AtkinsRéalis

Environmental Impact Assessment Report (EIAR) Volume 1 – Non-Technical Summary (NTS)

Uisce Éireann

October 2026
0089328DG0057

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 the Proposed 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 72 pages including the cover.

Document history

Document title: Environmental Impact Assessment Report (EIAR) Volume 1 – Non-Technical Summary (NTS)

Document reference: 0089328DG0057

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0	Draft	SK	LH	DE	TM	10/08/2026
1	For comment	SK	LH	DE	TM	10/08/2026
2	Final	SK/LH	LH	DL	TM	23/10/2026

Client signoff

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

Abbreviations

Abbreviation	Term
BPT	Brake Pressure Tank
BPS	Booster Pumping Station
CCRA	Climate Change Risk Assessment
C&D	Construction and Demolition
CEMP	Construction Environmental Management Plan
COMAH	Control of Major Accident Hazards
CWTMP	Construction Works Traffic Management Plan
DoHLGH	Department of Housing, Local Government and Heritage
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
GHG	Greenhouse Gas
GHGA	Greenhouse Gas Assessment
HGV	Heavy Goods Vehicle
kVa	Kilovolt-Ampere
km	Kilometres
LLO	Landowner Liaison Officer
m	meter
mm	millimetre
MV	Medium Voltage
NIAH	National Inventory of Architectural Heritage
NWRP	National Water Resources Plan
NIS	Natura Impact Statement
NO2	Nitrogen Dioxide
NPF	National Planning Framework
NSLs	Noise Sensitive Locations
PCEMP	Preliminary CEMP
PCRWMP	Preliminary Construction Resource and Waste Management Plan
PCU	Passenger Car Unit

Abbreviation	Term
PM	Particulate Matter
PV	Photovoltaic
RSES	Regional Spatial and Economic Strategy
RWI&PS	Raw Water Intake & Pumping Station
RWS&PS	Raw Water Storage and Pumping Station
SAC	Special Area of Conservation
SID	Strategic Infrastructure Development
SPA	Special Protected Area
TII	Transport Infrastructure Ireland
THM	Trihalomethane
TMP	Traffic Management Plan
UK	United Kingdom
WFD	Water Framework Directive
WTP	Water Treatment Plant
ZoN	Zone of Notification

Contents

1. Introduction and Methodology 1

2. Project Need 6

2.1 Principle 6

2.2 Need and Justification 6

2.3 Benefits 7

3. Project Description 8

3.1 Proposed Infrastructure 8
3.1.1 Wherrew Raw Water Intake & Pumping Station (RWI&PS) 8
3.1.2 Lisglennon Raw Water Storage and Pumping Station (RWS&PS) 9
3.1.3 Pipeline A – Lisglennon RWPS to Lisglennon WTP 11
3.1.4 Lisglennon Water Treatment Plant (WTP) 11
3.1.5 Treated Water Pipelines B, C, D and E: Lisglennon WTP to Lough Talt WTP 11
3.1.6 Bonniconlon Booster Pumping Station (BPS) 13
3.1.7 Windy Gap Break Pressure Tank (BPT) 13
3.1.8 Lough Talt Water Treatment Plant (WTP) 14
3.1.9 Bonniconlon Reservoir 15

3.2 Renewable Energy provision 17

3.3 Construction Overview 17
3.3.1 Summary of construction works 17
3.3.2 Working hours 17
3.3.3 Construction Plans 18
3.3.4 Construction traffic 18

3.4 Operation and Maintenance Overview 18

3.5 Decommissioning 19

3.6 Programme 19

4. Alternatives 20

4.1 Alternative Water Supply Assessment 20

4.2 Reappraisal and Alignment with the National Water Resource Plan / Regional Water Resource Plan – North West 20

4.3 Alternatives for the Proposed Development 21
4.3.1 Route Selection 21
4.3.2 Site Selection 22

4.4 Design Alternatives 24
4.4.1 Wherrew RWI&PS 24
4.4.2 Lisglennon WTP 24

4.5 Summary 24

5. Consultations 25

6. Population and Human Health 26

6.1 Existing Environment 26
6.2 Construction Phase 26
6.3 Operational Phase 26
6.4 Mitigation measures 26
6.5 Residual Effects 27
7. Biodiversity 28
7.1 Existing Environment 28
7.2 Construction Phase 28
7.3 Operational Phase 28
7.4 Mitigation Measures 29
7.5 Residual Effects 29
8. Agronomy 30
8.1 Existing Environment 30
8.2 Construction Phase 30
8.3 Operational Phase 30
8.4 Mitigation Measures 31
8.5 Residual Effects 31
9. Land, Soils and Geology 32
9.1 Existing Environment 32
9.2 Construction Phase 32
9.3 Operational Phase 33
9.4 Mitigation Measures 33
9.5 Residual Effects 33
10. Water (Hydrology and Hydrogeology) 34
10.1 Introduction 34
10.2 Existing Environment 34
10.3 Construction Phase 34
10.4 Operational Phase 34
10.5 Mitigation Measures 35
11. Air Quality 36
11.1 Existing Environment 36
11.2 Construction Phase 36
11.3 Operational Phase 36
11.4 Mitigation Measures 37
11.4.1 Construction Phase 37
11.4.2 Operational Phase 37

11.5 Residual Impact Assessment....37
12. Climate....38
12.1 Introduction....38
12.2 Existing Environment....38
12.3 Impact Assessment....38
12.3.1 GHG Assessment....38
12.3.2 Climate Risk Assessment....39
12.4 Mitigation Measures....39
12.5 Residual Impact....39
13. Noise and Vibration....40
13.1 Existing Environment....40
13.2 Construction Phase....40
13.3 Operational Phase....40
13.4 Mitigation Measures....40
13.5 Residual Effects....41
13.6 Conclusion....41
14. Resource and Waste Management....42
14.1 Existing Environment....42
14.2 Construction Phase....43
14.3 Operational Phase....43
14.4 Mitigation Measures....43
14.5 Residual Effects....44
14.6 Conclusions....44
15. Roads, Traffic and Transportation....45
15.1 Existing Environment....45
15.2 Construction Phase....45
15.2.1 Sensitive Locations....45
15.2.2 Walking, Cycling and Public Transport....46
15.3 Operational Phase....46
15.4 Mitigation Measures....46
15.5 Worst Case Scenario....47
15.6 Conclusion....47
16. Material Assets....48
16.1 Existing Environment....48
16.2 Construction Phase....48
16.3 Operational Phase....48
16.4 Mitigation Measures....48

16.4.1 Construction mitigation measures....48
16.4.2 Mitigation during operation....49
16.4.3 Monitoring requirements....49
16.5 Residual effects....49
17. Cultural Heritage....50
17.1 Existing Environment....50
17.2 Construction Phase....51
17.2.1 Direct Effects on Recorded Monuments....51
17.2.2 Direct Effects on NIAH and RPS....51
17.2.3 Direct Effects on Unregistered Cultural Heritage Features....51
17.2.4 Direct Effects on Potential Sub-Surface Archaeology....52
17.2.5 Indirect Effects on Cultural Heritage....52
17.3 Operational Phase....53
17.4 Mitigation Measures....53
18. Landscape and Visual Impact Assessment....55
18.1 Existing Environment....55
18.2 Construction Phase....55
18.3 Operational Phase....55
18.4 Mitigation Measures....56
18.5 Residual Effects....56
19. Risk of Major Accidents and Disasters....57
19.1 Existing Environment....57
19.2 Construction Phase....57
19.3 Mitigation Measures....57
19.4 Residual Effects....58
20. Cumulative Impact Assessment and Interactions between Effects....59
20.1 Cumulative effects....59
20.2 Interactive Effects summary....59
21. Mitigation and Monitoring Measures....60
22. References....61

List of Tables

Table 3-1 — Summary of proposed treated water pipeline sections....12
Table 3-2 — Proposed solar capacities across the Proposed Development....17
Table 17-1 – Summary of Cultural Heritage features impacted by Proposed Development....51

List of Figures

Figure 1-1 — Schematic Overview of the Proposed Development 2

Figure 1-2 — Overview of Proposed Development 3

Figure 3-1 — Wherrew RWI&PS proposed upgrades – Visualisation (for indicative purposes only) 9

Figure 3-2 — Lisglennon RWS&PS – Proposed Site Layout 10

Figure 3-3 — Lisglennon WTP 3D site layout showing existing and new structures. New proposed structures are shown in green. 11

Figure 3-4 — Proposed treated water pipeline Route Corridor from Lisglennon WTP to Lough Talt WTP 12

Figure 3-5 — Bonniconlon BPS – Visualisation (for indicative purposes only) 13

Figure 3-6 — Proposed BPT at Windy Gap – A typical 3D view 14

Figure 3-7 — Proposed Layout at Lough Talt WTP 15

Figure 3-8 — Bonniconlon Reservoir Proposed Upgrades – A Typical 3D view 16

Figure 4-1 – Preferred Route Corridor 22

Figure 4-2 – Site Selection Study Area 23

Figure 14-1 – Accepted Best Practice Waste Hierarchy (EPA, 2021) 42

Figure 17-1 – Features identified in proximity to the Proposed Development: Section of Pipeline B showing location of CH127 52

1. Introduction and Methodology

This is the Non-Technical Summary of the Environmental Impact Assessment Report (EIAR) for the Ballina and Lough Talt Water Supply Upgrade (hereafter the 'Proposed Development'). The EIAR has been prepared to accompany the planning application for the Proposed Development to the planning authority, An Coimisiún Pleanála.

The Proposed Development comprises both existing and new infrastructure, as well as above ground and below ground elements. This section describes the spatial extent, key components and operational parameters of the Proposed Development.

The Proposed Development will consist of seven "key locations" and five discrete sections of pipeline, as follows:

- Upgrade to the existing Wherrew Raw Water Intake & Pumping Station (RWI&PS), Wherrew, Ballina, Co. Mayo;
- Upgrade to the existing Lisglennon Raw Water Storage and Pumping Station (RWS&PS), Lisglennon, Ballina, Co. Mayo;
- Proposed Pipeline A – Lisglennon RWPS to Lisglennon Water Treatment Plant (WTP);
- Upgrade to the existing Lisglennon WTP, Lisglennon, Ballina, Co. Mayo;
- Proposed Pipeline B – Lisglennon WTP to River Moy Pipeline Crossing;
- Proposed Pipeline C – Existing River Moy Crossing to Bonniconlon BPS;
- Proposed Pipeline D – Bonniconlon BPS to Windy Gap BPT;
- Proposed Pipeline E – Windy Gap BPT to Lough Talt WTP;
- Proposed Bonniconlon BPS located at Bonniconlon, Ballina, Co. Mayo;
- Proposed Windy Gap BPT located at the Windy Gap, Ballina, Co. Mayo;
- Repurposing the existing Lough Talt WTP, Co. Sligo;
- Proposed Treated Water Reservoir at the existing Bonniconlon Reservoir site, Ballina, Co. Mayo; and,
- All permanent and temporary works, including construction compounds, access routes, pipeline corridors, and trenchless crossings.

A schematic overview of the development is shown in Figure 1-1. An overview map of the Proposed Development is provided in Figure 1-2.

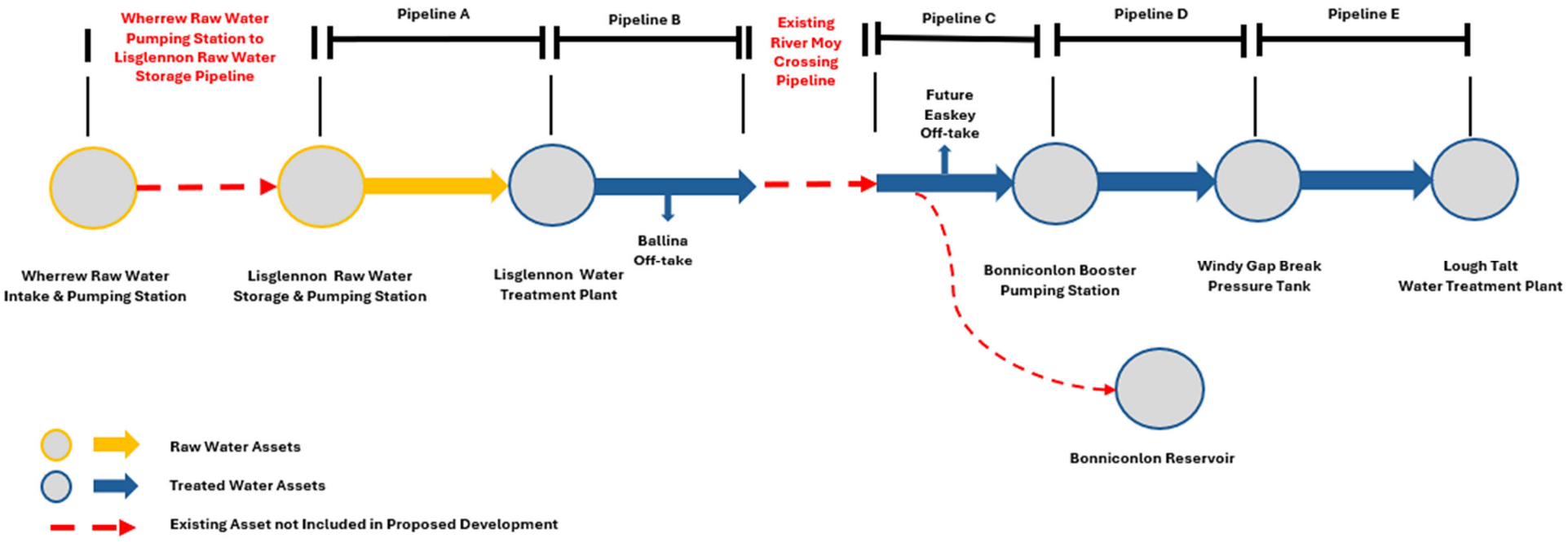


Figure 1-1 — Schematic Overview of the Proposed Development

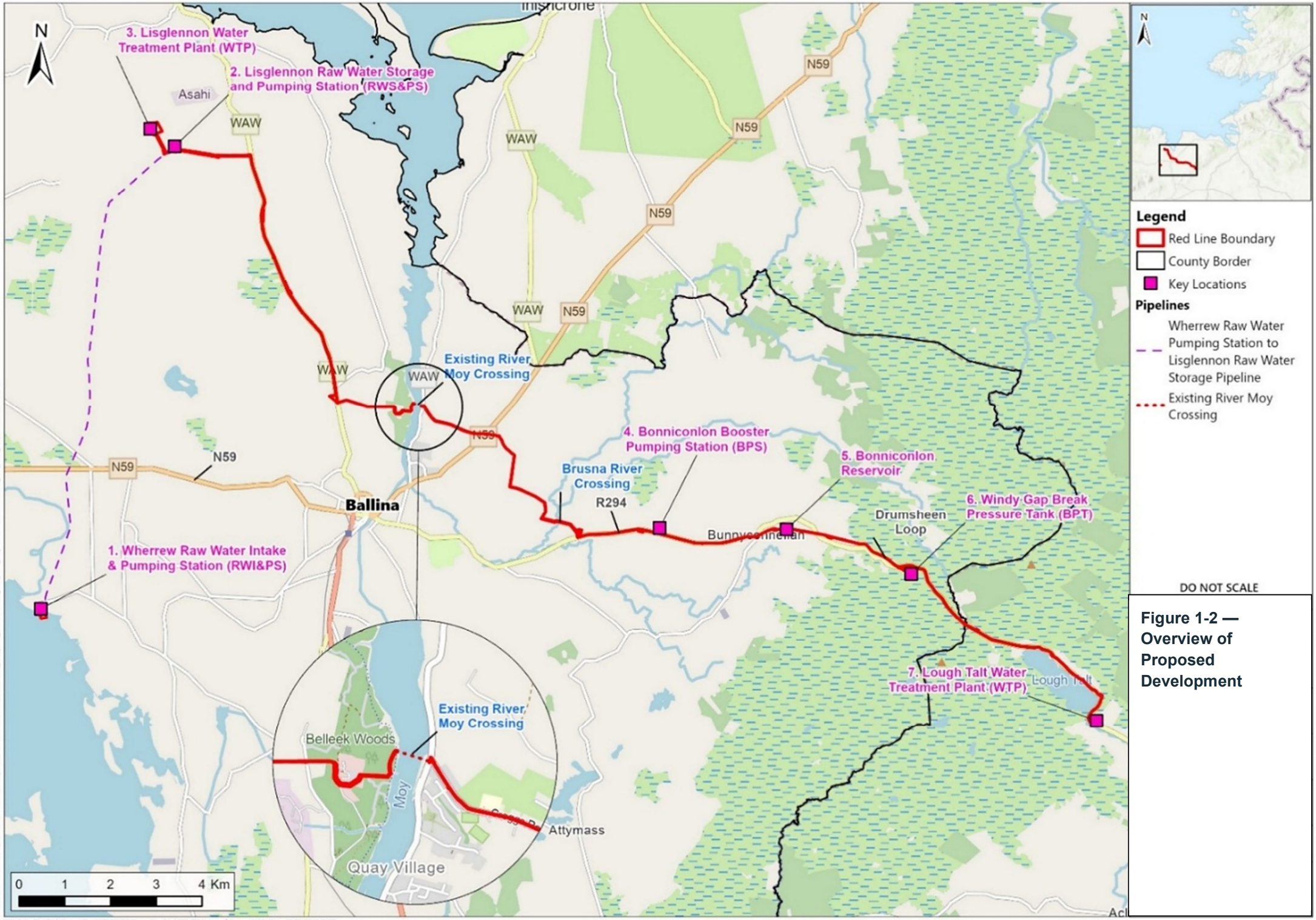


Figure 1-2 — Overview of Proposed Development

Uisce Éireann is the 'Applicant' for the Proposed Development. Uisce Éireann is Ireland's national regulated water utility, responsible for the delivery of secure, safe and sustainable water services for the people of Ireland. Incorporated in July 2013 as a company under the Water Services Act 2013, Uisce Éireann brings the water and wastewater services of the 31 Local Authorities together under one national service provider.

The preparation of a Non-Technical Summary is a requirement under the European Union (EU) Directive on Environmental Impact Assessment (EIA) (Directive 2014/52/EU, referred to as the EIA Directive). One of the fundamental objectives of the EIA Directive is to 'ensure that the public are made aware of the environmental implications of any decisions about whether to allow new projects to take place'.

This document summarises the EIAR in non-technical language, including the likely significant effects which may arise during the construction and operation of the Proposed Development and measures that will be put in place to reduce or remove those effects, known as mitigation. The EIA process has been undertaken in line with the EIA Directive, based on the guidance presented in the Environmental Protection Agency (EPA)'s (2022) Guidelines on the Information to be Contained in EIARs and other relevant guidance, as set out throughout the EIAR.

The EIAR is presented in three volumes as follows:

- Volume 1 – Non-Technical Summary;
- Volume 2 – EIAR; and
- Volume 3 – EIAR Appendices.

