AtkinsRéalis

Environmental Impact Assessment Report (EIAR) Volume 2 – Chapter 16 – Material Assets

Uisce Eireann

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BALLINA AND LOUGH TALT WATER SUPPLY UPGRADE

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Abbreviations

Abbreviation	Term
BPS	Booster Pumping Station
BPT	Break Pressure Tank
CEMP	Construction Environmental Management Plan
CSO	Central Statistics Office
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
Eir	Eir Telecommunications
Enet	Enet Telecommunications Network
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
GNI	Gas Networks Ireland
GPR	Ground Penetrating Radar
HSA	Health and Safety Authority
IFI	Inland Fisheries Ireland
LA	Local Authority
MCC	Mayo County Council
NTS	Non-Technical Summary
NPWS	National Parks and Wildlife Service
OHL	Overhead Line
OPW	Office of Public Works
PV	Photovoltaic
RWI&PS	Raw Water Intake and Pumping Station
RWS&PS	Raw Water Storage and Pumping Station
SAC	Special Area of Conservation
SCC	Sligo County Council
UGC	Underground Cable
VM	Virgin Media
WTP	Water Treatment Plant

Glossary

Term	Meaning
Proposed Development	Ballina and Lough Talt Water Supply Upgrade project
Pipeline A	Lisglennon RWS&PS to Lisglennon WTP
Pipeline B	Lisglennon WTP to River Moy Pipeline Crossing
Pipeline C	River Moy Pipeline Crossing to Bonniconlon BPS
Pipeline D	Bonniconlon BPS to Windy Gap BPT
Pipeline E	Windy Gap BPT to Lough Talt WTP
Bonniconlon Walking Trail	Recreational walking trail intersected by the Proposed Development

16. Material Assets – Built Services

16.1 Introduction

This Chapter of the Environmental Impact Assessment Report (EIAR) has considered the potential effects on built services associated with the construction and operation of the Proposed Development. According to relevant EPA guidance (EPA, 2022) the following topics warrant consideration under material assets:

- Built Services;
- Roads and Traffic; and
- Waste Management.

Waste Management and Roads and Traffic have been assessed separately as part of this EIAR. Refer to Chapter 14 – Resource and Waste Management and Chapter 15 – Roads, Traffic and Transportation. Therefore, this chapter identifies, describes and assesses the likely significant effects on material assets resulting from the construction and operation of the Proposed Development specifically in relation to existing and proposed built services / utilities (i.e., foul sewerage, surface water drainage, water supply, gas, electricity, and telecommunications utilities).

This chapter sets out the methodology used, describes the baseline environment, examines the predicted effects of the Proposed Development during construction and operation, and describes mitigation measures to reduce/remedy the significant effects on material assets.

The assessment has considered the mitigation that has been embedded into the design to reduce or avoid environmental effects.

A full description of the Proposed Development is provided in Chapter 3 (Project Description). Drawings which illustrate the location of services and utilities are provided in Appendix 3-2 of Volume 3 of this EIAR.

This chapter is supported by the following chapters:

- Chapter 6 Population and Human Health
- Chapter 14 Resource and Waste Management
- Chapter 15 Roads, Traffic & Transportation

16.2 Legislation and Policy Context

This assessment has been undertaken with regard to the *'Guidelines on the information to be contained in Environmental Impact Assessment Reports'*, Environmental Protection Agency (EPA), 2022 and with consideration of the requirements of key legislative and policy documents. Relevant legislation that were considered during the assessment process for the Proposed Development are as follows:

- Planning and Development Regulations 2001 (as amended);
- Planning and Development Act, 2000 (as amended);
- European Union (EU) Environmental Impact Assessment (EIA) Directive 2011/92/EU as amended by Directive 2014/52/EU (hereafter referred to as the "EIA Directive"); and,
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (hereafter referred to as the "EIA Regulations").

