AtkinsRéalis

Environmental Impact Assessment Report (EIAR) Volume 2 – Chapter 20 – Cumulative Impacts and Interactions

Uisce Éireann

October 2026
0089328DG0055

BALLINA AND LOUGH TALT WATER SUPPLY UPGRADE

Notice

This document and its contents have been prepared and are intended solely as information for Uisce Éireann and use in relation to Ballina and Lough Talt Water Supply Upgrade.

AtkinsRéalis Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 82 pages including the cover.

Document history

Document title: Environmental Impact Assessment Report (EIAR) Volume 2 – Chapter 20 – Cumulative Impacts and Interactions

Document reference: 0089328DG0055

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Draft for Comment	FE	LH	AM	DE	05/12/2025
2.0	Draft for comment	AR	LH	DE	-	07/10/2026
3.0	Draft for comment	AR	LH	DE	-	12/10/2026
4.0	Final	AR	LH	DE	DL	28/10/2026

Client signoff

Client	Uisce Éireann
Project	BALLINA AND LOUGH TALT WATER SUPPLY UPGRADE
Job number	100089328

Client signature/date

Contents

Abbreviations 20-i

20. Cumulative Impacts and Interactions 20-1

20.1 Introduction 20-1

20.2 Cumulative assessment methodology 20-1
20.2.1 Overview 20-2
20.2.2 Stage 1: Establishing the long list of other existing and, or approved developments 20-2
20.2.3 Stage 2: Establishing a shortlist of other existing and/or approved development 20-3
20.2.4 Stage 3: Information gathering 20-3
20.2.5 Stage 4: Assessment 20-3

20.3 Assessment of Cumulative Effects 20-3
20.3.1 Stage 1 Long List 20-3
20.3.2 Stage 2 Short List 20-25
20.3.3 Stages 3 and 4 Information Gathering and Assessment 20-28

20.4 Interactive Effects 20-57
20.4.1 Summary of Interactions 20-57
20.4.2 Description of Interactions 20-60

20.5 References 20-75

Tables

Table 20-1 — Developments considered for cumulative impacts 20-5

Table 20-2 — Screening Criteria for Stage 2 of the Cumulative Impact Assessment 20-25

Table 20-3 — Topic-Specific zone of influence applied to the Stage 1 Long List of the Cumulative Impact Assessment 20-25

Table 20-4 — Estimated work force numbers for cumulative projects 20-29

Table 20-5 — Screening & Assessment of Potential Cumulative Developments 20-35

Table 20-6 — Screening of residual impacts for potential cumulative effects 20-37

Table 20-7 — Chapter 9 – Land, Soils and Geology – Assessment of external developments for potential cumulative effects. 20-38

Table 20-8 — Summary of Developments with Potential for Cumulative Construction Dust Effects 20-44

Table 20-9 — Percentage cumulative effect analysis (In PCU) (2028 construction year background traffic) 20-50

Table 20-10 – Key interactions and interdependencies for the construction (C) and operational (O) phases 20-58

Table 20-11 — Interactions between Environmental Aspects of the Proposed Development for Population and Human Health 20-60

Table 20-12 — Interactions between Environmental Aspects of the Proposed Development for Biodiversity.....20-62

Table 20-13 — Interactions between Environmental Aspects of the Proposed Development for Land, Soils and Geology.....20-64

Table 20-14 — Interactions between Environmental Aspects of the Proposed Development for Water (Hydrology and Hydrogeology) 20-65

Table 20-15 — Interactions between Environmental Aspects of the Proposed Development for Air Quality.....20-66

Table 20-16 — Interactions between Environmental Aspects of the Proposed Development for Climate 20-67

Table 20-17 — Interactions between Environmental Aspects of the Proposed Development for Noise and Vibration 20-68

Table 20-18 — Interactions between Environmental Aspects of the Proposed Development for Resource and Waste Management.....20-69

Table 20-19 — Interactions between Environmental Aspects of the Proposed Development for Roads, Traffic and Transportation.....20-70

Table 20-20 — Interactions between Environmental Aspects of the Proposed Development for Material Assets20-70

Table 20-21 — Interactions between Environmental Aspects of the Proposed Development for Cultural Heritage .20-71

Table 20-22 — Interactions between Environmental Aspects of the Proposed Development for Landscape and Visual Assessment 20-72

Table 20-23 — Interactions between Environmental Aspects of the Proposed Development for Major Accidents and Disasters.....20-72

Figures

Figure 20-1 — 2028 Cumulative Traffic Effects along Mullafarry Road (L1111), Knockfree Road (L5110), Wherrew Road (L5111).....20-52

Figure 20-2 — 2028 Cumulative Traffic Effects along R314 N, R314 S, R294 W, R294 E 20-53

Figure 20-3 — 2028 Cumulative Traffic Effects along N59 E, N59 W.....20-54

Abbreviations

Abbreviation	Meaning
AA	Appropriate Assessment
ACP	An Coimisiún Pleanála
AD	Anaerobic Digestion
AEP	Annual Exceedance Probability
BESS	Battery Energy Storage System
BPT	Break Pressure Tank
CCTV	Closed-Circuit Television
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DAC	Designated Activity Company
DoHPLG	Department of Housing, Planning and Local Government
EC	European Commission
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EV	Electric Vehicle
FRS	Flood Relief Schemes
GAA	Gaelic Athletic Association
GHG	Greenhouse Gas
GSU	Generator Step-up
HGV	Heavy Goods Vehicles
HVAC	Heating, Ventilation and Air Conditioning
IAQM	Institute of Air Quality Management
IDA	Industrial Development Authority
IE	Industrial Emissions
IMP	Intermediate Poleset
MCC	Motor Control Centre
NIAH	National Inventory of Architectural Heritage
NIS	Natura Impact Statement
OPW	Office of Public Works
PECR	Planning and Environmental Considerations Report
PINS	Planning Inspectorate
PLC	Public Limited Company
PV	Photovoltaic
RLB	Red Line Boundary
RWI&PS	Raw Water Intake and Pumping Station
RWS&PS	Raw Water Storage and Pumping Station
RWMP	Resource and Waste Management Plan
SAC	Special Area of Conservation

Abbreviation	Meaning
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
TII	Transport Infrastructure Ireland
UK	United Kingdom
WFD	Water Framework Directive
WSV	Water Supply Zone
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plan
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

20. Cumulative Impacts and Interactions

20.1 Introduction

This chapter assesses the potential for the Proposed Development to result in cumulative environmental effects in combination with other existing, permitted, approved and reasonably foreseeable developments within the vicinity of the Site. It also considers the potential for interactions between environmental effects arising from the Proposed Development and the consequent effects on environmental receptors.

The Environmental Protection Agency (EPA) defines cumulative effects as the addition of many minor or individually insignificant effects, including those arising from other projects, which together may result in significant environmental effects (EPA, 2022). The assessment of cumulative effects is therefore an important component of the Environmental Impact Assessment (EIA) process, ensuring that the overall environmental implications of the Proposed Development are fully considered.

The individual technical chapters of this Environmental Impact Assessment Report (EIAR) (Chapters 6 to 19) have assessed the potential for cumulative effects associated with the Proposed Development in combination with relevant committed developments and projects within the study area. The findings of these assessments have been drawn together and are presented in this chapter to provide an overall evaluation of cumulative effects.

This chapter also considers the potential for interactions between environmental factors. The environmental topics assessed within an EIAR do not occur in isolation and, consequently, effects on one environmental factor may influence or alter another. For example, impacts on surface water quality may affect aquatic ecology, while changes to traffic patterns may influence both air quality and noise levels. The assessment is informed by the findings of the individual environmental topic chapters and identifies potential interactions between environmental factors where there is the potential for one environmental effect to influence another.

20.2 Cumulative assessment methodology

This EIAR has considered and assessed cumulative effects defined as '*the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects*' (EPA, 2022) arising from the construction and operation of the proposed development. A cumulative assessment has been undertaken based on best scientific knowledge in accordance with Part 5(e) of Annex IV of the EIA Directive: "(*e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*;"

Likely significant cumulative effects of the Proposed Development in-combination with other existing and/or approved projects for each of the environmental factors were initially identified, considered, and assessed in respective chapters of the EIAR. The assessment specifically considers whether any of the proposed and/or recently approved schemes in the local area have a potential to exacerbate (i.e. alter the significance of) effects associated with the Proposed Development based on best scientific knowledge.

A list of all committed developments, which have been assessed by each individual specialist as part of this report is included in full in Table 20-1. The results of the cumulative impact assessment for each environmental topic are presented in Section 20.3.3.

In summary, there are no significant adverse cumulative environmental impacts anticipated as a result of the Proposed Development. In addition, significant positive cumulative effects are anticipated with respect to population and human health.

20.2.1 Overview

The assessment of cumulative effects has been undertaken on a qualitative basis by each of the environmental topic leads based on best scientific knowledge. The approach has aligned with the overarching EIA guidance as outlined in Chapter 1 – Introduction and Methodology (including the EPA guidance (2022) and European Commission (EC) (2017) guidance) as well as per the methodology adopted for each environmental factor as described in Chapters 6 to 19. A summary of these effects is provided herein based on best scientific knowledge.

The assessment has been carried out with reference to the following guidance:

- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government (DoHPLG), (2018);
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EIAR). EPA, (2022);
- Guidance on the preparation of the Environmental Impact Assessment Report. EC, (2017);
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. EC, (1999); and
- Planning Inspectorates (PINS) (2024) UK guidance *'Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment'*.

The Cumulative Impact Assessment will follow the stages set out in PINS (2024) Advice.

20.2.2 Stage 1: Establishing the long list of other existing and, or approved developments

A long list of projects was compiled in accordance with the Zone of Influence (ZoI) defined for each topic, which is based on a combination of published guidance (where available), industry practice for similar developments and expert judgement. Each entry was assigned a Tier according to the anticipated availability of information to enable assessment confidence. A decreasing level of detail is likely to be available from Tier 1 to Tier 3. Assignment of tiers is based on the PINS (2024) guidance:

- **Tier 1:** Other existing and, or approved development:
  - Under construction;
  - Permitted applications but not yet implemented;
  - Submitted applications or other regimes but not yet determined; and
  - All refusals subject to appeal procedures not yet determined
- **Tier 2:** Other existing and, or approved development:
  - Projects in the public domain where an EIA scoping report has been issued.
- **Tier 3:** Other existing and, or approved development:
  - Projects in the public domain where a scoping report has not been submitted;
  - Projects identified in the relevant development plan and emerging development plans, with appropriate weight given as they near adoption, recognising that there will be limited information available on the relevant proposals; and
  - Identified in other plans and programmes, as appropriate, which set the framework for future development consents or approvals, where such development is reasonably likely to come forward.

20.2.3 Stage 2: Establishing a shortlist of other existing and/or approved development

The long list is then screened subject to threshold criteria, as follows:

- Temporal overlap:
  - Developments which have the potential to enter or be in construction or decommissioning at the same time as the Proposed Development (programme overlap); and
  - Operational developments with ongoing effects which are not part of the baseline.
- Scale and nature of the development:
  - Developments with the potential to interact with the Proposed Development, e.g. those with similar potential impacts.
- Other factors:
  - Nature or capacity of the receiving environment has the potential for significant cumulative effects.

Screening with the threshold criteria may be supplemented by professional judgement with reference to available data and peer-reviewed literature, where appropriate.

20.2.4 Stage 3: Information gathering

Relevant information collected for each project shortlisted at Stage 2 includes:

- Proposed design and location information;
- Proposed programme of construction, operation and decommissioning; and
- Environmental assessments that set out baseline data and effects arising from the other existing and, or approved development.

Data has been collected from reliable sources, as follows:

- Planning portals for ACP, Mayo County Council and Sligo County Council;
- Developer and project proponent websites;
- EPA data and licensing portals; and
- International sources for non-Irish projects, e.g. those located in Northern Ireland.

20.2.5 Stage 4: Assessment

The assessment of effects has been included in each technical chapter.

20.3 Assessment of Cumulative Effects

20.3.1 Stage 1 Long List

A review of all committed / proposed developments in the immediate environs of the Proposed Development, which have been approved by Mayo County Council, Sligo County Council or An Coimisiún Pleanála (ACP) within the last five years, have been reviewed as part of the preparation of this EIAR. Committed / proposed developments at timeframes greater than five years would generally be constructed, partially constructed or can reasonably be expected to be complete before commencement of works associated with this Proposed Development. Developments

granted permission more than five years ago were reviewed on a case-by-case basis to determine whether they remained relevant to the cumulative assessment. The majority of these developments have already been constructed1 or are of small scale in nature (i.e. extension works, or property retention works) or are considered to be a reasonable distance from the Proposed Development and so do not warrant further consideration as part of this assessment.

Relevant proposed and existing developments in close proximity to the Proposed Development site which are most likely to result in cumulative effects arising from the construction and operation of the Proposed Development are outlined in Table 20-1. The search of the Mayo County Council, Sligo County Council, ACP planning records, the Transport Infrastructure Ireland (TII) and the Uisce Éireann Planning Portals identified 40 committed developments within the vicinity of the Proposed Development; all of which have been assessed as part of this EIAR. Of these 40 developments, each individual environmental topic further assessed only the developments which had the potential to act cumulatively with the Proposed Development.

[1] Bunnyconnellan Wind Farm, granted planning permission in 2013 under Planning Ref. 10/514 and Appeal Ref. PL16.241506, was commissioned in 2020 and is part of the baseline.

Table 20-1 — Developments considered for cumulative impacts

Planning Ref	Address	Description	Status	Distance from Proposed Development
DPE63-14-2018	Crossmolina, Mullenmore, Co. Mayo	The proposed flood scheme for the River Deel is a diversion channel upstream of the town with a capacity of 110 cumec, which will redirect flood waters away from the town, directly to the flood plains of Lough Conn. The scheme will be designed to cater for the 1% Annual Exceedance Probability (AEP) flood event (also known as the 100 year flood event), but will also cater for a larger flood event as the diversion channel has additional capacity. This will safeguard against flooding associated with potential future climate change that could increase the size of the 100 year flood event.	Construction Ongoing (Construction started March 2025) Office of Public Works (OPW) has indicated an approximately four – year construction programme, Suggesting completion approx. 2029	2.9 km west of Wherrew, >10 km from Lisglennon Raw Water Storage and Pumping Station (RWS&PS) and Pipeline A/B
ABP-322329-25	Ballina, Co. Mayo	Flood Relief Works that will comprise the alignment of existing walls and will tie into existing walls, bridges and/or high ground along the banks of the Ridgepool Road, Cathederal Road, Clare Street, Emmet Street and Bachelors Walk. Along the Quignamager Stream, the proposed works include the replacement of the existing 0.9 m diameter diversion culvert with a 1.5 m discharge pipe, with a larger 1 .5 m diameter piped culvert for part of the upstream section and a 2 m wide by 1 m deep box culvert along the downstream section. Along the Bunree (Behy Road)	Granted by ACP in October 2025.	0 m from Pipeline C on Creggs Road

Planning Ref	Address	Description	Status	Distance from Proposed Development
		Stream, the proposed works include the installation of a new culvert to replace the existing culverted and open channel sections. A new 1 .5 m culvert will be installed upstream and will increase to a 1.8 m diameter culvert downstream. The culvert will further increase to a 2 m by 1.25 m² culvert at the N59 crossing. Local road raising will be undertaken at this location. A culverted section downstream of the N59 at Moyvale Park, will be removed and the open channel reinstated. Along the Brusna River, the proposed works include hard defences consisting of flood walls and embankments. Flood walls and embankments are to be provided on both sides of the river upstream of the access bridge to Rathkip/Shanaghy. Along the Tullyegan Stream, proposed flood walls on the north bank are to be constructed to the same height as the existing walls which range from 1.4 m to 2.96 m. The proposed embankment on the north bank has a maximum height of 1 .5 m. Proposed flood walls on the southern bank of the stream have a maximum height of 1 m. New gated construction and emergency access points will be provided from the N26 and L1122 roads. Temporary construction compounds shall be located at: Ballina Dairies site		

Planning Ref	Address	Description	Status	Distance from Proposed Development
		and adjacent boat club site, Mayo County Council lands on Barrett Street, sites located on Ridgepool Road, Behy Road and Bonniconlon Road, and, Provision of landscaping works as required throughout the development and all associated fencing, site development, advance works, accommodation works and all associated works. All located in the vicinity of the River Moy and the following tributaries: Quignamanger Stream, Bunree (Behy Road) Stream, Brusna River and the Tullyegan Stream in the townlands of Ballina, Quignamanger, Quignalecka, Quignashee, Knocknalyre or Downhill, Ballyholan, Abbeyhalfquarter, Rathkip, Ardnaree or Shanaghy, Carrowcushlaun West, Mullauns, Commons, Behybaun and Rahans, County Mayo.		
319173 / 2360182	Mullafarry Townland, Killala, Co. Mayo	Construction of Inert Waste Recovery Facility.	Granted 2024	480 m west of Lisglennon Water Treatment Plant (WTP)
322575	Mullafarry and Tawnaghmore Upper, Killala, Co. Mayo.	Construction of a data centre and all associated site works. An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS) have been submitted with the planning application.	Live Case – Latest Appeal Correspondence (April 2026) Awaiting further response	200 m from Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
2460708	Mullafarry and Tawnaghmore Upper, Killala, Co. Mayo	The construction of a single data centre building located to the north of the site, with an overall gross floor area of approx. 29,076 m² across two levels and an overall maximum height of approx. 22.764 m at parapet level. The data centre building includes data halls and associated electrical and mechanical plant rooms (approx. 23,908 m²), an administrative and staff services block (approx. 5,052 m²) and circulation and stairs (approx. 116 m²). Two external terraces are proposed to the east of the building (approx. 309 m²) and an external generator yard to the south of the building (approx. 5,205 m²) accommodating 25 backup / dispatchable generators and associated flues (to a height of approx. 21.164 m) within an enclosed compound. The construction of a sprinkler tank and pump house to the northeast of the site, the sprinkler tank is an overall height of approx. 7.2 m and the pump house is a single storey building with an overall height of approx. 4.15 m and area Gross Floor Area (GFA) of approx. 40.23 m². The construction of an entrance hut at the main access to the south of the site, the hut is an overall height of approx. 3.225 m and area GFA of approx. 11.6 m². Construction of two site access points	Granted, April 2025	200 m from Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		from the south and internal road network and circulation areas, footpaths, cyclist infrastructure, the provision of 56 car parking spaces (including 12 Electric Vehicle (EV) charging spaces and seven disabled spaces, three of them EV), 20 cycle parking spaces, hard and soft landscaping and planting, site lighting, Photovoltaic (PV) panels and plant at roof level, foul water connection connecting to existing Wastewater Treatment Plant (WWTP) in Killala Business Park, boundary treatments, green walls and all associated and ancillary works including underground foul and storm water drainage network and utility cables and all ancillary works and services. An EPA-Industrial Emissions (IE) Directive licence will be applied for to facilitate the operation of the proposed development. An EIAR and NIS will be submitted to the Planning Authority with the planning application and the EIAR and NIS will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy at the offices of the Planning Authority.		
2193 / 313975 / 2193/313975-22	Lisglennon, Ballybroony, Coonealmore, Cooonealcauraun, Rathrooen, Culleens,	An Anaerobic Digestion (AD) biogas facility and associated gas pipeline. comprising of: renewable energy project	Granted 2024	Crosses the existing 300 mm raw water main between