The EIAR (Volume 2) contains:

- Chapter 1 – Introduction and Methodology;
- Chapter 2 – Project Need;
- Chapter 3 – Project Description;
- Chapter 4 – Alternatives;
- Chapter 5 – Consultations;
- Chapter 6 – Population and Human Health;
- Chapter 7 – Biodiversity;
- 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 14 – Resource and Waste Management;
- Chapter 15 – Roads, Traffic & Transportation;
- Chapter 16 – Material Assets;
- Chapter 17 – Cultural Heritage;
- Chapter 18 – Landscape and Visual Impact Assessment;
- Chapter 19 – Risk of Major Accidents and Disasters;
- Chapter 20 – Cumulative Impacts Assessment and Interactions; and
- Chapter 21 – Mitigation and Monitoring Measures.

The EIAR has been prepared by competent subject matter experts (SMEs). Cumulative and interactive effects for environmental factors have been addressed within each technical chapter and summarised in Chapter 20, Volume 2 of the EIAR. All mitigation and monitoring commitments detailed within the EIAR have been included in each chapter and presented in Chapter 21, Volume 2 of the EIAR.

A Natura Impact Statement (NIS) has also been prepared in line with the requirements of the EU Habitats Directive and submitted with the Planning application. A Water Framework Directive Report has been prepared in line with the requirements of the EU Water Framework Directive (WFD), presented in Appendix 10-1 (the Proposed Development) and Appendix 10-3 (Lough Conn), Volume 3 of the EIAR.

Following consultation, An Coimisiún Pleanála confirmed that the Proposed Development is Strategic Infrastructure Development in accordance with the Seventh Schedule of the Planning and Development Act 2000 as amended.

The Proposed Development meets the criteria for Strategic Infrastructure Development (SID). ACP have determined that the Proposed Development exceeds the relevant threshold set out in the Seventh Schedule of the Planning and Development Act 2000 (as amended).

The full planning application pack, including this EIAR will be available for public viewing from the ACP Office, Mayo County Council Office, Sligo County Council Office or the SID Application website: https://ballinaandloughtaltwsupgradeproject.ie/.

2. Project Need

This chapter sets out the principle, need and benefits for the Proposed Development.

2.1 Principle

The Proposed Development is supported by policy objectives at European, National, Regional and Local level to ensure the provision of a resilient water supply by way of high-quality water infrastructure, including an upgrade of existing facilities, to support planned growth and development, while also ensuring the proper protection of relevant water bodies. Relevant national, regional and local plans include:

- National Planning Framework (Government of Ireland, 2025a)
- National Development Plan 2021-2030 (Government of Ireland, 2021);
- Accelerating Infrastructure Report and Action Plan 2025 (Government of Ireland, 2025b);
- Water Quality and Water Services Infrastructure – Sectoral Adaptation Plan 2025 (Department of Housing, Local Government and Heritage (DoHLGH), 2025);
- National Water Resources Plan (NWRP) (Irish Water, 2021);
- Regional Water Resources Plan – North West (RWRP-NW) (Irish Water, 2023a);
- Regional Spatial and Economic Strategy (RSES) for the Northern Region 2020-2032 (Northern and Western Regional Assembly (NWRA), 2020);
- Mayo County Development Plan 2022-2028 (Mayo County Council, 2022);
- Ballina Local Area Plan 2024-2030 (Mayo County Council, 2024);
- Sligo County Development Plan 2024-2030 (Sligo County Council, 2024).

2.2 Need and Justification

The Proposed Development is needed:

- To provide a safe and reliable water supply to Ballina and surrounding areas, while also supporting future growth and development in the area. The Proposed Development will benefit approx. 36,400 people, ensuring a reliable and sustainable water supply for Ballina, Bonniconlon, and surrounding areas as well as allowing for future socio-economic growth in the region.
- To upgrade Ballina town's existing critical aging trunk main, which will be replaced to improve the reliability of water supply.
- To provide for treatment capacity, storage and pumping between Lough Conn and Lough Talt and provision of supply network that will enable the existing Lough Talt RWSS to be supplied from Lough Conn in Co. Mayo.
- To provide a long-term safe supply of drinking water for the Lough Talt RWSS including reduction of the risk of formation of trihalomethanes (THMs) and an effective treatment barrier against Cryptosporidium.
- To cease abstraction from the existing intake at Lough Talt currently supplying Lough Talt RWSS in order to protect Lough Talt and associated dependent habitat and species.
- To provide for treatment capacity, provision of storage and upgraded treated water conveyance to the existing water network in Ballina, Co. Mayo in accordance with future demand to 2044 projections.
- To upgrade water storage facilities with the construction of new water storage tanks, enabling 24-hour water storage capacity.

- To prepare for future increases in water supply demand that exceed the capacity of the Easkey RWSS from Lough Easkey.
- To invest in water services infrastructure to support sustainable management of water resources.

The Proposed Development will ensure a continual safe water supply that is compliant with EU Drinking Water Standards, and that will facilitate the sustainable development of the population that it supports.

Failure to implement the Proposed Development could have detrimental effects on water quality and/or the security of potable water in the Ballina and Lough Talt Water Supply networks.

2.3 Benefits

Specifically, the Proposed Development will result in:

- Upgrades to the ageing water network infrastructure. Large parts of Ballina Town are currently served by a critical asbestos cement trunk main, which will be replaced to improve the reliability of the water supply;
- Increased capacity to provide for future growth and development;
- Increased resilience in the network by increasing the treated water storage for Ballina;
- Increased resilience in the network with the addition of treated water storage in Lough Talt, Co. Sligo; and
- Upgrade to the Lisglennon water treatment facilities which will improve the robustness of the existing treatment processes.

The Proposed Development will increase capacity in the supply network, allowing Uisce Éireann to extend the Ballina network to areas currently served by the Lough Talt RWSS, which is not sustainable long-term. Additional storage at Lisglennon will enhance the security of supply for Ballina and new storage facilities will also be provided at Lough Talt to ensure a stable water supply for south Co. Sligo.

In addition, the rationalisation of the Lough Talt WTP will put an end to water abstraction from Lough Talt, restoring natural lake levels and providing significant ecological benefits to local habitats and wildlife.

3. Project Description

3.1 Proposed Infrastructure

This section contains an overview of the key components of the Proposed Development. Ancillary works (such as, but not limited to: site access and roadworks; stormwater management; wastewater management; fencing and security; lighting; landscaping) at each site are included as part of the Proposed Development where required, and are set out in Chapter 3 – Project Description. New sites will require new ESB connections, which are subject to a separate application.

Biodiversity and sustainability have been considered in the Preliminary Design of the Proposed Development in accordance with Uisce Éireann's Biodiversity (IW-AMT-POL-013) and Sustainability (IW-AMT-POL-002) Policies (Uisce Éireann, 2018; 2021).

3.1.1 Wherrew Raw Water Intake & Pumping Station (RWI&PS)

The existing Wherrew Raw Water Intake & Pumping Station (RWI&PS) is located at the top of small bay known as Kent's Pool, on the north-eastern shoreline of Lough Conn. The abstracted raw water is transferred to two WTPs, Wherrew WTP and Lisglennon WTP. The site consists of a raw water intake channel, a raw water intake structure, raw water pumping station and transfer pipelines.

The purpose of the proposed upgrades to the existing Wherrew RWI&PS is to address key operational issues, specifically the accumulation of silt at the intake channel and fish exclusion systems.

The proposed upgrades include a new intake pipe (approx. 165 m in length with 110 m extending beyond the intake channel) and coarse screen at the lakeward end and extension of the intake structure including a new fish return system. The site will be equipped with upgraded pressure and flow monitoring equipment. The intake channel will be infilled enabling restoration of the original lakeshore. Proposed landscaping will be matched to the existing habitat where possible. A visualisation (for indicative purposes only) of the proposed upgrades is shown in Figure 3-1.



Figure 3-1 — Wherrew RWI&PS proposed upgrades – Visualisation (for indicative purposes only)

3.1.2 Lisglennon Raw Water Storage and Pumping Station (RWS&PS)

The existing Lisglennon RWS&PS site at Lisglennon, Ballina, Co. Mayo, is bounded to the northwest and northeast by a wire fence in addition to hedgerow and mature trees. Access to the site is from the L11109. Upgrades include replacement of decommissioned pumps, with associated pipework and valves, to accommodate future capacity increase; installation of pressure measuring instrumentation; and flowmeter. The site will be landscaped with new hedgerows consisting of native species along the southern fenceline, and a reduced mowing regime implemented to encourage establishment of a wildflower area. The majority of the upgrades at this site will be internal to the pumping station, with the exception of a new flow meter chamber and scour chamber, which will be installed in the existing hardstanding outside the existing pumping station, shown in Figure 3-2.

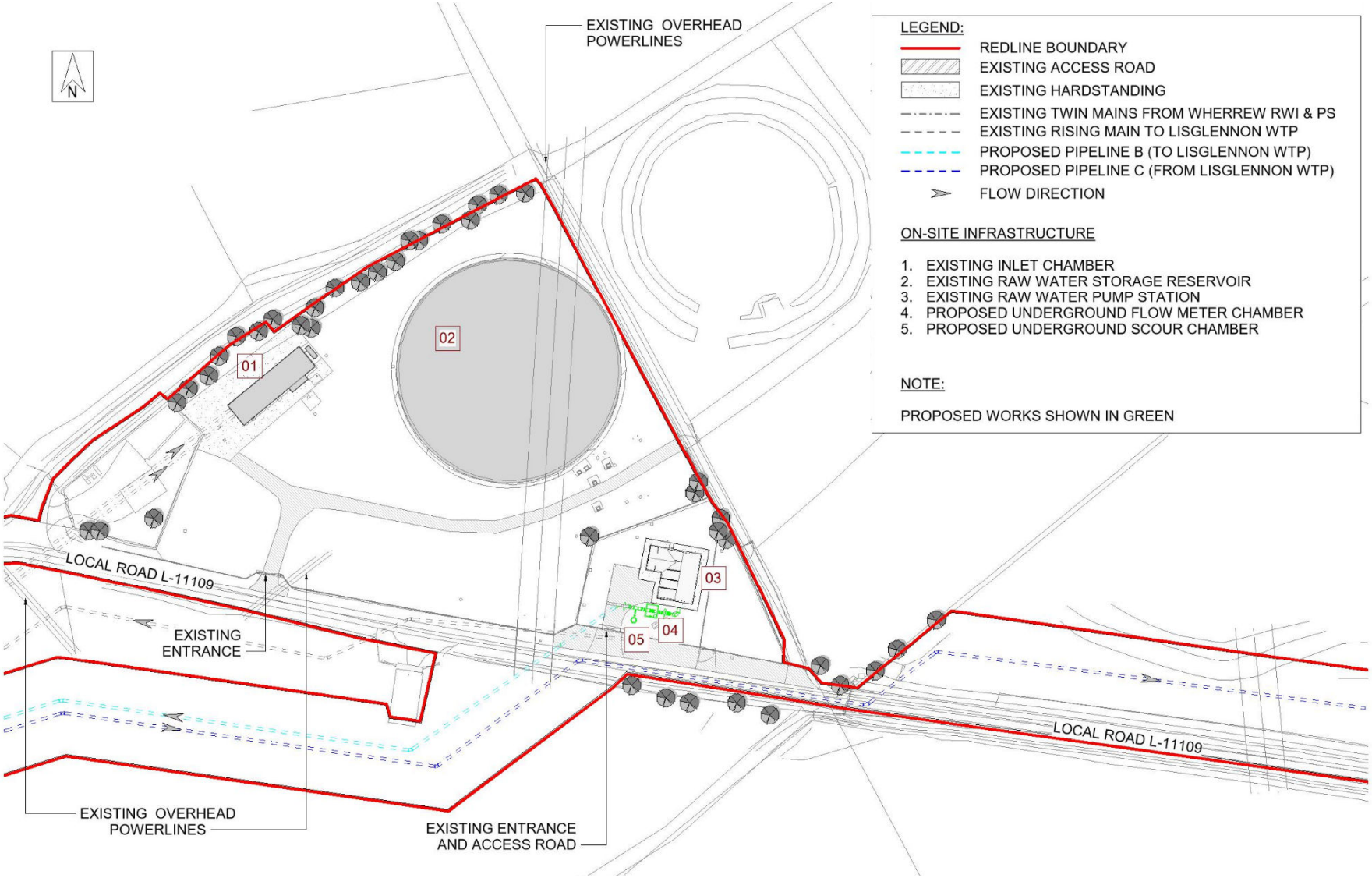


Figure 3-2 — Lisglennon RWS&PS – Proposed Site Layout

3.1.3 Pipeline A – Lisglennon RWPS to Lisglennon WTP

To facilitate the anticipated increase in raw water transfer to Lisglennon WTP, a new raw water pipeline, including valves, marker posts, fittings and associated chambers, will be installed parallel to the existing raw water pipeline between Lisglennon raw water pumping station and Lisglennon WTP building for a total length of approx. 1 km. The existing raw water pipeline will be retained as a maintenance bypass. Pipeline A and the initial section of Pipeline B will be installed in parallel within a common trench between the treated water storage tank at Lisglennon WTP and the site access to Lisglennon RWS&PS on the L11109.

3.1.4 Lisglennon Water Treatment Plant (WTP)

Lisglennon WTP is an existing operational WTP located at Lisglennon, Killala, Co. Mayo. The site comprises a part single-storey and part two-storey treatment building, associated treatment infrastructure, treated water storage, access roads, hardstanding and ancillary operational areas. The WTP is set back from the adjoining L1111 road and is contained within a defined operational site boundary.

Lisglennon WTP will be upgraded to provide increased treatment capacity, improved process resilience and enhanced operational control within the existing WTP site. The proposed upgrades will integrate retained existing assets with new treatment, storage, chemical dosing, residuals management, mechanical, electrical, instrumentation, control and automation infrastructure. The upgraded WTP will support the transfer of treated water to the wider Ballina and Lough Talt supply areas and will be operated in accordance with Uisce Éireann requirements for drinking water quality, asset resilience, health and safety, environmental protection and maintainability. A new ESB medium voltage (MV) substation incorporating a 400 kVA transformer is proposed to meet anticipated increase in electricity demand. The new substation will be maintained and operated by the ESB. Solar PV will be provided for at the site, located to the south of the site. Energy generated from the solar PV array farm will supply the WTP. There will be no export of power to the Grid. A back-up power supply in the form of a connection for a standby diesel generator, is provided in the event of a power outage. A 3D site layout is shown in Figure 3-3, where new proposed structures are shown in green.

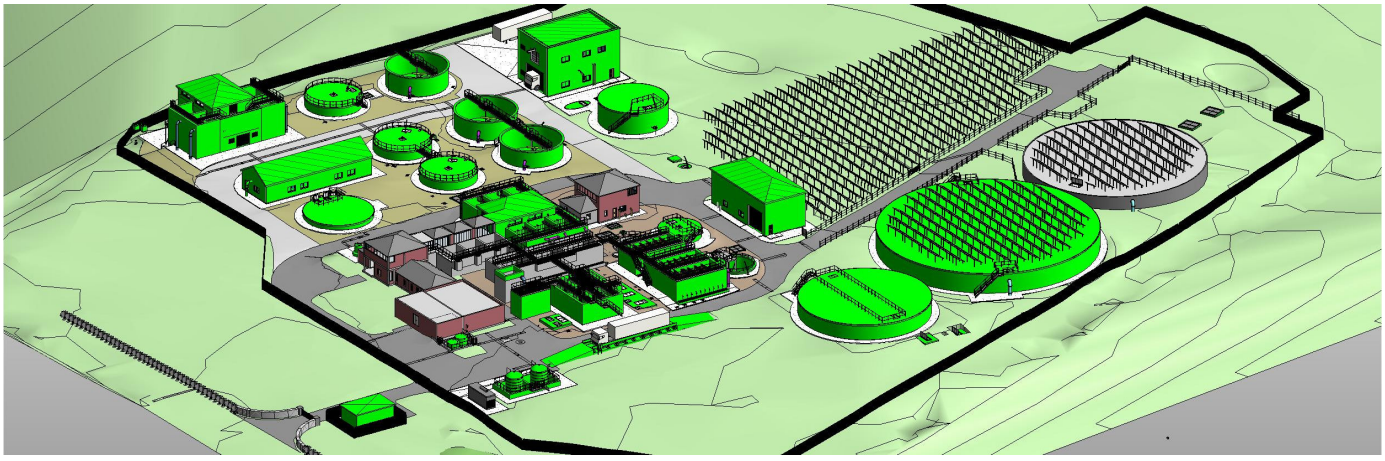


Figure 3-3 — Lisglennon WTP 3D site layout showing existing and new structures. New proposed structures are shown in green.

3.1.5 Treated Water Pipelines B, C, D and E: Lisglennon WTP to Lough Talt WTP

The proposed treated water pipeline route corridor between Lisglennon WTP and Lough Talt WTP extends for approximately 30.2 km. The route corridor has been developed to follow existing public roads, existing utility corridors and existing pipeline alignments where practicable, with sections across private lands where required to achieve hydraulic, engineering, environmental and constructability objectives. There are no works proposed

within or under the River Moy, instead the Proposed Development will tie-in to an existing 450 mm diameter pipeline crossing the River Moy, on either side. A number of recreational walking and cycling trails intersect the works, notably in Belleek Woods and near Bonniconlon. The pipeline route also overlaps with the EuroVelo 1 Ireland – Atlantic Coast Route (road cycling trail).

Ancillary pipeline infrastructure, including valves, fittings, marker posts, flowmeters, washout/scour arrangements, air valves, chambers, manholes and inspection chambers, will be installed as required to facilitate the operation, monitoring, maintenance, flushing, scouring and identification of the treated water pipeline system. The location of the pipeline sections are illustrated in Figure 3-4.