16.3 Study Assessment and Methodology

The scope of the work for the assessment is determined by the term 'material assets'. The EPA's Guidelines (2022) define material assets as follows:

'In the Directive 2011/92/EU this factor included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soil.'

For the purposes of this assessment material assets cover utilities infrastructure, traffic and land. As the majority of the pipeline will be laid on roads, this is covered in Chapter 15 – Roads, Traffic and Transportation. The remainder of the pipeline route will traverse agricultural land, and this is assessed in the Agronomy chapter (Chapter 8). Other potential effects include people, residential and commercial properties which is addressed in Chapter 6 Population and Human Health. These assessments have not been duplicated in this assessment.

A glint and glare assessment was undertaken to assess the potential effects associated with the solar photovoltaic (PV) panels proposed.

The Proposed Development will provide strategically important water supply infrastructure for Counties Mayo and Sligo. Given the long-term importance of the Ballina and Lough Talt Water Supply Upgrade, Uisce Éireann will operate, maintain and upgrade the infrastructure as required throughout its operational life.

The assessment involved data requests from key consultees to determine existing utilities in the area, the completion of a desk Study and site surveys and investigations.

The methodology used to prepare this section of the EIAR is in accordance with the EPA '*Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)'* (2022). The Study Area for assessment of built services is the Red Line Boundary of Proposed Development depicted in Figure 3-2, Chapter 3 – Project Description.

16.3.1 Data Collection and Collation

Data on the existing utilities within the Study Area was carried out by a desktop assessment, contacting the service providers and by field surveys.

Desktop assessments were carried out by examining aerial photography and GIS databases. Data requested from the service providers is discussed in the following sections.

16.3.1.1 Utilities

During the early stages of the design phase, data requests for existing utilities were issued to various utility companies, as listed below. The responses received informed the design and this information was embedded into the preliminary designs which allowed effects to be avoided and / or minimised.

The following service providers were contacted to provide utility information for the study area of the Proposed Development:

- Electricity Supply Board (ESB) Networks / EirGrid;
- Gas Networks Ireland (GNI);
- Uisce Éireann (formerly Irish Water); and,

- Telecommunications providers (Virgin Media, Eir, Enet, BT, Vodafone. euNetworks).

16.3.1.2 Field Surveys

A ground penetrating radar (GPR) survey was undertaken by Irish Drilling Ltd (2025) at selected locations along the Proposed Development, and the identified assets have been incorporated into the proposed design. This survey will be made available to the Appointed Contractor(s) for use in their Construction Management Plans.

The following utilities have been identified within the general area of the Proposed Development:

- Uisce Eireann
  - Foul Water
  - Water Mains
- Telecommunications
  - Virgin Media
  - Enet
  - BT
  - Aurora
  - Eir
- Electricity
  - ESB

The location of these utilities are illustrated in Drawings 10025936-ATK-LZ-ZZ-DR-CE-211101 to 10025936-ATK-LZ-ZZ-DR-CE-211251 given in Appendix 3-2 in Volume 3 of the EIAR.

There are no Bord Gáis assets identified within the study area, or its vicinity.

16.3.1.3 Other assets

A desk study was undertaken to obtain data from online sources including the following (non-exhaustive list):

- Central Statistics Office (CSO) (2026);
- Google Maps (2026) / Bing Maps (2026);
- Mayo County Development Plan 2022-2028 (Mayo County Council 2022); and,
- Sligo County Development Plan 2024-2030 (Sligo County Council 2024).

16.3.2 Limitations

This assessment is based on data request responses from various key consultees in 2024, and there is potential that recently installed utilities were not indicated on the responses received. GPR surveys have been undertaken at selected locations along the Proposed Development, (refer to Appendix 12 of the Ground Investigation Report (Irish Drilling Limited, 2025) which is appended to Chapter 9 – Land, Soils and Geology (Appendix 9-1). Notwithstanding these limitations the findings of the assessment are considered suitably representative of the baseline environment with respect to built services / utilities.