Planning Ref	Address	Description	Status	Distance from Proposed Development
	Laghtadawannagh & Farrannoo, Ballina, Co Mayo	consisting of an AD biogas facility using locally sourced silage and slurry as feedstock to generate biogas for export to the national grid with residual digestate being available for use locally as bio-fertiliser and associated site works. NIS included.		Lisglennon RWS&PS and Lisglennon WTP (the existing Pipeline A corridor) RWS&PS and approx. 20 m southwest from Lisglennon WTP and runs along R314 intersecting with the proposed treated water main trunk Proposed Pipeline B (Lisglennon WTP to River Moy Crossing).
317560	Carrowleagh, Bunnyconnellan, Co. Mayo and Curraun, Castleconnor, Co. Sligo.	Proposed windfarm development including 13 wind turbines in Bunnyconnellan, Co. Mayo and hydrogen plant in Castleconnor, Co. Sligo.	Granted 2024	Approx. 330 m from Pipeline D, 540 m from Bonniconlon Reservoir.
211063	Carrowcrin, Crossmolina, Co. Mayo	Construction of one standalone building incorporating gym, meeting room and storage area. including all other ancillary site works and services.	Granted, 2021	This is 3 km from Wherrew, 5 km from Lisglennon/ Pipeline B
19260	Mullafarry and Tawnaghmore Lower, Killala, Co. Mayo	25 year permission for a single electricity generating wind turbine with an overall maximum height of up to 125 m. The development will also consist of a turbine hardstand, access track of approx. 394 m, internal cable trench of approx. 1,775 m	Granted, 2019	525 m northeast from Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		and ancillary site works. The planning application is accompanied by a NIS.		
21342	Mullafarry, Killala, Co Mayo	Filling of lands with inert waste for the purpose of quarry restoration, and all associated ancillary works.	Granted, 2021	Approx. 700 m northwest of Lisglennon WTP
211284	Mullarry & Cloonawillin, Killala	1.0 hectare extension to an existing authorised quarry and will comprise of the following: extraction of material by blasting means down to a level of -2.0 mod; transportation of extracted material to the existing quarry for processing; landscaping and restoration of the site upon completion of works and all associated ancillary facilities. the applicant is seeking a 10 year permission	Granted, 2022	Approx. 795 m northwest of Lisglennon WTP
21708	Mullafarry td, Killala	Continued use and operation of the existing limestone quarry (approx. 3.97 ha) including wheelwash, settlement lagoons, portable office, workshop and all associated ancillary activities, permitted under plan reg. ref. no. 02/1931 and 08/1563; installtion of a packaged wastewater treatment system and polishing filter	Granted, 2022	Approx. 400 m northwest of Lisglennon WTP
18358	Tawnaghmore upper, Kiillala, Co. Mayo	A battery storage facility within a total site area of up to 1.18 ha, to include 55 self contained battery container units with associated Heating, Ventilation and Air Conditioning (HVAC) cooling units, 15 converter and 15 set up transformer	Granted, 2019	Approx. 570 m northwest of Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		container units, associated compound cabling and ducting, a grid transformer, a single storey substation/control building with welfare facilities, a cable route grid connection to the existing Electricity Supply Board (ESB) substation building, maintenance lighting, security fencing, a Closed-Circuit Television (CCTV) monitoring system, landscaping works and all associated ancillary infrastructure on lands within the Tawnaghmore generation station. A ten year planning permission is being sought to construct the development		
2560108	SSE Thermal Tawnaghmore Generation Station, Tawnaghmore Upper, Kilala Co. Mayo	The development will consist of the following elements: a) Battery Energy Storage System facility, consisting of battery containers with integrated HVAC units, transformers, inverters, underground cabling, associated control rooms, internal access routes, lighting, CCTV, lightning masts, fencing; b) Associated Electrical Compound consisting of: Low voltage operations compound including one single storey control and operational building, electrical plant, cabling, lighting, CCTV, lightning masts, diesel generator and diesel tank, operations and maintenance containers and stores; c) High voltage electrical yard comprising outdoor electrical plant and	Granted, April 2025; revised planning application submitted June 2026 for an enlarged BESS scheme (80 MW / 320 MWh, up to 64 battery units)	Approx. 400 m northwest of Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		associated compound; d) Underground high voltage electrical cable to facilitate a connection to the existing adjacent 110kV Tawnaghmore substation; e) Associated landscaping, drainage, decommissioning of existing septic tank and all ancillary works necessary to facilitate the development. A 10 year permission is sought in respect of the development. Certain details of the proposed development are unconfirmed in the planning application, and an opinion on unconfirmed details accompanies the application. The Tawnaghmore Power Station has an EPA issued IE Licence (Reg, No. P0566-02).		
2360134	Tawnaghmore Upper and Tawnaghmore Lower, Killala, Co. Mayo	A nominal 50 megawatt electricity generating station, combusting woody biomass chips (domestic and imported) as well as a small proportion of fuel oil for boiler start-up. The total site area is 19.0 ha of which approximately 7 ha will be developed. The elements of the station are: two weighbridges, scale house, roundwood storage area, log deck, enclosed wood chipper, wood chip truck dump, wood chip receiving hopper, wood chip screen, wood chip hog, two wood chip bins, wood chip storage building, wood chip reclaimer, wood chip conveyors with	Granted, 2024	540 m east of Lisglennon WTP, 570 m north of Lisglennon RWS&PS

Planning Ref	Address	Description	Status	Distance from Proposed Development
		associated magnetic separators, fuel oil storage tank and associated pumps, fuel oil generator, boiler house, baghouse, ash silo, induced draft fan room, boiler stack, combustion air and flue gas fans, three boiler additive material receiving hoppers, boiler additive conveyors with associated magnetic separators, three boiler additive silos, boiler water treatment tanks and associated pumps, ammonia tank and associated pumps, existing turbine hall, existing control room, cooling tower and associated pumps, water treatment building, waste water storage tank, fire water storage tank and associated pumps, compressed air system, three high voltage transfer lines, three low voltage transfer lines, Generator Step-up (GSU) transformer, switchyard, existing switchyard Motor Control Centre (MCC) room, existing storage and maintenance building, garage, car park, Heavy Goods Vehicle (HGV) parking, flagpoles (three), external lighting, CCTV cameras, internal road system, signage, construction compound, landscaping, foul and storm water disposal systems, storm water attenuation, wheel washes, two gatehouses, entrance gates, security fencing, and all associated site works and services.		

Planning Ref	Address	Description	Status	Distance from Proposed Development
2360266	The townlands of Tawnaghmore Lower and Meelick, Killala, Ballina	The Proposed Development will consist of a hydrogen plant and an energy centre. The hydrogen plant, to the south of the site, will consist of a double storey electrolyser building of up to 24 m height; fin fan coolers of up to 10.5 m height; hydrogen storage area of 7 m height; hydrogen gas tube filling station of up to 9 m height, gas injection compound and gas above ground installation building of 4 m height; electrical substation up to 15 m height and ancillary equipment building of up to 3 m height; fire water tank of up to 14 m height; pump house of up to 5 m height; administration/welfare building and control block building of up to 4 m height. The energy centre, to the north of the site, will consist of nine gas engines generating up to 106 MW of power, housed in a gas engine building of up to 13.6 m height with two stacks of up to 25 m height, distillate fuel tank of up to 11.2 m height, firewater tank of up to 10 m height, associated pumps, sludge tank of 2.1 m height and pump house of 5 m height, electrical building of 4 m height, gate house of up to 4 m height, administration/welfare building of up to 4 m height. The Proposed Development includes the demolition and removal of the existing Asahi plant	Granted, 2025	Approx. 770 m northeast of Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		buildings, foundations, as well as decommissioning and removal of the existing overhead, above ground drainage system and underground services. The Proposed Development will also include resurfacing, repair and improvement of existing site entrance and new internal access roads which in turn opens onto the existing entrance road to the Ballina/Killala regional road (R314). The provision for 23 car parking spaces, footpaths, street lighting, external lighting, CCTV cameras, signage, security fencing, construction compound, and all other associated site development plant and equipment and other works including, utilities connections, potable water, stormwater, sewage, and foul wastewater drainage infrastructure, within a total overall application boundary of 6.88 ha.		
2460699	Killala Business Park, Tawnaghmore Lower Killala, Co. Mayo	We, Schutz (Ireland) Ltd., intend to apply for permission for development at this site at Killala Business Park, Tawnaghmore Lower, Killala, Co. Mayo, F26 XY18. The proposed development will consist of the following works: (a) Demolition of part of existing adjoining building to make provision for future extension as part of this application. (b) Demolition of temporary prefabricated buildings. (c)	Granted, 2025	Approx. 970 m northeast of Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		Construction of a fully serviced extension to side of existing building which will create additional production area for the existing facility, external plant mezzanine area and the construction of a two-storey office / admin block to the front of the development. (d) Alterations to elevations of existing building to include new wall cladding and windows. (e) New vehicular entrance off the existing service road to allow for HGV access to the rear of the site. (f) Site works to consist of alterations to existing service road, car parking, EV charging spaces, landscaping, lighting, the provision of a bicycle shelter, smoking shelter, covered outdoor seating area, forklift and gas compound, flag poles, signage and boundary treatments to the site. (g) Connection to existing foul, surface water, watermain and utility services networks. (h) All ancillary and associated site works. A NIS will be submitted to the Planning authority in connection with the application.		
2460295	Killala Business Park, Tawnaghmore Lower, Killala Co.Mayo	Planning permission sought for (1) Installation of two proposed bulk storage silos (13.1 m high) to the rear of existing building with all associated siteworks. (2) Alterations to site boundaries. (3) Retention of detached temporary	Granted, 2024	Approx. 970 m northeast of Lisglennon WTP

Planning Ref	Address	Description	Status	Distance from Proposed Development
		prefabrication office ancillary building. (4) Retention of existing temporary smoking shelter. (5) Retention rf relocation of previously approved storage container and retention of one additional storage container at Killala Business Park, Tawnaghmore Lower, Killala Co.Mayo, F26 XY18.		
22562	Killala Business Park, Killala, Co. Mayo	Erection of a one-storey extension to existing cable landing station, proposed ESB substation and all associated site works.	Granted, 2022	Approx. 1.11 km north of Lisglennon RWS&PS, 1.14 km northeast of WTP
2460701	Rathglass East, Killala, Co. Mayo	Planning permission for development consisting of construction of a storage shed & new slatted shed and underground slurry storage tank along with all associated site works. There will be two buildings and all effluent will be collected and stored in the proposed/existing slatted tanks. The slatted shed will be 7.067 m in height and the storage shed will be 6.910 m in height they are to be constructed in an existing farmyard our clients family have been farming in for years.	Granted, 2025	Approx. 1.46 km from Lisglennon RWS&PS, 60 m North of Pipeline B
22757	Coonealcauran, Ballina, Co. Mayo	Filling of approx. 15,000 m² of existing land by the importation of construction and demolition waste material to an average depth of 2 m, level and reseed the site on completion of the fill, together with all associated site works.	Granted, 2023	Approx. 182 m west of Pipeline B, 2.868 km from Lisglennon RWS&PS

Planning Ref	Address	Description	Status	Distance from Proposed Development
2560595	Culleens Rathroeen, Ballina, Co. Mayo	Planning permission for raising an area of land approx. 19,300 m² with inert material, to be filled no higher than 2 m to complete reclamation of field, level and reseed fields along with all associated sites works.	Granted, 2025	0 m from Pipeline B, R314, 4 km from Lisglennon RWS&PS
22652	Culleens/Rathroeen, Ballina, Co. Mayo	Relocation of existing access 380 m to the north onto R314 Ballina/Killala road including all other ancillary site work and services.	Granted, 2023	0 m from Pipeline B, R314, 5.3 km from Lisglennon RWS&PS
2560027	Killala Road Culleens, Ballina, Co. Mayo	Full planning permission for a proposed steel framed commercial unit, together with on-site parking, wastewater treatment system and connection to existing public services to include all associated site works. An NIS will be submitted to the planning authority with the application.	Granted, 2025	Approx. 30 m Pipeline B, from R314, 5.4 km from Lisglennon RWS&PS
2560391	Old French Road, Farrannoo Td., Ballina Co. Mayo	Construction of a new two-storey detached dwelling house and domestic garage, together with connection to public services and all associated site works at Old French Road, Farrannoo Td., Ballina, Co. Mayo.	Granted, 2025	0 m from Pipeline B, R314, 6.9 km from Lisglennon RWS&PS
19393	Belleek castle, Ballina	Construct a new single storey rear extension to the northern most courtyard building (Jack Feen cafe) that is part of a complex adjacent to Belleek castle a protected structure. the extension is to be used to extend the cafe's kitchen and for a museum connected to the cafe, remove	Granted, 2020	0 m from Pipeline B, R314, approx. 7.2 km from Lisglennon RWS&PS, approx. 6.4 km from Bonniconlon BPS

Planning Ref	Address	Description	Status	Distance from Proposed Development
		stone retaining wall and construct a new retaining wall on the north side of the courtyard building, replace front window of cafe with a servicing window and carry out ancillary site works.		
2253	Heffernan park, Creggs road, Ballina	Redevelopment and extension of existing carpark, to include improved gradients, Public lighting and access to clubhouse facilities. to construct new retaining wall and associated works to facilitate carpark upgrade, to increase the width of existing vehicular access gate onto public road and construct new gate piers, carry out all ancillary site works.	Granted, 2022	0 m Pipeline C, Creggs Road, 7.2 km from Lisglennon RWS&PS, 6.4 km from Bonniconlon BPS
211376	Guignashee, Ballina	Construction of a new access junction onto the N59 including the provision of road markings to facilitate a right turn ghost island junction, an internal access road of approx. 340 m length of 7.0m wide carriageway, internal junctions, verges, footpaths, site services and all associated siteworks within the 8.66 ha site. The application is accompanied by an NIS.	Granted, 2022	0 m Pipeline C, Creggs Road, 4.3 km from Lisglennon RWS&PS, 6.4 km from Bonniconlon BPS
20646	Ballyholan, Ballina	Filling of land with inert soil and subsoil, approximate area of 12,000 m² to an average depth of 1.2 m level and reseed the site on completion of the fill. Carry out all ancillary site works.	Granted, 2021	0 m Pipeline C, L5132, 3.3 km from Bonniconlon BPS
2460315	Ballyholan Td., Ballina, Co. Mayo	Planning permission for the following: (1) filling of land with inert soil and stones and	Granted, 2024	Approx. 70 m Pipeline C, L5132,

Planning Ref	Address	Description	Status	Distance from Proposed Development
		mixtures of inert concrete, bricks, tiles and ceramics, to an approx. area of 12,000 m², with an average depth of 1.5 m, (2) level and reseed the site on completion of the fill and, (3) carry out all ancillary site works at Ballyholan Td., Ballina, Co. Mayo.		3.3 km from Bonniconlon BPS
2360261	Townlands of Gorteen Ardoughan Kilemoremoy Belleek Ballina Quignalecka Quignashee Ballyholan Behy More Corimla South Carrownlabaun Bunnyconnellan West Rathreedaun Drumsheen and Bunnyconnellan East, Co. Mayo.	The existing circuit is located in the townlands of Gorteen, Ardoughan, Kilemoremoy, Belleek, Ballina, Quignalecka, Quignashee, Ballyholan, Behy More, Corimla South, Carrownlabaun, Bunnyconnellan West, Rathreedaun, Drumsheen and Bunnyconnellan East, Co. Mayo. The proposed development will consist of: (i) The replacement ('restringing') of the existing overhead line circuit conductor wires with a new higher capacity conductor including installation of a new fibre communication connection. (ii) The replacement of 20 of the 63 existing Intermediate Polesets (IMPs) with similar polesets. Any replacement polesets will be constructed at, or immediately adjacent to the existing structures that they will replace, will be along the same alignment as the existing line, with a height difference of 1 to 2 m, with the exception of IMP52 where the height difference will be 4 m. (iii) The relocation of IMP49 on the	Granted, 2023	Intersects pipeline on R294 on Pipeline C and Pipeline D, approx. 230 m from Bonniconlon BPS, approx. 1 km from Windy Gap BPS

Planning Ref	Address	Description	Status	Distance from Proposed Development
		Behy Road (townland of Ballyholan), to be replaced with two new polesets (IMP49 and IMP49A) to the east and west of the existing poleset, along the route of the existing line. (iv) The replacement of three of the 13 existing steel towers (angle masts) with similar structures. (v) The carrying out of civil works for tower foundation strengthening at three locations and monopole-foundation strengthening at one location and bar member replacement works at three locations. (vi) The replacement of hardware and fittings at all locations. (vii) The replacement of crossarms at 20 locations. (viii) All associated works within the existing Glenree and Moy substations to accommodate the uprated 110kV overhead line. (ix) Other temporary associated and ancillary development works required for the purpose of the uprate, including construction compounds, the installation of silt traps, silt fences, access tracks, ground protection mats and temporary watercourse crossings. (x) All associated site development works above and below the ground to gain access to the existing structures including vegetation clearance, remedial works on concrete shear blocks, replacement of individual tower members and bolts, replacement of		

Planning Ref	Address	Description	Status	Distance from Proposed Development
		hardware and insulators, replacement of dampers, installation of line identification and danger notices and anti-climbing guards, the provision of temporary access routes and other ancillary works necessary to facilitate the proposed development. The planning application is accompanied by an NIS.		
2460330	Bunnyconnellan West Td., Bonniconlon, Ballina	Erect an extension to the existing school building (335.27 m²). the extension will consist of; two classrooms, multi-activity room, office, store room, sanitary accommodation and ancillary corridors, together with all associated alterations to the existing school building, including all associated site works.	Granted, 2024	0 m R294 on Pipeline D and Pipeline 1.9 km east of Bonniconlon BPS, Bonniconlon 810 m west of Reservoir, approx. 3.5 km west of Windy Gap BPS
2460631	Bunnyconnellan West Td, Bonniconlon, Ballina	Planning permission to construct an astro turf pitch and walking track. Permission to include associated access road, car park and pedestrian access, with associated lighting. Also to erect fencing, ball stop netting and floodlighting to the perimeter of the proposed pitch, with the lighting to the pitch mounted on four 10 m high columns, together with all associated site works at, Bunnyconnellan West Td, Bonniconlon, Ballina, Co. Mayo. An NIS has been prepared in respect of the proposed development, accompanies the application and will be available for	Granted, 2025	0 m R294 on Pipeline D, 1.9 km east of Bonniconlon BPS, Bonniconlon 810 m west of Reservoir, 3.5 km west of Windy Gap BPS

Planning Ref	Address	Description	Status	Distance from Proposed Development
		inspection or purchase at the fee not exceeding the reasonable cost of making a copy during office hours at the office of the planning authority.		
21881	Bunnyconnellan east, Ballina, Co. Mayo	Construction of a wind turbine with an operation lifespan of 30 years, from commissioning consisting of one wind turbine with a tip height of approximately 150 m, control building, new access road (approx. 240 m), hardstand areas, underground cabling and all associated site works.	Granted, 2022	0 m R294 on Pipeline D, 1.9 km east of Bonniconlon BPS, Bonniconlon 700 m west of Reservoir, 3.5 km west of Windy Gap BPS
21581	Glenree 110kv substation, Bunnyconnellan, Co Mayo	Construction of a 36 m high lattice communication structure carrying dishes, antennae and associated equipment,	Granted, 2021	325 m R294 on Pipeline D, 1.7 km west of Reservoir, 1.1 km west of Windy Gap BPS
22364	Gortersluin Td, Aclare, Co. Sligo	Development consisting of decommissioning of existing wastewater percolation area and install a new tertiary polishing filter and attenuation area. An NIS is also submitted with this application.	Granted, 2023	0 m on R294 on Pipeline D, 1.4 km west of Lough Talt WTP, 3.9 km of Windy Gap BPT
2460015	Gortersluin Td, Aclare, Co. Sligo	Decommission existing percolation area serving existing dwelling house and modification location of the three packaged tertiary as granted under planning ref:pl 22/36	Granted, 2024	0 m on R294 on Pipeline D, 1.4 km west of Lough Talt WTP, 3.9 km of Windy Gap BPT

20.3.2 Stage 2 Short List

Table 20-2 sets out the threshold criteria that were applied to projects included on the Long List.