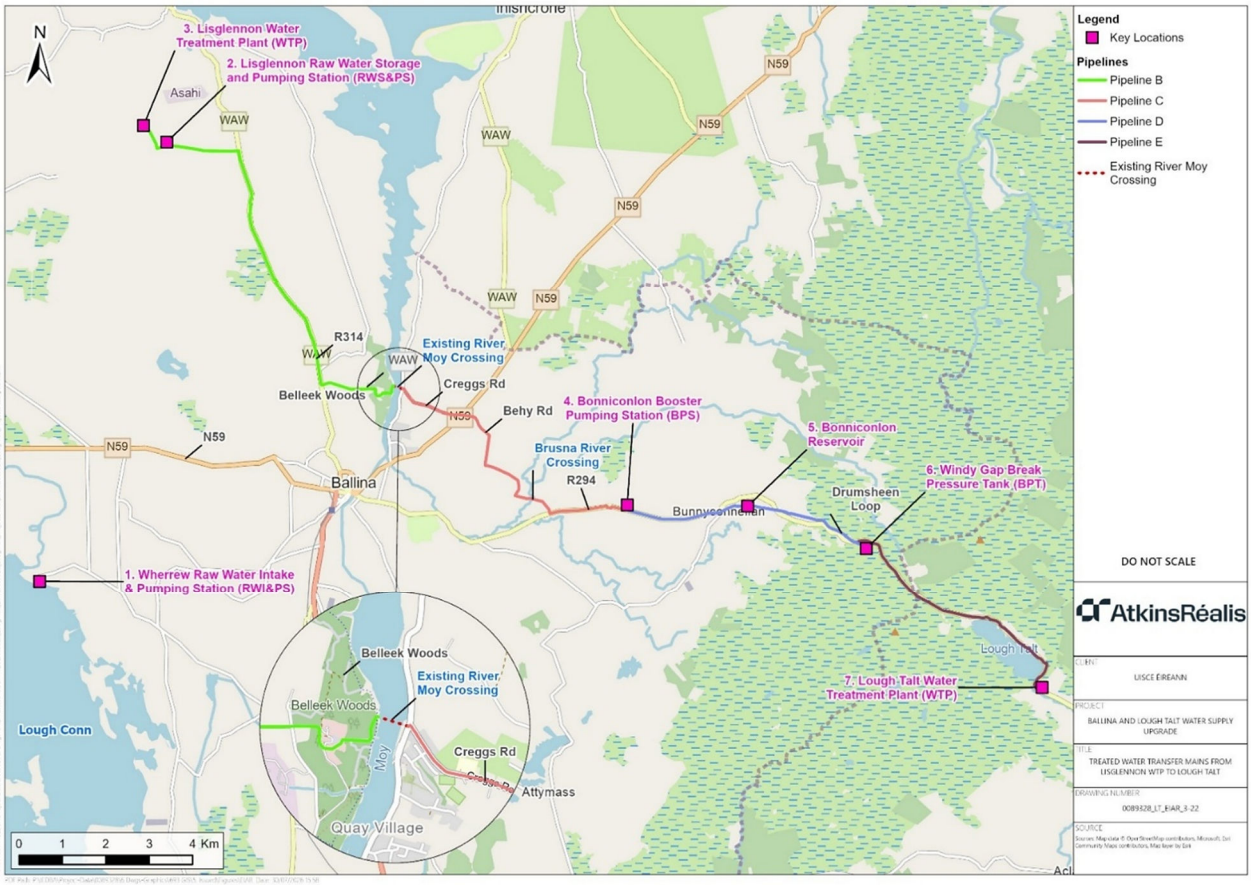


Figure 3-4 — Proposed treated water pipeline Route Corridor from Lisglennon WTP to Lough Talt WTP

A summary of approx. pipeline dimensions is provided in Table 3-1.

Table 3-1 — Summary of proposed treated water pipeline sections

Section	Approx. Diameter (mm)	Start location	End location	Approx. length (km)
Pipeline B	710	Lisglennon WTP	Junction R314 and Belleek Rd	8.3
Pipeline B	560	Junction R314 and Belleek Rd	River Moy Crossing	2.0
Pipeline C	500-560	River Moy Crossing	Bonniconlon BPS	7.2
Pipeline D	500-560	Bonniconlon BPS	Windy Gap Break Pressure Tank	6.0

Section	Approx. Diameter (mm)	Start location	End location	Approx. length (km)
Pipeline E	450	Windy Gap Break Pressure Tank	Lough Talt WTP	6.6

3.1.6 Bonniconlon Booster Pumping Station (BPS)

The proposed Bonniconlon BPS site is situated at Carralavin, Bonniconlon, Ballina, Co. Mayo. It is a greenfield site located at the junction of the R294 Ballina Road and L5135 Carrownlabaun, approx. 1.8 kilometres west of Bonniconlon. The proposed main entrance will be situated approximately 100 m North off the R294 onto the L5135, in accordance with the Mayo County Development Plan 2022 - 2028. The new 320 kW BPS (approx. 150 m^2, approx. 8 m tall) is required to transfer treated water uphill to Lough Talt WTP. A new ESB substation (approx. 24 m^2, 3 m tall), new permanent standby generator and two surge vessels (approx. 20 m^3 each) are also proposed. An indicative visualisation for the proposed Bonniconlon BPS is shown in Figure 3-5.



Figure 3-5 — Bonniconlon BPS – Visualisation (for indicative purposes only)

3.1.7 Windy Gap Break Pressure Tank (BPT)

The proposed site is located off the R294 in the vicinity of the Bunnyconnellan Wind Farm, and utilises the existing access road of the wind farm. The wider area is rural in nature, comprising areas of heavy overgrowth and areas of bogland. A BPT (approx. 7.5 m diameter and 2.3 m depth, including freeboard) with a storage capacity of approx. 80 m^3 is proposed to manage water pressure, allow water to flow under gravity, reduce pumping requirements, improve operational resilience and serve as a storage tank for the Lough Talt network. The inlet pipe from Pipeline D connects into the proposed BPT and the outlet pipework will connect to the Pipeline E which conveys treated water flows to Lough Talt WTP. The BPT will require: a scour extraction kiosk and control kiosk; associated inlet, outlet and overflow pipes and scour line; Precast Cement Concrete

inspection/collection chamber approx. 900 mm diameter; and associated works including underground flowmeter chambers, valve chambers and pipework.

Peatlands are acidic, therefore appropriate mitigation measures are proposed to prevent corrosion and to manage and monitor any leaks, including using a specific concrete mix, construction of an impermeable envelope within the pipe surround / pipe bedding, and all underground pipeline trenches.

A typical 3D view of the proposed BPT site is shown in Figure 3-6.

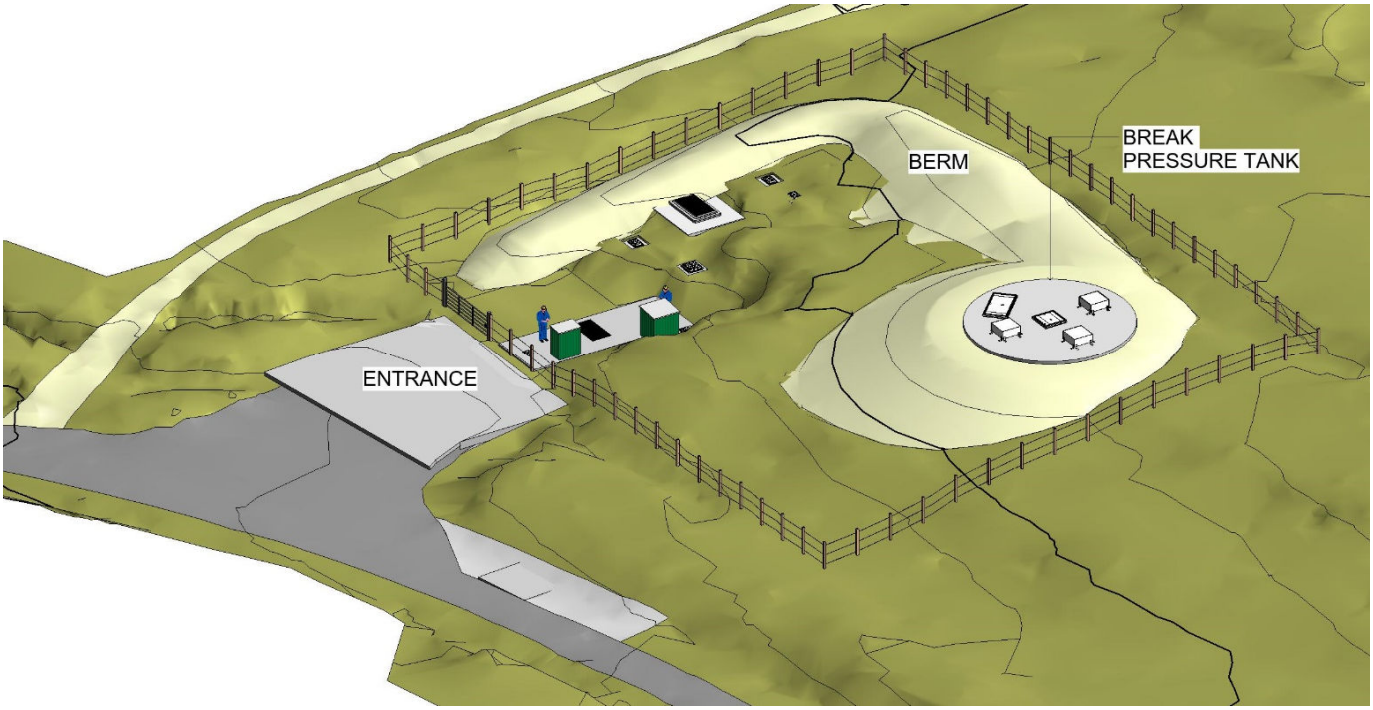


Figure 3-6 — Proposed BPT at Windy Gap – A typical 3D view

3.1.8 Lough Talt Water Treatment Plant (WTP)

The site comprises the existing Lough Talt WTP. Lough Talt WTP will be repurposed for treated water storage, supplied from the Lisglennon WTP, and conditioning facility. The existing approx. 330 m^3 chlorine contact tank will be retained and repurposed as a reservoir, and a new treated water reservoir with approx. 3300 m^3 capacity will be constructed. The existing control building, chemical storage container, tanks and associated works and disinfection (chlorination and ammonia) and orthophosphate dosing infrastructure will be retained. Redundant process units will be decommissioned and removed. Solar panels will be installed on the roof of the new storage tank to supplement the power requirements of the site.

No works are proposed to the existing abstraction point from Lough Talt. This is not located within the Lough Talt WTP site or the red line boundary. The cessation of abstraction from Lough Talt will be achieved by closing a control valve within the abstraction arrangement located adjacent to the carpark at Lough Talt.

A proposed layout of the Lough Talt WTP is shown in Figure 3-7.



Figure 3-7 — Proposed Layout at Lough Talt WTP

3.1.9 Bonniconlon Reservoir

The site is located off the L51172 at Bonniconlon West, in the vicinity of a junction with a private access road, east of the L5117, where there is an existing Bonniconlon Reservoir and associated infrastructure has a storage capacity of approximately 60 m^3. The existing reservoir is supplied from the existing treated water network fed from Lisglennon WTP via Behy Beg Pumping Station and Rathradeene Pumping Station (it will not be supplied via proposed Pipeline D). The surrounding area is predominantly rural and agricultural in character, with a number of residential properties located in the wider vicinity.

The capacity of the proposed new treated water storage reservoir is approximately 185 m^3, and indicative dimensions of approx. 11 m diameter and 2.5 m height, including freeboard. It will operate in parallel with the existing treated water storage reservoir, improving operational resilience, flexibility and security of supply. A new dechlorination chamber is proposed in the north-eastern part of the site and will connect to the existing reservoir overflow arrangement.

A typical 3D view of the proposed upgrades are shown in Figure 3-8.

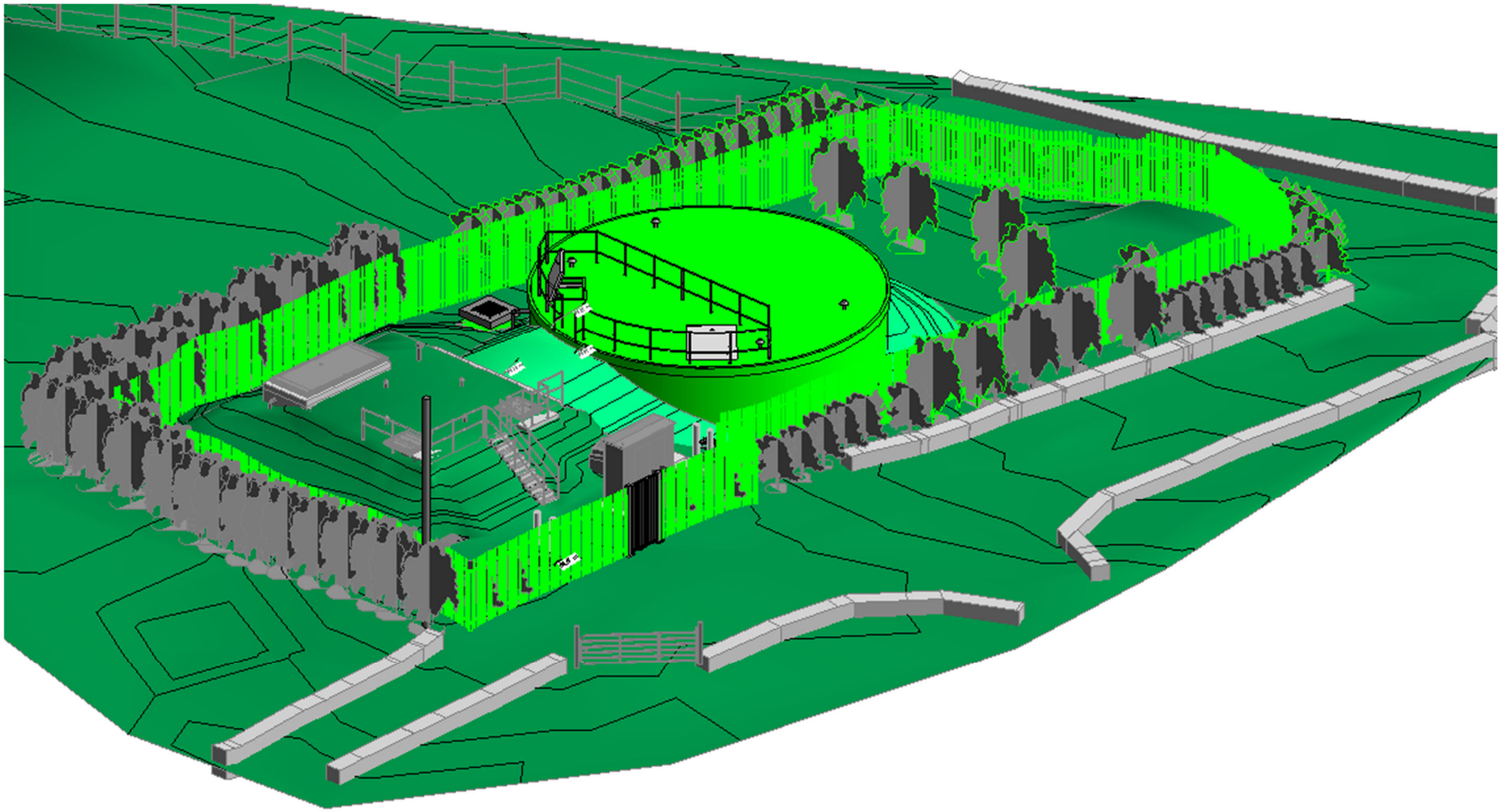


Figure 3-8 — Bonniconlon Reservoir Proposed Upgrades – A Typical 3D view

3.2 Renewable Energy provision

Solar PV arrays to offset energy usage by the Proposed Development will be installed at Lisglennon WTP, Bonniconlon BPS and Lough Talt WTP. There will be no export of power to the Grid. The anticipated installed solar capacity across the Proposed Development is presented in Table 3-2.

Table 3-2 — Proposed solar capacities across the Proposed Development

Description	Unit	Lisglennon WTP	Bonniconlon BPS	Lough Talt WTP
Number of Solar panels	No.	344	26	14
Area required	m²	1271	95	53
Solar power generated	kW	194	13	8
Site power demand	kW	177	320	8
% of Site power provided by solar energy	%	110%	4%	100%
Annual solar energy generated	kWh	187,210	12,981	7,720
Annual site energy demand	kWh	733,226	2,199,490	30,386
Max. % of Annual site energy provided by solar energy	%	11%	1%	11%

A glint and glare assessment determined that there would not be any hazardous glint and glare effects on dwellings or transport receptors as a result of the above solar installations.

3.3 Construction Overview

The Proposed Development spans seven key locations and approx. 30.2 km of mains laying. The works require a number of discrete work packages. Approximately 126 on-site staff will be present during peak construction periods. It is anticipated that the number of workers on site will fluctuate throughout the programme.

3.3.1 Summary of construction works

The works will be planned and phased to maintain continuity of operation throughout the construction period, insofar as practicable. Initial works will include site establishment, demarcation of the construction working area (including site compounds and temporary working areas), confirmation and protection of existing operational assets, buried services, boundary features, mature vegetation and drainage features, and implementation of temporary traffic management measures where required. On completion of the works, temporary access arrangements will be removed and affected boundaries reinstated. Site-specific measures are outlined in Chapter 3 – Project Description (Volume 2 of the EIAR).

3.3.2 Working hours

Typical working hours during construction are anticipated to be from 07:00 to 19:00 Monday to Friday and 08:00 to 13:00 on Saturdays, with no work on Sundays or public holidays unless otherwise agreed with the Local Authority or other key stakeholders. Exceptions may be required for certain construction activities which would need to be undertaken outside typical working hours, agreed with the county councils (Mayo and Sligo) in advance and supported by coordination with the Gardaí and Transport Infrastructure Ireland (TII) as required and communicated to the relevant community.

3.3.3 Construction Plans

A number of environmental management plans will be prepared by the Appointed Contractor, implemented prior to the commencement of works and adhered to throughout construction to commissioning. The purpose of these plans will be to ensure compliance with the EIAR and NIS conclusions and any planning permission granted to the Proposed Development. These plans will contain all the required environmental mitigation and monitoring measures identified in this EIAR (see Chapter 21) and the NIS, as well as any requirements of the planning permission. These include:

- Construction Environmental Management Plan (CEMP);
- Construction Works Traffic Management Plan (CWTMP);
- Stakeholder Communication Plan;
- Public Rights of Way (ProW) Management Strategy;
- Construction Resource and Waste Management Plan (CRWMP);
- Tree Protection Plan; and
- Biosecurity Management Plan.

A Preliminary CEMP (PCEMP), Arboricultural impact assessment, Preliminary CRWMP and Preliminary CWTMP (CWPTMP) have been submitted with the Application and inform the assessment presented in this EIAR and NIS conclusions.

Excavated material will be managed in accordance with the CRWMP. Suitable excavated material will be reused as trench backfill above the pipe surround where practicable, subject to geotechnical suitability and environmental testing. Surplus or unsuitable material will be removed from the working area and managed in accordance with the CRWMP.

3.3.4 Construction traffic

It is anticipated that the number of vehicles on site will fluctuate throughout the programme. Construction traffic will typically comprise standard vehicles required for excavation, materials delivery, plant mobilisation, spoil removal and general site servicing. This may include light commercial vehicles, rigid and articulated HGVs, concrete delivery vehicles, plant transporters and specialist delivery vehicles. The appointed Contractor will confirm final vehicle requirements prior to construction. No abnormal loads are currently envisaged. Should any non-standard, specialist or abnormal load vehicles be required due to the final construction methodology, these will be identified in advance and managed through the Appointed Contractor's CWTMP, in consultation with Uisce Éireann, the relevant local authority, the Roads Authority and An Garda Síochána, as required. The CWTMP will include appropriate measures for routing, access, delivery scheduling, temporary traffic management, road safety and the controlled movement of such vehicles. The Proposed Development will be constructed in accordance with appropriate noise and vibration standards as set out in Chapter 13 – Noise and Vibration (Volume 2 of the EIAR).

