for comparable developments of a similar scale and nature, an average car occupancy rate of **1.5 persons per vehicle** has been assumed. This reflects an anticipated level of car-sharing amongst construction workers, whereby on average each vehicle is occupied by 1.5 workers.

Applying the **74% car mode share** (refer to Section 15.3.5), results in approximately 111 workers travelling by car. Applying the assumed vehicle occupancy rate of 1.5 persons per vehicle equates to approximately 74 one-way car trips (equivalent to 148 two-way trips). All trips are assumed to be car-based (Passenger Car Unit, PCU factor = 1).

Although the typical construction working hours are expected to be between 07:00 and 19:00, construction personnel are anticipated to arrive in advance of the start of their shifts and depart following the end of the working day. For the purposes of the traffic assessment, staff arrival and departure patterns have therefore been distributed across the periods shown in Table 15-15.

Table 15-15 — Assumed Construction Staff Arrival and Departure Profile

Time Range	Movement	Percentage
06:00 to 07:00	Arrivals	70%
07:00 to 08:00	Arrivals	15%
08:00 to 09:00	Arrivals	15%
17:00 to 18:00	Departures	15%
18:00 to 19:00	Departures	15%
19:00 to 20:00	Departures	70%

It has been assumed that the majority of personnel will arrive between 06:00 and 07:00 to be on-site and ready to commence work at 07:00, with the remaining arrivals occurring shortly after. Similarly, while some personnel are expected to leave before 19:00, the majority of departures are anticipated to occur between 19:00 and 20:00 following completion of the working day.

Based on these assumptions, the number of car-based staff trips during the construction period is summarised in the Table 15-16.

Table 15-16 — Staff Trips By Hour

Time	Arrivals/Departures	Percentage	Trips (PCU)
06:00 to 07:00	Arrivals	70%	52
07:00 to 08:00	Arrivals	15%	11
08:00 to 09:00	Arrivals	15%	11
17:00 to 18:00	Departures	15%	11
18:00 to 19:00	Departures	15%	11
19:00 to 20:00	Departures	70%	52

15.7.1.3.2 Heavy Vehicles Trips (Weekdays)

All Construction Material Trips

Construction material deliveries associated with the various project sites have been considered and are summarised in the table below, including pipeline deliveries and other material deliveries (like steel, concrete, stone etc.) to individual site compounds.

The figures presented are high-level estimates representing a potential worst-case scenario and have been calculated based on the information available to date. It will be the responsibility of the appointed contractor to review and, where necessary, revise these estimates to reflect the construction methodology, sequencing, and approach adopted at the time of construction.

Table 15-17 — Construction Material Delivery Vehicle Movements and Assessment Assumptions

Item	Construction Material Truck Movements (vehicles per day)
Pipelines Delivery	
Pipeline materials delivery	**19**
Other Material Delivery	
Wherew RWI & PS	3
Lisglennon WTP	**10**
Lisglennon RWS & PS	1
Bonniconlon BPS	4
Bonniconlon Reservoir	2
Windy Gap BPT	2
Lough Talt WTP	2
Maximum of all Other Material Delivery	**10**
Total Construction Material Trips	**29**

The total number of deliveries presented represents the cumulative requirement across the overall programme and is not expected to occur concurrently in practice, as construction activities will be distributed across different locations and phases of the works.

However, in line with the conservative worst-case assessment approach adopted throughout this EIAR, the highest forecast site delivery volume of 10 no. Heavy vehicles per day associated with the Lislglennon WTP has been assumed to occur concurrently with the 19 no. pipeline delivery vehicles per day. Accordingly, a total of **29 no. construction material delivery vehicles per day** has been adopted for the purposes of the traffic assessment.

Waste Delivery Trips

The majority of heavy vehicle trips during construction will be associated with earthworks. Therefore, heavy vehicle trip estimates were calculated specifically for earthworks, based on the following methodology:

- It is estimated that approximately 67,143m^3 (**120,857 tonnes)** of earthworks material will be hauled over the earthworks period, based on an assumed bulk material density of 1.8 tonnes per m^3
- Based on the assumed trailer capacity of **20 tonnes**, which is representative of comparable Uisce Éireann water infrastructure projects such as the **Arklow Wastewater Treatment Plant**, an estimated **6,042 vehicle trips** would be required over the entire earthworks period.
- Earthworks duration: **24 months.**
- Heavy vehicle operations are typically expected to occur between 09:00–17:00 (8 hours per day) from Monday to Friday, and 09:00–13:00 (4 hours per day) on Saturdays.
- Operating 5 days per week, equating to 40 hours/week
- Assuming **4 weeks per month**, this results in **160 hours/month** and **3,840 hours** over the 24-month period
- Assuming **uniform haulage,** this equated to approximately **2 vehicles/hour** (6,042÷3,840), and approximately **12 vehicles/day** (based on 8 hours per day).

Overall HGV

- By combining the 29-no. construction material delivery vehicles per day with the 12 no. earthworks waste haulage vehicles per day, a total o82f **41 no. HGV movements per day** has been assumed for the assessment.
- Assuming each vehicle generates a corresponding return movement, this equates to **82 two-way vehicle trips per day.**
- Applying a Passenger Car Unit (PCU) factor of **3.0 for HGVs**, the forecast construction traffic is equivalent **to 246 PCU per day (two-way),** comprising **123 PCU associated with inbound movements** and **123 PCU associated with outbound movements.**

15.7.1.3.3 Total Number of Construction Trips

The total number of trips are summarised below:

Table 15-18 — Two-Way Construction Trips on Weekdays (in PCU)

Time	Staff		HV (in PCU)		Trips(Two-Way)
	Arrivals	Departures	Arrivals	Departures	
06:00 to 07:00	52	0	0	0	52
07:00 to 08:00	11	0	0	0	11
08:00 to 09:00	11	0	0	0	11
09:00 to 17:00 (off-peak)	0	0	123	123	246
17:00 to 18:00	0	11	0	0	11
18:00 to 19:00	0	11	0	0	11
19:00 to 20:00	0	52	0	0	52
Total Trips	**74**	**74**	**123**	**123**	**394**

15.7.1.3.4 Construction Material Storage and Distribution

The construction traffic assessment assumes that the majority of materials required for the Proposed Development, including aggregates, concrete and pipework, will be delivered to designated stockpile and storage areas before being distributed to individual site areas as required. This approach is expected to minimise direct deliveries to active work areas and reduce traffic movements across the construction corridor.

Deliveries of aggregates, concrete and pipework are expected to occur periodically throughout the construction programme, with deliveries typically anticipated on an infrequent basis, such as once or twice per week or month, depending on construction activities and programme requirements. The delivery vehicles associated with the individual project sites have been incorporated into the construction traffic generation assessment using the conservative worst-case assumptions outlined in Section 15.7.1.3.2.

For the purposes of a robust worst-case assessment, all forecast deliveries have been assigned to the assessed construction traffic scenarios, notwithstanding that some materials may be delivered in advance to designated stockpile areas and subsequently distributed to individual work locations as required.