Table 20-2 — Screening Criteria for Stage 2 of the Cumulative Impact Assessment

Criterion	Screened in / out?
Included as part of the topic baseline (e.g. constructed and complete)	Out
Part of the baseline but has an ongoing impact	In
Potential cumulative impact exists (e.g. spatial and temporal overlap)	In
No conceptual effect-receptor pathway (e.g. air quality and noise)	Out
Low data confidence (i.e. Tier 3)	Out
No physical effect-receptor overlap (outside ZoI)	Out
No temporal overlap	Out

The ZoI identified for each technical chapter is presented in Table 20-3, which will be based on a combination of published guidance (where available), industry practice for similar developments and expert judgement. This was used to further screen projects with the potential for cumulative impacts, the conclusion of which is presented within each technical chapter.

Table 20-3 — Topic-Specific zone of influence applied to the Stage 1 Long List of the Cumulative Impact Assessment

Technical Chapter	Zone of Influence (ZoI)[2]	Rationale
Population and Human Health	1 km	The potential for cumulative effects is predominantly linked to potential construction related impacts so based on the nature and scale of the proposed development, 1 km is appropriate.
Biodiversity	ZoI based on the Source Pathway Receptor model for the individual ecological sites	In establishing which European sites require consideration in Appropriate Assessment (AA) Screening, the screening process therefore focuses on the existence or absence of viable pathways between the Proposed Development and the features for which each European site is designated.

[2] Distance calculated from the red line boundary.

Technical Chapter	Zone of Influence (ZoI)[2]	Rationale
Agronomy	Individual properties and land holdings	The assessment presented is undertaken primarily at the individual agricultural holding level.
Landscape and Visual	Ranged from 500 m to 2 km	The Zone of Theoretical Visibility (ZTV), defined as the area of land from which the Proposed Development may theoretically be visible during the operation, was estimated using a manual approach comprising map interpretation and on-site visual envelope mapping.
Air Quality	500 m	Cumulative construction dust impacts may occur if other large-scale developments within 500 m of the site are under construction simultaneously, as per the Institute of Air Quality Management (IAQM) guidance (IAQM, 2024).
Climate	National	Climate is assessed on a national basis, and sectoral targets are set on a regional and national level, cumulative effects are not appropriate for climate.
Noise and Vibration	400 m	▪ Industry standard; ▪ Guidance; and ▪ Impact zone of most sensitive receptors.
Roads, Traffic and Transportation	Developments in proximity to the proposed construction site and designated haulage routes.	Committed developments located within the regional study area and along identified haulage routes were considered where their construction and/or operational phases coincide with those of the Proposed Development. Developments whose traffic effects were not already reflected within the baseline traffic survey data were included in the cumulative impact assessment, as they have the potential to contribute to cumulative traffic effects on the surrounding road network.

Technical Chapter	Zone of Influence (ZoI)[2]	Rationale
Resource and Waste Management	National and Regional	Resources are based on the availability of construction materials manufactured at a National level. Waste Management is based on the regional waste management capacity.
Land, Soils and Geology	The Study Area for the assessment is 2 km.	The Study Area for the assessment has been defined with regard to the extent of potential direct and indirect impacts on soils, geology and hydrogeological receptors which includes all lands denoted by the Proposed Development boundary and within a 2 km buffer. A 250 m radius will account for mobilisation of potential contaminants as a result of ground disturbance in surrounding areas that have not been included in ground investigations. Other impacts are likely limited to direct loss or damage of soils, superficial deposits and bedrock geology, as well as accidental spills and leaks of contaminants.
Water (Hydrology and Hydrogeology)	2 km	A conservative approach was taken to consider a Study Area of 2 km to address the potential effects of the larger areas of infrastructure and to take into account the potential presence of karst features and fracture networks. However, anticipated ZoIs are likely to be localised, as they represent relatively small scale works when considered at the water body scale.
Cultural Heritage	Study Area was 500 m and 100 m for previous excavations close to the site	The study area for National Monuments and Recorded Monuments, Protected Structures, Architectural Conservation Areas and structures recorded in the National Inventory of Architectural Heritage (NIAH) was 500 m. The Study Area for previous excavations and National

Technical Chapter	Zone of Influence (ZoI)[2]	Rationale
		Museum Topographical Files is 100 m.
Material Assets	Red line boundary	The potential for cumulative effects are restricted to assets that interact, directly or indirectly, with the Proposed Development

20.3.3 Stages 3 and 4 Information Gathering and Assessment

Possible cumulative effects during construction are outlined in the individual assessment chapters of this EIAR – Chapters 6 to 19, and a summary of the conclusions are included below. There are no prescriptive techniques used to evaluate the significance of cumulative effects. Professional judgement and an understanding of the surrounding environment has been applied to the cumulative effects assessment. The cumulative effects assessment considered the ability of the surrounding environment to accommodate change that is likely to occur, based on the duration of the effect, the severity of the effect and the extent of the effect. The cumulative effects assessment also considers the effectiveness of the mitigation measures and residual effects.

20.3.3.1 Chapter 6 – Population and Human Health

The most likely cumulative effect of the Proposed Development, with regard to population and human health, is the demand it will place on local infrastructure, services and other planned and future developments during the construction phase. Using professional judgement, a search area of 1 km was applied to the cumulative impact assessment to consider the potential significant population and human health effects of the wider study area from the Proposed Development.

Following a review of Planning Applications in the local area, the Population and Human health assessment considers that most cumulative effects are as identified in respective technical chapters: Chapter 8 – Agronomy; Chapter 9 – Land, Soils and Geology; Chapter 10 – Water (Hydrology and Hydrogeology); Chapter 11 – Air Quality; Chapter 12 – Climate; Chapter 13 – Noise and Vibration; Chapter 15 – Roads, Traffic & Transportation; Chapter 16 – Material Assets and Chapter 19 – Risk of Major Accidents and Disasters.

There are a number of developments planned within Study Area over the next few years that have the potential to generate an influx of non-local workforces and associated pressures on local housing, facilities and amenities. While this assessment does not identify significant effects due to the relatively small and transient nature of much of the construction works in isolation, there is a potential to increase pressure on local housing, healthcare facilitates and other amenities when considered in combination with the construction of other nearby development. It is noted in Chapter 3 – Project Description that there will be approx. 126 total on-site construction workers at peak periods.

Consultation or close communication with local councils throughout the construction phase should take place to ensure that works do not exacerbate housing demand, or pressures on local facilities and amenities.

Table 20-4 details the number of construction and operation personnel estimated for developments with available information from environmental reports.

Table 20-4 — Estimated work force numbers for cumulative projects

Planning Reference	Development	Estimated Workforce
319173 / 2360182	Construction of Inert Waste Recovery Facility	*Construction:* No information available. *Operation:* Two direct employees and a number of sub-contractors.
322575	Construction of a data centre and all associated site works.	*Construction:* No information available. *Operation:* 32 employees on site per shift with three shifts over 24 hours.
2460708	The construction of a single data centre building	*Construction:* 40 staff initially on site per day, during peak construction could rise to 100 staff per day. *Operation:* 32 employees on site per shift with three shifts over 24 hours.
313975	An anaerobic digestion (ad) biogas facility and associated gas pipeline.	No information available.
17619	Five turbine wind farms	*Construction:* 50 staff during the construction period. *Operation:* No information available.
211284	1.0 hectare extension to an existing authorised quarry	No information available.
2560108	Battery Energy Storage System (BESS) facility and associated infrastructure	No information available.
2360266	Hydrogen Plant and an Energy Centre.	*Construction:* 40 staff during the construction period, rising to 63 during peak periods. *Operation:* No information available.
2460699	Development at the existing Killala Business park	No information available.
2460295	Development at the existing Killala Business park	No information available.
22562	Development at the existing Killala Business park	No information available.

Planning Reference	Development	Estimated Workforce
2460701	Construction of a storage shed and new slatted shed and underground slurry storage tank along with all associated site works.	No information available.
22757	Filling of approx. 15,000 m² of existing land with associated works	No information available.
2560595	Raising an area of land approx. 19,300 m² with inert material and all associated works	No information available.
22652	Relocation of existing access 380 m to the north onto R314 Ballina/Killala Road and all associated works	No information available.
2560027	Full planning permission for a proposed steel framed commercial unit and associated infrastructure	No information available.
2560391	Construction of a new two-storey detached dwelling house and associated infrastructure	No information available.
211376	Construction of a new access junction onto the N59	No information available.
20646	Filling of land with inert soil and subsoil, approx. area of 12,000 m² to an average depth of 1.2 m, and associated works	No information available.
2460315	Filling of land with inert soil and stones and mixtures of inert concrete, bricks, tiles and ceramics, to an approx. area of 12,000 m^2, with an average depth of 1.5 m, and associated works	No information available.
2360261	The proposed development will consist of the replacement (‘restringing’) of the existing overhead line circuit conductor wires with a new higher capacity conductor including installation of a new fibre communication connection and associated works	No information available.
2460330	Erect an extension to the existing school building (335.27 m²)	No information available.

Planning Reference	Development	Estimated Workforce
2460631	To construct an Astro Turf Pitch and walking track.	No information available.
21881	Construction of a wind turbine with an operation lifespan of 30 years	*Construction:* No information available. *Operation:* 15 on site staff during maximum activity.
22364	Development consisting of decommissioning of existing wastewater percolation area and install a new tertiary polishing filter and attenuation area	No information available.
2460015	Decommission existing percolation area serving existing dwelling house and associated works	No information available.

Note that interactions with other critical infrastructure such as water supply are dealt with in relevant chapters and from material consideration in construction management plans. All work will be carried out in accordance with appropriate safety guidance and legislative requirements and that safety on the road network will be maintained. Such considerations apply for the Proposed Development in isolation and in combination with any other projects.

20.3.3.2 Chapter 7 – Biodiversity

Cumulative effects with the following plans and projects were considered during the preparation of Chapter 7 - Biodiversity and the accompanying Natura Impact Statement (NIS) (AtkinsRéalis, 2026). The assessment has been undertaken in accordance with EPA (2022) Guidelines and CIEEM (2024) and considers whether the Proposed Development could act in combination with other plans or projects to give rise to significant effects on biodiversity receptors.

The ZoI for the cumulative effects assessment is defined based on ecological connectivity pathways identified in Chapter 7 – Biodiversity, including hydrological connections to the River Moy Special Area of Conservation (SAC), Killala Bay/Moy Estuary SAC/Special Area of Conservation (SPA) and Lough Conn and Lough Cullin SPA, as well as habitat linkages and species mobility.

The assessment focuses on other projects that have potential connectivity via:

- Surface water pathways;
- Hydrological systems;
- Habitat networks; and
- Ecological corridors.

20.3.3.2.1 Plans

Mayo County Development Plan (CDP) 2022-2028 and Sligo CDP 2024-2030 sets out policies and objectives for the development of the counties. The CDPs aim to promote the sustainable development and improvement

of the economic, environmental, cultural and social aspects of the counties. The CDPs also require that any developments must be subject to AA process and that permitted developments comply with the requirements of the Water Framework Directive (WFD), the relevant River Basin Management Plans and the Habitats Directive. A Strategic Environmental Assessment (SEA) was prepared for the CDPs and they went through the AA process. The findings of which were integrated into the objectives of the CDPs resulting in Plans that afford high levels of protection to the environment and European sites.

20.3.3.2.2 Other Projects

A review of Mayo County Council, Sligo County Council and ACP planning records, combined with information from the NIS (AtkinsRéalis 2026 Document Ref; 0089328DG0011), identified the following developments within the wider ZoI of the Proposed Development.

Key developments considered

The following developments were identified as part of the cumulative impact assessment:

- **OPW – DPE63-14-2018** – River Deel Flood Relief Scheme;
- **Mayo County Council – ABP-322329 – 25** – Ballina Flood Relief Works
- **BP Mitchell Haulage and Plant Hire Ltd. – 319173 / 2360182** – Inert Waste Recovery Facility;
- **Mayo Data Hub Ltd. – 322575** – Data Centre Development;
- **Lisglennon Ad Ltd. – 313975** – Anaerobic Digestion Biogas Facility and Pipeline;
- **Mercury Renewables (Carrowleagh) Limited – 317560** – Windfarm and Hydrogen Plant;
- **Ardagh Gaelic Athletic Association (GAA) Club – 211063** – Club Facility Development;
- **Killala Community Windfarm Designated Activity Company (DAC) – 19260** – Wind Turbine Development;
- **Killala Community Windfarm DAC – 17619** – Wind Farm Development;
- **Mullafarry Quarry Ltd. – 21342** – Quarry Restoration;
- **Mullafarry Quarry Ltd. – 211284** – Quarry Extension;
- **BP Mitchell Haulage & Plant Hire Ltd. – 21708** – Quarry Operation Continuation;
- **Killala Community Windfarm DAC – 2012** – Energy Storage Facility;
- **SSE Renewables (Ireland) Ltd. – 18358** – Battery Storage Facility;
- **SSE Renewables (Ireland) Ltd. – 2560108** – BESS Facility;
- **Mayo Renewable Limited – 2360134** – Biomass Energy Plant;
- **Constant Energy – 2360266** – Hydrogen Plant and Energy Centre;
- **Schutz Ireland Ltd. – 2460699** – Industrial Facility Expansion;
- **Schutz Ireland Ltd. – 2460295** – Industrial Development Works;
- **Aqua Comms (Ireland) Ltd. – 22562** – Cable Landing Station Extension;
- **Stephen Hannick – 2460701** – Agricultural Development;
- **Lorcan Brennan – 22757** – Land Reclamation Works;
- **Conor Ruane – 2560595** – Land Reclamation Works;
- **Martin Carey – 22652** – Access Road Development;
- **Noreen Hackett – 2560027** – Commercial Unit Development;
- **Siobhan Henry and Declan Kiely – 2560391** – Residential Development;
- **Holgrove Ltd. – 19393** – Building Extension;
- **Ballina Rugby Football Club – 2253** – Car Park Upgrade;
- **Industrial Development Authority (IDA) Ireland – 211376** – Access Road Infrastructure;

- **Joseph Corcoran – 20646** – Land Reclamation;
- **Paul Hanley – 2460315** – Land Reclamation;
- **EirGrid Public Limited Company (PLC) – 2360261** – Overhead Line Upgrade;
- **St Joseph's National School – 2460330** – School Extension;
- **Bonniconlon Youth Hub – 2460631** – Community Sports Development;
- **H-Gen Renewables Ltd. – 21881** – Wind Turbine Development; and
- **ESB Networks – 21581** – Communication Structure.

These projects include a mixture of infrastructure, renewable energy, agricultural, commercial, and residential developments.

20.3.3.2.3 Cumulative Impacts to Habitats

The Proposed Development will result in localised and temporary disturbance to habitats, primarily affecting habitats of low ecological value such as improved agricultural grassland, roadside verges and hedgerows. Higher value habitats (e.g. woodland, wetlands, and Annex I habitats) are largely avoided through design, with trenchless techniques used at sensitive crossings. Construction phase mitigation measures, including surface water protection, silt control and pollution prevention, are prescribed for all works in proximity to watercourses and designated sites. These measures ensure that no significant adverse impacts to habitats of high ecological value will occur.

Of the projects reviewed, the majority are located in separate catchments or have no direct or indirect connectivity to habitats associated with the Proposed Development. These developments therefore cannot act in-combination to give rise to cumulative effects.

A small number of projects identified within the wider study area share potential hydrological connectivity with the Proposed Development, including those associated with flood relief infrastructure, pipeline works and windfarm developments where watercourse crossings are required. These developments represent the only realistic scenario in which cumulative effects on habitats could theoretically arise, due to their potential interaction with shared surface water pathways and associated ecological receptors.

However, all such projects have been subject to AA and/or detailed ecological assessment as part of their respective planning processes. These assessments have concluded that, with the implementation of prescribed mitigation measures, there will be no adverse effects on water quality, hydrological processes or associated habitats. In particular, these projects incorporate standard and robust measures such as controlled watercourse crossings (e.g. trenchless techniques), sediment and pollution control systems, and construction management protocols designed to protect receiving environments. As a result, no significant residual impacts on habitats or ecological receptors are predicted for any of these other projects on an individual basis.

Similarly, the Proposed Development has been designed to avoid impacts on higher value habitats and incorporates comprehensive mitigation measures to protect water quality and maintain hydrological connectivity. Chapter 7 – Biodiversity concludes that, following the implementation of mitigation, the Proposed Development will not result in significant residual impacts on habitats, including those of higher ecological value.

Given that all identified projects, including the Proposed Development, avoid or fully mitigate potential impacts on key pathways such as water quality and hydrology, there are no remaining mechanisms by which effects could combine or accumulate. In the absence of overlapping unmitigated impact pathways, the potential for cumulative impacts on habitats of ecological value is effectively eliminated.

On this basis, it is concluded that the Proposed Development will not act in combination with other plans or projects to give rise to significant cumulative impacts on habitats.