3.4 Operation and Maintenance Overview

During the Operational Phase, it is anticipated that approx. 8 staff will be employed on a regular basis to operate the works.

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

Lisglennon and Lough Talt WTP. At the Wherrew Intake and RWPS sites, traffic will be limited to occasional operator and maintenance-related visits.

Routine operation and maintenance will include operator attendance, visual inspections, planned preventative maintenance and functional checks throughout the Proposed Development, in accordance with Uisce Éireann operational procedures, drinking water quality requirements and relevant health and safety controls. Any water generated during inspection, cleaning, flushing, scour or washout activities will be managed in accordance with Uisce Éireann operational procedures, the scour management proposals set out in Chapter 3 (Volume 2 of the EIAR) and relevant environmental controls. The Proposed Development will be operated in accordance with appropriate noise and vibration standards as set out in Chapter 13 – Noise and Vibration (Volume 2 of the EIAR).

3.5 Decommissioning

The Proposed Development will deliver regionally important strategic infrastructure. For the purpose of this EIAR, the target design life of new or upgraded elements is up to 50 years, however, considering that the Proposed Development will be essential for continued safe and secure water supply for the population of Mayo and Sligo, there is no plan to decommission these structures, and Uisce Éireann is committed to maintaining and repairing them into the future.

3.6 Programme

Total project duration (including design, development and review as well as pipeline final road reinstatement) is anticipated to be 35 months, with commencement anticipated in 2027. Elements required to facilitate cessation of the Lough Talt abstraction in 2029 will be prioritised, with overall completion and commissioning of the scheme in 2030.

4. Alternatives

A range of alternative supply options were considered to identify a long-term replacement water supply for the Lough Talt Water Resource Zone (WRZ). These were prepared by RPS (2018) and provided for information as Appendix 4-1 of Volume 3 of this EIAR. Uisce Éireann continued to develop and refine options for the long-term solution for a new public drinking water supply, through a comprehensive programme of strategic planning and project development.

The level of detail available for each alternative reflects the stage of project development at which that alternative was considered. Alternatives identified and discounted at an early stage of the options assessment process were assessed using the information reasonably available at that time, including feasibility studies, desk-based environmental constraints information, mapping, engineering judgement and relevant planning and technical considerations. As the design process progressed, further environmental, technical, planning and constructability information became available, allowing more detailed comparative assessment of the shortlisted alternatives.

4.1 Alternative Water Supply Assessment

The objectives for identifying a long-term solution for the Lough Talt RWSS were:

- To provide long-term safe supply of drinking water including reduction in the risk of formation of THMs and the effective treatment barrier against *Cryptosporidium*; and,
- To eliminate the environmental impact on Lough Talt and any other water courses associated with the final solution.

There were seven design options considered. Each option was assessed in terms of security of supply, raw water quality, planning, water abstraction Licence/Order, environmental constraints, technical delivery and programme. Of the options considered, supply from Lough Conn and upgrade existing Lisglennon WTP and supply Lough Talt RWSS via Ballina and Bonniconlon) was identified as the preferred option. Lough Conn was considered the most favourable option, as it is classified by the EPA as having ‘good’ water quality status, and under the Water Framework Directive (WFD) it is categorised as not at risk. Given the size and storage capacity of Lough Conn, it was considered unlikely that an increase in abstraction would have a significant impact on the hydrological regime of the River Moy SAC. See Chapter 10 – Water (Hydrology and Hydrogeology), Volume 2 of the EIAR, and associated appendices in Volume 3 of the EIAR for more information.

4.2 Reappraisal and Alignment with the National Water Resource Plan / Regional Water Resource Plan – North West

As the option development process progressed following the 2019 decision, a broader Uisce Éireann strategic planning framework emerged through the publication of the NWRP and Regional Water Resources Plans (RWRPs). These plans provided an updated assessment of long-term water resource needs and identified strategic interventions required to ensure a sustainable and resilient water supply.

In light of this new policy context, a review of the strategic options for the Lough Talt water supply was undertaken. The purpose of this review was to assess the previously identified preferred solution against the emerging national and regional water resource strategies, ensuring that it remained appropriate, aligned with wider strategic objectives, and was capable of meeting future supply and demand requirements.

The outcome of this review informed the ongoing development and refinement of the project, and the project evolved from a standalone replacement supply for the Lough Talt RWSS to supporting the wider water supply

needs of the region and developed into the Proposed Development, incorporating upgrades to the Ballina supply system to facilitate the transfer of supply to the Lough Talt area.

4.3 Alternatives for the Proposed Development

The alternatives assessed within this section are the design options that transfer the water supply from Lough Conn to the Ballina and Lough Talt Water Supply Schemes. The assessment initially focused on the identification of a suitable pipeline corridor. In tandem, the technical requirements of the transfer system were examined, including the need for a pumping station to facilitate water conveyance and a break pressure tank to regulate pressures within the network

4.3.1 Route Selection

A route selection assessment was carried out on the pipeline route in order to address particular constraints which were identified along the preferred route corridor including major and minor watercourse crossings and refined the preferred route corridor where more than one suitable road or track existed along the selected corridor. The Study Area for the final route selection of the watermain is shown in the Figure 4-2.

Following a detailed review of the preferred pipeline route, including topography, watercourse crossings, existing utility infrastructure, road network and constructability constraints, a number of localised route options were identified. Each location was scored as one of ‘Less Constrained’, ‘Neutral’ or ‘More constrained’. Sub-criteria also assessed pipeline length; topography; utility interfaces; effects on structures; traffic disruption; stakeholder interface; constructability; access; land/wayleaves; geotechnical; carbon; ecology/biodiversity; landscape; geology/hydrogeology; hydrology; noise/air; archaeology/cultural heritage; planning history; land-use zoning; and plan policies.

The preferred route corridor best balances technical feasibility, environmental stewardship, traffic and stakeholder effects, planning compliance, and carbon. The preferred corridor reflects a consistent decision pattern for the shortest workable alignments, minimised works on busy regional roads, avoiding direct interventions to heritage arch bridges, using trenchless technology for single river crossings where possible, and prioritises biodiversity and carbon outcomes while ensuring constructability and access. The resulting Preferred Route Corridor will be approx. 30.2 km in length. The preferred corridor is shown in Figure 4-1.

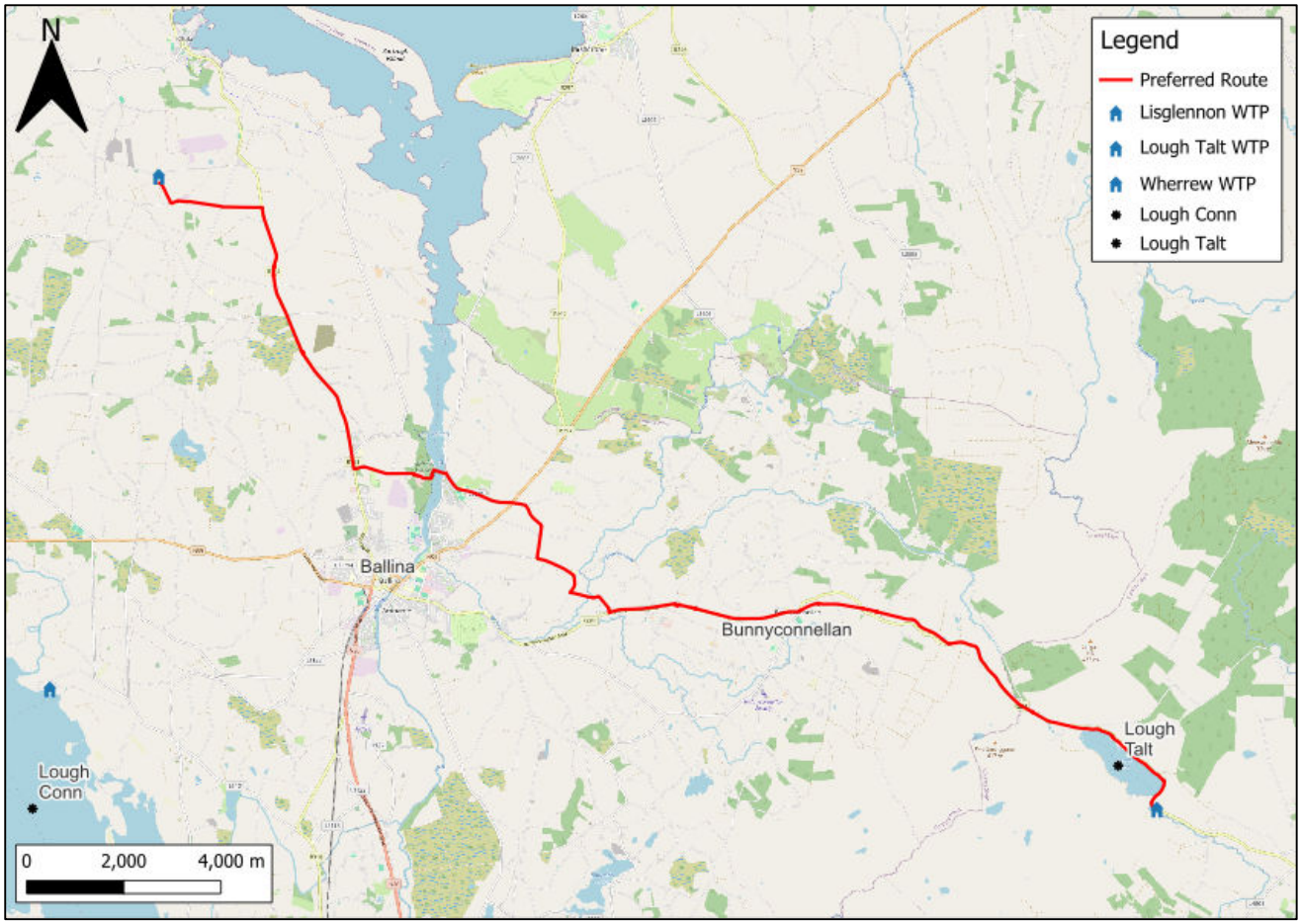


Figure 4-1 – Preferred Route Corridor

4.3.2 Site Selection

The Proposed Development will require an upgrade to the existing Wherrew RWI&PS, upgrade to the existing Lisglennon WTP, upgrades to Lisglennon RWS&PS, a new BPS at Bonniconlon, a new BPT at Windy Gap and repurposing of existing Lough Talt WTP, a new pipeline between Lisglennon RWS & PS to Lisglennon WTP, a new pipeline from Lisglennon WTP to Lough Talt WTP. An upgrade to existing Bonniconlon Reservoir is also included within this Proposed Development.

Having identified the preferred pipeline route through the route selection process, a separate assessment was undertaken to determine the most suitable locations for the pumping station and break pressure tank.

The majority of the infrastructure sites ('key locations') are existing. These include Wherrew Raw Water Intake and Pumping Station, Lisglennon Raw Water Intake and Pumping Station, Lisglennon WTP, Lough Talt WTP, Bonniconlon Reservoir and the existing water supply network assets. The site selection process therefore focused on identifying the most suitable sites for the construction of the new Bonniconlon BPS and Windy Gap BPT by:

- Identifying areas with major constraints to the Proposed Development that should be avoided where possible;
- Identifying and comparing potential sites within the residual lands to narrow down the options; and,
- Evaluating and comparing all short-listed sites to identify the least constrained option.

The site selection study areas for the BPS and the BPT were defined by the operational and hydraulic requirements of the proposed trunk main, while also allowing sufficient flexibility to identify practicable and

environmentally preferable locations for new above-ground infrastructure (Figure 4-2). Two separate study areas were identified: one for the proposed BPS west of Bonniconlon, and one for the proposed BPT at Windy Gap.

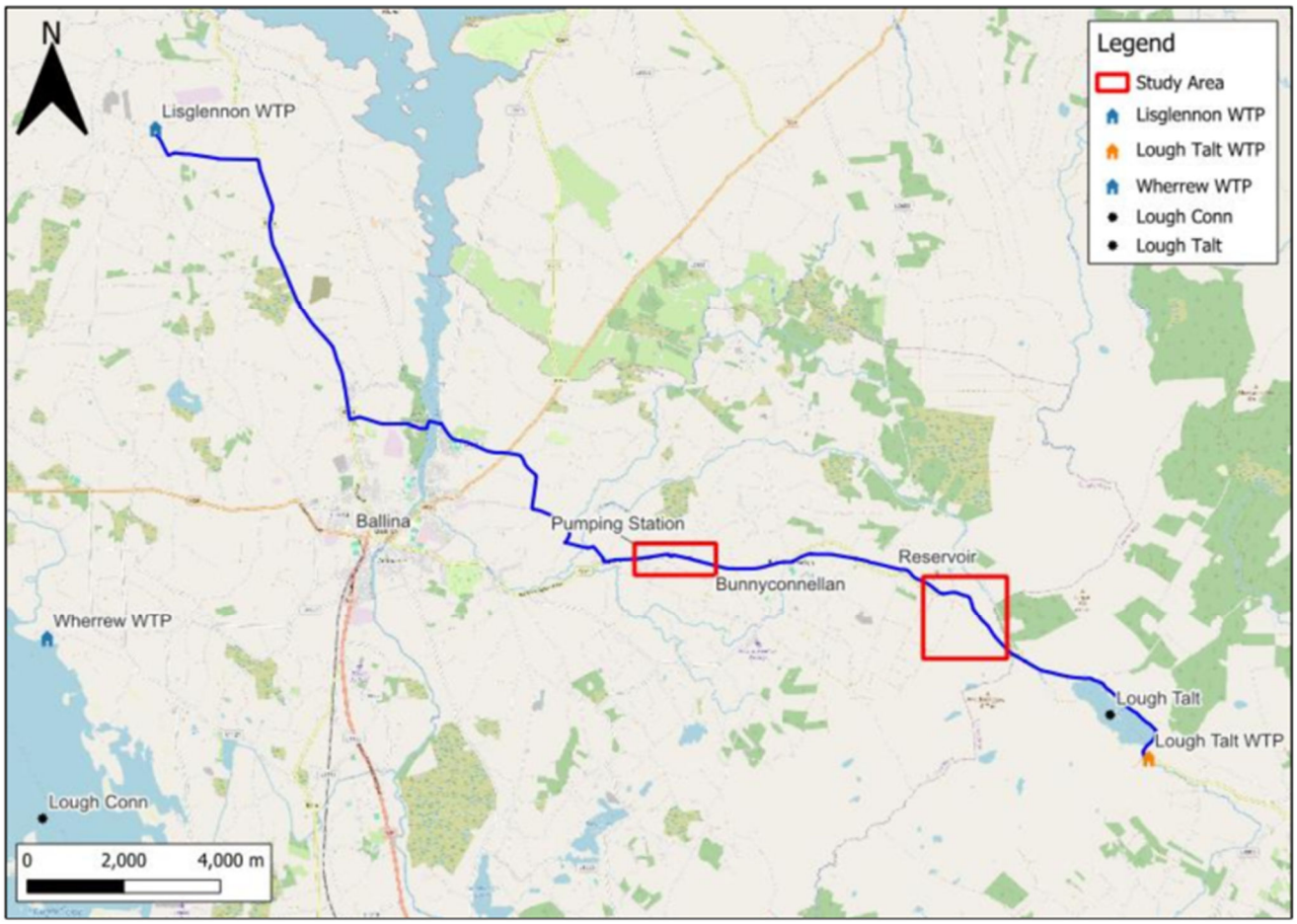


Figure 4-2 – Site Selection Study Area

In both Study Areas, the identification of potential sites also had regard to access, constructability, land availability, proximity to existing utilities, environmental constraints and planning considerations. Direct access from the R294 was avoided where practicable, having regard to the strategic function of this regional road and the relevant objectives of the Mayo County Development Plan 2022-2028 (Mayo County Council, 2022).

The preferred site for the BPS was selected because it provides suitable local road access, is located within a single landholding, avoids cross-folio wayleaves and is outside mapped flood extents. While it is located on a scenic route, on balance, the preferred site presented the lowest overall constrained profile and was therefore selected as the final location for the Bonniconlon BPS.

The need for a BPT at Windy Gap was identified through the preliminary hydraulic and transient/surge assessments. These assessments identified the high point of the proposed trunk main, at approx. 190 m OD, as the preferred operational location for pressure management and transient suppression, reducing the risk of negative pressures at the summit, and provide additional operational resilience within the transfer system. The preferred site for the BPT on blanket bog (construction complexity acknowledged), however was based on pipeline connection length, constructability, power and utility connections, ecological constraints, landscape sensitivity and proximity to Lough Hoe Bog SAC.

4.4 Design Alternatives

There was limited scope for reasonable alternatives in design at Lisglennon RWS&PS, Bonniconlon BPS, Windy Gap BPT, Lough Talt WTP and Bonniconlon reservoir, however alternative options were considered for the Wherrew RWI&PS and Lisglennon WTP.

4.4.1 Wherrew RWI&PS

Design alternatives for the Wherrew raw water intake focused on addressing sediment deposition within the existing intake channel and providing an appropriate fish screening arrangement. The land-based screening option was selected as it provides improved access for inspection and maintenance, incorporates fisheries protection measures, avoids additional in-lake infrastructure, and maintains greater operational resilience at the existing raw water pumping station.

4.4.2 Lisglennon WTP

Design alternatives at Lisglennon WTP were limited to the arrangement and integration of the required process upgrades within the existing site. The use of Powdered Activated Carbon (PAC) was investigated as a means of reducing high concentrations of organic matter in the raw water. However, dosing of PAC into the raw water, while effective, would increase the volume of sludge produced. Therefore, it was decided to include a secondary filtration process stage using Granular Activated Carbon (GAC), due to less additional sludge produced.

4.5 Summary

The preferred options, as outlined in this chapter, were chosen because of their strengths in providing a secure water supply, while making every effort to avoid, reduce, remedy or offset adverse effects on the environment and the public. The chosen option has in its design catered for biodiversity net gain, sustainability, reduced carbon and the provision of renewable energy. The preferred option as described in Chapter 3 – Project Description is the subject of assessment for this EIAR, and is assessed in Chapters 6 to 19.

5. Consultations

As part of the EIAR assessment process, consultation was undertaken with key stakeholders at various stages of the pre-planning process to inform the scope of this EIAR. A variety of methods were used throughout the consultation process that invited stakeholders to participate in the non-statutory consultation for the Proposed Development. Stakeholders that were consulted included the public, Local Authorities, and statutory bodies. A copy of all pre-application consultation correspondence received from consultees for this EIAR is presented in Appendix 5-1, Volume 3 of this EIAR.

Under section 37B of the Planning and Development Act 2000 (as amended), two meetings were held with An Coimisiún Pleanála as part of the formal pre-application process for Strategic Infrastructure Development (SID). A formal determination letter concluded pre-application consultation and confirmed that the Proposed Development will be strategic infrastructure within the meaning of Section 37A.

Individual meetings were arranged with a number of key stakeholders to discuss the key potential issues of the Proposed Development, including Mayo County Council and Sligo County Council, as well as Inland Fisheries Ireland and National Monuments Service. A meeting request was sent to National Parks and Wildlife Service (NPWS); however, they did not have comments at this time.