15.7.1.3.5 Effect of construction trips (Weekdays)

The expected construction works corridor for this Proposed Development includes the **N59, R314, R294, Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111)**. For the purposes of the effect assessment, all construction generated traffic associated with the Proposed Development has been assigned to each of the

assessed roads to represent a worst-case scenario. This approach ensures that the assessment captures the maximum potential effects.

The traffic effect of construction-related trips was assessed using the following methodology.

- The estimated two-way trips generated during the construction period were added to the existing traffic volumes along each expected routes.
- The combined volumes were then compared against the capacity of the respective routes.
- With reference to sections 15.3.4.3 and 15.3.7, the capacity of expected routes where the traffic surveys are carried out has been investigated.
  - As per the '*Design Manual for Roads and Bridges, Volume 5, Section 1, Part 3: Traffic Capacity of Urban Roads" (May 1999)'*, two locations along the **N59 (N59 E, N59 W)** fall under the **UAP1** category.
  - The **R314 (R314 N, R314 S),** and **R294 (R294 W, R294 E)** falls under **UAP2** category.
  - **Local access roads (Mullafarry Road/L1111, Knockfree Road/L5110, and Wherrew Road/L5111)** are considered under **UAP3** category.

Two-way capacity assessment of the respective roads along the expected corridor is summarised and assigned to the relevant roads in the Table 15-19 below.

Table 15-19 — Two-Way Capacity for respective ATC counters

Survey Reference	Road Name	Road Type	Theoretical Road Capacity (Vehicles per hour)
ATC 1	Mullafarry Road (L1111)	Local Access Road	1800
ATC 2	R314 N	Regional Road	2040
ATC 3	R314 S	Regional Road	2520
ATC 4	R294 W	Regional Road	2040
ATC 5	R294 E	Regional Road	2040
ATC 6	N59 E	National Road	2040
ATC 7	N59 W	National Road	2040
ATC 8	Knockfree Road (L5110)	Local Access Road	1800
ATC 9	Wherrew Road (L5111)	Local Access Road	1800

The detailed effect analysis of the construction trips with respect to daily weekday traffic across the expected construction works corridor during construction phase is provided in Table 15-20.

Table 15-20 — % Construction trips effect analysis (in PCU) (2028 construction year background traffic)

Road Name	Weekday Daily Traffic (24 hour)	Prop. Dev. Construction Trips	% Increase
Mullafarry Road (L1111)	508	394	78%
R314 N	4620	394	9%
R314 S	9581	394	4%
R294 W	6212	394	6%
R294 E	1292	394	31%
N59 E	7304	394	5%
N59 W	8542	394	5%
Knockfree Road (L5110)	211	394	186%
Wherrew Road (L5111)	95	394	417%

As presented in Table 15-20 above and with reference to Section 15.3.3, the percentage increases in traffic on the R314, R294 (West), and N59 are below the 10% assessment threshold. Higher percentage increases are predicted on the R294 (East) and the local access roads, including Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111). However, these increases are primarily a function of the low baseline traffic volumes on these routes rather than substantial numbers of additional trips generated by the Proposed Development.

To assess the significance of these increases, a link capacity assessment was carried out to evaluate the performance of these roads relative to their theoretical capacities, and the findings are summarised below. Figure 15-10, Figure 15-11, and Figure 15-12, presents a comparison of cumulative traffic volumes (background traffic + construction trips) against the estimated capacity.

It should also be noted that the link capacity assessment presented below is based on a worst-case scenario. This approach assumes that all trips generated by the Proposed Development are fully assigned to the assessed road links and directly compared against relevant assessment year traffic flows. As such, the resulting percentage effects represent an upper-bound estimate of the maximum likely impact on the assessed road network.

In practice, actual traffic effects are likely to be lower, as construction activities will be distributed across multiple locations, and traffic will similarly be dispersed across the network.

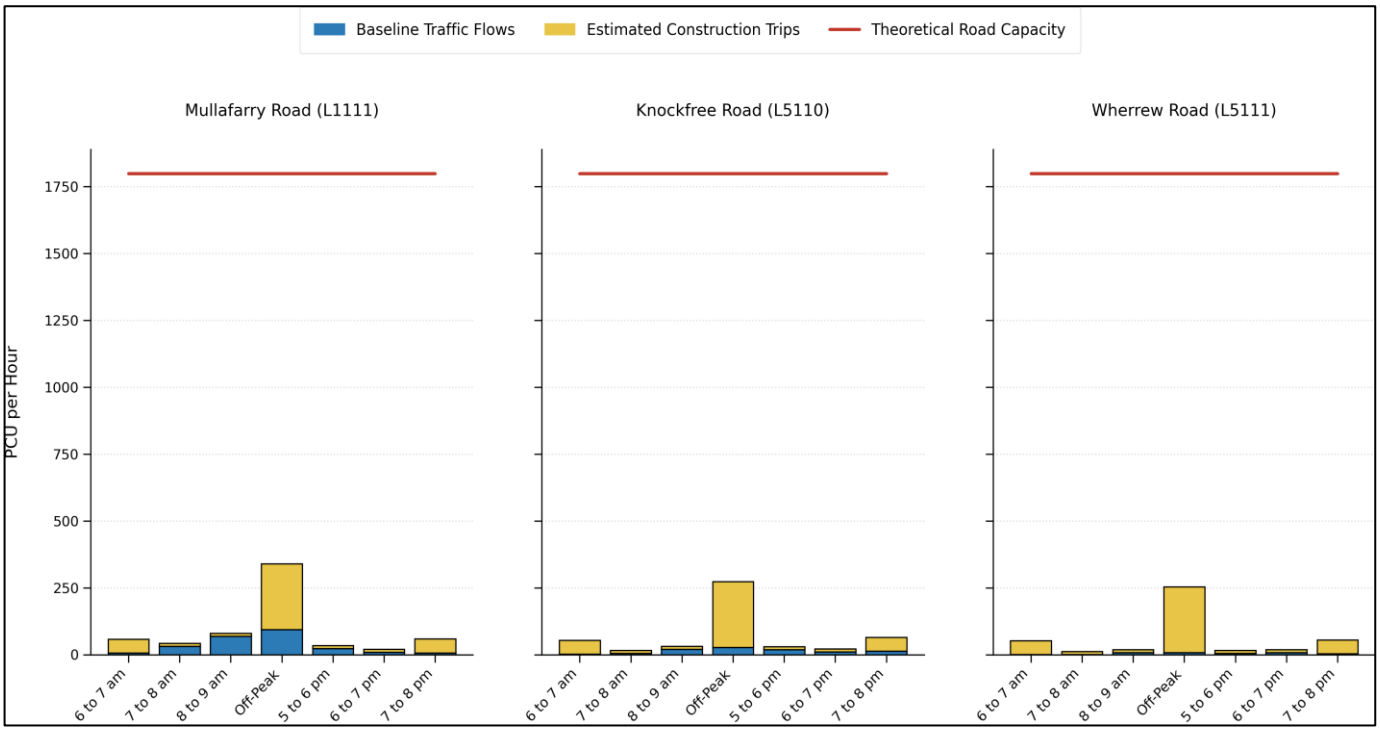


Figure 15-10 — Effect of Construction Trips along Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111)