16.4 Baseline Environment

During the site selection process and the alternative design consideration stage of the project (See Chapter 4 – Alternatives), material assets were identified by desktop assessment and site walkover surveys. The information

gathered from the desktop assessment allowed the design team to consider avoidance of the utilities if possible or alternatively to consider construction techniques that minimise disruption to the utilities.

16.4.1 Study Area

The Study Area for the assessment is shown in Figure 3-2, Chapter 3 – Project Description. The Study Area is located within County Mayo and County Sligo and is in proximity to Ballina town and the Village of Bonniconlon. There is potential for direct and indirect effects on material assets from the construction and operation of the Proposed Development. The following sections of this chapter describes material assets within the study area, with reference to the drawings provided in Appendix 3-2, volume 3 of this EIAR.

16.4.2 Water, Wastewater Drainage and Supply

Existing Uisce Éireann water pipelines run parallel to and intercept the proposed pipeline route between Lisglennon WTP and Lough Talt WTP. The locations are shown on the design drawings presented in Appendix 3-2, Volume 3 of the EIAR, and summarised below.

Table 16-1 — Uisce Eireann Assets within vicinity of the Proposed Development

Pipeline Section	Description of Existing Assets	Type of UÉ Asset (Water(W)/Wastewater (WW))	No. of UÉ Asset Crossings	No. of Lift and Lay
Pipeline A	In parallel to the existing 350 mm asbestos cement (AC) watermain maintaining the separation distances. Crossing of existing 700 mm AC twin rising main maintaining the separation distances.	W	1	
Pipeline B	In parallel to existing 500/400 mm AC and 350 mm ductile iron (DI) trunk watermains maintaining the separation distances. Crossing of trunk watermains between 350 mm and 500 mm diameter and 700 mm AC twin rising main maintaining the separation distances. Crossing of smaller watermains varying in diameter between 50 mm and 250 mm maintaining the separation distances. Lift and lay of an existing small diameter service in the entrance to Belleek Castle for an approximate length of 150 m.	W	17	1
Pipeline C	In parallel to existing watermains of 350 mm DI (Creggs Rd), 250 mm HDPE and 160 mm uPVC (R294) diameters and smaller watermains ranging between 50 mm and 100 mm in diameter along various sections. Crossing of existing 250 mm HDPE and 160 mm uPVC distribution mains and smaller watermains varying between 50 mm and 100mm in diameter. There are existing 225 mm diameter sewer in parallel to pipeline C in Creggs Rd.	W/WW	23	

	Crossing of existing 225 mm and 300 mm diameter sewers also at Creggs Rd. Separation distances will be maintained at all locations.		
Pipeline D	In parallel to existing watermains varying in diameter between 225 mm and 80 mm. Crossing of watermains varying in diameter between 225 mm and 75 mm and smaller property connections. There is an existing 225 mm PVC sewer in parallel to pipeline D in Bonniconlon. Crossing of existing 225 mm PVC sewer at two locations in Bonniconlon. Separation distances will be maintained at all locations.	W/WW	12
Pipeline E	Crossing of existing 500 mm AC watermain maintaining the separation distances. Note: assessment considered up to the Lough Talt Water Treatment Plant site boundary.	W	1

Note: This information is based on As built records and slit trenches at discrete locations and will be confirmed during detailed design by the Appointed Contractor.

Watermains and foul sewers are located within the vicinity of the seven key locations[1], as detailed in the design drawings (Appendix 3-2).

Based on the GSI (2026) database, there are no public water supply or group water scheme abstraction points, or source protection areas, beneath or adjacent to the Proposed Development, excluding Lough Conn and Lough Talt (GSI, 2026).

16.4.3 Electricity/ ESB Supply

The existing power transmission infrastructure identified in the study area consists of overhead lines (OHL) and underground cables (UGC). There are low, medium (10 kV and 20 kV) and high voltage lines (38 kV, 110 kV, 220 kV) within the study area.