20.3.3.2.4 Cumulative Impacts to Species

Aquatic Species

Key aquatic receptors within the ZoI include salmon, lamprey and other species associated with the River Moy SAC and its connected watercourses. The principal pathway through which cumulative effects could arise is through deterioration in water quality, which has the potential to affect aquatic habitats, spawning grounds and overall ecological function.

The Proposed Development has been specifically designed to avoid such impacts through the implementation of robust mitigation measures, including trenchless crossings at sensitive watercourses, the establishment of buffer zones and the application of strict pollution prevention controls during construction activities. Similarly, other projects identified within the wider study area that involve interactions with watercourses have been subject to Appropriate Assessment and/or ecological assessment and incorporate equivalent mitigation measures to protect aquatic environments.

These assessments have consistently concluded that no significant effects on water quality or aquatic habitats will arise. As a result, no individual project is predicted to give rise to water quality impacts, and there is no potential for additive or cumulative effects on receiving waters. Furthermore, there are no anticipated changes to hydrological processes that could influence habitat availability or ecological function.

In the absence of any residual water quality impacts or altered hydrological regimes, there is no viable pathway through which cumulative effects on aquatic species could occur. Accordingly, cumulative impacts on aquatic species are not expected.

Otter

Otter habitat is present along several watercourses within the ZoI, and potential cumulative impacts could theoretically arise through disturbance, habitat fragmentation or indirect effects on prey availability. However, site specific surveys did not identify the presence of holts within the Proposed Development footprint, indicating limited direct sensitivity in the immediate works area.

The Proposed Development has been designed to avoid instream works and to maintain water quality, thereby preserving the ecological conditions required by otter populations. In addition, mitigation measures such as buffer zones, pollution control and best practice construction management will further reduce the potential for disturbance. Other developments within the ZoI that have potential hydrological connectivity have likewise incorporated appropriate mitigation measures and have been assessed as not giving rise to significant impacts on otter or associated habitats.

Given that all relevant projects avoid disturbance pathways and maintain habitat integrity, there is no overlap of impact pathways that could result in cumulative disturbance, habitat loss or fragmentation. Therefore, cumulative impacts on otter populations are not predicted.

Waterbirds

Waterbirds associated with Lough Conn and the Killala Bay/Moy Estuary SPAs represent key ecological receptors that are sensitive to disturbance and changes in habitat quality. Potential cumulative impacts could arise through increased disturbance, degradation of supporting habitats or deterioration in water quality.

The Proposed Development avoids direct habitat loss within SPAs and incorporates mitigation measures to maintain water quality and minimise disturbance during both construction and operation. The design of the scheme ensures that sensitive habitats are not encroached upon and that ecological function is preserved.

Other projects considered within the cumulative assessment are either located outside the ZoI of SPA habitats, lack ecological connectivity to these sites, or have been assessed through Appropriate Assessment and determined not to result in significant effects. As such, there are no additional disturbance pressures or habitat impacts that could combine with those of the Proposed Development.

Given the absence of disturbance pathways and the maintenance of habitat condition across all projects, there is no mechanism for cumulative effects on waterbirds. Therefore, cumulative impacts on waterbird populations and their supporting habitats are not expected.

Terrestrial Fauna (Birds, Bats and Mammals)
Potential impacts on terrestrial fauna associated with the Proposed Development are limited to localised and temporary disturbance during construction, primarily affecting habitats such as hedgerows, grassland and woodland edges. These impacts are mitigated through measures including seasonal restrictions on vegetation clearance, habitat reinstatement and management of works areas.

Other projects within the ZoI are generally small scale in nature, spatially separated from the Proposed Development, and located outside key ecological networks or areas of higher biodiversity value. As a result, they do not contribute to wider habitat fragmentation or sustained disturbance pressures.

Given the temporary and localised nature of impacts associated with the Proposed Development, and the limited scale and separation of other projects, there is no potential for cumulative fragmentation or disturbance effects on terrestrial fauna.

20.3.3.2.5 Overall Cumulative Impact Conclusion

The review of other plans and projects demonstrates that only a limited number of developments share potential ecological connectivity with the Proposed Development, primarily through hydrological pathways. All such developments have been subject to environmental assessment and incorporate mitigation measures designed to avoid significant ecological effects.

The Proposed Development similarly incorporates a comprehensive suite of mitigation measures and has been assessed as not giving rise to significant residual impacts on biodiversity. Crucially, there are no overlapping unmitigated pathways between projects that could give rise to combined or additive effects.

In light of these factors, it is concluded that the Proposed Development will not act in combination with other plans or projects to give rise to significant cumulative effects on biodiversity, including habitats, species or ecological processes within the study area.

20.3.3.3 Chapter 8 – Agronomy

The cumulative assessment considers the potential for the Proposed Development to act in combination with other committed developments identified in the cumulative developments register prepared for the EIAR. Projects were screened to determine whether there was a realistic potential for cumulative effects on agricultural receptors (see Table 20-5).

Table 20-5 — Screening & Assessment of Potential Cumulative Developments

Planning Ref	Development	Screening Decision	Agronomy Justification

19393	Belleek Castle Café Extension and Museum	Scoped In	Although the development is confined to the existing Belleek Castle property and does not involve agricultural land, it is located alongside the proposed treated water trunk main. If construction activities were to occur concurrently, there is potential for temporary cumulative effects relating to construction traffic, access arrangements and site activity. Any interaction would be localised, temporary and can be effectively managed through coordination between contractors and the landowner. No significant cumulative effects on agricultural land or farm operations are anticipated.
2360261	Glenree–Moy 110 kV Overhead Line Uprating	Scoped In	The project intersects the proposed treated water trunk main corridor and includes works within agricultural land, including temporary access tracks, construction compounds and replacement of poles and towers. Where both projects affect the same agricultural holdings during overlapping construction periods, there is potential for temporary cumulative disturbance to farming activities and agricultural access. However, the works are localised and short in duration, with most activities confined to existing infrastructure corridors. Through coordination of construction programmes and liaison with affected landowners, any cumulative effects would be temporary and not significant.

The Glenree–Moy 110 kV Overhead Line Uprating project intersects the proposed treated water trunk main at a number of locations and may include temporary works within agricultural land. Where construction activities overlap spatially and temporally, there is potential for temporary cumulative disturbance to agricultural access and farming operations. Given the limited footprint and short duration of the works, together with coordination between project teams and ongoing communication with affected landowners, significant cumulative effects on agricultural receptors are not anticipated.

In conclusion, the identified cumulative agronomy effects are temporary, localised and confined to the construction phase. Through coordination of construction activities, maintenance of agricultural access where required, reinstatement of affected land, and ongoing liaison with affected landowners, the Proposed Development is not expected to give rise to likely significant cumulative effects on agricultural land, agricultural holdings or farm enterprises.

20.3.3.4 Chapter 9 – Land, Soils and Geology

This section considers the residual effects presented in Chapter 9 – Land, Soils and Geology and the potential for cumulative effects rising from other proposed developments within the Study Area. This chapter considers the potential effects through construction and operational phases.

A 250 m radius of the Proposed Development site boundary is considered to be a suitable study area for the cumulative assessment. A 250 m radius will account for mobilisation of potential contaminants as a result of ground disturbance in surrounding areas that have not been included in ground investigations. Other impacts are likely limited to direct loss or damage of soils, superficial deposits and bedrock geology, as well as accidental spills and leaks of contaminants. With regard to direct loss of soils and geology, the nature of the effect is one that limits the effects to the footprint of the Proposed Development infrastructure. Accidental spills and leaks of fuels and oils are, in most circumstances, likely to be relatively small in volume but may have the potential to affect a larger area. However, as a result of the mitigation included in Section 9.6 and the CEMP (Appendix 3-3, Volume 3 of the EIAR), the effects will likely be limited to the Proposed Development site boundary. Leakages

of chlorinated water from the treated water main are likely to be contained in the low permeability road basement materials.

20.3.3.4.1 Anticipated Effects

To assess likely cumulative effects arising from the Proposed Development, the residual effects established in Section 9.6 of Chapter 9 – Land Soils and Geology are screened. Table 20-6 summarises which of the residual effects has the potential to result in cumulative effects. As Uisce Éireann is committed to maintaining and repairing infrastructure of the Proposed Development into the future and there are no plans for decommissioning the Proposed Development, no residual effects are anticipated as a result of decommissioning activities. As such, there is no potential for cumulative effects to arise from decommissioning activities and will therefore not be taken forward for assessment.

Table 20-6 — Screening of residual impacts for potential cumulative effects

Impact	Potential for cumulative effects	Rationale
Construction		
Effect 1: Direct damage or loss of topsoil or subsoil	Yes	As the residual effects of this effect were assessed as 'Slight' there is potential for cumulative effects, should the construction period of external developments overlap with the construction period and site boundary of the Proposed Development.
Effect 2: Direct damage or loss of geology	Yes	As the residual effects of this effect were assessed as 'Slight' there is potential for cumulative impacts, should the construction period of external developments overlap with the construction period Proposed Development. Cumulative effects are anticipated in areas where the Proposed Development and external developments overlap spatially within geological heritage sites. For areas not within geological heritage sites, the residual effect was assessed as 'imperceptible' which is not anticipated to give rise to cumulative effects due to the anticipated low significance of effect.
Effect 3: Risk of leaks or spills impacting on land and soils	No	The residual effects of this impact were assessed as being 'Imperceptible'. This indicates that the effect is unlikely to result in cumulative effects due to the anticipated low significance of effect.
Operation and Maintenance		
Effect 4: Risk of leaks or spills impacting on land and soils	No	The residual effects of this impact were assessed as being 'Imperceptible'. This indicates that the effect is unlikely to result in cumulative effects due to the anticipated low significance of effect.

20.3.3.4.2 External Development Screening

The full list of external developments screened as part of the cumulative impact assessment are provided in Table 20-4. For the purposes of the cumulative impact assessment relative to land, soils and geology, a ZoI of

250 m will be employed to provide an initial screening on the full list of external developments. This screening distance was chosen to account for mobilisation of potential contaminants that may arise as a result of ground disturbance. The screening distance will be used to assess cumulative effects associated with land, soils and geology considering the close proximity between developments and overlap of construction periods.

Table 20-7 provides an assessment of the external developments within 250 m of the Proposed Development and the likelihood for cumulative impacts to arise as a result of activities throughout construction and operational phases.

Table 20-7 — Chapter 9 – Land, Soils and Geology – Assessment of external developments for potential cumulative effects.

Development	Distance to Proposed Development	Potential for cumulative effects	Rationale
211063 (Carrowcrin, Crossmolina, Co. Mayo)	Intersects with existing raw water mains	No	The planning application for this development indicates that the only spatial overlap with the Proposed Development is with the existing raw water main. No works are planned for this aspect of the infrastructure. Therefore, there is no potential for cumulative impacts to occur.
21708 (Mullafarry td, Killala, Co. Mayo)	Approx. 250 m northwest of Lisglennon WTP	No	This planning application relates to the continued use of a limestone quarry with the implementation of a wastewater treatment system. As the use of the quarry is continued, this is considered part of baseline conditions. An AA Screening Report was completed for this application and accepted by the planning authority which concluded that there were no pathways for this development to result in cumulative effects. Therefore, there are unlikely to be any cumulative effects associated with this development.
2560595 (Culleens Rathroeen, Ballin, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application indicates that the development will occupy an area adjacent to the Proposed Development mains pipeline. However, there will be no overlap of development boundaries. The development involves the raising of ground, to be filled with inert material. This would indicate limited/no impacts to soils and geology as a result of direct excavation or damage. No EIA or associated impact assessment of land, soils and geology was provided alongside the planning application and therefore an

Development	Distance to Proposed Development	Potential for cumulative effects	Rationale
			assessment of cumulative effects is not possible. Due to the nature of the development and lack of spatial overlap, cumulative effects are unlikely.
22652 (Culleens/Rathroeen, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to a small replacement access road. The development is small in nature and therefore, no EIA or associated impact assessment was provided to supplement the planning application. Therefore, an assessment of cumulative effects is not possible. However, due to the nature of the development, lack of spatial overlap and considering the minimal works required to install the treated water pipeline in the road basement materials, cumulative effects are considered unlikely.
2560027 (Killala Road Culleens, Ballina, Co. Mayo)	75 m west of the proposed treated water trunk main	No	The planning application for this development indicates that there is no spatial overlap between this development and the Proposed Development. Additionally, installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Therefore, on the basis that the residual impacts of the Proposed Development are limited to the site boundary, there are unlikely to be any cumulative effects associated with this development.
2560391 (Old French Road, Farrannoo Td., Ballina Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to a two-storey detached dwelling and access road. The development is small in nature and therefore, no EIA or associated impact assessment was provided to supplement the planning application. Therefore, an assessment of cumulative effects is not possible. However, installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.

Development	Distance to Proposed Development	Potential for cumulative effects	Rationale
19393 (Belleek castle, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to a single storey building extension. While no EIA or land, soils and geology specific assessments were carried out, an appropriate assessment screening report was conducted which stated that no significant effects were anticipated. On this basis and the basis that there is no spatial overlap with the Proposed Development, no cumulative effects are anticipated.
2253 (Heffernan Park, Creggs Road, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to an extension to an existing carpark. The development is small in nature and therefore, no EIA or associated impact assessment was provided to supplement the planning application. Therefore, an assessment of cumulative effects is not possible. However, installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.
211376 (Quignashee, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to the construction of a relatively small access road junction. While no EIA or land, soils and geology specific assessments were carried out, an AA screening report was conducted and mitigation measures were proposed to address pollution prevention. Additionally, this development is not located any geological heritage sites. Therefore, on the basis that the residual works of the Proposed Development at this location are limited to installation of the treated water mains in the road basement materials, there are unlikely to be any cumulative effects associated with this development.
20646 (Ballyholan, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to the infilling of land with inert material. While no EIA or land, soils and geology specific assessments were carried out, an appropriate assessment screening report

Development	Distance to Proposed Development	Potential for cumulative effects	Rationale
			was conducted which stated that no significant effects were anticipated. On this basis and the basis that there is no spatial overlap with the Proposed Development, no cumulative effects are anticipated.
2460315 (Ballyholan Td., Ballina, Co. Mayo)	Approx. 100 m south of the proposed treated water trunk main	No	The planning application for this development indicates the development involves the filling of land with inert materials. Therefore, there will be no loss of soils and geology. At this location, the Proposed Development is limited to installation of the treated water mains in the road basement materials which will also result in no loss to soils and geology and minimal ground disturbance. Therefore, there are unlikely to be any cumulative effects associated with this development.
2360261 (Townlands of Gorteen Ardoughan Kilemoremoy Belleek Ballina Quignalecka Quignashee Ballyholan Behy More Corimla South Carrownlabaun Bunnyconnellan West Rathreedaun Drumsheen and Bunnyconnellan East, Co. Mayo)	Intersects the proposed treated water trunk main	No	The planning application relates to the replacement of an overhead line circuit, including polesets, wiring and other associated works. Only a small section of the development overlaps with the Proposed Development. The development supplied an EIA screening report, Planning and Environmental Consideration Report (PECR) and CEMP to supplement the planning application. The PECR stated that impacts as a result of accidental emissions are possible but residual impacts will be minimal due to the mitigation measures proposed within the CEMP. Therefore, on the basis that the residual effects of the Proposed Development are minimal due to the nature of the works at this location, there are unlikely to be any cumulative effects associated with this development.
2460330 (Bunnyconnellan West Td., Bonniconlon, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to an extension of an existing school building. The development is small in nature and therefore, no EIA or associated impact assessment was provided to supplement the planning application. However,

Development	Distance to Proposed Development	Potential for cumulative effects	Rationale
			installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.
2460631 (Bunnyconnellan West Td, Bonniconlon, Ballina, Co. Mayo)	Alongside the proposed treated water trunk main	No	The planning application relates to the construction of an astro turf pitch and associated walking path. The development is small in nature and therefore, no EIA or associated impact assessment specific to soils and geology was provided to supplement the planning application. Therefore, an assessment of cumulative effects is not possible. However, installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.
21581 (Glenree 110kV Substation, Bunnyconnellan, Co. Mayo)	200 m south of the proposed treated water trunk main	No	The planning application for this development indicates that there is no spatial overlap between this development and the Proposed Development. The development is small in nature and therefore, no EIA or associated impact assessment specific to soils and geology was provided to supplement the planning application. Therefore, an assessment of cumulative effects is not possible. However, installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.
22364 (Gortersluin Td, Aclare, Co. Sligo)	Alongside the proposed treated water trunk main	No	The planning application relates to construction of a new dwelling, garage and discharge system. The development is relatively small in nature and as such, an EIAR was not required and no soils and geology specific assessment was provided However, installation of the treated water main will involve minimal

Development	Distance to Proposed Development	Potential for cumulative effects	Rationale
			ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.
2460015 (Gortersluin Td, Aclare, Co. Sligo)	Alongside the proposed treated water trunk main	No	The planning application relates the decommissioning of a percolation area and moving of three tertiary treatment systems. The development is relatively small in nature and as such, an EIAR was not required and no soils and geology specific assessment was provided However, installation of the treated water main will involve minimal ground disturbance and no loss of soils and geology. Due to this and the nature of the development and lack of spatial overlap cumulative effects are unlikely.

The construction period of the Proposed Development is anticipated to take place over approx. 35 months. The development has the potential to cause direct impacts to soils and geology including the loss and damage of resources. Additionally, the Proposed Development has the potential to cause impacts to soils and geology as a result of accident release of contaminants throughout construction and operational phases. Chapter 9 (Land, Soils and Geology) has assessed these impacts and found that significant impacts are unlikely with the addition of mitigation measures identified.

Based on the location, nature and scale of the developments presented in Table 20-6 and Table 20-7 taking the residual effects of the Proposed Development into account, no significant cumulative effects are anticipated with respect to land, soils and geology. Therefore, cumulative effects to land, soils and geology are considered to have an imperceptible impact and are considered to be not significant.

20.3.3.5 Chapter 10 – Water (Hydrology and Hydrogeology)

A review of all committed / proposed developments in the immediate environs of the Proposed Development, approved by Mayo County Council, Sligo County Council or ACP within the last five years, has been undertaken as part of the preparation of this EIAR. The majority of these developments have already been constructed or are of small scale in nature (i.e. extension works, or property retention works) or are considered to be a reasonable distance from the Proposed Development and do not warrant further consideration as part of this assessment.

The search of the Mayo County Council, Sligo County Council, ACP planning records, the TII and the Uisce Éireann Planning Portals identified 40 committed developments within the vicinity of the Site; all of which have been assessed as part of this EIAR. Of these, 11 developments are located alongside the Proposed Development, but do not spatially overlap with it. These developments are not anticipated to occur concurrently with the Proposed Development. In the absence of spatial and temporal overlap, and given the lack of shared effect pathways, no likely significant cumulative effects are predicted.