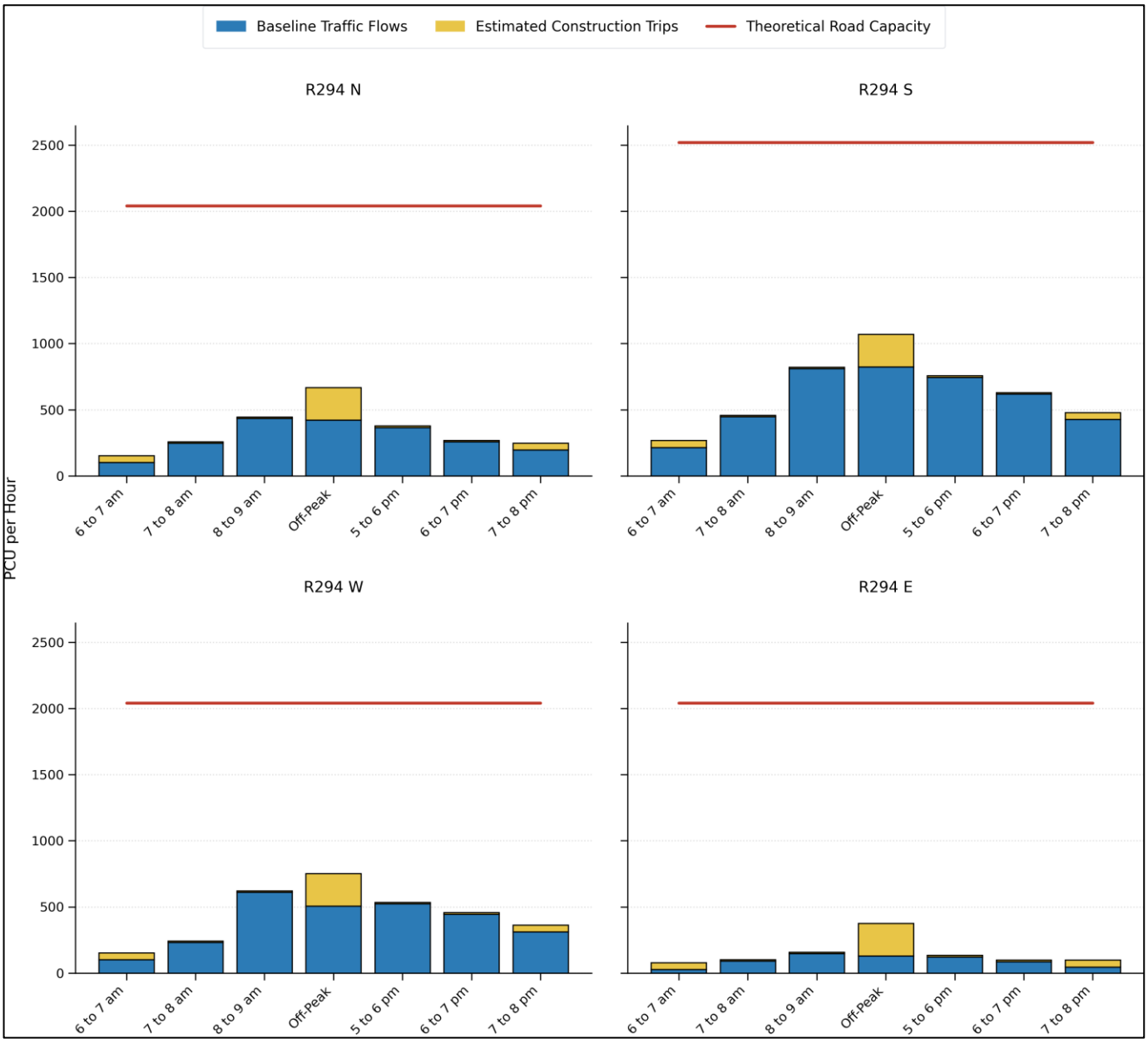


Figure 15-11 — Effect of Construction Trips along R314 N, R314 S, R294 W, R294 E

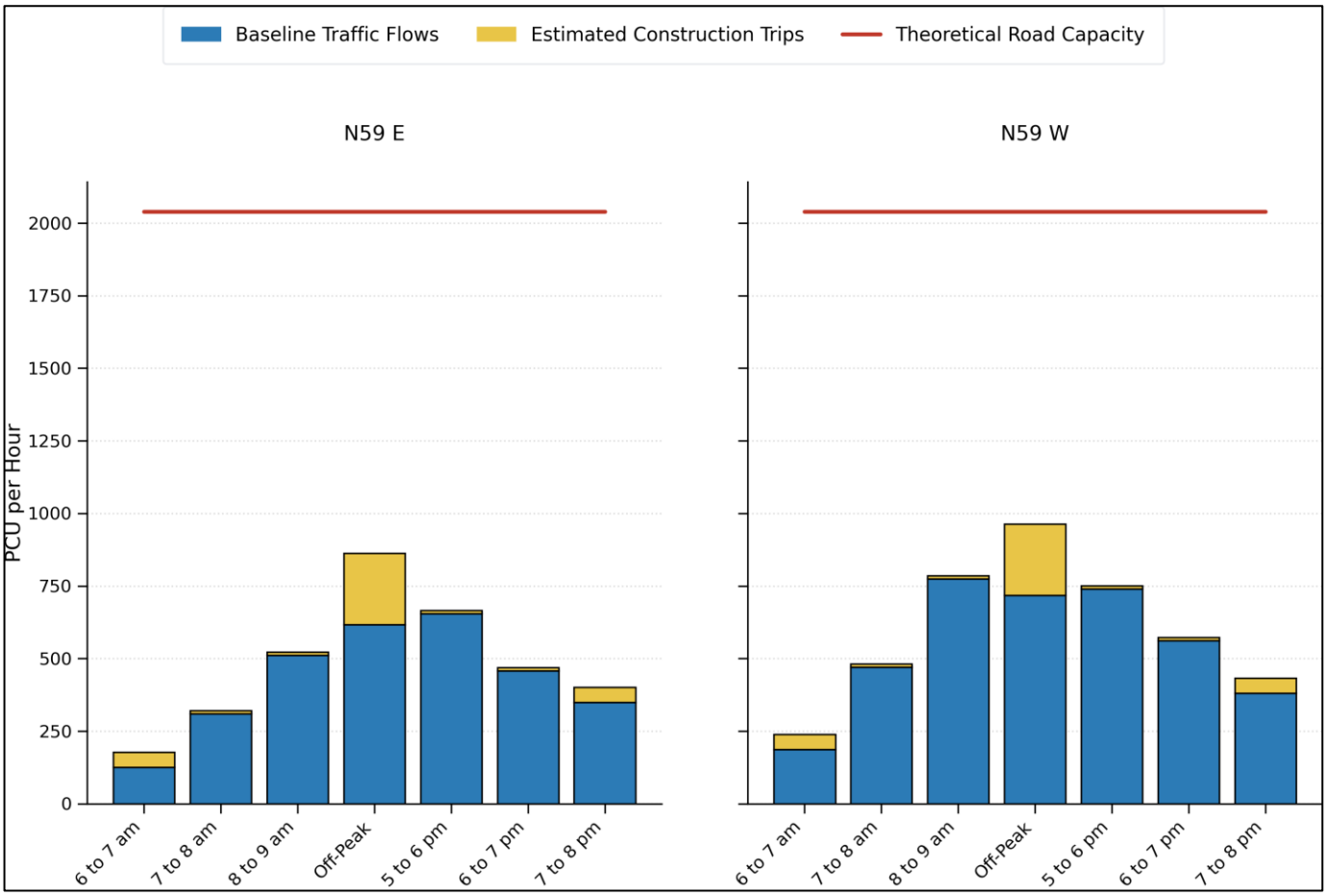


Figure 15-12 — Effect of Construction Trips along N59 E, N59 W

As shown in the graphs above, forecast cumulative traffic volumes remain well below the theoretical capacities of the surrounding road network, indicating that construction-related traffic associated with the Proposed Development would have a minor effect on network performance.