In addition, non-statutory consultation was undertaken between February and April 2025, and March to April 2026. The aim of the public consultation was to provide information on the project proposals to the local community and other key stakeholders, and to gather their feedback which will help to shape the project moving forward. The following communication materials were prepared:

- Project webpage
- Project information leaflet
- Stakeholder letters / emails
- Social media posts
- Press release
- Newspaper advertisement
- Radio advertisement
- Briefing presentation for elected representatives
- Public Information Event display boards.

Full details are included in the Consultation Report, which has been submitted with the planning application.

Engagement with landowners (and tenants or occupiers as relevant) was conducted by a qualified Landowner Liaison Officer (LLO) as a dedicated point of contact throughout pre-planning stages, including ground investigation works, archaeological testing and advance notification of surveys or site visits. The LLO will continue to work with landowners through the Construction Phase.

6. Population and Human Health

The Population and Human Health Chapter (Chapter 6, Volume 2 of the EIAR) outlines the assessment of potential effects to the local population of North East Mayo and Sligo and their health from the Proposed Development. This utilised appropriate guidance and considered both the wider population, as well as those groups within the population who could be considered more vulnerable.

6.1 Existing Environment

The Proposed Development is anticipated to significantly benefit population and human health through the provision of an increased, resilient safe and secure potable water supply. This is supported by local and regional policy (reviewed in section 6.2) and considered necessary to enable future growth in the region. In order to achieve this outcome however, a number of construction phase disruptions have been identified.

6.2 Construction Phase

During construction, the following potential significant adverse effects for all groups were noted pre-mitigation under the following wider determinant of health categories:

- Transport modes, access and connections
  - There are community assets directly accessed along the proposed new pipeline route that intersects existing road which will disrupt access, trading conditions and increase the risk of injuries or loss of life from construction traffic levels and altered traffic movements particularly for sensitive road users.
  - Bus routes located along a 6.8 km stretch of the R314 road and at the N59 / Creggs road junction will be disrupted by traffic management, disrupting and restricting normal journeys / activities.
- Employment and Income
  - Belleek Castle Hotel is intersected by the pipeline where it connects to walking trails to the River Moy, disturbing operation of the hotel through amenity disruptions and may deter business.

6.3 Operational Phase

During the Operational phase, the Proposed Development will result in potential significant beneficial effects for residents and users of services in the wider area through provision of an increased, resilient, safe and secure potable water supply. This will benefit the local population and visitors to the area.

6.4 Mitigation measures

Construction impacts to all population groups associated with the receptors above will be ***short-term*** and ***temporary*** in nature. The majority of disruptions to these receptors are anticipated along the pipeline installation works, which are also anticipated to be carried out over a staggered, short period of time. It is anticipated that with appropriate traffic management measures, including access and health and safety provisions, ***residual impacts will not be significant***. Communication with business owners prior to and throughout construction works affecting businesses, especially Belleek Castle Hotel, properties and settings should be undertaken and best practice safety measures adhered to. Measures to avoid negative impacts on population and human health are largely integrated into the design and layout of the Proposed Development. Monitoring of compliance with Health & Safety requirements will be undertaken by the Project Supervisor for the Construction Process. The monitoring of the effects of this development on Population and Human Health will primarily take place in line with the recommendations set out within the specific chapters of the EIAR including air quality and noise and vibration (Chapters 11 and 13 respectively).

6.5 Residual Effects

In short, while impacts such as disruption to travel, businesses or restrictions on access to certain areas, are inevitable during construction, these are of a ***temporary nature***.

When operational, the plant is expected to have ***significant residual beneficial effects.***

7. Biodiversity

The Biodiversity Chapter (Chapter 7, Volume 2 of the EIAR) describes the existing ecological environment along the Proposed Development and assesses how the proposed construction works and operation may affect local habitats, protected species and designated conservation sites. The assessment combines detailed desk studies with an extensive programme of ecological surveys undertaken between 2024 and 2026. The purpose of the chapter is to identify any potential ecological risks and to set out measures to avoid, reduce or offset them.

7.1 Existing Environment

The Proposed Development interacts with a wide variety of ecological receptors. These include nationally and internationally important conservation areas such as the River Moy SAC, Killala Bay/Moy Estuary SAC and Special Protection Area (SPA), Lough Hoe Bog SAC surrounding Lough Talt, and the Lough Conn and Lough Cullin SPA. These areas contain habitats and species of high conservation concern, including salmon, lamprey, otter, Arctic char, fen habitats and wintering waterbirds. Because of the close hydrological and geographical links between the Proposed Development and these sites, the ecological assessment carefully examined potential pathways of impact, particularly through proximity, water quality, hydrology and disturbance.

Ecological surveys recorded a range of habitats. The habitats affected by the Proposed Development, such as improved agricultural grassland, amenity grassland, wet grassland, hedgerows and treelines, are not of high ecological value and are therefore classified as being of local ecological importance. Higher value habitats are present in Belleek Woods, a large mixed woodland of county importance, along watercourses and in the uplands at Windy Gap where blanket bogland occurs. The Proposed Development largely avoids direct impact on these higher value habitats by routing the pipeline along existing tracks and hard surfaces, however, the design does include for off road watercourse crossings and a BPT located in a small area of upland blanket bog. Fauna surveys identified otter activity along several watercourses, modest levels of bat activity in woodland edges, a variety of breeding and wintering bird species and localised presence of protected aquatic species in rivers and lakes. Zebra mussel, an invasive species, is present at the Lough Conn intake, and extensive Japanese knotweed stands occur in Belleek Woods. These findings informed the mitigation strategy developed for the Proposed Development.

7.2 Construction Phase

Construction of the pipeline and site upgrades has the potential to cause several types of ecological impact if not properly managed. These include habitat loss (particularly of small sections of hedgerow, treeline and local grassland), temporary disturbance to fauna, and changes in water quality during works near rivers and lakes. Although the majority of watercourse crossings will be undertaken using trenchless techniques, which avoid instream works entirely, there remains inherent risk of sediment release or accidental pollution during construction. Works at Lough Conn, where a new screened intake and fish return system will be installed, will involve activities at the lake shore as well as within the lake itself with potential to disturb nearshore habitats and aquatic species. However, these works will be undertaken with mitigatory measures to prevent water quality deterioration.

7.3 Operational Phase

Operational impacts of the increased abstraction at Lough Conn were also assessed. Hydrological studies show that predicted changes to lake level are ***extremely small*** relative to natural seasonal variation and will not alter habitats or ecological processes within the lake or downstream in the River Moy.

7.4 Mitigation Measures

To address the identified risks, a comprehensive set of mitigation measures has been incorporated into the Proposed Development design. These include trenchless river crossings to avoid instream disturbance, strict surface water protection such as silt controls and pollution barriers, ecological exclusion zones at sensitive habitats, and seasonal restrictions on vegetation clearance to avoid disturbance to nesting birds. All works near designated waterbodies will be monitored and supervised to ensure compliance. Biosecurity protocols will prevent the spread of invasive zebra mussels, including equipment cleaning and avoidance of infested areas. Measures specific to otter, birds and aquatic species ensure their habitats and movements remain unharmed.

7.5 Residual Effects

Beyond mitigation, the project incorporates a suite of biodiversity enhancement measures. These include new woodland planting, creation of wildflower areas by reduced mowing regimes, hedgerow creation, and installation of bat boxes, bird boxes, insect boxes and hibernacula. These enhancements help offset habitat losses and are designed to support pollinators, birds, bats and small mammals. A Biodiversity Net Gain assessment for the Proposed Development found that there will be a positive net gain, with only the upland Windy Gap site unable to support new habitat creation due to its sensitive bogland context. Across the project site as a whole the Proposed Development can achieve a net beneficial effect on biodiversity.

The Proposed Development delivers important ecological benefits for Lough Talt, primarily through the cessation of water abstraction, which has long been identified as a pressure on the lake's sensitive hydrology. By ending abstraction, the project allows the lake to return to a more natural water level regime, supporting the recovery of groundwater dependent fen habitats along the shoreline, habitats that previously deteriorated due to lowered lake levels during dry periods. This improvement directly benefits the ecological conditions required by species such as *Vertigo geyeri*, a highly sensitive and legally protected snail once recorded in the fens but now absent likely due to hydrological disruption. Overall, the cessation of abstraction and any associated fen habitat reestablishment will result in a ***significant positive ecological effect*** for Lough Talt and its surrounding protected habitats.

After all mitigation and enhancement measures are applied, the ecological assessment concludes that ***no significant*** residual impacts are expected. Effects that do remain, such as temporary disturbance to fauna during construction or minor localised habitat loss, are ***short-term*** and ***small*** in scale. Watercourses and designated sites will remain fully protected due to strict construction controls and the avoidance of instream works. In the long term, new woodland, hedgerows and wildflower habitats will provide ***improved ecological connectivity*** and ***enhanced biodiversity value*** across the development area.

In summary, the Proposed Development has been carefully designed to avoid sensitive habitats, protect important ecological features and enhance biodiversity where possible. With the identified mitigation and enhancement measures implemented in full, the Proposed Development ***will not adversely affect*** the integrity of any designated sites and has the opportunity to deliver a measurable biodiversity gain across multiple plant sites. Overall, the cessation of abstraction and any associated fen habitat reestablishment will result in a ***significant positive ecological effect*** for Lough Talt and its surrounding protected habitats.

8. Agronomy

8.1 Existing Environment

The Proposed Development is located in Counties Mayo and Sligo and is primarily routed within existing public road corridors and existing Uisce Éireann water infrastructure sites. However, sections of the pipeline route cross agricultural land and the Proposed Development also require two new permanent infrastructure sites (the Booster Pumping Station (BPS) and BPT) within agricultural land. In total, the Proposed Development directly affects approx. 36 agricultural parcels, of which 34 parcels are intersected by the pipeline infrastructure and 2 parcels associated with the permanent infrastructure sites. These parcels are associated with 43 registered landowners.

The land use surrounding the Proposed Development is predominantly agricultural. The main farm enterprises within the affected area are grassland, sheep, drystock, mixed livestock, equine and dairy enterprises. Land use in the study area generally comprises improved and semi-improved grassland used for grazing and silage production, together with commonage areas which could be described as used for rough grazing. The BPT site at Windy Gap is located within upland commonage used mainly for seasonal sheep grazing by multiple shareholders.

To support the assessment, agricultural surveys were undertaken by suitably qualified personnel. These included site visits, roadside surveys and engagement with landowners. Where access to lands was not possible, aerial imagery, mapping and professional judgement were used to inform the assessment.

8.2 Construction Phase

The Proposed Development has been designed to reduce effects on agriculture where feasible. Most of the treated water trunk main is routed within existing road corridors, with only limited sections crossing agricultural land. The main impact during construction would be the temporary occupation of agricultural land within the construction working width together with temporary disturbance associated with pipeline infrastructure installation. Permanent land take will occur at the BPS and BPT sites.

Prior to mitigation, construction of the pipeline infrastructure would directly ***affect*** 34 agricultural parcels. Of these, 3 parcels are predicted to experience ***Significant effects***, 10 parcels ***Moderate effects***, 9 parcels ***Slight effects*** and 12 parcels ***Not Significant*** effects during construction. In addition, 2 agricultural parcels would be ***affected*** by the infrastructure sites, of which 1 parcel is predicted to experience a ***Moderate effect*** and one parcel a ***Slight effect.***

Mitigation measures have been proposed to avoid or reduce these effects and are summarised below.

8.3 Operational Phase

Measures have been embedded into the design to reduce permanent impacts on agriculture during operation. These include routing most of the pipeline infrastructure within existing road corridors, installing the large pipeline infrastructure underground and minimising the footprint of above-ground permanent infrastructures. The BPT will also be constructed below ground level to reduce surface disturbance.

Despite these embedded design measures, the following impacts may occur during operation:

- Permanent loss of land at the BPS and BPT sites.
- Permanent restrictions on certain activities within the pipeline wayleave, including deep excavation, construction of permanent structures and tree planting.

- Periodic access to agricultural land for inspection, maintenance or emergency repair of pipeline infrastructure.
- Localised operational activities associated with the BPS, including above-ground infrastructure, security fencing and occasional maintenance access.

The majority of agricultural holdings affected by the pipeline infrastructure are predicted to experience either ***Not Significant*** or ***Slight*** operational effects. Normal agricultural activities, including grazing and grassland management, can generally continue following reinstatement, subject to the permanent wayleave restrictions. Greater operational effects are limited to the permanent infrastructure sites where permanent land acquisition and above-ground infrastructure are required.

8.4 Mitigation Measures

Key mitigation measures for reducing effects on agriculture include, but are not limited to:

- Suitable access arrangements will be maintained for landowners during construction, including provision of temporary access where required.
- Biosecurity procedures will be implemented during construction to prevent the spread of invasive species, plant diseases and soil-borne pathogens.
- Agricultural soils will be carefully stripped, stored and reinstated, and disturbed land will be restored to its pre-construction condition.
- Existing field drainage systems will be protected or reinstated where affected.
- Ongoing engagement will take place with affected landowners before and during construction to minimise disruption to farming activities.
- Agricultural infrastructure, including fencing, gates, water supplies and livestock facilities, will be protected or reinstated where required.

8.5 Residual Effects

Following the implementation of the proposed mitigation measures, Construction Phase effects on agricultural holdings reduced. For the pipeline infrastructure works, the 34 affected parcels are predicted to experience either ***Slight*** or ***Not Significant*** residual effects, with 13 parcels predicted to experience ***Slight*** effects and 21 parcels predicted to experience ***Not Significant*** effects. For the 2 infrastructure site parcels, 1 parcel is predicted to experience a ***Slight*** residual effect and 1 parcel a ***Not Significant*** residual effect.

During operation, no additional mitigation measures are required beyond those incorporated into the design of the Proposed Development. Operational effects associated with the pipeline infrastructure are predicted to remain ***Not Significant*** or ***Slight***, reflecting the permanent wayleave restrictions over the buried pipeline route. At the permanent infrastructure sites, the BPS is predicted to result in a Moderate residual effect due to the permanent loss of productive agricultural land, while the BPT is predicted to result in a ***Slight*** residual effect. Overall, following implementation of the proposed mitigation measures, the Proposed Development is expected to result in ***not significant*** residual effects on the majority of affected agricultural holdings.

9. Land, Soils and Geology

9.1 Existing Environment

A review of the historical development of the site location indicates that the site is located in a generally rural area within limited industrial / commercial historical development and no significant potential sources of contamination identified. There are three geological heritage sites (Killala Area (MO068), River Moy (MO089) and The Gap (NW of Lough Talt) (SO023)) that underlie the footprint of the site. Therefore, the sensitivity of the underlying geology is increased and has been taken into account during the impact assessment.

Extensive site assessment has been undertaken across the Proposed Development, comprising geophysical surveys and intrusive geotechnical investigation. The scope of the ground investigation was designed by AtkinsRéalis geotechnical and environmental teams to ensure that suitable geo environmental and engineering data was obtained for the Proposed Development (preliminary design stage), taking account of the receiving environment (specifically the underlying karst geology), proposed initial engineering design, and baseline monitoring and environmental data requirements.

9.2 Construction Phase

The Land, Soils and Geology chapter (Chapter 9, Volume 2 of the EIAR) outlines the assessment of potential effects to:

- Land and soil resources and fertile land suitable for agriculture (including land take);
- Contamination; and
- Geological heritage sites.

Potential effects of the Proposed Development during construction (prior to mitigation), with respect to soils and geology, are expected to include:

- Disturbance of the soil resource and loss of fertile land;
- Impacts to geology including karst bedrock and superficial geology potentially present beneath the site, and
- Effects associated potential for new land contamination arising from construction activities.

The impact on land take is unlikely to have any significant impact as the majority of the site will occupy currently developed land used for the same purpose. Where the Proposed Development does overlie land used for agricultural purposes, the site footprint is considered small and is unlikely to significantly alter the use of the land. While no recorded karst features are shown to be present at the Proposed Development, there is potential for features to be identified during construction. If discovered, a karst protocol will be implemented prior to the continuation of works. This will ensure that there will be no significant effects to geology or infrastructure failure.

Regarding Geological Heritage Sites River Moy (MO089) and The Gap (NW of Lough Talt) (SO023, the features for which these locations were designated are not likely to be compromised due to the nature of the works at these locations. Geological Heritage Site Killala Area (MO068) is likely to be subject to ***slight effects*** however due to the relative size of the Proposed Development compared to the overall size of the Geological Heritage Site, the effects are anticipated to be ***not significant***.

The ground investigation has shown there to be a low potential for existing contamination at locations across the Proposed Development. There is potential for pollution of the soils and geology to occur through accidental spillages and leaks of fuels and chemicals. Prior to mitigation being implemented, it is anticipated that there will

be ***no significant effects*** to the underlying soils and geology apart from locations designated as Geological Heritage Sites, at which there may be a ***slight adverse effect***.

9.3 Operational Phase

Similarly, there will be ***no potential significant*** environmental impacts to the receiving land, soils and geology environment, during the operational phase via karst geology beneath the Lisglennon WTP. Extensive engineering design solutions (including secure onsite containment (fuel, wastewater, contaminated storm water / firewater runoff), and offsite disposal of all associated waste streams) as detailed further within Chapter 9 – Land Soils and Geology, Volume 2 of the EIAR, have been developed. These solutions will ensure that there will be no discharge of contaminated water or potentially contaminated water to ground beneath the project site during the operational phase.

9.4 Mitigation Measures

To address loss of the underlying soils and geology, mitigation proposed includes adequate removal and storage of excavated materials. This will allow the materials to be reused where possible, restoring the landscape to pre-construction conditions as much as is reasonable. This will be carried out in line with best practice guidance and will be managed through the use of a waste management plan. In the event that karst features are identified during construction, an adequate karst protocol will be implemented to ensure effects to geology and infrastructure are addressed.

Mitigation for Geological Heritage Sites also includes the mitigation used to address potential effects to soils and geology. Much of the potential effects are mitigated through construction design which utilises existing infrastructure to either negate the need for new infrastructure or to minimise potential effects.

With respect to leaks and spillages of fuels and oils, this will be mitigated through the use of pollution prevention measures in line with best practice guidance which will include, adequate transport and storage of materials, supervision of works, appropriate storage of chemical and fuels and incident response plans for accidental releases. During the operational phase accidental leaks and spillages will also be addressed through engineered measures such as appropriate bunding and drainage of chemical stores and fire suppression systems. Incident response plans will also be implemented.

9.5 Residual Effects

After the implementation of mitigation, effects on soils during construction, as a result of loss or damage, are limited to slight effects while to geology, effects are considered to be imperceptible. Loss or damage to Geological Heritage Sites, River Moy and The Gap, is anticipated to be imperceptible during construction, while effects to Killala Area are considered to be slight. Throughout construction, the risk of spills or leakages will be mitigated resulting in ***an imperceptible effect*** to soils, geology or Geological Heritage Sites.