Of the considered developments, two notable developments - namely an *Aerobic Digestion (AD) biogas facility and associated infrastructure* (planning permission **313975**) and a *Hydrogen Plant and Energy Centre* (planning permission **2360266**) - were examined in further detail. The assessments undertaken for these developments concluded that they would result in no significant effects on the water environment.

Additionally, the Ballina (ABP-322329-25) and Crossmolina (DPE63-14-2018) Flood Relief Schemes (FRSs) were considered. The Ballina FRS is designed for 1% of the AEP for fluvial areas and 0.5% AEP for coastal flood events, while the Crossmolina is designed for 1% AEP. NIS and EIA reports have been prepared for both schemes with mitigation measures built in to protect the local hydrology. The Ballina FRS overlaps spatially with the RLB for the Proposed Development, however it is noted in the Scheme's application that coordination would ensure that the development works of each scheme would be offset. Cumulative effects from the FRSs would be not significant and related only to short-term flood events.

On this basis, it is concluded that no cumulative effects arise from the considered developments in combination with the Proposed Development.

20.3.3.6 Chapter 11 – Air Quality

Cumulative construction dust impacts may occur if other large-scale developments within 500 m of the Proposed Development are under construction simultaneously, as per the IAQM guidance (IAQM, 2024).

A review of the planned and permitted projects within the last ten years within 500 m of the Site, with the potential for overlapping construction periods, was undertaken to identify developments with the potential for cumulative construction phase impacts. There is the potential for the construction phase of the Proposed Development to coincide with that of the following developments as illustrated in Table 20-8.

Table 20-8 — Summary of Developments with Potential for Cumulative Construction Dust Effects

Reference No	Development Description
317560	Proposed windfarm development including 13 wind turbines in Bunnyconnellan, Co. Mayo and hydrogen plant in Castleconnor, Co. Sligo.
18358/ 2560108	A battery storage facility within a total site area of up to 1.18 ha, to include 55 self contained battery container units with associated HVAC cooling units, 15 converter and 15 set up transformer container units, associated compound cabling and ducting, a grid transformer, a single storey substation/control building with welfare facilities, a cable route grid connection to the existing ESB substation building, maintenance lighting, security fencing, a CCTV monitoring system, landscaping works and all associated ancillary infrastructure on lands within the Tawnaghmore generation station.
2360134	A nominal 50 megawatt electricity generating station, combusting woody biomass chips (domestic and imported) as well as a small proportion of fuel oil for boiler start-up. The total site area is 19.0 ha of which approx. 7 ha will be developed.

Reference No	Development Description
2360266	The Proposed Development will consist of a Hydrogen Plant and an Energy Centre. The Proposed Development includes the demolition and removal of the existing Asahi Plant buildings, foundations, as well as decommissioning and removal of the existing overhead, above ground drainage system and underground services. The Proposed Development will also include Resurfacing, Repair and Improvement of Existing Site Entrance and new Internal Access Roads which in turn opens onto the existing entrance road to the Ballina/Killala regional road (R314). The provision for 23 car parking spaces, footpaths, street lighting, external lighting, CCTV cameras, signage, security fencing, construction compound, and all other associated site development plant and equipment and other works including, utilities connections, potable water, stormwater, sewage, and foul wastewater drainage infrastructure, within a total overall application boundary of 6.88 ha.
2460699	The proposed development will consist of the following works: (a) Demolition of part of existing adjoining building to make provision for future extension as part of this application. (b) Demolition of temporary prefabricated buildings. (c) Construction of a fully serviced extension to side of existing building which will create additional production area for the existing facility, external plant mezzanine area and the construction of a two-storey office / admin block to the front of the development. (d) Alterations to elevations of existing building to include new wall cladding and windows, etc.

No significant effects on air quality as a result of construction dust were identified during the construction phases of the proposed and permitted developments in Table 20-8. As part of their respective impact assessments, and similar dust mitigation measures are required as per their planning conditions to ensure there are no significant effects (i.e. construction works must be carried out with dust mitigation applied or the development will be in breach of its planning conditions).

The dust mitigation measures outlined in Section 11.7.1 of Chapter 11 – Air Quality will be applied during the construction phase of the Proposed Development which will avoid significant effects on air quality.

In combination, the Proposed Development and considered permitted developments will not have a significant effect on air quality due to the required application of dust mitigation measures for each development. The predicted cumulative effects on air quality, in terms of human health and ecology, associated with the construction phase of the Proposed Development is short-term, direct, negative and not significant.

20.3.3.7 Chapter 12 – Climate

In accordance with guidance from the ISEP (ISEP, 2022) the climate is not constrained by project, regional or national boundaries and therefore the Greenhouse Gas (GHG) assessment has been presented in the context of the national and sectoral carbon budgets for the whole of Ireland and the ability of the Proposed Development to assist or impede the national relevant targets. Given the contribution of such targets to the global efforts to reduce the impact of society upon the climate the assessment is considered to be inherently cumulative.

In light of these statements, the residual cumulative effect of the Proposed Development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

20.3.3.8 Chapter 13 – Noise and Vibration

The potential for cumulative noise and vibration effects has been assessed having regard to other existing, permitted and proposed developments within the 400 m ZoI established for the Proposed Development.

The identified projects were reviewed with regard to their proximity, nature and potential to generate noise or vibration during construction or operation. Particular consideration was given to developments located along or in close proximity to the proposed treated water trunk main, where construction activities could potentially overlap.

The majority of identified projects are not anticipated to result in a material cumulative noise or vibration interaction due to their scale, nature, separation from sensitive receptors or limited operational noise potential. The potential for cumulative effects is therefore primarily associated with temporary construction activities occurring concurrently with the Proposed Development and, to a lesser extent, the operation of existing or permitted noise-generating facilities.

20.3.3.8.1 Anticipated Effects

The principal potential cumulative and interactive effects are associated with:

- Construction noise from activities occurring concurrently with other permitted developments;
- Construction traffic noise associated with simultaneous construction activities; and
- Potential interaction between operational noise from the Proposed Development and existing or permitted fixed noise sources.

No material cumulative vibration effects are anticipated.

20.3.3.8.2 Construction

Effect 1: Cumulative Construction Noise

Value and sensitivity

Noise-sensitive Locations (NSL) are predominantly residential properties and are therefore considered to have high sensitivity to construction noise.

Magnitude

The potential for cumulative construction noise is greatest where works associated with the Proposed Development occur concurrently with other construction activities in close proximity to the same NSLs. Table 13-28 of Chapter 13 – Noise and Vibration demonstrates that, under worst-case unmitigated conditions, construction noise levels generally reduce with increasing distance from the works, with the greatest potential for exceedance occurring at receptors located close to the active construction area.

Given the temporary and localised nature of the works and the uncertainty regarding the timing of other permitted developments, the magnitude of cumulative construction noise is considered Low to Moderate.

Significance of effect

Taking account of the High sensitivity of the receptors and the temporary nature of the construction activities, the significance of cumulative construction noise is considered Slight to Moderate, where concurrent works occur in close proximity to the same receptors.

Mitigation

The construction noise mitigation measures set out in Section 13.7 of Chapter 13 – Noise and Vibration will be implemented, including control of noise at source, appropriate selection and management of plant, screening where practicable and adherence to appropriate working practices.

Residual significance of effect
Following implementation of the proposed mitigation measures, the residual cumulative construction noise effect is considered Not Significant.

20.3.3.8.3 Operational Effects

Operational cumulative noise has been considered in relation to existing and permitted developments within the 400 m zone that have the potential to generate ongoing noise emissions.

The majority of identified developments do not contain significant fixed operational noise sources. Greater potential for interaction is associated with existing or permitted facilities incorporating operational plant, including the Mullafarry limestone quarry (Planning Ref. 21708), the Lisglennon anaerobic digestion/biogas facility (Planning Ref. 2193) and the Tawnaghmore energy infrastructure developments (Planning Refs. 18358 and 2560108).

The operational assessment in Section 13.6.3 in Chapter 13 – Noise and Vibration demonstrates compliance with the applicable noise criteria. Having regard to the predicted operational noise levels, separation distances and nature of the identified developments, no significant cumulative operational noise effect is anticipated.

The residual cumulative operational noise effect is therefore considered Not Significant.

20.3.3.9 Chapter 14 – Resource and Waste Management

Resource and waste management is assessed on a national basis and regional basis respectively in Chapter 14 - Resource and Waste Management.. Chapter 14 – Resource and Waste Management has demonstrated that the effects of the Proposed Development on resources is Not Significant. The effects of the Proposed Development on waste generation and management is Moderate.

The following proposed developments (as shown in Table 20-1) will place an additional local and regional demand on resources, particularly concrete, aggregates and steel:

- The construction of a data centre and all associated site works at Mullafarry and Tawnaghmore Upper, Killala, Co. Mayo (Planning Ref. 322575) will place an extra demand on resources in the area.
- Proposed Hydrogen Plant and Energy Centre in Tawnaghmore Lower and Meelick, Killala, Ballina (Planning Ref. 2360266).
- Construction of a new access junction onto the N59 including the provision of road markings to facilitate a right turn ghost island junction, an internal access road of approx. 340 m length of 7.0m wide carriageway, internal junctions, verges, footpaths, site services and all associated siteworks within the 8.66 Ha site in Guignashee, Ballina (Planning Ref. 211376).
- Flood Relief Works, Ballina (Planning Ref. ABP-322329-25).
- Proposed flood scheme for the River Deel, Crossmolina, Mullenmore, Co.Mayo (Planning Ref. DPE63-14-2018). The construction programme for the Crossmolina FRS is similar to the construction programme for the Proposed Development.
- Battery Energy Storage System facility, Tawnaghmore upper, Kiillala, Co. Mayo (Planning Ref. 18358).
- A nominal 50 megawatt electricity generating station, combusting woody biomass chips. Tawnaghmore Upper and Tawnaghmore Lower, Killala, Co. Mayo. (Planning Ref. 2360134).
- Planning permission sought for (1) Installation of two proposed bulk storage silos (13.1 m high) to the rear of existing building with all associated siteworks. Killala Business Park, Tawnaghmore Lower, Killala Co. Mayo. (Planning Ref. 2460295).

The construction of these projects will run over a number of years and some of the construction programmes may coincide with the construction programme for the Proposed Development. Data provided by the Irish Concrete Federation (2024) (Table 14-7, Chapter 14 Resource and Waste Management) shows that 38,000,000 tonnes of aggregates, 5,000,000 m^3 of concrete, 2,000,000 tonnes of bituminous road surfacing materials is produced annually in Ireland. 167,000,000 tonnes of steel is imported annually. There are several active quarries in County Mayo that can supply rock, sand and aggregates to these projects. Overall, it can be concluded that the cumulative effect of the proposed projects in the area on resources is short-term negative and Not Significant cumulative effect.

Many of the projects listed above will generate construction and demolition waste. The waste handling capacities in County Mayo is 822,810 tonnes per annum and 124,000 tonnes in County Sligo. Mayo County Council has granted planning for several infilling projects county-wide including backfilling at Mullafarry Quarry. Waste generation will be extended over the lifetime of the construction projects and it is concluded that there is sufficient waste handling capacity for C&D wastes in County Mayo and County Sligo. The cumulative effects of C&D wastes generated from the proposed projects in the area will be short-term negative and Not Significant cumulative effect.

Residual significance of effect

Following implementation of the proposed mitigation measures summarised in Chapter 14 – Resource and Waste Management, the residual cumulative construction and operational resource and waste effect is considered Not Significant.

20.3.3.10 Chapter 15 – Roads, Traffic and Transportation

20.3.3.10.1 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 from 2027 to 2029. 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); and

- 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); and
- Hydrogen Plant and Energy Centre (Planning Ref. 2360166).

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 2027 to 2029 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 of Chapter 15 – Roads, Traffic and Transportation (Establishing baseline traffic flow conditions).

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

20.3.3.10.2 Cumulative Construction Development

Hydrogen Plant and Energy Centre (Planning Ref. 2360266)

Planning Ref. 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 15: Traffic and Transport.

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

Additionally, Section 2.7.6 (Construction Hours) identifies that 40 to 63 construction workers will be employed on site during the construction phase. In total, during peak construction, this development is estimated to generate approx. 299 Passenger Car Units (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 to 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.

20.3.3.10.3 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 of Chapter 15 – Roads, Traffic and Transport, 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 20-9.

Table 20-9 — Percentage 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 20-9 and with reference to Section 15.3.3 of Chapter 15 – Roads, Traffic and Transport, 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 20-1, Figure 20-2, and Figure 20-3 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.

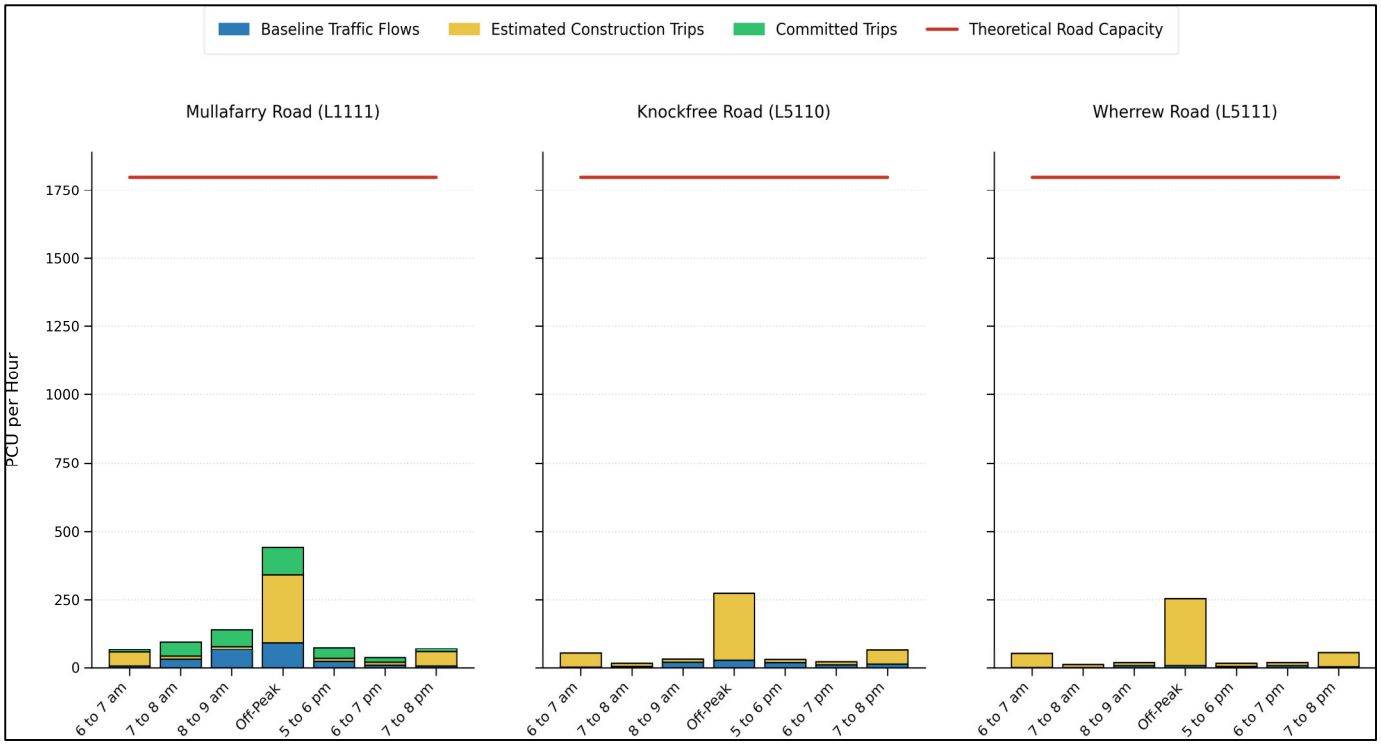


Figure 20-1 — 2028 Cumulative Traffic Effects along Mullafarry Road (L1111), Knockfree Road (L5110), Wherrew Road (L5111)

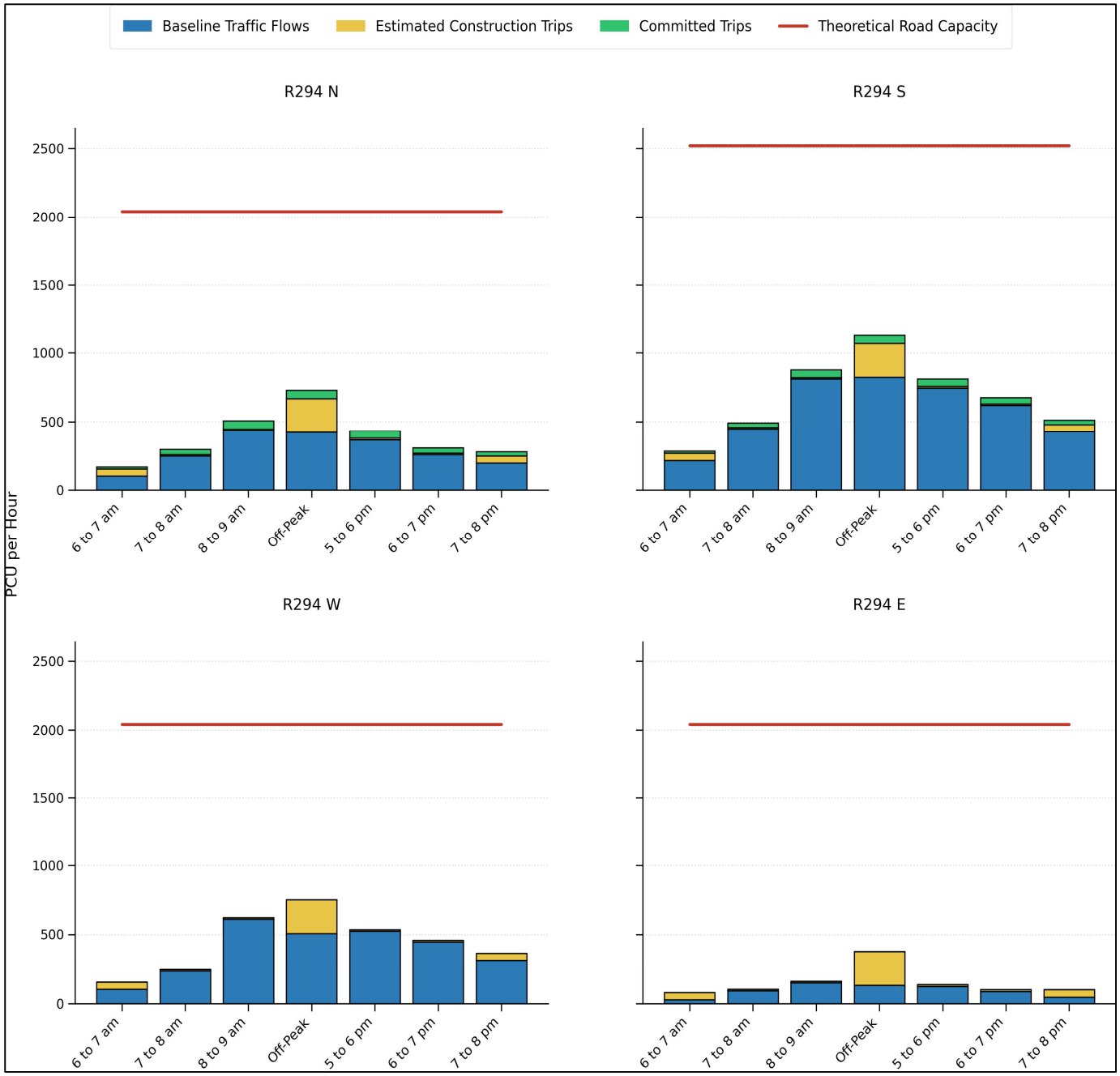


Figure 20-2 — 2028 Cumulative Traffic Effects along R314 N, R314 S, R294 W, R294 E