However, temporary traffic management measures during construction, such as lane closures, road diversions, or short-term road closures, may temporarily reduce available road capacity and affect network performance. Taking these potential effects into account, the overall construction traffic impact is considered to be **Short-Term Not Significant Negative**.

15.7.1.3.6 Effect on Active Travel Facilities

With reference to section 15.4.4, several active travel schemes are proposed across the study area; however, many remain at the planning stage and are therefore not expected to be operational during the construction period of the Proposed Development.

Potential construction phase effects on active travel users, including safety risks and disturbance effects on routes such as Creggs Road and within Bonniconlon Village, are assessed in Chapter 6 (Population and Human Health), Chapter 13 (Noise and Vibration), and Chapter 19 (Risk of Major Accidents and Disasters) of this EIAR. Taking account of the proposed mitigation measures and any temporary traffic management arrangements, the overall effect on existing and proposed active travel routes is predicted to be **Short-Term Imperceptible Negative**.

15.7.1.3.7 Effect on Public Transport Facilities

As mentioned in Section 15.4.5, there are no bus stops in the immediate vicinity of the Proposed Development sites. Given the limited availability of public transport infrastructure and the infrequent nature of services on nearby routes,

the Proposed Development is expected to result in a **"Short-term Imperceptible Negative**" effect on existing public transport facilities.

15.7.2 Operation and Maintenance

As outlined in Section 15.6.1, the Proposed Development is expected to generate only a small number of additional vehicle trips during the operational phase. As the facilities are already operational, existing traffic associated with their day-to-day activities is reflected in the baseline traffic surveys. Therefore, this assessment considers only the additional traffic arising from the proposed upgrades.

The operational phase is expected to generate up to 16 additional two-way vehicle trips per day (approximately 21 PCU/day) at the majority of sites and 4 additional two-way vehicle trips per day (approximately 4 PCU/day) at the Wherrew Intake and RWPS sites. These trips will primarily comprise staff travel, maintenance visits, scheduled deliveries and occasional HGV movements.

Occasional HGV trips are anticipated for operational and maintenance purposes, including sludge removal from Lisglennon WTP and chemical deliveries to Lisglennon and Lough Talt WTP. At the Wherrew Intake and RWPS sites, traffic will be limited to occasional operator and maintenance-related visits.

For assessment purposes, a conservative distribution of daily trips has been assumed as follows for all sites except Wherrew Intake and RWPS:

- **AM Peak:** 6 two-way trips
- **Off-Peak:** 6 two-way trips
- **PM Peak:** 4 two-way trips

A detailed assessment of operational traffic effects is presented in Table 15-21.

Table 15-21 — % Operational trips effect analysis (In PCU) (2026 background traffic flows)

Road Name	Weekday Daily Traffic (24 hour)	Prop. Dev. Operation Phase	% Effect
Mullafarry Road (L1111)	489	21	4%
R314 N	4476	21	0%
R314 S	9289	21	0%
R294 W	6027	21	0%
R294 E	1250	21	2%
N59 E	7076	21	0%
N59 W	8273	21	0%
Knockfree Road (L5110)	205	4	2%
Wherrew Road (L5111)	92	4	4%

The assessment indicates that roads including the **R294 (East), Mullafarry Road (L1111), Knockfree Road (L5110) and Wherrew Road (L5111)** would experience only minor increases in traffic volumes, typically in the order of **2-4%.** These increases are well below the **10% threshold** generally associated with significant traffic effects.

Given the low level of additional traffic and the fact that existing operational movements are already included within the baseline conditions, the operational impact of the Proposed Development on the local road network is considered to be **Long-Term Imperceptible and Not Significant Negative.**

15.7.2.1 Effect on Active Travel Facilities

By completion of the construction works, any active travel infrastructure temporarily affected by the Proposed Development will be reinstated to its pre-construction condition by the Appointed Contractor. Overall, given the low trip-generating nature and limited scale of the Proposed Development, no significant physical effects on active travel facilities including pedestrian and cyclist infrastructure are anticipated. Consequently, the effect on all such receptors is assessed as **"Long-term Imperceptible Negative."**

15.7.2.2 Effect on Public Transport Facilities

Given the nature and scale of the Proposed Development, no significant physical effects on public transport infrastructure are anticipated. Any public transport facilities temporarily affected during construction will be reinstated to their original condition by the Contractor upon completion of the works. Consequently, the effect on public transport receptors is assessed as **"Long-term Imperceptible Negative."**

15.8 Mitigation Measures

15.8.1 Construction Phase Mitigation

Based on the analysis undertaken in Section 15.7.1, the traffic effects associated with construction of the Proposed Development are expected to be **"Short-term Not Significant Negative"** with the implementation of mitigation measures. All construction activities will be managed and directed by a CWTMP. The details of the CWTMP will be agreed with the roads department of the Local Authority in advance of construction activities commencing on-site. The site actions that could be undertaken to overcome traffic management issues are discussed below. A Preliminary CWTMP has been submitted as Appendix 15-1, Volume 3 of this EIAR.

Site Actions to Overcome Traffic Management Issues

It is proposed to manage the effect of construction traffic through the provision of controlled access points to the site. These will be carefully coordinated to minimise conflicts with other activities. A list of measures which may potentially be adopted during the construction works which are also typically included in a detailed CWTMP are as follows: -

(Note: this is not an exhaustive list, and it will be the appointed contractor's responsibility to prepare a detailed CWTMP to be approved with the Planning Authority prior to commencement of construction)

- Warning signs / Advanced warning signs will be installed at appropriate locations in advance of the construction access.
- A road condition survey will be undertaken by the Contractor prior to the commencement of earthworks. The Contractor will ensure that any damage attributable to the construction works is repaired and that affected roads are reinstated to their original condition upon completion of the works.
- Construction and delivery vehicles will be instructed to use only the approved and agreed means of access and movement of construction vehicles will be restricted to these designated routes.
- Restriction of HGV movements during drop off and pick up times associated with the schools.
- Appropriate vehicles will be used to minimise environmental effects from transporting construction material, for example the use of dust covers on trucks carrying dust producing material.
- Speed limits of construction vehicles to be managed by appropriate signage, to promote low vehicular speeds within the site.