The residual effect associated with contamination of land due to accidental spills or leakages on soils and geology is anticipated to have a ***negative imperceptible*** impact resulting in ***no significant adverse effects*** during the construction phase.

During the operational phase, there is potential for fuel and chemical spills/leaks during operation of the Proposed Development causing pollution to soils and geology. Pollution prevention measures will be implemented to minimise potential risks, resulting in an anticipated imperceptible effect. Consequently, land contamination is likely to have a ***negative imperceptible*** effect resulting in ***no significant adverse effects***.

10. Water (Hydrology and Hydrogeology)

10.1 Introduction

The Proposed Development is designed to improve the reliability, safety, and long-term resilience of the public water supply serving communities in County Mayo and County Sligo. The upgraded system is expected to benefit approximately 36,400 people, both now and in the future, as population growth and socioeconomic development increase demand for secure drinking water. It will also replace the existing water supply with improved quality drinking water and safeguard the local fen habitat which is supported by the groundwater fed by Lough Talt.

10.2 Existing Environment

The Proposed Development interacts with a wide range of water environment receptors, including both surface water and groundwater systems of high environmental importance. These include designated sites such as the River Moy SAC, Killala Bay/Moy Estuary SAC and SPA, Lough Hoe Bog SAC in the vicinity of Lough Talt, and the Lough Conn and Lough Cullin SPA. These water-dependent ecosystems support sensitive aquatic habitats and species, including salmon, lamprey, otter, Arctic char, fen habitats, and wintering waterbirds. Due to the close hydrological connectivity between the Proposed Development and these receiving water bodies, the assessment places particular emphasis on potential pathways for impact, including changes to water quality, hydrological regime (flows and levels), hydrogeological conditions, and associated disturbance mechanisms.

This Chapter describes the potential effects of the Proposed Development on water, and sets out how the work will comply with environmental requirements in Ireland and the European Union. It examines both the positive and negative impacts that may occur during construction and operation, and how these could influence the natural water environment. Potential impacts include changes in the quantity of water, such as increased runoff or localised flooding, and changes in water quality, such as the risk of sediment or pollutants entering rivers, lakes, or groundwater. The assessment follows the methods recommended by the EPA and considers where changes may occur, how significant they might be, what mitigation measures will be put in place to reduce any negative effects identified, and what, if any, impacts may remain after those mitigation measures are applied. This is achieved through an extensive investigation of existing information, maps, technical assessments and historical records.

10.3 Construction Phase

The main potential negative effects identified after a thorough investigation include temporary disturbances to soil and sediments during construction resulting in short-term increases in turbidity, and low-risk of fuel, concrete, and drilling fluid entering rivers, lakes or groundwater. To minimise these risks and their severity, best-practice controls such as careful management of excavation, concrete mixing, and drainage and secure storage of fuel and other chemicals will be adopted. Particular attention will be paid to sites where the pipeline crosses the River Brusna and works next to the River Moy (crossing is via an existing pipeline) due to their conservation status. These measures include maintaining the natural shape of riverbanks, and minimising disturbances to river vegetation to preserve their existing condition and minimise negative impacts to aquatic life. With these measures in place, most changes will be temporary and not significant and unlikely to change the WFD status of these water bodies long-term.

10.4 Operational Phase

During operation, the increased abstraction will result in a slight decrease in the water levels of Lough Conn and Lough Cullin and in the flow exiting the lakes to the River Moy. However, modelling indicates that these

changes are very small and will not significantly affect water quantity or quality, nor will they alter the WFD status of the two lakes or downstream watercourses. Routine monitoring and abstraction adjustment will further ensure that lake levels and river flows remain within safe limits, particularly during dry periods. The operation of storage, pumping, treatment, and water supply infrastructure is not expected to pose any significant risk to nearby lakes, watercourses, or groundwater. The infiltration of stormwater through the swale system introduces a low risk of fuel or other chemicals entering shallow groundwater; however, given the limited volume of stormwater and the provision of sustainable drainage features, this risk is largely mitigated.

Overall, despite the scale of the proposed works and the number of water features encountered during construction and long-term operation, the impacts on water quality and quantity are slight, temporary, and well-managed. ***No significant long-term negative effects*** on Lough Conn, Lough Cullin, the River Moy, other watercourses, or groundwater are expected once the mitigation measures proposed are implemented.

10.5 Mitigation Measures

Mitigation and monitoring measures are presented in Chapter 10 – Water (hydrology and Hydrogeology), Volume 2 of the EIAR, and include (but not limited to) adherence to a detailed CEMP, appointment of an ECoW, implementing pollution prevention measures, prevention of silt run-off and invasive species prevention.

11. Air Quality

The assessment of potential Air Quality impacts is contained within Chapter 11 of the EIAR. The air quality assessment has focused on:

- Potential construction dust emissions and impacts to nearby sensitive receptors such as residential properties, schools, hospitals, etc.; and
- Potential vehicle emissions from traffic accessing the site for construction works and during operation.

11.1 Existing Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) in the study area are generally in compliance with the current National and EU ambient air quality standards.

11.2 Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document *'Guidance on the assessment of Dust from Demolition and Construction'*. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health and ecological effects. The surrounding area was assessed as being of medium sensitivity to dust soiling and of low sensitivity to dust-related human health effects. There are no sensitive ecological receptors within the construction dust study area and therefore there is no potential for impacts to sensitive ecology from construction dust emissions.

The sensitivity of the area was combined with the dust emission magnitude for the site from earthworks, small scale demolition and construction activities and trackout (movement of vehicles) to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most a medium risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for ***direct, short-term, localised, negative,*** and ***slight*** impacts to air quality.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in TII's (2022) guidance document *'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106'.* As a result, a detailed air assessment of construction stage traffic emissions has been scoped out from any further assessment and the construction stage traffic emissions will not have a significant effect on air quality.

11.3 Operational Phase

There is the potential for maintenance vehicles accessing the site to result in emissions of NO_2, PM_{10} and $PM_{2.5}$. However, due to the infrequent nature of maintenance activities and the low number of vehicles involved emissions are predicted to be ***not significant***.

11.4 Mitigation Measures

11.4.1 Construction Phase

Detailed dust mitigation measures are outlined within Section 11.7 of Chapter 11, Volume 2 of the EIAR, to ensure that no significant impacts as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction'* as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered ***direct, short-term, localised, negative*** and ***not significant***, posing no nuisance at nearby sensitive receptors (such as local residences).

11.4.2 Operational Phase

No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be ***not significant***.

11.5 Residual Impact Assessment

When the dust mitigation measures detailed in the mitigation section (Section 11.7, Chapter 11, Volume 2 of the EIAR) are implemented, the residual effect of fugitive emissions of dust and particulate matter from the site will be ***short-term, direct, localised, negative*** and ***not significant*** in nature and will pose no nuisance at nearby receptors.

No significant residual effects are predicted for the operational phase of the proposed development.

12. Climate

12.1 Introduction

The climate assessment for the Proposed Development is divided into two distinct sections – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA).

- Greenhouse Gas Emissions Assessment (GHGA) – Quantifies the GHG emissions from a project over its lifetime. The assessment compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude.
- Climate Change Risk Assessment (CCRA) – Identifies the impact of a changing climate on a project and receiving environment. The assessment considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

12.2 Existing Environment

The European Green Deal published by the European Commission in December 2019, provides an action plan which aims for the EU to achieve climate neutrality by 2050. The EU Green Deal highlights a reduction in emissions of 55% in comparison to 1990 levels by 2030 and 90% by 2040. The deal outlines plans for a just and fair transition to a climate neutral society though funding and social investment, carbon pricing, the Emissions Trading Scheme, green industry, the circular economy and stakeholder engagement in the processes at every level. Further details are provided in Section 12.3, Chapter 12 – Climate, Volume 2 of the EIAR. The existing emissions baseline (GHG) is detailed in Section 12.5.2, Chapter 12 – Climate, Volume 2 of the EIAR.

With regards to climate change vulnerability, historic records show the region of the Proposed Development has a temperate, oceanic climate, resulting in mild winters and cool summers.

12.3 Impact Assessment

12.3.1 GHG Assessment

The potential impacts on climate have been assessed through a greenhouse gas assessment (GHGA) using a bespoke Whole Life Carbon Assessment Tool established for use within Uisce Éireann. The results of the assessment estimated 57% of the GHG emissions are associated with the construction phase, primarily embodied carbon in materials such as concrete used in the reservoirs and ductile iron in watermains. During the operational phase of the Proposed Development, the most significant emissions are from energy consumption required to run the system and process emissions from chemicals used within the system. However, GHG emissions were found to be a small fraction of the sectoral budgets and therefore will not impede Ireland's GHG trajectory to net zero by 2050.

The TII guidance states that the following two factors should be considered when determining significance:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050; and
- The level of mitigation taking place.

Based on the GHG Assessment results and once mitigation, as set out below, has been taken into consideration, the above criteria equates to an effect of GHG emissions during the construction and operational phase of a ***direct, long-term***, ***negative*** *and* ***not significant***, which is overall ***not significant*** in EIA terms.

12.3.2 Climate Risk Assessment

An initial climate hazard screening based on the locality of the Proposed Development was carried out resulting in further assessment for extreme heat, flooding (pluvial, fluvial, coastal), drought, wildfire, storms and landslides. The vulnerability of the Proposed Development to the climate hazards was then established. All vulnerabilities were classified as low risk.

With design mitigation in place, there are no significant risks to the Proposed Development as a result of climate change. In accordance with the EPA Guidelines (EPA, 2022), the significance of effect of the impacts to the Proposed Development as a result of climate change are ***direct***, ***long-term***, ***negative*** and ***not significant,*** which is overall ***not significant*** in EIA terms.

12.4 Mitigation Measures

Mitigation measures to reduce the impact of the Proposed Development on climate include alternative materials selection for example low carbon concrete and HDPE watermains. Further, solar panels are being installed as part of the design to offset some of the additional energy demand required. Landscaping measures such as planting trees and hedgerows will sequester carbon dioxide through time, benefiting the climate. Additional best practice measures during construction will also help to reduce associated GHG emissions.

During construction, the contractor will manage climate-related risks through site assessments, method statements and good site practices. All materials will include certified datasheets showing their safe operating temperatures. During operation, the development will address climate vulnerability through flood planning, ongoing monitoring and ensuring it does not increase flood risk elsewhere. Regular checks on water levels and abstraction rates will help prevent drought-related issues.

Monitoring of embodied carbon during construction will be carried out to identify further opportunities to reduce climate impacts. Commitments to monitor GHG emissions during the construction phase will also be secured through the final Construction Environmental Management Plan (CEMP). Where monitoring shows that the Proposed Development is not meeting its targets, further mitigation will be put in place.

Monitoring will also consider the potential for extreme weather during construction. The contractor's Environmental Management System will include measures to manage risks such as flooding.

12.5 Residual Impact

The Proposed Development will generate some greenhouse gas emissions across all phases, even after applying best-practice mitigation. However, with mitigation in place and given that the project does not hinder Ireland's pathway to carbon neutrality, the residual significance of effect for the Proposed Development is considered to be ***direct, long-term, negative and not significant*** in EIA terms.

For climate change vulnerability, the site is considered to have low exposure to climate-related risks. The residual effect of climate change on the Proposed Development is considered ***direct***, ***long-term***, ***negative*** and ***imperceptible.*** Overall, this is considered to be ***not significant*** in EIA terms.

13. Noise and Vibration

Chapter 13 Noise and Vibration (Volume 2 of the EIAR) focuses on assessing the potential impacts and significant effects of noise and vibration associated with the construction and operation of the Proposed Development. It aims to provide a comprehensive understanding of the existing noise environment, the methodology used for the assessment, the potential effects of noise and vibration, and the proposed mitigation measures to minimise any adverse effects from the overall Proposed Development.

13.1 Existing Environment

The baseline environment relevant to the noise impact assessment includes existing noise sources and receptors within the study area. These elements are key in informing the noise impact assessment scope and methodology.

A baseline noise survey was carried out across the Proposed Development site between the 20th and 25th of November 2025, with supplementary surveying completed in May and June of 2026. The baseline noise survey helped establish the dominant existing noise sources within the study area and serves as a reference point for evaluating the potential effects of the overall Proposed Development.

13.2 Construction Phase

The construction phases of the Proposed Development will inevitably introduce noise into the environment. For the majority of the time, it is expected that construction noise emissions will fall within applicable construction noise criteria at nearby Noise Sensitive Locations (NSLs). Under worst-case conditions, construction noise levels may exceed the applicable construction noise criteria at NSLs located in close proximity to certain active construction works; ***temporary Significant effect*** may occur in the absence of mitigation. However, the construction activities will be temporary and localised, and implementation of the recommended mitigation measures will reduce noise impacts at nearby NSLs.

Construction-related vibration is predicted to be ***negligible*** at nearby NSLs and ***Not Significant***.

13.3 Operational Phase

Operational noise associated with the Proposed Development will arise primarily from operational plant and equipment. The assessment considers daytime, evening and night-time operations and applies the relevant Environmental Protection Agency (EPA) NG4 noise criteria to each facility. Based on the predicted operational noise levels, noise associated with the Proposed Development is anticipated to result in a ***Not Significant adverse effect*** at nearby NSLs.

Operational vibration at nearby NSLs is predicted to be ***Not Significant***. Due to the separation between operational plant and nearby receptors, operational vibration levels are expected to remain below thresholds for human perception and structural or cosmetic building damage.

13.4 Mitigation Measures

In the absence of mitigation, construction noise may result in negative effects at NSLs located within approximately 100 m of active construction works. However, appropriate attenuation can be achieved through the implementation of a range of best-practice mitigation measures in accordance with BS 5228. These measures will include the selection of low-noise, well-maintained plant and equipment; control of noise at

source; use of site hoarding and temporary acoustic screening where appropriate; and avoidance of unnecessary plant idling and material dropping. Noisy activities will be appropriately managed and, where practicable, scheduled to minimise impacts at nearby NSLs, with ongoing public liaison and communication maintained throughout the construction phase.

The implementation of these measures aims to reduce noise levels during construction, ensuring that the impacts on NSL's are minimised.

Based on the predicted operational noise levels, noise associated with the Proposed Development is anticipated to result in a ***Not Significant adverse effect*** at nearby NSLs. Nevertheless, where practicable, appropriate noise control measures should be incorporated into the detailed design, including acoustically rated and sealed building elements, acoustic louvres and ventilation attenuators, internal sound-absorbing treatments, and the selection of low-noise plant and equipment. Noisy plant should also be located and orientated away from nearby NSLs and external openings where practicable. Overall, the residual operational noise effect is considered ***Not Significant***.

13.5 Residual Effects

With the implementation of the proposed mitigation measures, the assessment evaluates the remaining effects of noise and vibration. The conclusion is that the residual effects of construction noise from the Proposed Development are expected to be temporary and of negligible significance. Similarly, operational noise is also anticipated to have a ***Not Significant effect*** on NSL's.

13.6 Conclusion

Chapter 13 Noise and Vibration provides a comprehensive evaluation of the noise and vibration impacts related to the Proposed Development. It identifies potential effects during both the construction and operational phases. By applying established methodologies and implementing effective mitigation measures, the project seeks to minimise adverse noise and vibration impacts. This approach ensures that the development will be compatible with the surrounding environment, without introducing significant noise and/or vibration effects to existing residents.

14. Resource and Waste Management

The assessment of the potential resource and waste management effects of the Proposed Development is contained in Chapter 14, Volume 2 of the EIAR. The resource and waste assessment has focused on:

- Potential effects on resources during the construction and operation of the Proposed Development; and,
- Potential effects of waste generated during the construction and operation of the Proposed Development.

14.1 Existing Environment

The construction of the Proposed Development will require a range of construction materials. It is expected that aggregates, concrete and steel will form the largest volumes of construction materials required. The Irish Concrete Federation, 2024 reported on the quantities of these materials that are produced annually in Ireland.

Construction and Demolition (C&D) waste includes materials from construction, renovation and demolition activities. The EPA promotes sustainable waste management practices through reduction, reuse, recycling before final disposal at a landfill (see Figure 14-1). In Ireland 7.9 million tonnes of C&D was generated in 2024, with 77% of this coming from soil and stones. The EPA's National By-product criteria provide rules for the safe reuse of greenfield soil and stone and prevents it from becoming a waste. In 2024 nearly 2 million tonnes of soil and stone was determined as by-products.

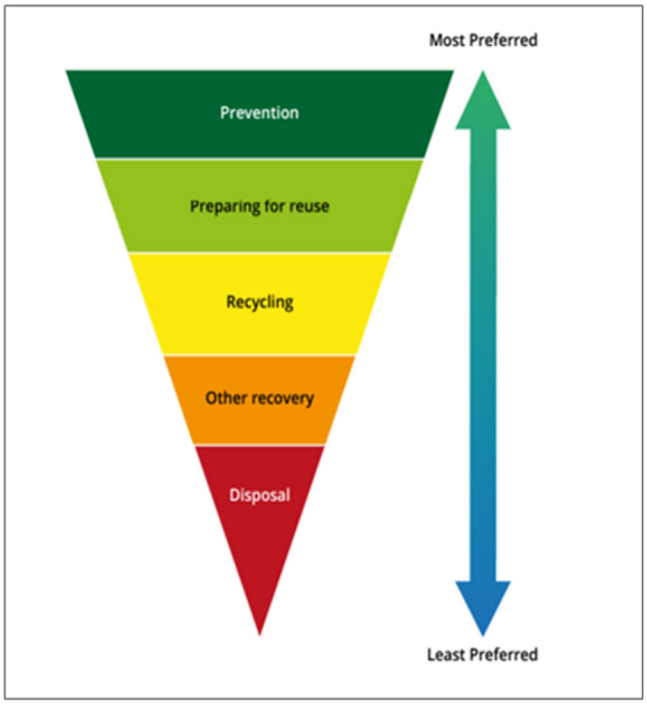


Figure 14-1 – Accepted Best Practice Waste Hierarchy (EPA, 2021)

14.2 Construction Phase

The Proposed Development has been designed to minimise the effects on resources by maximising the re-use of material on site during construction. The Appointed Contractor will maximise the reuse of the soil and stone excavated during the installation of the approx. 30.2 km of trunk main and hence avoid importing aggregates to the site. However, it is estimated that approximately 71,794 m^3 of aggregates will be required to construct the Proposed Development. This amount is estimated to be 0.28% of the total national annual aggregate production. In the absence of mitigation there is the potential for ***direct, short-term, localised, negative,*** and ***slight*** impacts to resources. Overall, the effects on resources are anticipated to be ***Not Significant*.**

A large portion of waste will arise during the installation of the pipelines in roads. In line with Uisce Éireann's Sustainability Framework zero recoverable waste will be sent to landfill. The Appointed Contractor will separate the asphalt from the road excavation and send it to a nearby Reclaimed Asphalt Pavement (RAP) where it meets acceptance criteria facility for reuse as asphalt in new roads. Excavated soil and stone from the installation of the pipelines in agricultural land will be reused as backfill where suitable. Surplus clean soil and stone excavated at the construction sites will be used as non-engineered backfill and for landscaping purposes. The remaining surplus soil and stone will be sent off site as a by-product or as infill in other licensed sites and quarries.