16.4.3.1 Underground Cables (UGC)

Underground cables are reported as intercepting and / or running parallel to the proposed pipeline as follows (refer to the drawings in Appendix 3-2):

- Pipeline B: Low Voltage UGC are reported as intercepting Pipeline B at 2 locations;
- Pipeline C: Low Voltage UGC are reported as intercepting Pipeline C at 1 location and Medium Voltage UGC are reported as crossing Pipeline C at 2 locations. Existing Medium Voltage UGC run parallel to Pipeline C for approx. 220 m;

[1] Wherrew Raw Water Intake & Pumping Station (RWI&PS), Lisglennon Raw Water Storage and Pumping Station (RWS&PS), Lisglennon Water Treatment Plant (WTP), Bonniconlon Booster Pumping Station (BPS), Windy Gap Break Pressure Tank (BPT), Lough Talt Water Treatment Plant (WTP), Bonniconlon Reservoir.

- Pipeline D: Medium Voltage UGC are reported as intercepting Pipeline D at 3 locations, and run parallel to the proposed pipeline for approx. 370 m.

No UGC have been identified within the boundary of the seven key locations.

16.4.3.2 Overhead Lines (OHL)

Overhead Lines are reported as intercepting and / or running parallel to the proposed pipeline as follows (refer to Appendix 3-2)

- Pipeline A: Low Voltage OHL cross Pipeline A at 2 locations, Medium Voltage OHL cross at 3 locations and High Voltage OHL cross at 1 location;
- Pipeline B: Low Voltage OHL cross Pipeline B at 15 locations, Medium Voltage OHL cross at 10 locations and High Voltage OHL cross at 2 locations;
- Pipeline C: Low Voltage OHL cross Pipeline C at 10 locations, Medium Voltage OHL cross at 4 locations and High Voltage OHL cross at 2 locations;
- Pipeline D: Low Voltage OHL cross Pipeline D at 11 locations, Medium Voltage OHL cross at 5 locations and High Voltage OHL cross at 2 locations; and,
- Pipeline E: Low Voltage OHL cross Pipeline E at 1 location, Medium Voltage OHL cross at 3 locations and High Voltage OHL cross at 3 locations.

OHL crossings are identified as crossing the tanks at the Lisglennon WTP, with OHL also identified as crossing the boundary of the following key locations:

- Lough Talt WTP – a Medium Voltage OHL runs in a north-east – south-west direction near the western boundary with a short section Low Voltage extending into the boundary, perpendicularly.
- Bonniconlon Treated Water Reservoir –a short section of Medium Voltage OHL diagonally crosses the south-western corner of the site boundary.
- Lisglennon Water Treatment Plant – a short section of Low Voltage OHL crosses the south-east corner of the site, in a north-east, south-west direction. A Medium Voltage OHL crosses over the central portion of the site before turning north-west towards the northern boundary.
- Lisglennon Raw Water Reservoir – short sections of High Voltage and Medium Voltage OHL extend towards the centre of the site from south.

The location of OHL and UGC are detailed in the design drawings (Appendix 3-2).

16.4.4 Telecommunications

BT, Eir, and Aurora assets are intercepted by the Pipeline, as detailed below. Refer to the drawings in Appendix 3-2.

- Pipeline A: Eir assets intercept Pipeline A at one location;
- Pipeline B: Eir assets cross Pipeline B at 9 locations and Aurora assets intercept at 2 locations. Eir Assets run parallel to Pipeline B for approx. 530 m;
- Pipeline C: Eir assets cross Pipeline C at 12 locations and BT assets intercept at one location:
- Pipeline D: Eir assets and BT assets intercept Pipeline D at 10 and 6 locations respectively, with Eir assets running parallel to Pipeline D for approx. 840 m and BT assets running parallel for approx. 1.4 km;
- Pipeline E: Eir assets are crossed by Pipeline E at 9 locations and run parallel for approx. 1.9 km, with BT assets being crossed at 13 locations and running parallel for approx. 5.8 km.