- Parking of site vehicles will be managed, and will not be permitted on public roads, unless proposed within that designated area that is subject to traffic management measures.
- A road sweeper will be employed to clean the public roads adjacent to the site of any residual debris that may be deposited on the public road leading away from the construction site.
- Reasonable access to all local residents, and businesses will be maintained with the use of traffic management measures, including priority-controlled traffic flow, give and take arrangements, and where necessary, temporary road closures with signed diversion routes.
- On site wheel washing will be undertaken for construction trucks and vehicles to remove any debris prior to leaving the site, to avoid any potential for debris on the local roads.
- A combination of 'Stop/Go' system and road closures and diversions will be utilised as agreed with the council. The seasonal nature of traffic patterns will be taken into account, a detailed constraints analysis identifying key complexities in the design as well as a detailed design of each identified crossing or location will be agreed with the local authority in advance of construction. An example of a 'Stop/Go' system and traffic light system are presented in Figure 15-13, and Figure 15-14 below.
- Construction vehicle movements will be coordinated to avoid peak traffic periods and school's pickup/drop off periods wherever practicable, with the majority of operations scheduled during off-peak hours—typically between 09:00 and 17:00 from Monday to Friday, and 09:00 and 13:00 on Saturdays. This approach is intended to minimise potential effects on sensitive receptors along the expected construction works corridor, including schools, medical centres, and other community facilities.
- In the event that road closures or diversions are required, alternative routes will be reviewed and assessed to ensure their suitability prior to implementation. An example of this system is presented in Figure 15-15 below.
- Appropriate coordination will be maintained with nearby committed developments should construction activities coincide, and any disruption to the road network and nearby road users will be managed in an efficient and timely manner.
- Where a vehicle would be unsuitable on the public road, these would be transported by Ordinary Goods Vehicle Type 2 to designated access/egress points which are gateways to the working areas.
- All vehicles will be suitably serviced and maintained to avoid leaks or spillage of oil, petrol or diesel. Spill kits will be available on site. All scheduled maintenance carried out off site will not be carried out on the public highway; and,
- Safe and secure pedestrian facilities are to be provided where construction works obscure any existing pedestrian footway. Alternative pedestrian facilities will be provided in these instances, supported by physical barriers to segregate traffic and pedestrian movements, and to be identified by appropriate signage. Pedestrian facilities will cater for vulnerable users and mobility impaired persons.

The above measures will minimise any significant environmental degradation or safety concerns in the vicinity of the proposed works, due to the presence of construction traffic. Furthermore, it is in the interest of the construction programme that deliveries, particularly concrete deliveries are not unduly hampered by traffic congestion, and as a result continuous review of expected corridors, delivery timings and access arrangements will be undertaken as construction progresses to ensure smooth operation.



Figure 15-13 — Example of 'Stop/Go' system (Source: AtkinsRéalis Onsite images)



Figure 15-14 — Example of 'Traffic Lights' system (Source: AtkinsRéalis Onsite images)



Figure 15-15 — Example of 'Lane Closure and Diversion' system (Source: AtkinsRéalis Onsite images)

15.8.2 Operation Phase Mitigation

During the operational phase of the Proposed Development, the trip generation will be minimal as stated in Section 15.7.2**.** The site will experience traffic associated with site security, service and delivery vehicles, maintenance visits, and occasional HGV movements.

It is anticipated that these activities will generate low volume of trips, will be dispersed throughout the day, and will not require network interventions to the infrastructure.

As discussed in the preceding sections, the operational phase is expected to result in only limited effects on the road network. Accordingly, no specific operational-phase mitigation measures are required, and the resulting effect on the surrounding road network is assessed as **"Long-Term Imperceptible and Not Significant Negative".**

15.9 Cumulative Effects

As stated in Section 15.3.8, the assessment of the potential effects of the construction development (Hydrogen Plant and Energy Centre) will be detailed in the following sub-section. The cumulative effects on the surrounding road network were also evaluated based on the corresponding road capacity.

15.9.1 Cumulative Construction Development

15.9.1.1 Hydrogen Plant and Energy Centre (Planning Reference 2360266)

Planning Reference 2360266 relates to a proposed Hydrogen Plant and Energy Centre located to the east of the Proposed Development site. Planning permission was granted in May 2025, with construction anticipated to commence in early 2026, as outlined in Section 13.6.4 of EIAR Vol. II – Chapter 13: Traffic and Transport.

According to Section 2.7 of the updated EIAR report received by Mayo County Council upon the request of further information, the construction programme is expected to **last 24–36 months**, which coincides with the excavation and construction period of the proposed development. Section 2.7.9 (Construction Traffic) estimates that the Hydrogen Plant project will generate approximately **50–75 delivery vehicle movements per day during peak construction activity**.

Additionally, Section 2.7.6 (Construction Hours) identifies that **40–63 construction workers** will be employed on site during the construction phase. In total, during peak construction, this development is estimated to generate approximately **299 PCU per day**, contributing traffic to the R314 Ballina-Killala Road.

As per the submitted planning documents, the construction-related trips are temporary in nature and will only occur over a short duration. As such, when assessed in combination with the Proposed Development and existing baseline traffic, the additional traffic generated is expected to have limited effect on the surrounding road network during the construction period.

During the operational phase, the facility will require a maintenance team of **2–4 engineers** to carry out monthly inspections and servicing. A moderate increase in traffic volumes is anticipated from the operational activities of the Hydrogen Plant, while the Energy Centre component of the committed development is expected to generate only a low level of operational traffic.

The hydrogen plant will feature a tube-trailer filling area capable of refilling up to **80 hydrogen tube-trailer trucks over a 10-hour operating day.** Overall, the projected operational traffic volumes are expected to remain below the daily construction traffic estimates referenced earlier. Based on this it is anticipated that the cumulative traffic effect during the operational phase will remain well below the threshold levels.

15.9.2 Summary of Cumulative Effects

To assess the cumulative effect, the construction traffic generated by both the committed development and the Proposed Development was added to the corresponding future-year daily traffic volumes on each road link. These baseline flows had been factored to 2028 and have added the operational traffic flows from committed developments, as outlined in Section 15.6.2, to derive the total traffic volumes used in the cumulative assessment.

As the committed Hydrogen Plant and Energy Centre did not provide hourly construction traffic estimates, hourly traffic distributions from the baseline ATC surveys (shown in Appendix 15-4, volume 3 of this EIAR) were applied to allocate their daily construction trips across Mullafarry Road (L1111), R314 N, and R314 S. These roads are closest to the committed development sites and are expected to cater for the additional construction traffic associated with these developments.

The detailed effect analysis of the cumulative trips across the expected construction works corridor is provided in Table 15-22 below.

Table 15-22 — % Cumulative effect analysis (In PCU) (2028 construction year background traffic)

Road Name	Weekday Daily Traffic (24 hour)	Cumulative Flows		Total Trips	% Effect
		Comm. Trips	Prop. Dev. Construction Trips		
Mullafarry Road (L1111)	508	86	394	989	95%
R314 N	4620	86	394	5101	10%
R314 S	9581	86	394	10061	5%
R294 W	6212	0	394	6606	6%
R294 E	1292	0	394	1686	31%
N59 E	7304	0	394	7699	5%
N59 W	8542	0	394	8937	5%
Knockfree Road (L5110)	211	0	394	606	186%
Wherrew Road (L5111)	95	0	394	489	417%

As presented in Table 15-22 and with reference to Section 15.3.3, the percentage increases in traffic on the R314 (South), R294 (West) and N59 are below the 10% assessment threshold. Higher percentage increases are predicted on the R294 (East), R314 (North), and Local Access Roads including Mullafarry Road (L1111), Knockfree Road (L5110), and Wherrew Road (L5111). However, these increases are primarily a function of the low baseline traffic volumes on these routes rather than substantial numbers of additional trips generated by the Proposed Development.