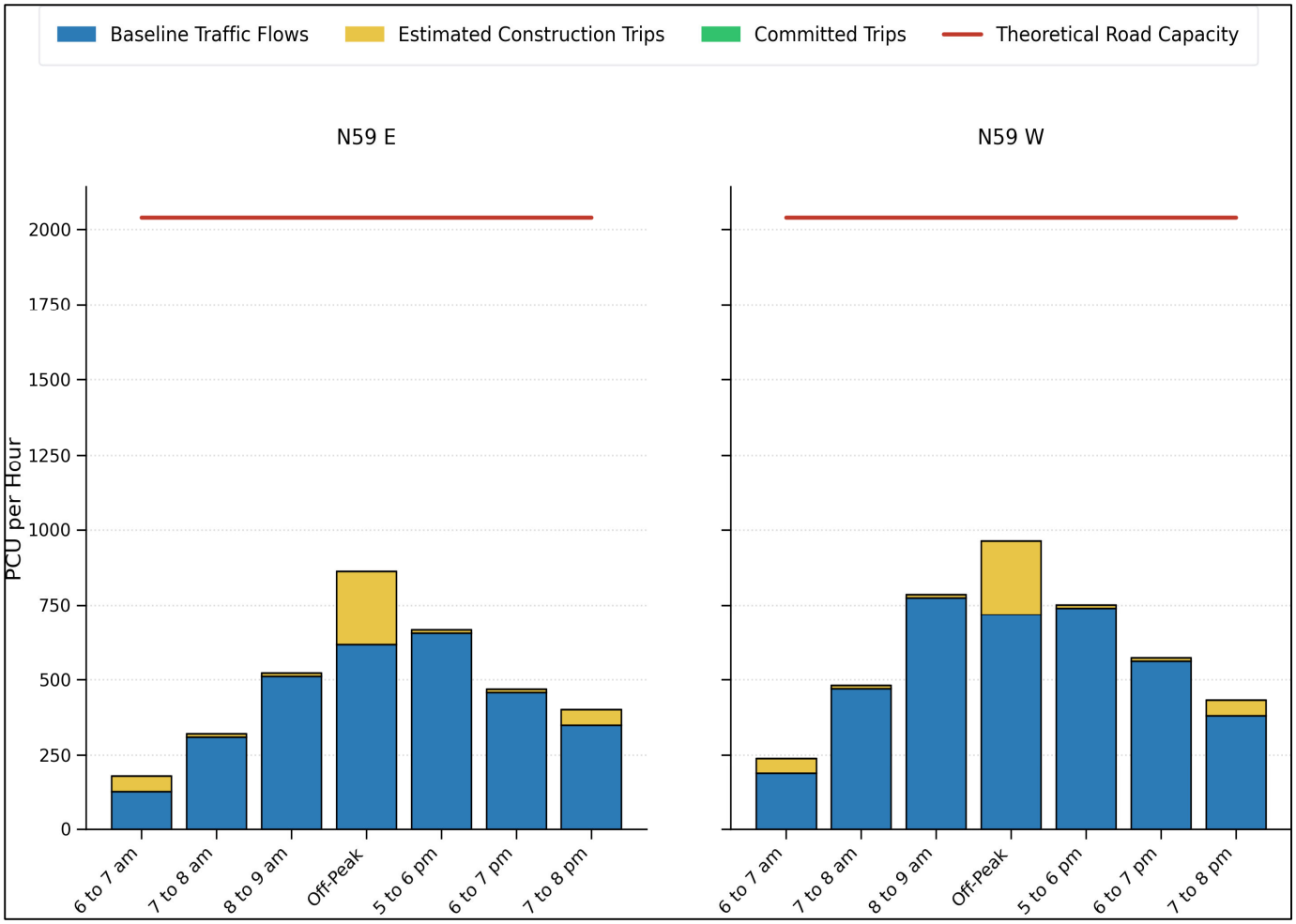


Figure 20-3 — 2028 Cumulative Traffic Effects along N59 E, N59 W

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 Not Significant Negative effect on overall network performance. On this basis, no further or separate analysis of this scenario is considered necessary.

Residual significance of effect

Following implementation of the proposed mitigation measures, the residual cumulative construction and operational traffic and transportation effect is considered Not Significant.

20.3.3.11 Chapter 16 – Material Assets

The developments listed in Table 20-1 were reviewed and the following projects were assessed, as they were considered to have potential to result in cumulative effects with the Proposed Development:

- **2360261** – the Proposed Development will consist of: (i) The replacement ("restringing") of the existing overhead line circuit conductor wires with a new higher capacity conductor including installation of a new fibre communication connection. (ii) The replacement of 20 of the 63 existing Intermediate Polesets (IMPs) with similar polesets.
- **21881** – construction of a wind turbine with an operation lifespan of 30 years, from commissioning consisting of one wind turbine with a tip height of approx. 150 m, control building, new access road (approx. 240 m), hardstand areas, underground cabling and all associated site works.

Based on the nature and location of these developments, there is potential for cumulative effects with the Proposed Development during the construction phase. Based on the fact that best practices will be implemented during the construction phase, any potential construction effects will be brief and Not Significant in nature.

Residual significance of effect

Following implementation of the proposed mitigation measures, the residual cumulative construction and operational material assets effect is considered Not Significant.

20.3.3.12 Chapter 17 – Cultural Heritage

In terms of cumulative effects, since all projects have been assessed from a cultural heritage perspective through the EIAR process, all potential negative effects are deemed to have been dealt with through the use of effective mitigation measures. If the mitigation measures prescribed in this EIAR are implemented then cumulative direct effects to unknown sub-surface archaeology will not occur, regardless of the other projects within 20 km of the Proposed Development.

Residual significance of effect

Following implementation of the proposed mitigation measures, the residual cumulative construction archaeology and cultural effect is considered Not Significant.

20.3.3.13 Chapter 18 – Landscape and Visual Impact Assessment

The developments listed in Table 20-1 were reviewed to identify those with the potential to give rise to cumulative landscape or visual effects with the Proposed Development. The review considered the scale, nature and location of each development, potential intervisibility, shared landscape character and visual receptors, and the potential for construction or operational effects to occur at the same time or in close succession.

The developments with the greatest potential to interact with the Proposed Development are the larger industrial, energy, quarry / inert recovery and data centre developments in the wider Killala / Lisglennon area,

including the data centre development at Mullafarry and Tawnaghmore Upper (Ref. 2460708 / ACP Ref. 322575), the anaerobic digestion facility and associated gas pipeline near Lisglennon and the R314 corridor (Refs. 313975 / 2193), quarry / inert recovery developments at Mullafarry (Refs. 319173 / 2360182, 21342, 211284 and 21708), and energy-related developments at Tawnaghmore / Killala (Refs. 2012, 18358, 2560108, 2360134 and 2360266). The Glenree to Moy 110 kV overhead line uprate (Ref. 2360261) and the permitted upland wind / communications infrastructure in the Bonniconlon, Windy Gap and wider Mayo / Sligo upland context (Refs. 317560, 21881 and 21581) were also considered relevant to the landscape and visual cumulative assessment. These developments are identified in Table 20-1.

In the Killala / Lisglennon area, the relevant developments are located within a landscape context already influenced by industrial, quarrying and energy-related land uses, including Killala Business Park, Tawnaghmore Power Station, Killala Wind Farm and quarrying activity. Although these developments may contribute to some further intensification of industrial and infrastructure character locally, they are spatially separated from Lisglennon Water Treatment Plant and Lisglennon Raw Water Storage and Pumping Station. In some longer-distance views, such as from the R314, Lisglennon Water Treatment Plant and the wider Killala / Tawnaghmore industrial and energy cluster may be visible within the same broad panorama; however, they are generally perceived as separate elements, with intervening rural landform, vegetation, field boundaries and distance reducing the potential for significant combined or successive visual effects.

Along the underground pipeline route, potential cumulative effects would be limited mainly to temporary construction-stage effects where other developments are located alongside or close to the works and where construction programmes overlap. Following reinstatement, the pipeline would have minimal permanent above-ground expression and would not give rise to significant cumulative operational landscape or visual effects.

In the Bonniconlon / Windy Gap / Lough Talt upland area, the relevant developments include the permitted Bunnyconnellan Wind Farm development, including associated infrastructure (Ref. 317560), the permitted single wind turbine at Bunnyconnellan East (Ref. 21881), the Glenree to Moy 110 kV overhead line uprate (Ref. 2360261) and the permitted lattice communications structure at Glenree 110 kV Substation (Ref. 21581). These developments have the potential to influence the wider upland landscape and sequential views from roads and recreational routes. However, the Proposed Development in this area is limited in its operational landscape and visual effects. The underground pipeline would be reinstated following installation, the Bonniconlon Reservoir would be partially recessed into the ground and integrated with planting, the Windy Gap BPT would be below-ground with disturbed peat and ground reinstated, and the proposed changes at Lough Talt Water Treatment Plant would be located within the context of the existing operational water treatment plant. The Proposed Development would therefore not introduce prominent new vertical or large-scale above-ground elements into the upland landscape and would not materially add to the visible operational infrastructure baseline.

Overall, significant cumulative landscape and visual effects are not anticipated, having regard to the limited operational visibility of the Proposed Development, the temporary nature of construction effects, the progressive construction of the pipeline in discrete sections along the route corridor, and the proposed reinstatement and landscape mitigation measures incorporated into the Proposed Development.

20.3.3.14 Chapter 19 –Major Accidents and Disasters

The Proposed Development lies within the consultation distance of an upper-tier Seveso establishment (Ballina Beverages /European Refreshments, approx. 300 m). The only element of the scheme that falls within this consultation distance is the buried treated-water trunk main; the principal operational assets (treatment works, pumping stations and reservoirs) are located outside the 5 km study area.

The trunk main is a robust, buried asset conveying treated potable water, which is non-hazardous by nature. Considering the location of the Proposed Development relative to the nearby Seveso establishment, and the

buried and protected nature of the trunk main together with the non-hazardous nature of its contents, there is no credible pathway by which the Proposed Development would materially increase the likelihood or consequences of a major accident at the Seveso establishment.

There are no other projects within 5 km that would interact with the Proposed Development in a way that could meaningfully increase the likelihood or severity of a major accident or disaster. As a result, no significant cumulative major-accident effects have been identified. Both during construction and operation, cumulative effects from major accidents and disasters are considered imperceptible and neutral, and the residual cumulative effects are therefore assessed as imperceptible and neutral. No significant residual cumulative effects are anticipated for Major Accidents & Disasters during the construction or operational phases of the Proposed Development.

20.4 Interactive Effects

The potential interactions between environmental aspects arising from the Proposed Development were considered in detail in the applicable chapters of the EIAR. This section summarises the interactions between effects on different environmental aspects identified in each technical chapter. All potential interactions have been addressed as required throughout the EIAR. During each stage of the assessment, contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been robustly addressed.

20.4.1 Summary of Interactions

The interactions between each of the technical environmental topics have been assessed to identify potential direct and indirect significant effects which could arise through various environmental pathways.

This section has been prepared in accordance with EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (2022), which states: *'Some topics could be placed under more than one heading, for example Land and Soils may be relevant under 'Soils and Geology'. The requirement for the EIAR to consider 'Interactions' addresses this issue by ensuring that effects are cross-referenced between topics, thus reducing the need to duplicate coverage of such topics.'*

A summary matrix illustrating the key interactions and interdependencies between environmental attributes for the construction and operations phases of the Proposed Development is presented in Table 20-10 . The matrix lists the environmental topics in the left-hand column as the receptors or attributes that may be influenced by the factors set out along the top row. Where an interaction is considered likely, this is indicated by a tick ('√') in the corresponding cell, while the absence of an interaction is represented by an 'x'. The matrix also specifies the phase of the Proposed Development during which each interaction may occur, using 'C' to denote construction and 'O' for operation.

Table 20-10 – Key interactions and interdependencies for the construction (C) and operational (O) phases

Interaction		Population & Human Health	Biodiversity	Agronomy	Land, Soils & Geology	Water (Hydrology &	Air Quality	Climate	Noise & Vibration	Resource and Waste Manageme	Roads, Traffic & Transport	Material Assets	Cultural Heritage	Landscape and Visual	Risk of Major Accidents
Population & Human Health	C		✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	O		x	x	x	✓	✓	✓	✓	x	x	x	x	✓	✓
Biodiversity	C			✓	✓	✓	✓	✓	✓	x	x	x	x	✓	✓
	O			x	✓	✓	x	✓	✓	x	x	x	x	✓	✓
Agronomy	C				✓	✓	x	x	✓	✓	✓	x	x	✓	x
	O				✓	✓	x	x	x	x	x	x	x	x	x
Land, Soils & Geology	C					✓	✓	✓	x	✓	x	✓	x	x	✓
	O					x	x	✓	x	x	x	x	x	x	✓
Water (Hydrology & Hydrogeology)	C						x	✓	x	x	x	x	x	x	✓
	O						x	✓	x	x	x	x	x	x	✓
Air Quality	C							✓	x	x	✓	✓	x	x	x
	O							✓	x	x	✓	✓	x	x	x
Climate	C								x	✓	x	✓	x	x	x
	O								x	✓	x	✓	x	x	x
Noise and Vibration	C									✓	✓	✓	x	x	x
	O									✓	x	x	x	x	x
Resource and Waste Management	C										✓	✓	✓	x	x
	O										✓	x	x	x	x

Interaction		Population & Human Health	Biodiversity	Agronomy	Land, Soils & Geology	Water (Hydrology &	Air Quality	Climate	Noise & Vibration	Resource and Waste Manageme	Roads, Traffic & Transport	Material Assets	Cultural Heritage	Landscape and Visual	Risk of Major Accidents
Roads, Traffic and Transport	C											✓	✓	✓	X
	O											X	✓	✓	X
Material Assets	C												X	X	X
	O												X	X	X
Cultural Heritage	C													✓	✓
	O													✓	X
Landscape and Visual	C														X
	O														X
Risk of Major Accidents and Disasters	C														
	O														

20.4.2 Description of Interactions

20.4.2.1 Chapter 6 – Population and Human Health

The Population and Human Health assessment has strong interrelationships with a number of environmental topics. Noise and vibration, air quality and traffic and transport have the greatest potential for direct effects on human receptors during construction due to their influence on amenity, accessibility and wellbeing. Interactions are also anticipated with the water environment, material assets and climate change topics, reflecting the role of the project in maintaining and improving reliable water supply infrastructure. These interactions have been considered throughout the assessment to avoid double counting and to ensure potential cumulative effects on population and human health are appropriately identified and evaluated.

Table 20-11 — Interactions between Environmental Aspects of the Proposed Development for Population and Human Health

Interactions	Description
Population and Human Health and, Air Quality	Construction activities associated with the pipeline and infrastructure such as excavation, vehicle movements, material handling and reinstatement works may generate dust and emissions. Operational effects from the Proposed Development include potential increased traffic emissions. The air quality assessment (See Chapter 11 – Air Quality) takes into account human health interactions and overall determines that predicted residual dust-related human health effects, with mitigation, during construction will not be significant. Operational residual effects were determined to be not significant.
Population and Human Health and, Noise and Vibration	Construction activities including trenching, horizontal directional drilling, installation of water trunk mains and upgrades to water infrastructure facilities, and traffic movements may generate noise and vibration. Permanent operational noise sources from plant and equipment associated with the Proposed Development were also considered in the noise assessment (See Chapter 13 – Noise and Vibration). These effects can influence human health through annoyance, disruption to learning environments and impacts on quality of life for nearby receptors. However, during construction and operation, with mitigation, of the Proposed Development, no significant effects are anticipated and the interaction was therefore scoped out of the population and human health impact assessment.
Population and Human Health and, Roads, Traffic and Transport	Construction traffic, temporary road closures, traffic management measures and reduced access may affect journey times, road safety, access to properties (especially those with direct access intersected by the pipeline installation e.g. along Pipeline B, C and D), community facilities (e.g. Bonniconlon National School), and local businesses (See Chapter 15 – Roads, Traffic and Transport). These changes can influence community wellbeing and accessibility. Interactions with population and human health are considered within Chapter 15 – Roads Traffic and Transport, and mitigation measures implemented as part of the CWTMP are anticipated to reduce any identified residual impacts to ‘not significant’ during this phase. As operational traffic is expected to be minimal, no significant effects are anticipated during this phase and was therefore scoped out of the population and human health impact assessment.
Population and Human Health and	Landscape and visual effects to the local population were considered in Chapter 18 – Landscape and Visual. The assessment considered visual impacts to residents, road users and recreational users, community facility users, workers and visitors. Visual effects would

Interactions	Description
Landscape and Visual	be most noticeable during construction for nearby residents, road users, recreational users and visitors close to the pipeline corridor and above-ground sites, with some significant effects noted. However, as mitigation planting and reinstatement matures, no long-term landscape or visual effects are anticipated. No long-term significant adverse operational landscape or visual effects are anticipated following embedded mitigation such as reinstatement and landscape planting. Changes to the local environment can affect people's perception of place, community satisfaction and overall wellbeing, particularly for sensitive residential receptors. However, as no significant effects are anticipated, this interaction was scoped out of the population and human health assessment.
Population and Human Health and Biodiversity	The Proposed Development may have effects on habitats, green spaces (such as Belleek Woods), trees or ecological features which may alter access to natural environments which contribute to recreation, physical activity and mental wellbeing. No significant interaction has been identified with respect to biodiversity in the context of the Proposed Development and population and human health.
Population and Human Health and, Water (Hydrology and Hydrogeology)	Potential effects associated with the Proposed Development during the construction phase as assessed in Chapter 10 – Water (Hydrology and Hydrogeology) include chemical pollution of surface water and groundwater and alterations to groundwater flows and the creation of preferential pathways, specifically at Wherrew RWI&PS and Lisglennon RWS&PS and WTP. Reduced quality of water sources may negatively affect the health of biodiversity and humans. However, Chapter 10 – Water (Hydrology and Hydrogeology) concluded that no significant residual effects are anticipated from the Proposed Development therefore it was scoped out of the population and human health impact assessment. During operation, the provision of a safe, robust and reliable potable water supply to residents will provide long-term benefits for human health through increased resilience of water supply services.
Population and Human Health and, Land, Soils and Geology	Potential effects of the Proposed Development during construction include effects associated with the potential for new land contamination arising from construction activities, and also during operation e.g. fuel spills and potential minor leaks. Excavation works may disturb contaminated land, creating pathways for human exposure through dust generation, direct contact or pollution of water resources. However, this risk is anticipated to be appropriately controlled by implementation of the mitigation measures outlined in Chapter 9 – Land, Soils and Geology and the CEMP.
Population and Human Health and, Climate	Potential increases in embodied carbon from the Proposed Development may contribute to GHG emissions, indirectly effecting population and human health e.g. contributing to climate change, which is associated with potential extreme weather events. However, during the construction and operational phases, these effects are anticipated to be not significant, as discussed in Chapter 12 – Climate hence this interaction as scoped out of the population and human health assessment. Improved water network resilience can contribute positively to long-term population health outcomes.
Population and Human Health and, Material Assets	Construction works may affect existing utilities, telecommunications, public services, and local infrastructure as discussed in Chapter 16 – Material Assets. Short-term disruptions may affect local communities, while enhanced water infrastructure may improve service reliability and support future population needs. By implementing the proposed mitigation

Interactions	Description
	measures set out in Chapter 16 – Material Assets, there are not anticipated to be any significant short or long term effects during both the construction and operational phases.
Population and Human Health and Cultural Heritage	Temporary restrictions around heritage assets or changes to the setting of cultural features in proximity to the Proposed Development may affect community value and sense of place. Preservation of cultural heritage contributes to social wellbeing and community identity. By implementing mitigation measures, it was determined in Chapter 17 – Cultural Heritage that there would be no significant effects during the construction of operational phases. It is therefore anticipated that any potential adverse impacts relating to this interaction will be minor.
Population and Human Health and Major Accidents and Disasters	Potential incidents such as natural disasters, contamination events to drinking water, traffic accidents, failure of water supply assets or construction-related emergencies may present direct risks to public health and safety. Embedded mitigation measures within the Proposed Development are closely linked to protection of population and human health e.g. construction activities will be undertaken in accordance with site-specific health and safety procedures, detailed risk assessments, method statements, a Site Emergency Response Plan, and traffic-related risks will be managed through implementation of a Traffic Management Plan, temporary traffic controls and agreed site access arrangements.