16.4.5 Street Lighting

Mayo County Council responded stating that street lighting utilities are located within the Bonniconlon and Ballina areas. Sligo County Council did not respond to the request for information on street lighting. The portion of the Proposed Development within Sligo County Council administrative area is along rural roads, and no street lighting has been identified during a review of google mapping (Streetview), 2026.

16.4.6 Future baseline

There is a potential for new utilities and material assets which have not been considered in this chapter to be commissioned and constructed in the future. Chapter 20 – Cumulative Assessment has considered future development in the area including wind farms and battery storage facilities. In the absence of the Proposed Development, current infrastructure will remain unchanged and there will be no effects, either positive or negative on utilities within the receiving environment.

16.5 Impact Assessment

This section assesses the effects of the Proposed Development during construction and operation on the existing material assets within the study area. The alternative preliminary designs have considered the direct and indirect effects of the Proposed Development and mitigation measures have been embedded into the preliminary designs and layouts.

During the construction phase no existing utilities will be subject to major disruption. Construction of the Proposed Development is likely to happen in phases, and work will be planned to ensure that in the event of a short-term interruption of a utility supply, alternative provisions will be provided to enable continuity of supply. This may mean the provision of an alternative potable water supply or alternative energy supply. The Appointed Contractor will liaise with the service provider in advance of a potential disruption so that alternative supplies can be facilitated for the short-term disruption.

16.5.1 Sensitivity of Receptors

The sensitivity of existing material assets is determined having regards to the criteria shown in Table 16-2. Disruption of a utility or utilities at a single location can often result in a knock-on effect of the functionality of the infrastructure over a wider area. Therefore, all utilities within the study area are considered sensitive to change and disruption. For sensitivity of the other material assets the reader is referred to Chapter 15 for traffic and roads, Chapter 14 for Waste Management and Chapter 8 for agronomy and land use.

Table 16-2 — Summary of the Material Assets with Potential to be affected by the Proposed Development

Material Asset	Level of Importance	Sensitivity Rating
Electricity	High voltage cables including underground cables and overhead lines above 38 kV	Regional 38 kV – 110 kV: Medium rating National 220 kV-400 kV: High rating
Potable Water and foul sewers	Trunk potable drinking water mains and trunk foul or combined sewers	Regional: Medium rating Local: Medium rating
	Surface water sewers less than 300 mm diameter	Local: Low rating

Telecommunications	Telephone cables, internet cables, cable television and other private services	Local: Low rating

16.5.2 Characteristics of the Proposed Development

The Proposed Development is detailed in Chapter 3 – Project Description and is summarised as follows:

- During the construction phase of pipeline sections A-E, the Appointed Contractor will ensure that existing utilities and services are identified, protected, diverted or supported as required in agreement with the utility/service providers
- Construction of an ESB MV substation building at Lisglennon Water Treatment Plant. This will be carried out and managed by the ESB.
- Where works at the Lough Talt WTP require modification or relocation of existing utilities, including any ESB pole, stay or associated service, these works will be confirmed during detailed design and undertaken in consultation with the relevant utility provider. Such works will be planned to maintain safe working conditions and avoid unnecessary disruption to site operations or public infrastructure. The ESB will be responsible for all works regarding the removal or re-routing of OHL or UGC's. An application for such work has been submitted to the ESB.
- The construction of the Bonniconlon Booster Pumping Station will require a ESB mains supply to a proposed on-site 400 kVA sub-station and transformer. The substation will be supplied and managed by the ESB and will be via either underground cable connection or overhead line, from the R294. An application for this supply has been submitted to the ESB.

- Where installation of the dechlorination chamber or associated pipework at Bonniconlon Reservoir requires modification or relocation of existing utilities, including any ESB pole, stay or associated service, these works will be confirmed during detailed design and undertaken in consultation with the relevant utility provider. The ESB will be responsible for any work relating to OHL and UGCs. An application for such work has been submitted to the ESB.