To assess the significance of these increases, a link capacity assessment was carried out to evaluate the performance of these roads relative to their theoretical capacities, and the findings are illustrated in the Figure 15-16, Figure 15-17, and Figure 15-18 below.

It should also be noted that the link capacity assessment presented below is based on a worst-case scenario. This approach assumes that all trips generated by the Proposed Development are fully assigned to the assessed road links and directly compared against relevant assessment year traffic flows and committed development flows. As such, the resulting percentage effects represent an upper-bound estimate of the maximum likely impact on the assessed road network.

In practice, actual traffic effects are likely to be lower, as construction activities will be distributed across multiple locations, and traffic will similarly be dispersed across the network.

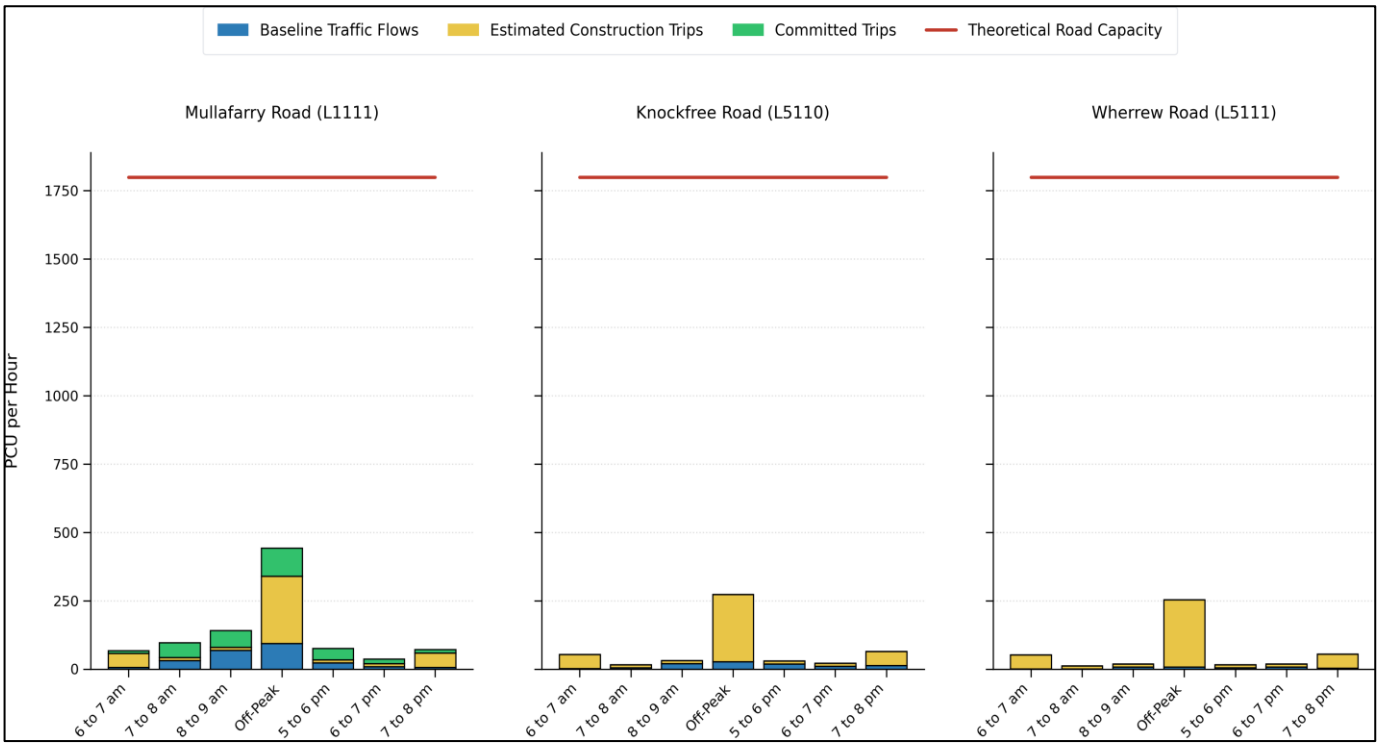


Figure 15-16 — 2028 Cumulative Traffic Effects along Mullafarry Road (L1111), Knockfree Road(L5110), Wherrew Road(L5111)