20.4.2.2 Chapter 7 – Biodiversity

The interaction of biodiversity with other environmental attributes are summarised below in Table 20-12.

Table 20-12 — Interactions between Environmental Aspects of the Proposed Development for Biodiversity

Interaction	Description
Biodiversity and Land, Soils and Geology	Potential effects on biodiversity may arise from excavation works, soil stripping, trenching activities, habitat disturbance and reinstatement works associated with the Proposed Development. Temporary and permanent habitat loss impacts on hedgerows and treelines, and potential disturbance to species are intrinsically linked to land and soil conditions. However, the mitigation measures described in Chapter 9 – Land, Soils and Geology and those outlined in Sections 7.5 of Chapter 7 - Biodiversity are anticipated to manage potential risks so as to be unlikely to affect ecological receptors.
Biodiversity and Water (Hydrology and Hydrogeology)	Biodiversity is closely linked to surface water and groundwater resources. The Proposed Development includes works within and adjacent to watercourses, lakes and designated sites, including Lough Conn, the River Moy SAC and Lough Hoe Bog SAC. Potential effects to aquatic habitats, protected species, wetlands and downstream ecological receptors could occur through changes in water quality, hydrology or sediment release during construction. However, the mitigation measures described in Chapter 10 – Water (Hydrology and Hydrogeology) together with the mitigation measures outlined in Chapter 7 – Biodiversity are anticipated to manage the potential risks so as to be unlikely to affect ecological receptors.
Biodiversity and Landscape and Visual	Biodiversity and landscape resources are closely related through the presence of woodland, hedgerows, treelines, wetland habitats and other semi-natural features that contribute to ecological connectivity and landscape character. Construction activities have the potential to affect vegetation, habitat structure and wildlife movement corridors. However, habitat reinstatement, landscaping proposals, woodland and hedgerow planting, and biodiversity enhancement measures described in Chapter 18 – Landscape and Visual and Section 7.5 of Chapter 7 - Biodiversity are anticipated to manage potential risks and contribute to improved ecological connectivity and biodiversity value in the long term.

20.4.2.3 Chapter 8 – Agronomy

Table 20 13 — Interactions between Environmental Aspects of the Proposed Development for Agronomy

Interaction	Description
Agronomy and Land, Soils and Geology	Agricultural land use and productivity are closely linked to soil conditions. Construction of the Proposed Development will require excavation, soil stripping, storage and reinstatement within agricultural land with potential effects on soil structure, trafficability and agricultural productivity. The agricultural assessment also identifies potential disturbance to existing field drainage systems during construction and reinstatement. However the mitigation measures described in Chapter 9 – Land, Soils and Geology together with the agronomy mitigation measures outlined in Section 8.6 of Chapter 8 – Agronomy are anticipated to manage potential risks to agricultural land and soils.
Agronomy and Water and Hydrology	Agricultural activities are dependent on the maintenance of existing field drainage and water supply infrastructure. Construction of the Proposed Development has the potential to disturb field drainage systems and temporarily disrupt agricultural water infrastructure including livestock drinkers and water supply pipework. However, the mitigation measures described in Chapter 10 – Water (Hydrology and Hydrogeology) together with the agronomy mitigation measures outlined in Section 8.6 of Chapter 8 – Agronomy are anticipated to manage potential risks to agricultural holdings and farm operations.
Agronomy and Biodiversity	Agricultural land contains hedgerows, trees and other boundary vegetation which may also provide ecological habitat and connectivity. Construction of the Proposed Development may require the removal of trees, hedgerows or other boundary vegetation within the Temporary Working Area. Construction activities across agricultural holdings may also give rise to biosecurity risks. However, the mitigation measures described in Chapter 7 Biodiversity together with the agronomy mitigation measures outlined in Section 8.6 are anticipated to manage potential risks to agricultural holdings and ecological receptors.
Agronomy and Noise & Vibration	Construction activities within or adjacent to agricultural holdings have the potential to generate noise and vibration which may temporarily disturb livestock. The Agronomy assessment identifies temporary disturbance to livestock associated with construction noise, vibration and increased construction activity in proximity to agricultural holdings. However, the mitigation measures described in Chapter 13 – Noise & Vibration together with the agronomy mitigation measures outlined in Section 8.6 are anticipated to manage potential risks to agricultural receptors.
Agronomy and Traffic and Transport	Construction activities associated with the Proposed Development may temporarily disrupt access to agricultural land, including farm entrances, internal farm roadways and shared rights-of-way. Construction traffic and traffic management measures may also affect access to agricultural holdings during the construction period. However, access to agricultural land will be maintained where practicable and temporary access arrangements will be provided where existing farm access routes are disrupted. The mitigation measures described in Chapter 15 – Traffic and Transport together with the agronomy mitigation measures outlined in Section 8.6 are anticipated to manage potential effects on agricultural access and farm operations.
Agronomy and Landscape and Visual	Construction of the Proposed Development will result in temporary visual and physical disturbance to agricultural land within the construction areas. The removal of trees, hedgerows or other boundary vegetation may also alter the appearance of affected agricultural land. However, affected agricultural land will be reinstated following construction where permanent infrastructure is not required. The mitigation measures described in Chapter 18 – Landscape and Visual together with the agronomy mitigation measures outlined in Section 8.6 are anticipated to manage potential effects.

20.4.2.4 Chapter 9 – Land, Soils and Geology

The interaction of land, soils and geology with other environmental attributes are summarised below in Table 20-13.

Table 20-13 — Interactions between Environmental Aspects of the Proposed Development for Land, Soils and Geology

Interaction	Description
Land, Soils and Geology, and Population and Human Health	Potential impacts on the receiving land, soils and geology environment could impact on human health. Potential risk to human health receptors may be affected through direct contact, ingestion or inhalation with soils which may potentially contain contamination from site activities (including potential minor leaks and spills of fuels, oils and paint). However, this risk is anticipated to be appropriately controlled by implementation of the mitigation measures outlined in this chapter. Considering the baseline environmental setting and the proposed mitigation measures during the construction phase presented in section 9.6.1 of Chapter 9, and those relevant in Chapter 6 – Population and Human Health, human health risks associated with exposure to contaminants (via. direct contact, ingestion or inhalation) resulting from the Proposed Project are considered as unlikely.
Land, Soils and Geology and Agronomy	Potential impacts to land, soils and geology includes the loss and disturbance of soils. A small proportion of the soil loss takes place on agricultural land. However, the mitigation measures described in Section 9.6.1 and 9.7 and those relevant in Chapter 8 – Agronomy are anticipated to manage the potential risks so as to be unlikely to affect receptors.
Land, Soils and Geology, and Biodiversity	Potential impacts on the receiving land, soils and geology environment could impact on biodiversity conditions present. The mitigation measures described in section 9.6.1 and 9.7 and those relevant in Chapter 7 – Biodiversity are anticipated to manage the potential risks so as to be unlikely to affect receptors.
Land, Soils and Geology, and Air Quality and Climate	Potential impacts on the receiving land, soils and geology environment could also impact on air quality conditions present. However, the mitigation measures described in section 9.7 and those relevant in Chapter 11 - Air Quality, and Chapter 12 - Climate are anticipated to manage the potential risks so as to be unlikely to affect receptors.
Land, Soils and Geology, and Water (Hydrology and Hydrogeology)	Potential impacts on the receiving land, soils and geology environment could also impact on surface water and groundwater conditions present. However, the mitigation measures described in section 9.7 and those relevant in Chapter 10 – Water (Hydrology and Hydrogeology) are anticipated to manage the potential risks so as to be unlikely to affect receptors.
Land, Soils and Geology, and Material Assets	Potential impacts on the receiving land, soils and geology environment could also impact on material assets. However, the mitigation measures described in section 9.7 and those relevant in Chapter 16 – Material Assets are anticipated to manage the potential risks so as to be unlikely to affect receptors.

20.4.2.5 Chapter 10 – Water (Hydrology and Hydrogeology)

The interaction of water (hydrology and hydrogeology) with other environmental attributes are summarised below in Table 20-14.

Table 20-14 — Interactions between Environmental Aspects of the Proposed Development for Water (Hydrology and Hydrogeology)

Interaction	Description
Water (Hydrology and Hydrogeology) and, Population and Human Health	Construction phase: Proposed Development activities may affect the water and groundwater quality in face of accidental releases of suspended solids, concrete, fuels, drilling fluids, sediments, or treatment chemicals. This may have indirect consequences on human health, if the downstream is used for water supply, and private wells. However, the mitigation measures scoped under Chapter 19 - Major Accidents and Disasters, would prevent this pathway and there are no significant residual effects are anticipated. The interaction between these environmental factors is neutral and Not Significant. Operational Phase: The Proposed Development will enhance the safe and reliable potable water supply to residents and improve the resilience of water supply services. The interaction during operational phase of the Proposed Development is neutral and Not Significant.
Water (Hydrology and Hydrogeology) and Biodiversity	Construction phase: The Proposed Development activities could result in accidental releases of concrete, fuels, drilling fluids, suspended sediments, or treatment chemicals which may affect aquatic habitats, fish populations, aquatic flora and designated ecological sites such as Lough Conn and Lough Talt. Water quality is closely connected to the aquatic biodiversity and habitats. Similarly, accidents during abstraction pipe installations within Lough Conn, Horizontal Directional Drilling (HDD) operations may result in water quality and habitat degradation. However, the proposed mitigation measures outlined in Chapter 19 – Major Accidents and Disasters and Chapter 7 - Biodiversity, would prevent this pathway and the implementation will ensure there are no effects on the water systems which are essential for aquatic habitats and biodiversity. Operational Phase: The use of the Proposed Development during the operational phase will have neutral effects on water systems. Accident or damage to the intake, structure or failure of a chemical contaminant system could develop pathways to affect the aquatic ecosystem. Furthermore, mitigation measures proposed will protect the aquatic biodiversity with no traceable impacts from the Proposed Development. The interaction during operational phase of the proposed development is neutral and Not Significant.
Water (Hydrology and Hydrogeology) and Land, Soil, and Geology	Construction phase: The Proposed Development activities have potential accident scenarios including releases of silt-laden runoff, drilling fluids, concrete, fuels or treatment chemicals. Removal of topsoil and excavation of subsoils may increase runoff and erosion potential; these could influence groundwater quality and recharge rates. However, mitigation measures outlined in the Chapter 19 – Risk of Major Accidents and Disasters and Chapter 9 - Land, Soils and Geology will prevent this pathway and the implementation will ensure there are no effects on the land, soils, and/or geology will arise. Operational Phase: The use of the Proposed Development during the operational phase will have neutral effects on the land, soils, and geology.
Water (Hydrology and Hydrogeology) and Climate	Construction Phase: There are no anticipated interactions with climate in the construction phase. Operational Phase: The effect of climate change has been assessed in the accompanying flood risk assessment and the Proposed Development will be designed to cater for increased rainfall in future years as a result of climate change. The effect of the interactions between climate and water and hydrology are therefore direct, long-term, negative and Not Significant during the operational phase.

20.4.2.6 Chapter 11 – Air Quality

The interaction of air quality with other environmental attributes are summarised below in Table 20-15.

Table 20-15 — Interactions between Environmental Aspects of the Proposed Development for Air Quality

Interaction	Description
Air Quality and Population and Human Health	Construction Phase: An adverse air quality effect during the construction phase can cause health and dust nuisance issues. There is a low risk of dust-related human health effects during the construction phase of the Proposed Development. Best practice mitigation measures (see Section 11.7 in Chapter 11 – Air Quality and the CEMP) will be implemented during the construction phase to ensure that the effects of the Proposed Development complies with all ambient air quality legislative limits. Therefore, the predicted effect is direct, short-term, negative, localised and not significant with respect to population and human health during the construction phase. Operational Phase: Vehicles accessing the site will emit pollutants which may impact air quality and human health. However, the increased number of vehicles associated with the Proposed Development will not cause a significant change in air pollutant emissions in the locality. It has been assessed that emissions will be in compliance with the ambient air quality standards which are set for the protection of human health. Effects will be long-term, localised, direct, and not significant.
Air Quality and Climate	Air quality and climate have interactions as the emissions from the burning of fossil fuels during the construction and operation generate both air quality and climate effects. There is no significant effect on climate arising from air quality emissions associated with the Proposed Development. However, the sources of impacts on air quality and climate are strongly linked.
Air Quality and Land, Soils and Geology	Construction Phase: Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between air quality, and land and soils in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils during the construction phase. Operational Phase: There are no potentially significant interactions identified between air quality, and land and soils during the operational phase.
Air Quality and Biodiversity	Construction Phase: Dust generation can occur during extended dry weather periods due to traffic along haul routes and activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. A high level of dust mitigation is proposed (Mitigation measures in Chapter 11 – Air Quality) to ensure no significant effects occur. With the implementation of these mitigation measures dust emissions will be minimised and effects will be direct, short-term, negative, localised and not significant with respect to biodiversity. Operational Phase: There are no potentially significant interactions identified between Air Quality and Biodiversity during the operational phase.
Air Quality and Roads, Traffic and Transportation	Construction Phase: Interactions between air quality and roads, traffic and transportation have been considered. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The effects of the Proposed Development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the effect of the interactions between air quality and roads, traffic and transportation are considered to be direct, short-term, neutral, localised and not significant during the construction phase.

Interaction	Description
	Operational Phase: The effect of the interactions between air quality and roads, traffic and transportation are considered to be long-term, direct, negative and not significant during the operational phase.

20.4.2.7 Chapter 12 – Climate

Climate has the potential to interact with a number of other environmental attributes, summarised in Table 20-16.

Table 20-16 — Interactions between Environmental Aspects of the Proposed Development for Climate

Interaction	Description
Climate and Land, Soils and Geology	The impact of flood risk has been assessed and the Proposed Development will be designed to cater for increased rainfall in future years as a result of climate change. The effect of the interactions between climate and land, soils and geology are therefore direct, short-term, negative and imperceptible during the construction phase and direct, long-term, negative and not significant during the operational phase, which is overall not significant in EIA terms.
Climate and Water (Hydrology and Hydrogeology)	The impact of flood risk has been assessed and the Proposed Development will be designed to cater for increased rainfall in future years as a result of climate change. The effect of the interactions between climate and water (hydrology and hydrogeology) are therefore direct, short-term, negative and imperceptible during the construction phase and direct, long-term, negative and not significant during the operational phase, which is overall not significant in EIA terms.
Climate and Air Quality	Air quality and climate have interactions due to the emissions from the burning of fossil fuels during the construction and operational phases generating both air quality and climate impacts. There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.
Climate and Resource and Waste Management	Waste management measures will be put in place to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as re-use or recycling. The effect of the interactions between waste and climate are considered to be direct, short-term, negative and Not Significant during the construction phase and direct, long-term, negative and Not Significant during the operational phase, which is overall not significant in EIA terms.
Climate and Population and Human Health	Climate change has the potential to influence environmental conditions that affect human health and wellbeing, including exposure to extreme weather events, heat stress, flooding, and disruption to critical infrastructure and services. Appropriate mitigation measures have been incorporated into the design to minimise GHG emissions, enhance climate resilience and reduce the potential for climate-related risks to affect local populations. As such, no significant adverse interactive effects are anticipated between climate and population and human health and therefore the interaction should be considered as direct, short- term, negative and imperceptible during the construction and operational phases, which is Not Significant in EIA terms.
Climate and Biodiversity	Climate change has the potential to alter habitat conditions, species distributions, phenology, and ecosystem functioning through changes in temperature, precipitation patterns, extreme weather events, and other climate-related pressures. However,

Interaction	Description
	appropriate mitigation measures have been incorporated into the design to minimise GHG emissions, enhance climate resilience and reduce the potential for climate-related risks to ecology and biodiversity and therefore the interaction should be considered as direct, short- term, negative and imperceptible during the construction and operational phases, which is Not Significant in EIA terms.

20.4.2.8 Chapter 13 – Noise and Vibration

The potential for interactions between noise and vibration effects and other environmental aspects of the Proposed Development has been considered for both the construction and operational phases. Such interactions may arise where noise or vibration effects occur concurrently with, or contribute to, effects identified within other environmental topics, particularly in relation to population and human health, biodiversity, and roads, traffic and transportation.