Materials that will be consumed when the Proposed Development is in operation will consist primarily of chemicals used in the water treatment process. Uisce Éireann requires 30 days of stock of liquid chemicals at the water treatment plant at Lisglennon and 90 days supplies of the solid water treatment chemicals. There is sufficient bunded vessel and storage areas to safely house these chemicals within the Lisglennon WTP site.

14.3 Operational Phase

During operation the majority of waste generation will arise from the treatment process at Lisglennon Water Treatment Plant. The wastes will arise as residues resulting from the water treatment process. Dewatered sludge will form the biggest source of waste generated during the operation of the water treatment plant at Lisglennon. It is estimated that approximately 30 tonnes of sludge will be produced per month. Dewatered sludge will be stored securely on site prior to removal by an appropriately authorised contractor. It will be transported to an appropriately authorised facility for treatment and recovery, with beneficial re-use prioritised where practicable in line with circular economy principles, regulatory requirements and Uisce Éireann's residuals management approach. In the absence of mitigation there is the potential for ***direct, short-term, localised, negative,*** and ***slight*** impacts to waste management. When mitigation measures are in place the effects of the Proposed Development on waste will be ***Not Significant***.

14.4 Mitigation Measures

Key mitigation measures for resources aimed at reducing significant effects include:

- Reuse of excavated material where possible during the installation of the pipelines and during earthworks for the construction sites.
- Reuse of aggregates, if suitable, during the installation of the pipelines on the road
- Applying circular economy principles when purchasing materials and equipment

Key mitigation measures for waste aimed at reducing significant effects includes:

- The Appointed Contractor will engage the services of a Waste Management Co-ordinator (WMC). The WMC will have responsibility for the management of waste generated at the site, tracking and reuse/disposal of the waste as per the requirements of the Waste Management Act 1996 as amended
- The WMC will be responsible for completing the Uisce Éireann Waste Tracker on a monthly basis

- The WMC will be responsible for ensuring that waste management during construction will be in compliance with EU and National waste management legislation and policies.
- The WMC will be responsible for ensuring that waste management during construction will be in compliance with the Resource Waste Management Plan for the development
- The Appointed Contractor will maximise the reuse of materials on site and minimise waste going off site. Where suitable, particularly on green field sites, surplus material will be sent off site as a by-product for reuse at a suitably permitted/licensed site.
- Zero recoverable waste will be sent to landfill for disposal.

14.5 Residual Effects

The proposed mitigation measures will reduce material consumption during the construction and operation of the Proposed Development, resulting in ***no likely significant effects***.

Maximise reuse of surplus materials generated during the construction and operation of the Proposed Development will result in ***no likely significant effects***.

14.6 Conclusions

The Proposed Development has been designed to minimise the resources that will be used during construction.

Reuse of the surplus materials as a by-product where suitable, will support the circular economy and the waste management hierarchy.

Overall, ***no Significant impacts*** on waste management are predicted during the construction or operational phases of the proposed development.

15. Roads, Traffic and Transportation

The Traffic and Transport assessment examines how the proposed water supply upgrade could affect roads, traffic, pedestrians, cyclists and public transport during both construction and operation.

15.1 Existing Environment

Traffic surveys were carried out on the main roads in the study area, including the N59, R294 and R314, as well as a number of local roads L1111, L5110 and L5111.

The surveys found that:

- National and regional roads currently carry moderate traffic levels.
- Several local roads, particularly around Wherrew and Knockfree, carry very low volumes of traffic.
- Overall, the road network has sufficient spare capacity to accommodate additional traffic associated with the project.

15.2 Construction Phase

Construction is expected to take approximately 35 months and is anticipated to begin in 2027. At peak periods, around 126 workers could be employed at peak construction on the project. Construction traffic will consist mainly of:

- Worker vehicles travelling to and from sites.
- Delivery vehicles and heavy goods vehicles transporting materials and equipment.
- If required, abnormal loads associated with specialist equipment.

The assessment concludes that:

- Traffic increases on national and regional roads will generally be small.
- Larger percentage increases are predicted on some local roads. However, this is largely because those roads currently carry very little traffic.
- Even under a cautious "worst-case" assessment, all roads are expected to operate within their available capacity.

Temporary traffic management measures such as:

- Stop/go systems,
- Lane closures,
- Short-term road closures, and
- Signed diversion routes

may be required as pipeline works progress along the route. These impacts will be temporary and will move along with the construction works.

15.2.1 Sensitive Locations

The assessment identified schools, medical facilities and residential areas along parts of the route as sensitive locations.

Measures proposed to reduce disruption include:

- Maintaining priority access to residential areas, businesses and services.
- Avoiding school drop-off and pick-up periods where possible.
- Maintaining emergency vehicle access at all times.
- Coordinating traffic management with the relevant roads authority.

15.2.2 Walking, Cycling and Public Transport

The project is ***not expected to have significant long-term impacts*** on walking or cycling facilities.

Some temporary localised disruption may occur during construction, particularly near:

- The Monasteries of the Moy Greenway,
- River Moy tie in connection works, and
- Areas where traffic management is required.

Any disruptions will be managed through appropriate traffic and pedestrian safety arrangements. Public transport impacts are expected to be ***minimal and temporary***.

15.3 Operational Phase

Once construction is complete, the upgraded water supply infrastructure will generate very little ongoing traffic.

Operational traffic will mainly consist of:

- Maintenance visits,
- Staff movements,
- Chemical deliveries, and
- Periodic sludge removal vehicles at Lisglennon WTP.

The assessment estimates that operational traffic levels will be very low and will have a ***negligible effect*** on the surrounding road network.

15.4 Mitigation Measures

A CWTMP will be prepared before works begin. Measures will include:

- Designated haulage routes,
- Advance warning signage,
- Wheel washing facilities,
- Road cleaning where necessary,
- Control of heavy vehicle movements,
- Temporary pedestrian facilities where required,
- Continuous monitoring of traffic conditions; and
- Reinstatement of roads, pathways and trails in accordance with county council or landowner requirements.

A CWPTMP has been submitted with the EIAR.

15.5 Worst Case Scenario

- **Future Development Traffic:** Traffic from committed developments have been included using the highest forecast volumes reported within their respective planning application documents, although actual traffic levels are expected to be lower.
- **Traffic Assignment:** All proposed development traffic have been assumed to use each assessed road, representing a conservative assumption as actual traffic will be distributed across the network.
- **Construction Workforce:** The assessment assumes up to 126 construction staff at peak, although actual numbers on site at any particular time are likely to be lower.
- **Visitor and Delivery Traffic:** Four visitor and delivery trips per day have been assumed, despite such movements being expected to occur only occasionally.
- **Worst-Case Assessment:** Overall, the assessment is based on conservative assumptions to represent a robust worst-case scenario, with actual traffic impacts likely to be lower.

15.6 Conclusion

The assessment concludes that:

- Construction will cause temporary increases in traffic, particularly on some local roads.
- The existing road network has adequate capacity to accommodate the anticipated traffic.
- Interventions such as partial lane closure and full road closure could elevate the traffic effects during construction phase.
- Temporary traffic management measures will be used to minimise disruption.
- Long-term operational traffic will be very low.
- After mitigation, traffic impacts are expected to be ***not significant*** overall, with no lasting adverse effects on the road network, public transport, walking or cycling facilities.

16. Material Assets

Chapter 16 – Material Assets (Volume 2 of this EIAR) describes and assesses the likely significant effects on material assets specifically in relation to existing and proposed built services / utilities and linear amenities. Waste Management and Roads and Traffic have been assessed separately in Chapter 14 – Waste Management and Chapter 15 – Roads, Traffic and Transportation (Volume 2 of this EIAR). Chapter 16 should also be read in conjunction with Chapter 6 – Population and Human Health (Volume 2 of this EIAR).

16.1 Existing Environment

Existing and proposed services / utilities in the Study Area include water services (potable water, drainage and foul sewerage), electricity, telecommunications and street lighting and gas. A number of linear amenities (i.e. walkways and cycle trails) intersect and are located within the vicinity of the Proposed Development: the Bonniconlon Walking, Belleek Wood Greenway Cycling Trail, Belleek Multi Access Walking Trail, EuroVelo 1 Ireland – Atlantic Coast Route (road cycling trail), Glen Loop – Bonniconlon Walking Trail and Sligo Way (Long Distance Waymarked Way).

16.2 Construction Phase

Potential effects on existing and proposed built utilities during construction include damage and temporary disruption or loss of service, resulting in potential adverse effects during the construction phase.

Interactions between the Proposed Development and existing and proposed services / utilities have been minimised in the design in accordance with relevant standard guidelines for utilities. Following detailed design undertaken by the Appointed Contractor, consultation with relevant stakeholders and implementation of mitigation measures via the CEMP and other relevant management plans, these effects will be ***slight adverse, not significant*** and ***short-term*** in nature.

Temporary loss of access to linear amenities is also anticipated during construction, assessed as having potential ***slight adverse, not significant*** and ***short-term*** effects following implementation of mitigation measures set out in the CEMP and other relevant management plans including reinstatement of roads, trails and pathways.

16.3 Operational Phase

Accidental leaks or maintenance works can interact with existing and proposed built services / utilities and linear amenities, resulting in damage and disruption or temporary loss of service. The Proposed Development will deliver a long-term sustainable water source for the Ballina and Lough Talt water supply areas, which will meet future residential, commercial and industrial users. Routine maintenance of the various valves along the pipeline route will be carried out. These are planned events and would be scheduled to suit the landowner and weather conditions. The effect of this operation is ***negligible*** and ***Not Significant***.

16.4 Mitigation Measures

16.4.1 Construction mitigation measures

Key mitigation measures which will be implemented during the construction phase are presented in Section 16.6.1 of Chapter 16 – Material Assets, Volume 2 of the EIAR.

16.4.2 Mitigation during operation

Key mitigation measures which will be implemented during the operational phase are presented in Section 16.6.2 of Chapter 16 – Material Assets, Volume 2 of the EIAR, and include adherence to the scour management measures set out in Chapter 3 – Project Description (Volume 2 of the EIAR).

16.4.3 Monitoring requirements

The Contractor will be responsible for maintaining records and documentation for the full duration of the demolition and construction phase, including all relevant paperwork during commissioning of new services, consisting of required approvals and consents, and documentation for each system being commissioned (i.e. completion reports, checklists, test results, utility provider confirmation, and operations and maintenance manuals).

16.5 Residual effects

Taking account of the proposed mitigation measures for Material Assets, specifically built services the residual effects of the Proposed Development will be short-term and ***Not Significant*** during the construction phase, and long-term and ***Not Significant*** during the operational phase. There will be ***No likely Significant residual effects*** associated with built services.

The Proposed Development will result in a ***permanent positive Significant Effect*** on the water supply network by ensuring adequate water quality and increasing the supply and security of the water supply to Counties Mayo and Sligo.

17. Cultural Heritage

The Cultural Heritage assessment was undertaken to determine the likely significant effects (if any) of the Proposed Development on the archaeological, architectural and cultural heritage environment.

17.1 Existing Environment

The assessment identified 128 sites/potential sites of archaeological and/or cultural heritage significance within the defined study area. Of these 42 are listed in the Sites and Monuments Record /Record of Monuments and Places (CH001–CH042) and twelve registered in the National Inventory of Architectural Heritage (CH016, CH043–CH053) of which three are also Recorded Protected Structures (CH016, CH043, CH051). One of the Recorded Protected Structures (CH016) is also a recorded monument. The route travels south from the Lisglennon WTP along the eastern boundary of two fields of pasture divided by a post and wire fence. The pipeline travels south-west through a third, smaller, field of pasture before crossing a narrow local road. The Proposed Development travels through the ruins of a stone constructed dwelling house (CH054) on the north side of the road.

No recorded monument is directly impacted by the Proposed Development. The Zone of Notification surrounding five recorded monuments (CH011, CH021, CH026-027, CH035) will be impacted. The zones do not define the exact extent of the monuments and are intended to identify them for the purposes of notification under Section 12 of the National Monuments Act (1930-2004). At least two months' notice will be given in writing to the Minister for Housing, Local Government and Heritage for works undertaken within the zones of notification. Following consultation with National Monuments Section, Department of Housing, Local Government and Heritage archaeological monitoring of ground disturbance along the existing road will be undertaken at these locations.

Archaeological testing in greenfield areas along the proposed pipeline route was undertaken by Through Time Ltd. (Licence 25E0070 extension). One feature of potential archaeological significance (CH127) was encountered in Ballinteean townland. It is recommended that this area be archaeologically resolved in advance of construction. Further archaeological monitoring during construction will take place at all greenfield locations associated with the Proposed Development. Archaeological testing in advance of construction will be undertaken at the greenfield sites at the proposed Bonniconlon BPS and the proposed Windy Gap BPT.

Underwater archaeological dive, wade and metal detection surveys have been undertaken by Archaeological Management Solutions (AMS) at ten locations and walk-over / desk-based surveys at a further 10 (Dive Survey licence no. 26D0002; detection licence no. 26R0039). Thirteen culverts/possible culverts (CH064, CH113-CH115, CH117, CH119-126) and four bridges (CH062, CH112, CH116 & CH118) were identified at locations where the existing roads and watercourses intersect. The underwater survey at Lough Conn, Wherrew encountered no features or artefacts of archaeological significance.

A total of 27 undesignated cultural heritage sites were recorded within the study area, 18 of which will not be directly impacted, have no surface trace or have been avoided by the project design. The Proposed Development will have a permanent direct (negative) effect on nine undesignated cultural heritage sites. This number includes six culverts/possible culverts, one structure, one road and one ditch feature.

A total of 28 townland boundaries are crossed by the Proposed Development: all are already broken by or formed by the existing road network or watercourse with the exception of CH082 and CH086. Archaeological monitoring during construction will take place at townland boundary crossings.

The Proposed Development will incorporate ground disturbance in an area of peat (CH072) in Drumsheen/Knocknasliggaun townland. Archaeological monitoring of geotechnical site investigations recorded peat 0.5 m deep over natural clay layers (Appendix 17.7 of Volume 3 of the EIAR). A summary of Cultural Heritage features impacted by Proposed Development is presented in Table 17-1.

Table 17-1 – Summary of Cultural Heritage features impacted by Proposed Development

Site Type	Summary
Record of Monuments and Places (RMPs)	42 RMPs located within 500 m of Proposed Development. None are directly impacted. The Proposed Development will impact on the zones of notification surrounding five recorded monuments.
National Monuments	No National Monuments are impacted by the Proposed Development.
Preservation Orders	No monuments with preservation orders are impacted by the Proposed Development.
Protected Structures	Three protected structures are located within 500 m of the Proposed Development. No protected structure will be directly impacted.
Architectural Conservation Areas	No Architectural Conservation Areas are impacted by the Proposed Development
Sites listed in NIAH	12 structures recorded in the NIAH are located within 500 m of the Proposed development. None of these will be directly impacted.
Unregistered Cultural Heritage sites/features	27 unregistered features are located within the study area. 18 no impact, and nine negatively impacted.
River/Stream Crossings	Six rivers and 13 streams are crossed by the Proposed Development. The underwater archaeological surveys and walkover surveys recorded 13 culverts/possible culverts and four bridges at locations where the existing roads and watercourses intersect.

17.2 Construction Phase

17.2.1 Direct Effects on Recorded Monuments

The Proposed Development will have a neutral ***Not Significant (direct) effect*** on the 37 recorded monuments located within 500 m of the Proposed Development and a ***slightly Significant negative effect*** on the 5 monuments (CH011, CH021, CH026, CH027, CH035) where the Proposed Development crosses the Zones of Notification. Following consultation with National Monuments Service, Department of Housing, Local Government and Heritage it was agreed that licensed archaeological monitoring during construction be conducted at these five locations.

17.2.2 Direct Effects on NIAH and RPS

There are a total of 12 NIAH features and two recorded protected structures are located within 500 m of the Proposed Development, none of which will be directly affected. The Proposed Development will have a ***neutral***, ***Not Significant long-term direct effect*** on NIAH features and RPS.

17.2.3 Direct Effects on Unregistered Cultural Heritage Features

27 undesignated cultural heritage sites were recorded within the study area, 18 of which will not be directly impacted, have no surface trace or have been avoided by the project design. The Proposed Development will have a direct impact on nine undesignated cultural heritage sites. This number includes Six culverts/possible culverts, one structure, one road and one ditch feature. Archaeological monitoring during construction will take place at each of these locations.

A total of 28 townland boundaries are crossed by the Proposed Development with all except CH082 and CH086 already broken by or formed by the existing road network or watercourses. Archaeological monitoring during construction will take place at all townland boundary crossings.

17.2.4 Direct Effects on Potential Sub-Surface Archaeology

Parts of the Proposed Development are located in greenfield sites and peat environment. Archaeological testing has been undertaken in some greenfield areas along the proposed pipeline route to mitigate the risk of encountering significant archaeology. A possible ditch feature (CH127) was encountered in section B of the proposed pipeline (see Figure 17-1). The direct impact of the Proposed Development would be of medium magnitude, resulting in a slightly significant negative effect. It is recommended that prior to construction and following consultation with the National Monuments Service, Department of Housing, Local Government and Heritage that this area is stripped of topsoil under archaeological supervision and the full extent of the feature revealed and recorded. It is recommended that all ground disturbance associated with the construction of the Proposed Development in greenfield areas will be monitored by a suitably qualified archaeologist working under licence as issued by the Minister (DoHLGH) under section 26 of the National Monuments Acts (1994-2014). Should new sites, features and/or artefacts be revealed during excavations, the Proposed Development will have a likely permanent significant direct effect (negative) on unrecorded archaeology. The sites/features, if detected, during monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential direct effect after mitigation measures is likely to be long term positive significant.