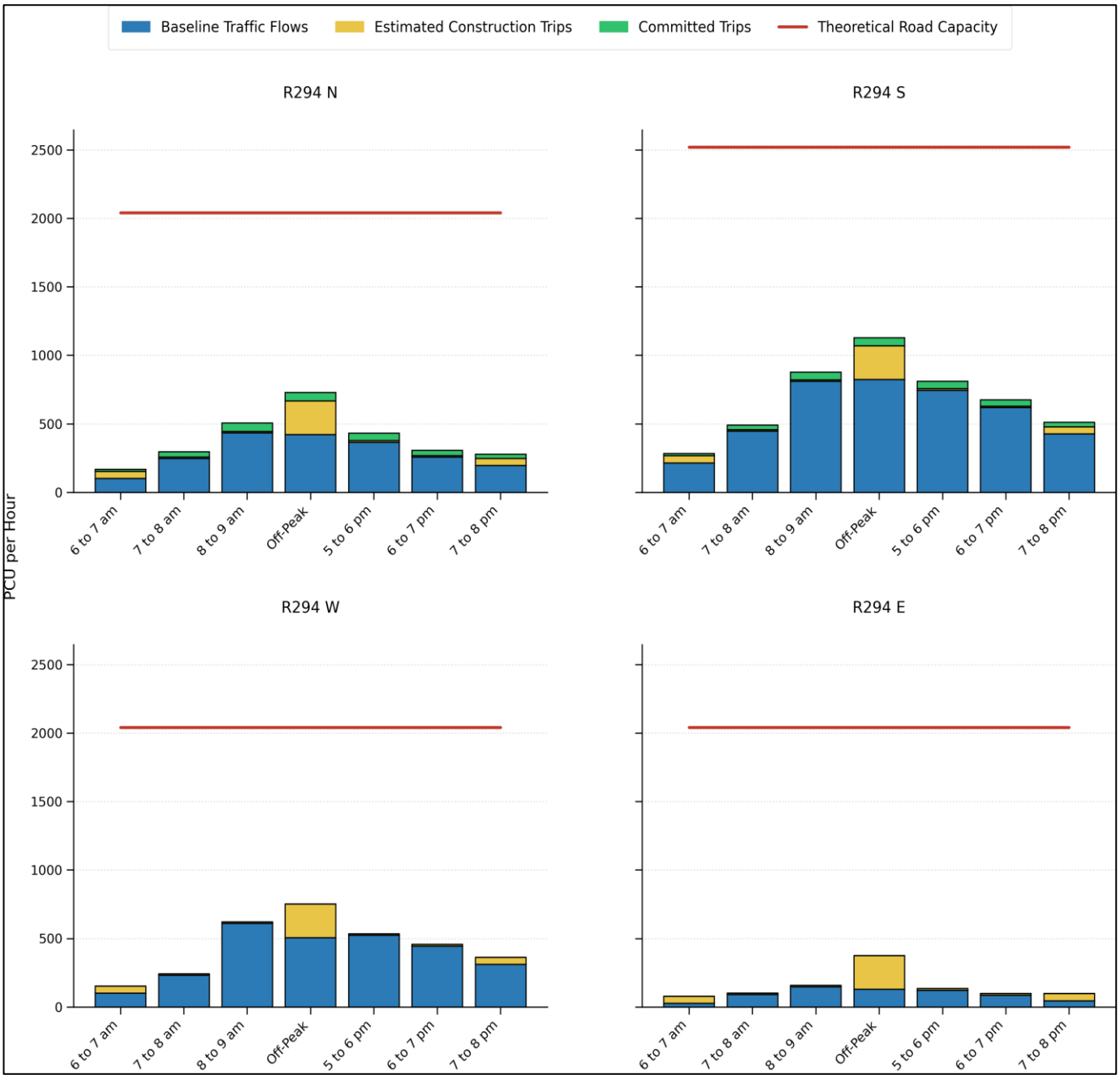


Figure 15-17 — 2028 Cumulative Traffic Effects along R314 N, R314 S, R294 W, R294 E

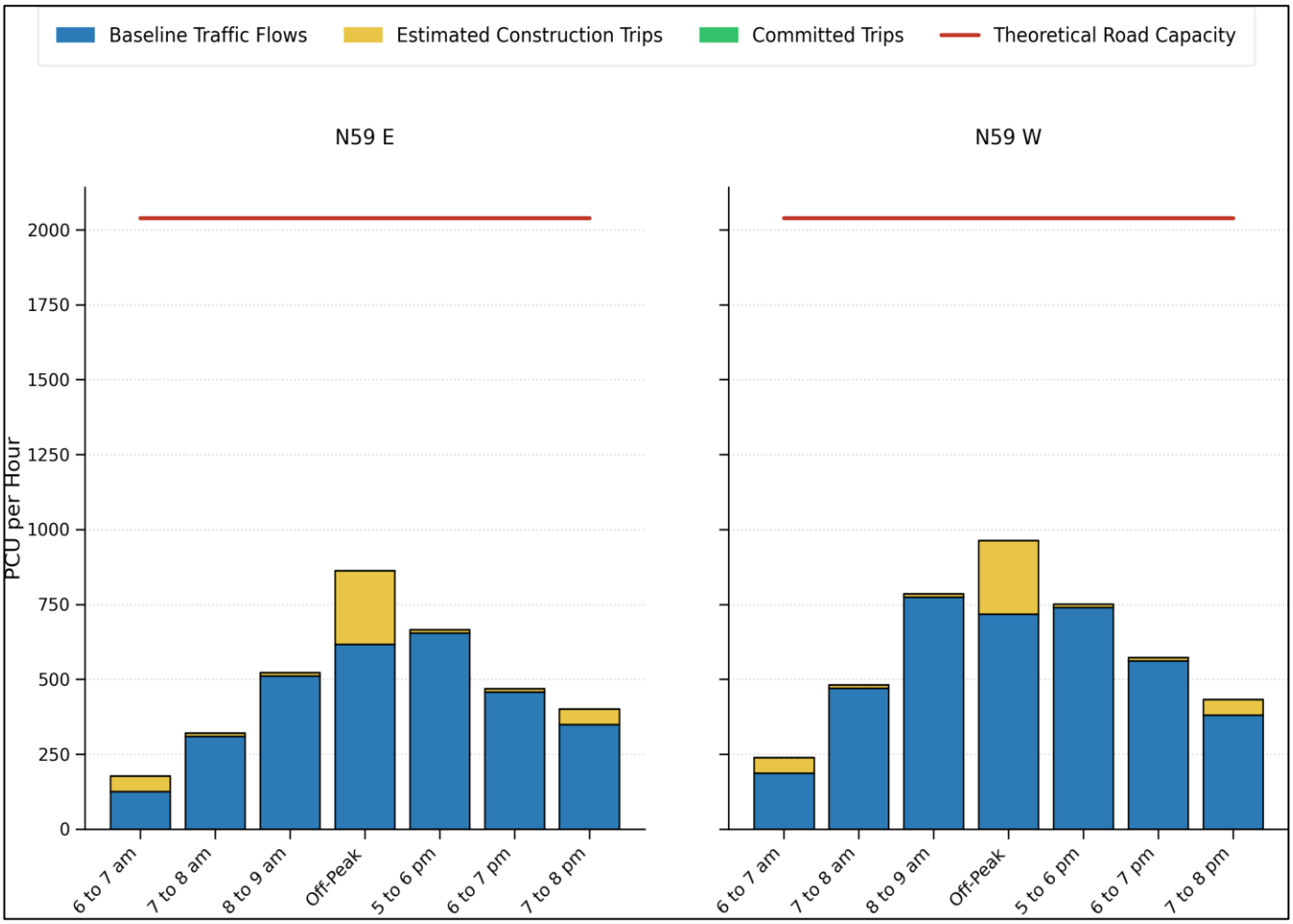


Figure 15-18 — 2028 Cumulative Traffic Effects along N59 E, N59 W

As shown in the graphs above, the cumulative construction phase traffic flows remain well below the theoretical capacities of the surrounding road network, indicating that construction-related traffic associated with the Committed and Proposed Development would have a minor effect on network performance.

However, temporary traffic management measures during construction, such as lane closures, road diversions, or short-term road closures, may temporarily reduce available road capacity and affect network performance. The appointed contractor will be responsible for ensuring appropriate coordination between the two developments should construction activities coincide, and for managing any disruption to the road network and nearby road users in an efficient and timely manner.

Taking these potential effects into account, the overall construction traffic impact is considered to be **Short-Term Not Significant Negative**.

Similarly, given the scale and function of both the committed and Proposed Development, the combined daily operational-phase traffic from these developments is expected to remain well below the theoretical capacities of the surrounding road network. This demonstrates that the cumulative operational-related trips associated with these developments will result in a **"Long-term Imperceptible and Not Significant Negative"** effect on overall network performance. On this basis, no further or separate analysis of this scenario is considered necessary.