The assessment has considered the nature, duration and extent of the predicted noise and vibration effects, together with the findings of the assessments presented in the relevant technical chapters. The principal interactions identified in relation to noise and vibration are summarised in Table 20-17.

Table 20-17 — Interactions between Environmental Aspects of the Proposed Development for Noise and Vibration

Interaction	Description
Noise and Vibration and, Population and Human Health	Noise and vibration have the potential to interact with effects on population and human health during both the construction and operational phases. During construction, temporary noise effects may arise from activities including water trunk main installation, site set-up, demolition, substructure and superstructure works. As demonstrated in Table 13-28 of Chapter 13 - Noise and Vibration, the highest construction noise levels occur at receptors located closest to the active works, with the potential for exceedances of the applicable construction noise criterion under worst-case conditions. Construction-related vibration is predicted to be negligible at nearby receptors due to the separation distances between the works and noise-sensitive locations. During operation, noise from fixed plant and equipment has been assessed at the nearest Noise Sensitive Locations. Predicted operational noise levels are within the applicable EPA NG4 criteria.
Noise and Vibration and, Biodiversity	Noise and vibration have the potential to interact with effects on biodiversity during the construction phase through temporary disturbance associated with construction activities. The potential for interaction is greatest where construction works occur in proximity to sensitive ecological receptors. During operation, noise and vibration associated with fixed water infrastructure plant are expected to be substantially more localised, with the majority of operational plant located internally, underground or otherwise screened. The potential for noise and vibration to interact with effects on sensitive ecological receptors is therefore expected to be greatest during the temporary construction phase.
Noise and Vibration and, Roads, Traffic & Transportation	An interaction exists between noise and traffic during both construction and operation. During construction, additional vehicle movements associated with the delivery of materials, plant and equipment have the potential to generate temporary increases in traffic noise. The construction traffic noise assessment identifies a Negligible magnitude of impact, with the additional traffic movements not expected to result in a perceptible change in noise levels. During operation, traffic associated with the Proposed Development is expected to be limited and is not anticipated to result in a significant increase in road traffic noise. Accordingly, no significant interaction between traffic and noise is anticipated during either phase.

20.4.2.9 Chapter 14 – Resource and Waste Management

The potential for interactions between resource and waste management have been considered during the construction and operational phases. Such interactions may arise where resource and waste management occur concurrently with, or contribute to, effects identified within other environmental topics, particularly in relation to population and human health, biodiversity, roads, traffic and transportation, land, soils and geology, and water (hydrology and hydrogeology).

The assessment has considered the resources (aggregates, concrete, steel) and the nature (hazardous or non-hazardous), of waste generated during construction and operation of the Proposed Development. The principal interactions identified in relation to noise and vibration are summarised in Table 20-18.

Table 20-18 — Interactions between Environmental Aspects of the Proposed Development for Resource and Waste Management

Interaction	Description
Resource and Waste Management and, Population and Human Health	Removal of surplus material from the site will increase traffic movements on local and regional roads. The increase in traffic will have a two-fold effect on population and human health, firstly increases in vehicular generated air emissions and secondly disruption to road users particularly on local roads. Chapter 11 – Air Quality concludes that the Proposed Development will have a short-term direct, negative and not significant effect. Chapter 15 - Roads, Traffic and Transportation concludes that, with mitigation measures, the effect of traffic will be short-term, negative and Not Significant.
Resource and Waste Management and, Noise and Vibration	Traffic movements generated by the removal of surplus materials from the site during construction and the removal of waste during operation can generated noise related effects. Chapter 13 - Noise and Vibration concludes that the transient nature of the work and removal of surplus materials off-site will result in an effect that will be Slight to Moderate and Not Significant. Wastes generated during the operation of the Proposed Development will require removal of the water treatment sludge off-site. The effects are estimated to be slight, and Not Significant.
Resource and Waste Management and, Roads, Traffic and Transportation	An interaction exists between noise and traffic during both construction and operation. During construction, additional vehicle movements associated with the removal of waste off-site will occur. Construction will require traffic management which may require road closures particularly on local roads. This will be a temporary road closure and it is expected that the effects of these closures will be slight and Not Significant. During operation, traffic associated with the Proposed Development is expected to be limited and is not anticipated to result in a significant increase in road traffic or road traffic noise. Accordingly, no significant interaction between traffic and noise is anticipated during either phase.
Resource and Waste Management and, Land, Soils and Geology	Potential impacts to land, soils and geology includes the loss and disturbance of soils. A small proportion of the soil loss takes place on agricultural land.

20.4.2.10 Chapter 15 – Roads, Traffic and Transportation

Roads, traffic and transportation have the potential to interact with several environmental attributes during construction and operational phases.

Table 20-19 — Interactions between Environmental Aspects of the Proposed Development for Roads, Traffic and Transportation

Interaction	Description
Roads, Traffic & Transportation and Population and Human Health	Traffic during construction, operation and decommissioning may influence population and human health through changes in journey times, access arrangements and road safety.
Roads, Traffic & Transportation and Noise and Vibration	Traffic movements may contribute to short-term noise effects associated with heavy vehicle movements during construction phase.
Roads, Traffic & Transportation and Material Assets	Traffic movements interact with material assets through the transport of construction materials, equipment and waste.
Roads, Traffic & Transportation and Major Accidents and Disasters	Traffic-related safety considerations include the potential for road traffic incidents and interactions with vulnerable road users during construction, operation and decommissioning activities.
Roads, Traffic & Transportation and Air Quality	Traffic movements may contribute to short-term air quality effects arising from vehicle emissions.
Roads, Traffic & Transportation and Climate	Vehicle movements generate greenhouse gas emissions, creating an interaction with climate.
Roads, Traffic & Transportation and Landscape & Visual	Traffic movements may temporarily influence landscape character and visual amenity.
Roads, Traffic & Transportation and Cultural Heritage	Traffic movements may pose minor risks to cultural heritage features located close to haul routes.

Traffic during these phases may influence population and human health through changes in journey times, access and road safety, while also contributing to short-term air quality and noise effects from vehicle emissions and movements. Interactions with climate arise from vehicle-related GHG 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 cultural heritage where sensitive features are located near haul routes. 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 range between Short-term Not Significant Negative and Short-term Significant Negative.

20.4.2.11 Chapter 16 – Material Assets

Material Assets attributes interact with other environmental attributes, as listed in Table 20-20.

Table 20-20 — Interactions between Environmental Aspects of the Proposed Development for Material Assets

Interaction	Description
Material Assets and, Roads, Traffic and Transport	Traffic is one of the environmental attributes typically assessed under Material Assets. For the purposes of this EIAR a full Traffic Impact Assessment has been undertaken and is presented in Chapter 15 – Roads, Traffic & Transportation, along with all relevant mitigation measures. The chapter concludes that there will be no significant interaction between traffic and material assets.

Interaction	Description
Material Assets and Resource and Waste Management	Waste Management is one of the environmental attributes typically assessed under Material Assets. For the purposes of this EIAR a Resource and Waste Management Assessment has been undertaken and is presented in Chapter 14 – Resource and Waste Management, along with all relevant mitigation measures. The chapter concludes that there is sufficient waste management capacity in the region to adequately cater for the estimated surplus soil and stone that will be generated. The assessment concludes that the effects on waste during construction will be Moderate and during operation will be Not Significant.
Material Assets and, Population and Human Health	During the construction phase no existing utilities will be subject to major disruption. Construction of the Proposed Development is likely to happen in phases and work will be planned to ensure that in the event of a short-term interruption of a utility supply, alternative provisions would be provided to enable continuity of supply. This may mean the provision of an alternative potable water supply or alternative energy supply. Construction at the various sites will require the re-routing of overhead lines (OHL), for example at the Lisglennon WTP. The Bonniconlon BPS site will require a power supply which will require the placement of either an underground cable (UGC) or OHL. In these cases the diversion route would be constructed first do that the supply can be continued while the exiting line is decommissioned. These operations may result in outage to several dwellings which will result in a moderate adverse effect which is temporary and reversible. The sensitivity of the receptors is low to medium and the magnitude of the effect, in the absence of mitigation measures, is negligible resulting in a Not Significant adverse effect.

20.4.2.12 Chapter 17 – Cultural Heritage

Interactions between cultural heritage, and landscape and visual, population and human health, material assets, and roads, traffic and transportation are shown in Table 20-21.

Table 20-21 — Interactions between Environmental Aspects of the Proposed Development for Cultural Heritage

Interaction	Description
Cultural Heritage and, Landscape and Visual	Cultural heritage interactions with Landscape and Visual Impact Assessment (LVIA) relates to the setting of cultural heritage features in the landscape and how these might be impacted by the Proposed Development. There will be a temporary visual effect during construction on Belleek Manor. The visual effect will be short term and not significant**.** The landscape value of an area can be effected by the discovery of cultural heritage features in the course of excavations.
Cultural Heritage and Population and Human Health	Community value and sense of place can be impacted by road closures and restrictions around heritage assets in proximity to the Proposed Development while the recording and preservation of cultural heritage contributes positively to social wellbeing and community identity.
Cultural Heritage and Roads, Traffic and Transport	Cultural heritage interaction with transportation relates to assessing the risk to archaeological, architectural and cultural heritage features identified along or in close proximity to haul routes. 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 range between short-term Not Significant Negative and short-term Significant Negative.

20.4.2.13 Chapter 18 – Landscape and Visual Assessment

Interactions between landscape and visual effects and other environmental aspects of the Proposed Development have been considered as part of this assessment (Table 20-22). The principal interactions relate to environmental topics where construction activity, reinstatement, operation or mitigation may also influence landscape character, visual amenity or the perceptual qualities of the receiving landscape.

No additional significant landscape or visual effects are predicted as a result of interactions between environmental aspects, beyond those already assessed within this chapter and the relevant specialist EIAR chapters.

Table 20-22 — Interactions between Environmental Aspects of the Proposed Development for Landscape and Visual Assessment

Interaction	Description
Landscape and Visual and Biodiversity	Interactions arise where vegetation removal, hedgerow planting, woodland and scrub planting, species-rich grassland, blanket bog reinstatement and other landscape mitigation measures also affect habitats, ecological connectivity and biodiversity enhancement. These measures are complementary and have been considered in the landscape mitigation and reinstatement proposals.
Landscape and Visual and Population and Human Health	Interactions arise where landscape and visual effects influence the amenity experienced by residents, recreational users, road users, visitors and local communities. These receptors are considered within the visual assessment through representative viewpoints and receptor based professional judgement.
Landscape and Visual and Cultural Heritage	Interactions arise where landscape and visual changes may also relate to the setting of cultural heritage assets. The principal interaction identified in this assessment relates to Belleek Castle and woodland, where the proposed pipeline route follows an existing track through the wooded estate landscape. The LVIA considers landscape character and visual amenity effects, while any effects on cultural heritage significance or heritage setting are assessed in the Chapter 17 – Cultural Heritage.

20.4.2.14 Chapter 19 – Major Accidents and Disasters

In accordance with Section 2.7.6 of the EPA Guidelines (2022), this section considers the interactions between the identified major accident and disaster risks and other environmental factors. The assessment recognises that a major accident may result in secondary or cascading effects across multiple environmental receptors and therefore considers both the interaction pathway and the embedded mitigation measures incorporated into the Proposed Development.

Table 20-23 — Interactions between Environmental Aspects of the Proposed Development for Major Accidents and Disasters

Interaction	Description
Major Accidents and Disasters and, Population and Human Health	The principal risks with the potential to interact with Population and Human Health include fire or explosion associated with compressed gas cylinders during construction, traffic collisions involving construction or operational vehicles, contamination of treated drinking water arising from treatment failures or dosing errors, flooding or extreme weather affecting critical infrastructure, and the failure of key water supply assets such as treatment facilities, pumping stations, reservoirs or trunk mains. These events could result in injury to workers, members of the public, road users, or consumers dependent on the public water supply network. In particular, disruption to water treatment, storage or distribution infrastructure could adversely affect drinking water security and the resilience of water supply services to communities.

Interaction	Description
	Similarly, contamination of treated water through process failure could create a direct human health pathway through the potable water supply system. The Proposed Development incorporates a range of embedded mitigation and resilience measures designed to prevent or minimise these interactions. Construction activities will be undertaken in accordance with site-specific health and safety procedures, detailed risk assessments, method statements and a Site Emergency Response Plan. Traffic-related risks will be managed through implementation of a Traffic Management Plan, temporary traffic controls and agreed site access arrangements. Operationally, the water treatment system incorporates multiple treatment barriers, continuous instrumentation, automated monitoring and control systems, routine sampling, operational checks and preventative maintenance programmes to minimise the risk of treated water contamination. The design also includes redundancy and resilience measures such as duty/standby pumps, backup power generation, retained infrastructure, storage reservoirs, and routine inspections, thereby reducing the likelihood that infrastructure failure, flooding or extreme weather events could interrupt water supply services or result in adverse effects on human health. (see Chapter 3 – Project Description and Chapter 6 – Population and Human Health for details).
Major Accidents and Disasters and, Land, Soils and Geology	Major accident scenarios capable of interacting with land, soils and geology primarily include accidental releases of concrete, fuels, lubricants, drilling fluids, bentonite and spoil materials during construction activities, as well as pollution incidents arising from extreme weather events, flooding, infrastructure failures or chemical releases. Such events have the potential to contaminate soils, alter soil chemistry, affect geological materials, and facilitate the migration of contaminants through vulnerable ground conditions. The interaction is particularly relevant where excavations, temporary works, dewatering activities, HDD crossings, construction compounds and chemical handling operations are undertaken, creating potential pathways for contaminants to enter soil and underlying geological strata. Embedded controls substantially reduce the likelihood of significant soil or geological effects. The CEMP will provide for pollution prevention procedures, spill response measures, sediment management controls, dewatering management and environmental monitoring. HDD activities will be undertaken using drilling fluid management procedures, pressure monitoring, inspection regimes and contingency measures for drilling fluid breakout. Spill containment systems will be provided for fuels, lubricants and hydraulic fluids, while designated refuelling and storage areas will be bunded, sealed and covered. Wet concrete works near sensitive receptors will be undertaken within controlled construction environments using cofferdams, drained work areas, settlement systems and pollution prevention measures. During operation, treatment chemicals will be stored within bunded compounds supported by leak detection systems, controlled delivery areas and documented operational procedures, thereby preventing accidental releases from affecting soils and geological receptors. (see Chapter 3 – Project Description and Chapter 9 – Land, Soil and Geology for details).
Major Accidents and Disasters and, Water (Hydrology and Hydrogeology)	Surface water and hydrogeological receptors represent one of the most sensitive interaction pathways identified within the assessment. Potential major accident scenarios include releases of silt-laden runoff, drilling fluids, bentonite, hydrocarbons, concrete, fuels or treatment chemicals; flooding of operational infrastructure; and accidental incidents associated with intake installation works in Lough Conn and infrastructure located near water-dependent habitats. These events could result in deterioration of water quality within sensitive receptors including Lough Conn, Lough Talt, Lough Cullin and associated watercourses. In hydrogeological terms, accidental releases could infiltrate highly vulnerable groundwater zones, resulting in contaminant transport through groundwater pathways. Chemical spills arising from operational water treatment facilities could similarly affect both surface waters and groundwater if containment systems were absent.

Interaction	Description
	The design incorporates extensive water protection measures to interrupt these pathways. Construction phase controls include settlement tanks, silt fencing, sediment management measures, cofferdams, dewatering controls, pollution prevention procedures and emergency spill response arrangements implemented through the CEMP. For HDD crossings, launch and reception pits will be located away from watercourses where practicable, with drilling pressure monitoring, inspection programmes and contingency procedures in place. No direct works will occur at the River Moy crossing, as the existing crossing infrastructure will be utilised. During intake installation works at Lough Conn and construction works at Windy Gap, controlled construction methodologies, sediment control measures, water quality protection procedures, containment systems, leak collection drains and inspection chambers will minimise the potential for releases. Operationally, chemical storage systems incorporate bunding, dedicated delivery aprons, leak detection alarms, controlled drainage arrangements and Standard Operating Procedures covering handling, transfer and spill response, ensuring that accidental releases are contained before reaching surface water or groundwater receptors (see Chapter 3 – Project Description and Chapter 10 – Water (Hydrology and Hydrogeology) for details).
Major Accidents and Disasters and, Biodiversity	Biodiversity receptors are particularly sensitive to major accidents and disaster events due to the strong ecological connectivity between aquatic habitats, water quality and designated conservation sites. Accidental releases of concrete, fuels, drilling fluids, sediments, hydrocarbons or treatment chemicals could adversely affect aquatic habitats, fish populations, aquatic flora and designated ecological sites such as Lough Conn and Lough Talt. Similarly, accidents during abstraction pipe installation within Lough Conn, HDD operations beneath sensitive watercourses, flooding events or infrastructure failures could result in habitat degradation, elevated sedimentation, reduction in water quality or ecological disturbance. During operation, damage to the intake structure or failure of chemical containment systems could create pathways for effects on aquatic ecosystems and protected species. A comprehensive suite of ecological protection measures has been embedded within the project design. Construction activities near sensitive water environments will be controlled through implementation of the CEMP, sediment management measures, pollution prevention controls, spill containment systems and water quality protection procedures. HDD crossings will utilise trenchless methodologies specifically to avoid direct disturbance of sensitive watercourses and aquatic habitats. Intake installation works within Lough Conn will be undertaken using controlled construction methods supported by sediment containment measures and environmental monitoring. During operation, the Wherrew intake incorporates dedicated fish protection measures including intake screening, rotating fish screens, fish return systems, acoustic hoods and monitoring infrastructure to minimise effects on aquatic fauna. Vessel collision risk is reduced through the provision of cardinal markers identifying the intake location. In addition, all chemical storage and handling systems are designed with bunding, containment, leak detection and emergency response arrangements, significantly reducing the potential for accidental releases to affect designated ecological receptors or important aquatic habitats (see Chapter 3 – Project Description and Chapter 7 – Biodiversity for details).

20.5 References

Institute of Air Quality Management (IAQM) (2024). Guidance on the Assessment of Dust from Demolition and Construction (Version 2.2).

Department of Housing, Planning and Local Government (DoHPLG) (2018). Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.

European Commission (EC) (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. ISBN 92-894-1337-9. Luxembourg.

European Commission (EC) (2017). Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report' (Directive 2011/92/EU as amended by 2014/52/EU). ISBN 978-92-7974374-0.

Environmental Protection Agency (EPA) (2022). Guidance on the Information to be Contained in an Environmental Impact Assessment Report. Available at: https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf. [Accessed: November 2025]

Mayo County Council (2022). Mayo County Development Plan 2022-2028.

Sligo County Council (2024). Sligo County Development Plan 2024-2030.

UK Planning Inspectorate (PINS) (2024). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment.

AtkinsRéalis

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

Tel: +353 1 810 8000

© AtkinsRéalis Ireland Limited except where stated otherwise