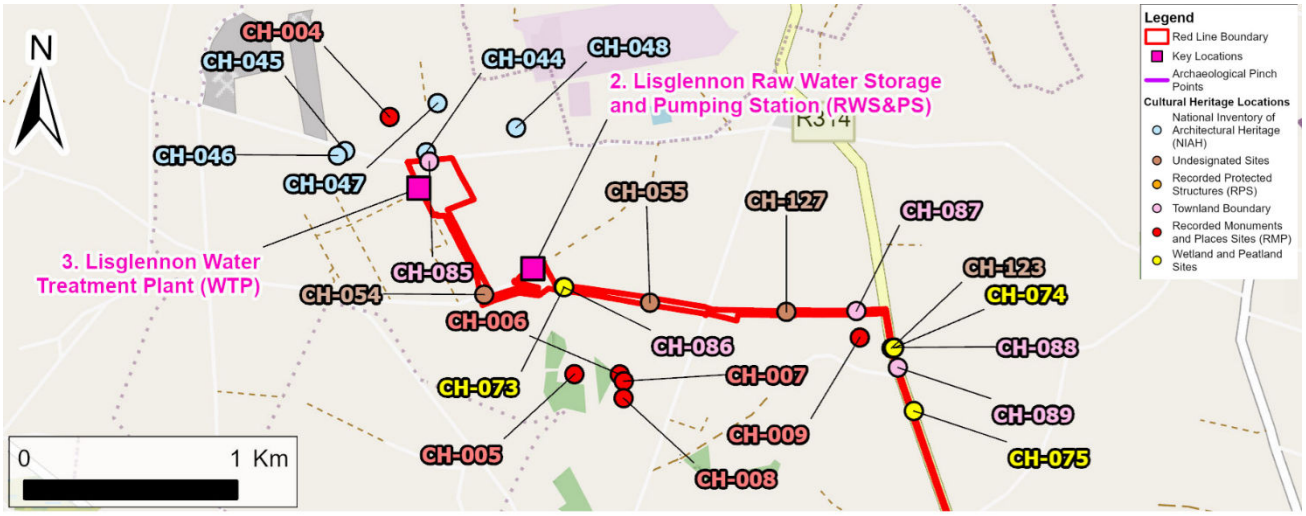


Figure 17-1 – Features identified in proximity to the Proposed Development: Section of Pipeline B showing location of CH127

This assessment has identified ***No likely Significant direct negative effects*** from the Proposed Development on the receiving environment given the layout and design of the proposed development and the mitigation measures recommended.

17.2.5 Indirect Effects on 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.

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 impact during construction on Belleek Manor. The visual impact will be short term and not significant. The landscape value of an area can be impact by the discovery of cultural heritage features in the course of excavations. 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 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***.

In the event of new archaeology features being revealed, the Proposed Development will have a ***long-term positive Significant direct effect***. The proposed new amenity development will increase the awareness of the cultural heritage of the area thus having a long term positive significant effect.

17.3 Operational Phase

Potential effects (indirect) of the Proposed Development are concerned with the visual effect on cultural heritage assets. While the Proposed Development may not have a direct effect on a cultural heritage asset, it may alter the setting. The proposed Bonniconlon BPS will be visible from the surrounding cultural heritage features. The cultural heritage features include the site of a holy well (CH033) a megalithic tomb (CH032) and two barrows (CH030 & CH031). The closest of these monuments (CH033) is the site of a holy well located 215 m to the north-east. The Proposed Development will have a ***neutral long-term imperceptible (direct) effect*** on cultural heritage assets during the operation phase.

17.4 Mitigation Measures

Detailed mitigation measures are set out in Chapter 17 – Cultural Heritage, Volume 2 of the EIAR. Pre-Construction/Post Consent Advance Works Stage will include:

- Archaeological testing at the site of the new Windy Gap BPT.
- Archaeological testing at the Bonniconlon BPS.
- Archaeological resolution of ditch feature (CH127) encountered during archaeological testing.
- Architectural Survey of ruins of structure (CH054).

The testing will be undertaken by a suitably qualified archaeologist working under licence as issued by the Minister (DHLGH) under section 26 of the National Monuments Acts (1994-2014). In the event of archaeological features, finds and/or deposits being encountered during the course of the testing, the relevant authorities should be notified immediately. *Preservation by record* (through archaeological excavation) will only occur if it is established that *preservation in situ* cannot be achieved, and such excavations are agreed with National Monuments Service.

Archaeological monitoring of topsoil stripping will be undertaken in the area surrounding CH127 (ditch feature). This will be undertaken by a suitably qualified archaeologist working under licence as issued by the Minister (DHLGH) under section 26 of the National Monuments Acts (1994-2014). In the event of archaeological features, finds and/or deposits being encountered during the course of the monitoring, the relevant authorities should be notified immediately. *Preservation by record* (through archaeological excavation) will only occur if it is established that *preservation in situ* cannot be achieved, and such excavations are agreed with National Monuments Service.

Archaeological monitoring of all groundworks in greenfield areas is proposed, including the 2.5 km sections that travels across farmland in the townlands of Lisglennon and Ballinteean and at the ruins of a structure (CH054), to include:

- 1 km section across farmland in the townlands of Behy More and Corimla South;
- 1.5 km section of the old roadway between Tobercurry and Bonniconlon that is also part of the walking route;
- 500 m section of pipeline will travel through the designed landscape and forestry surrounding Belleek Manor;
- Archaeological monitoring along the roads within the zones of notification of five recorded monument;
- Archaeological monitoring at townland boundary sites;
- Archaeological monitoring at culverts and possible culverts (CH064, CH115, CH121-124, CH126-CH127);
- Archaeological monitoring at the Bonniconlon Reservoir Site; and,
- Part-time monitoring along existing roads.

Written notification will be given to the Minister (or relevant department) at least 2 months in advance of any works being undertaken in the vicinity of the five recorded monuments (CH011, CH021, CH026-027, CH035) The monitoring will be undertaken by a suitably qualified archaeologist working under licence as issued by the Minister (DHLGH) under section 26 of the National Monuments Acts (1994-2014). In the event of archaeological features, finds and/or deposits being encountered during the course of the monitoring, the relevant authorities should be notified immediately. *Preservation by record* (through archaeological excavation) will only occur if it is established that *preservation in situ* cannot be achieved and such excavations are agreed with National Monuments Service.

No site-specific mitigation measures are proposed for the operational phase.

18. Landscape and Visual Impact Assessment

This chapter (Chapter 18, Volume 2 of the EIAR) assesses the likely significant landscape and visual effects of the Proposed Development. The assessment considers how the Proposed Development may affect landscape character and views experienced by people during construction and operation.

The assessment was prepared in accordance with the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) and the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022). It was informed by desk study, field survey, review of relevant planning policy and landscape designations, representative viewpoint assessment and professional judgement. Seventy-five representative viewpoints were selected to assess the range of views towards the Proposed Development from different locations, distances and viewing directions.

18.1 Existing Environment

The Proposed Development extends across parts of Counties Mayo and Sligo. It includes lowland rural farmland, the urban edge of Ballina, the village setting of Bonniconlon, and upland landscapes associated with the Ox Mountains, Windy Gap and Lough Talt. Key landscape and visual features include Lough Conn, the River Moy, Belleek Woods, the Ox Mountains, Windy Gap and Lough Talt.

18.2 Construction Phase

During construction, the main landscape and visual effects will arise from temporary construction activity, including excavation, pipeline installation, construction plant, traffic management, temporary working areas, vegetation removal where required, temporary lighting where required, and reinstatement works. Effects of construction works associated with the underground pipeline will generally be temporary and localised around active construction areas. The pipeline works will be undertaken progressively in discrete sections along the route corridor, although different sections may be constructed at the same time depending on programme, traffic management, environmental constraints, land access and construction logistics.

Effects of Construction works on landscape character are assessed as ***Moderate Adverse*** in a number of landscape character areas, including parts of the North Coast Plateaux, Northern Drumlins, East Mayo Uplands and the Windy Gap to Lough Talt landscape. These effects are temporary and associated mainly with construction activity, disturbance and the introduction of plant, machinery and working areas into the landscape. Construction visual effects will also be ***Moderate Adverse*** in some locations, particularly where residents, road users, recreational users or trail users experience close-range views of pipeline works or works at above-ground infrastructure sites. These effects will cease following completion of construction and reinstatement of affected areas.

18.3 Operational Phase

During operation, the underground pipeline will have minimal visible expression once reinstatement is complete. Operational effects will therefore mainly relate to the new and upgraded above-ground infrastructure. At existing operational sites, including Wherrew, Lisglennon and Lough Talt, the Proposed Development will generally be seen in the context of existing water supply infrastructure. At new or expanded sites, including Bonniconlon BPS, Bonniconlon Reservoir and Windy Gap BPT, operational effects will be more locally apparent, particularly in the opening year before proposed mitigation planting has matured.

Operational landscape effects are generally assessed as Neutral in the longer term, as the pipeline will be reinstated and the above-ground infrastructure will either be located within existing operational sites or integrated into the receiving landscape through mitigation planting and reinstatement. Operational visual effects will generally range from ***Neutral to Slight Adverse*** or ***Slight Beneficial***. ***Some localised Moderate Adverse*** visual effects may occur in the opening year where receptors have close-range views of new infrastructure before mitigation planting has established. These effects are expected to reduce over time as planting matures and reinstated vegetation becomes established. At Lough Talt, the replacement and integration of infrastructure, together with proposed landscape planting, is expected to result in localised beneficial visual effects once planting has matured.

18.4 Mitigation Measures

Mitigation has been incorporated into the Proposed Development to reduce landscape and visual effects. This includes the use of existing infrastructure sites where practicable, routing of the pipeline along existing road corridors and utility / pipeline corridors where practicable, retention of existing vegetation where feasible, reinstatement of disturbed areas, and proposed landscape planting. Proposed mitigation includes hedgerow, scrub, woodland and species-rich grassland planting, as well as bog reinstatement where appropriate. Built structures will use neutral finishes and colours appropriate to their rural or upland contexts, and site lighting will be designed to minimise unnecessary light spill.

18.5 Residual Effects

Following construction, reinstatement of the pipeline corridor will remove most temporary construction effects. In the longer term, the underground pipeline will not give rise to significant landscape or visual effects during operation. Residual landscape effects during operation are generally assessed as ***neutral***. Residual visual effects during operation are generally assessed as ***neutral to slight adverse*** or ***slight beneficial***, reducing over time as mitigation planting matures. Some localised opening-year effects ***may be Significant*** where close-range views of new infrastructure occur before planting has established; however, these are expected to reduce and are ***not anticipated to remain Significant*** in the longer term.

Overall, the Proposed Development will give rise to temporary significant adverse landscape and visual effects during construction in some locations. During operation, effects will reduce substantially. The underground pipeline will not be visible following reinstatement, and the above-ground infrastructure will be integrated through siting, design, reinstatement and landscape planting. Overall, the long-term residual landscape and visual effects are generally assessed as ***Not Significant in EIAR terms***, subject to the implementation and establishment of the mitigation measures described in Chapter 18 – Landscape and Visual Impact Assessment, Volume 2 of the EIAR

19. Risk of Major Accidents and Disasters

This summary describes the assessment of risks associated with major accidents and disasters for the Proposed Development in line with the requirements of the EIA Directive regarding the vulnerability of the project to risks of major accidents and/or disasters. This is a regional infrastructure project.

19.1 Existing Environment

The Proposed Development includes upgrades and new infrastructure at several locations.

Overall, the Flood Risk Assessment (FRA) concludes that flood risk associated with the Proposed Development can be appropriately managed through the location and design of the infrastructure and the identified flood-resilience and drainage measures. While parts of the Proposed Development are exposed to mapped flood risk, principally the Wherrew intake works and the section of Pipeline at Creggs Road, these elements are water-compatible and have been designed to remain resilient under the identified flood conditions. Accordingly, flooding is not considered likely to result in a significant major accident or disaster effect associated with the Proposed Development.

19.2 Construction Phase

The assessment considered potential effects on human health, the environment, property and critical infrastructure. The assessment considered both internal hazards arising from the project and external hazards arising from the surrounding environment. Internal hazards examined during construction include the use of compressed gas cylinders for welding, potential concrete spills, small quantities of diesel for construction plant equipment and the production of silt and drilling spoil during trenchless crossings such as horizontal directional drilling. The assessment also considered traffic incidents, fire, failure of temporary works, accidental damage to operational water infrastructure, and accidents associated with installation works at Lough Conn and Windy Gap.

During operation, the assessment focused on storage and handling of water treatment chemicals at Lisglennon WTP, potential infrastructure failure leading to chemical releases, contamination of treated drinking water arising from treatment or dosing failures, failure of critical water supply infrastructure, traffic incidents associated with operational activities, and fire risk associated with operational facilities, as well as burst pipes and risks to the intake pipe from craft collision. External hazards considered include flooding from rivers and coastal influences, extreme weather events, seismic activity, and landslides. Sensitive environmental receptors including the River Moy SAC, Lough Conn, Lough Talt and Lough Cullin were also considered.

19.3 Mitigation Measures

Mitigation is embedded in the project design and will be reinforced by a site-specific Construction Environmental Management Plan and health and safety planning. Control measures include secure external storage and certified use of gas cylinders, containment and capture of chemical delivery areas, bunded liquid chemical storage with leak detection, silt and surface water controls around drilling works, spill containment for fuels and lubricants, and intake protection measures including screening and markers. Additional measures include temporary drainage and dewatering controls, pollution prevention measures near sensitive watercourses, emergency response procedures, chemical monitoring and control systems, backup infrastructure and monitoring arrangements, fish protection systems at the intake, and routine inspection and maintenance programmes.

Mitigation measures reduce potential risks to a low and acceptable level.

19.4 Residual Effects

The project has been screened against nearby hazardous industry under the Control of Major Accident Hazards (COMAH) regulations; two COMAH establishments are located in 5 km to Proposed Development. The Proposed Development does not introduce additional risk pathways and does not impose constraints on the continued safe operation of the nearby establishment.

On the basis of the assessment, and with the described design measures and management controls in place, ***no significant residual risks*** of major accidents or disasters to human health, property, critical infrastructure or the environment are predicted for construction or operation.

20. Cumulative Impact Assessment and Interactions between Effects

Chapter 20 summarises the cumulative assessments for the potential for the Proposed Development as well as describing interactions between impacts on different environmental factors.

20.1 Cumulative effects

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 is aligned with the overarching EIA guidance as outlined in Chapter 1 of Volume 2 of this EIAR as well as per the methodology adopted for each environmental factor as described in Chapters 6 – 19.

A review of developments approved by Mayo County Council, Sligo County Council, or An Coimisiún Pleanála within the last 5 years and within a search area of 2 km from the Red Line Boundary identified 37 committed developments share potential connectivity with the Proposed Development.

There is potential for cumulative effects where other plans, projects or developments overlap with the Proposed Development spatially and temporally. Following implementation of standard construction environmental measures, the Proposed Development is ***Not expected to give rise to likely Significant cumulative effects***.

20.2 Interactive Effects summary

This EIAR has considered and assessed the interactive effects arising from the construction and operation of the Proposed Development based on best scientific knowledge. Interactive effects (or interactions), between each of the topics as discussed within Chapters 6 - 19 of this EIAR have been considered in order to determine the potential direct and indirect environmental impacts, via. various pathways, which could arise as a result of the proposed development. Following implementation of mitigation measures outlined in the Chapters 6 to 19 and summarised in Chapter 21 – Mitigation and Monitoring Measures, of Volume 2 of the EIAR, the Proposed Development is ***Not expected to give rise to likely Significant interactive effects***.

21. Mitigation and Monitoring Measures

All mitigation and monitoring measures relating to the pre-commencement, construction and operational phases of the Proposed Development are set out in the relevant chapters and are summarised in Chapter 21, Volume 2 of the EIAR.

All of the mitigation and monitoring measures detailed below have been incorporated into the PCEMP (Appendix 3-3 of Volume 3 of the EIAR) submitted as part of this planning application. The PCEMP will be used by the Appointed Contractor to produce a CEMP, which will be a live document and will be further added to by the Appointed Contractor and to include any future additional mitigation measures as may be required.

22. References

AtkinsRéalis (2024). Provision for Long Term Supply for Lough Talt, Feasibility Report.

AtkinsRéalis, (2024). The Feasibility Assessment.

AtkinsRéalis (2026). Ballina and Lough Talt Water Supply Upgrade - Environmental Impact Assessment Report (EIAR) Volume 2 – Main EIAR.

AtkinsRéalis (2026). Ballina and Lough Talt Water Supply Upgrade - Environmental Impact Assessment Report (EIAR) Volume 3 - Appendices.

Department of Housing, Local Government and Heritage (DoHLGH) (2025). Water Quality and Water Services Infrastructure – Sectoral Adaptation Plan 2025. Available at: https://www.gov.ie/en/department-of-housing-local-government-and-heritage/publications/water-quality-and-water-services-infrastructure-climate-change-sectoral-adaptation-plan/

European Commission (2019). European Green Deal.

Environmental Protection Agency (EPA) (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports. Available: https://www.epa.ie/publications/monitoring--assessment/assessment/guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment-reports-eiar.php.

Government of Ireland (2021). National Development Plan 2021-2030. Updated 2025. Available at: https://assets.gov.ie/static/documents/national-development-plan-2021-2030.pdf

Government of Ireland (2025a). National Planning Framework; First Edition. Available at: https://www.npf.ie/

Government of Ireland (2025b). Accelerating Infrastructure Report and Action Plan 2025. Available at: https://www.gov.ie/en/department-of-public-expenditure-infrastructure-public-service-reform-and-digitalisation/publications/accelerating-infrastructure-report-and-action-plan/.

Irish Water (2021). National Water Resources Plan – Framework Plan: Irish Water's 25 Year Plan for Our Water Assets. 2021. Available at: https://www.water.ie/projects/strategic-plans/national-water-resources

Irish Water (2023a). Regional Water Resources Plan – North West. Summer 2023. Available at: https://www.water.ie/projects/local-projects/north-west

Irish Water (2023b). Regional Water Resources Plan – North West: Appendix 3 Study Area C Technical Report. Summer 2023. Available at: https://www.water.ie/sites/default/files/docs/rwrp-northwest/2023/RWRP-NW-Appendix-3-Study-Area-C-Technical-Report-Final.pdf

Landscape Institute and Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3).

Mayo County Council (2022). Mayo County Development Plan 2022-2028. Available: https://www.mayo.ie/en-ie/your-council/services/planning/development-plans-and-strategies/county-development-plans/proposed-mayo-county-development-plan-2022-2028Mayo County Council (2024). *Ballina Local Area Plan 2024-2030.* Available: https://www.mayo.ie/en-ie/your-council/services/planning/development-plans-and-strategies/local-area-plan/ballina-local-area-plan-2024-2030

Northern and Western Regional Assembly (NWRA) (2020). Regional Spatial and Economic Strategy (RSES) for the Northern Region 2020-2032. Available at: https://www.nwra.ie/RSES/.

RPS (2018). Replacement Supply Options Report. Rev F01, May 2018. Document number MGW0214RP0019. Available in Sligo County Council Planning Application Ref. 18210;

Sligo County Council (2024) Sligo County Development Plan 2024-2030. Available: https://consult.sligococo.ie/en/consultation/draft-sligo-county-development-plan-2024-2030

Transport Infrastructure Ireland (TII) (2022). ‘ PE-ENV-01104 Climate guidance for national roads, light rail, and rural cycleways (offline and greenways) -

Transport Infrastructure Ireland (TII) (2022). ‘Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106

Uisce Éireann (2018) Biodiversity Policy (IW-AMT-POL-013), Revision 2.1. Available at: https://www.water.ie/iwstandards/explore

Uisce Éireann (2021) Sustainability Policy (IW-AMT-POL-002), Revision 3.1. Available at: https://www.water.ie/iwstandards/explore

AtkinsRéalis

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

© AtkinsRéalis Ireland Limited except where stated otherwise