15.10 Residual Effects

15.10.1 Construction Phase

The potential effect during the construction phase, incorporating the combined effects of all identified cumulative developments, implementation of the CWTMP and active management of traffic generated by construction worker and deliveries is anticipated to be **"Short-term Not Significant Negative".**

15.10.2 Operational Phase

The traffic-related residual effects of the Proposed Development are anticipated to be **"Long-Term Imperceptible Negative".**

15.11 Worst Case Scenario

The assessment presented in this report represents a **worst-case scenario**, and several conservative assumptions have been applied, including the following:

- **Adjusted Cumulative Development Operational Traffic:** The traffic survey was undertaken in January 2026. As a number of committed developments are expected to be operational before construction of the Proposed Development commences in Q3 2027, their expected traffic generation has been included in the future-year assessment. To maintain a robust approach, the traffic from these committed developments has been estimated using the highest traffic volumes reported within their respective planning application documents. It is expected, however, that actual traffic flows will be lower than these conservative estimates.
- **Traffic Assignment:** All traffic generated by the Proposed Development has been assigned to each of the assessed roads (N59, R314, R294, Mullafarry Road/L1111, Knockfree Road/L5110, and Wherrew Road /L5111). This assumption is intentionally conservative, as actual travel patterns will be more dispersed and are unlikely to place equal demand across all routes.
- **Construction Staff Numbers:** An assumed total of 150 construction staff has been used for assessment purposes. In practice, this number may be lower due to the presence of existing operational staff, and the distribution of construction personnel across the three sites is likely to reduce peak-period concentrations.
- **Visitor Trip Numbers:** A total of four daily trips has been assumed to represent deliveries and visitor movements. In reality, such trips are expected to occur infrequently rather than on a consistent daily basis.

Based on the above assumptions, the assessment has been carried out to present a **robust and conservative worst-case scenario**.

15.12 Monitoring Requirements

15.12.1 Construction Phase

A detailed CWTMP will be agreed upon with the Roads Authority / Planning Authority, as appropriate, prior to commencement of construction. Any necessary modifications within the CWTMP will be communicated in accordance with the established guidance and legislation.

The primary objective of the CTMP is to meticulously address the effects of all construction-related activities during the development phase including both off-site effects on the public and on-site considerations for construction

workers. By proactively managing and scheduling these activities, the CWTMP ensures the safety, health, and well-being of both the public and construction personnel.

15.12.2 Operational Phase

No monitoring requirements are necessary for the Proposed Development as part of the operational phase.

15.13 Do Nothing Scenario

The Lough Talt Regional Water Supply Scheme (RWSS) serves a large rural supply area in south Co. Sligo with a population of approximately 13,663 people. The raw water supply for this region is currently abstracted from Lough Talt following which it is treated at Lough Talt Water Treatment Plant (WTP).

The Lough Talt treatment plant has historically failed to meet the trihalomethanes standard set out in the European Union (Drinking Water) Regulations 2014 and the Lough Talt RWSS was placed on the EPA's Remedial Action List due to the inadequate treatment for Cryptosporidium. The scheme was subject to a boil water notice due to this cryptosporidium risk, from February 2018 until November 2020.

In addition, hydrogeological investigations carried out on Lough Talt (Lough Talt Hydrogeological Effect Assessment Report; RPS, 2016) concluded that during periods of extended dry weather or drought, the abstraction from Lough Talt contributes to water levels dropping in the lake to a point which has a detrimental impact on the waterbody as well as on the artesian conditions within the surrounding wetland habitats.

Due to the conditions outlined above, continued abstraction from Lough Talt is not a feasible long term supply option that can provide the required volumes of clean and safe drinking water for the Lough Talt RWSS.

As the presence of cryptosporidium and exceedances in trihalomethanes in the treated water supply are both important public health risks and given the necessity for an adequately treated water supply for the local population in this region of Sligo, planning permission was granted by Sligo County Council in 2019 for temporary treatment plant upgrades at Lough Talt WTP through the 'Imperative Reasons of Overriding Public Interest (IROPI)' statutory provisions on the basis of 'ongoing dangers to public health'. The plant upgrades were commissioned in 2020 and will continue to operate until a permanent replacement supply can be delivered, and planning approval will cease in 2030.

As a result, existing systems would remain under pressure and may not meet future demand in the Ballina RWSS area. The Ballina Regional Water Supply Scheme Extension to Lough Talt, the Proposed Development, has been developed for the provision of the permanent replacement supply for the Lough Talt RWSS.

In the event that the Proposed Development does not proceed, there would be no traffic-related effects arising from construction activities. As this scenario maintains the current status quo, it is **not expected** to have **any immediate or direct effect** on traffic conditions.

15.14 Interactions

Roads, Traffic & Transportation have the potential to interact with several environmental attributes during construction and operational phases. Traffic during these phases may influence Population and Human Health through changes in journey times, access and road safety, as assessed in Chapter 6 (Population and Human Health). Traffic movements may also contribute to short-term air quality and noise effects from vehicle emissions and movements with noise-related effects considered in Chapter 13 (Noise and Vibration). Interactions with climate arise from vehicle-related greenhouse gas emissions, and limited disturbance to soils, hydrology and biodiversity can occur through the use of access routes and transport corridors.

Traffic movements may also temporarily influence landscape character and views, interact with material assets through the transport of construction materials and waste, and pose minor risks to road users and to cultural heritage where sensitive features are located near haul routes. Safety-related considerations, including potential traffic-related incidents and interactions with vulnerable road users, are further assessed in Chapter 19 (Risk of Major Accidents and Disasters).

However, with the implementation of standard best-practice mitigation— including traffic management measures, dust and noise controls, pollution prevention, ecological protection measures and careful route planning—the effects of these interactions are expected to be **"Short-term Not Significant Negative"**

15.15 Difficulties encountered during preparation of this chapter

No difficulties were encountered during preparation of this chapter.

15.16 References

The following is a list of sources of information consulted for use in this chapter:

- **Traffic and Transport Policy and Guidance**
  - TII Traffic and Transport Assessment Guidelines (PE-PDV-02045), May 2014;
  - TII Project Appraisal Guidelines for National Roads (2021), including Unit 5.3: Travel Demand Projections October 2021;
  - Design Manual for Roads and Bridges (DMRB) – Traffic Capacity of Urban Roads, 2020;
  - Design Manual for Urban Roads and Streets (DMURS) (as amended);
  - Traffic Signs Manual (as amended),
  - Cycle Design Manual, 2023; and,
- **National, Regional, and Local Planning Policy**
  - National Planning Framework (NPF),2025;
  - Project Ireland 2040: The National Development Plan 2021-2030;
  - Mayo County Development Plan 2022-2028;
  - Sligo County Development Plan 2024-2030;
  - Ballina Local Area Plan 2024-2030;
  - Ballina Local Transport Plan 2025;
- **Legislative and EIA Guidance Framework**
  - Planning and Development Act, 2000 (as amended);
  - Planning and Development Regulations 2001 (as amended);
  - European Union (EU) Environmental Impact Assessment (EIA) Directive 2011/92/EU as amended by Directive 2014/52/EU (hereafter referred to as the “EIA Directive”);
  - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (hereafter referred to as the “EIA Regulations”);
  - Guidelines on the information to be contained in Environmental Impact Assessment Reports, Environmental Protection Agency (EPA), 2022;
  - The EIA Regulations 2018 (Government of Ireland 2018);
- **Baseline Data and Reference Sources**
  - Traffic Survey Data (TRACSIS, 2026); and,
  - Central Statistics Office SAPMAP (Small Areas Population Map), 2022

AtkinsRéalis

AtkinsRéalis Ireland Limited
150-155 Airside Business Park
Swords
Co. Dublin
K67 K5W4

Tel: +353 1 810 8000

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