16.5.2.1 Stormwater Management

The following stormwater management measures have been incorporated into the design:

- At the Wherrew Raw Water Intake & Pumping Station (RWI&PS), a linear slotted drain will be installed at the interface between the proposed and existing hardstanding areas to manage any additional surface water runoff from the new hardstanding area. This will be connected into the existing local on-site drainage network. From the proposed linear drain, surface water will drain to a petrol interceptor and ultimately to a proposed soakaway. The proposed soakaway is located within the channel infill area and will consist of free draining stones to allow for percolation.
- No changes are proposed to the stormwater management at the Lisglennon RWS&PS Site.
- At the Lisglennon WTP, the existing surface water management system consists of a conventional system of gullies and drains across the road, running towards soakpits along existing roads. Additional stormwater run-off from proposed buildings, hardstanding and roads, will be conveyed by a new pipe network to petrol interceptors and flow into ponds and soakaways proposed at different locations within the site. Some of the existing soakaways will be abandoned with surface water captured and redirected to the new ponds and soakaways.
- At the Bonniconlon BPS, the proposed storm water management system consists of a conventional system of gullies and drains along the access road. Stormwater run-off from buildings, hardstanding and roads, will be collected by this new storm water network, conveyed by the proposed storm water pipe network to a petrol interceptor before draining into a proposed pond located at the southern boundary of the Bonniconlon BPS site.

- At the Windy Gap BPT, the bog habitat at this site is groundwater-dependent and, to a lesser extent, reliant on rainfall. No site drainage is proposed, allowing rainfall to continue infiltrating the ground as occurs at present. Runoff from impermeable surfaces, i.e. the reservoir tank roof, hardstanding areas, roof of kiosks, will be minimal and can dissipate into the surrounding peat. The BPT will be a precast concrete tank. To manage tank roof runoff and ensure it is directed into the surrounding peat rather than flowing down the tank sides, an impermeable membrane will be installed around the tank at an approximate depth of 500 mm below ground level. This will be overlain by an approx. 50 mm layer of sand, followed by an approx. 450 mm layer of salvaged peat. Rainfall within the Windy Gap BPT site will continue to infiltrate and drain into the bog habitat, as occurs under existing conditions.
- At the Lough Talt WTP, the existing network consists of a conventional drainage network, which includes road gullies, pipe network with manholes for maintenance. The pipe network conveys the surface water to the existing attenuation pond located at the southeast corner of the site. The surface water is collected in an attenuation pond and is discharged from the site to the existing outfall near the eastern corner of the site. The existing flow control device located downstream from the attenuation pond restricts the flow of surface water to pre-development runoff rate. This results in the surface water backing up and gradually filling the attenuation pond to a pre-determined level. The existing attenuation pond is sized to cater for extreme rainfall events.

  It is anticipated that the Proposed Development will result in a small increase in surface water entering the system, therefore the attenuation pond will be extended (approx. 8%) to enable the same discharge rate from the site to be maintained. New pipe network and gullies will be installed within the site to collect surface runoff from new impermeable areas.
- At the New Bonniconlon Reservoir, there is minimal surface runoff from the proposed works. Stormwater generated from the new tank roof will be collected into a French drain circling the base of the proposed tank's berm, which will consist of a shallow trench with single sized free draining stones wrapped in geotextile. Stormwater will percolate into the ground.

  There will be no effect on stormwater infrastructure as a result of the construction of the Proposed Development.

16.5.2.2 Wastewater Management

- At the Lisglennon WTP, the existing septic tank will be decommissioned and a new wastewater treatment system with percolation area is proposed at the northern side of the site. It will collect wastewater from existing toilets and proposed eye wash and handwash facilities. The new wastewater treatment system will be installed in accordance with a site suitability assessment to ensure it meets EPA requirements given in the EPA (2022) Code of Practice for Domestic Waste Water Treatment System. It is a requirement of the Mayo County Development Plan 2022-2028 that these assessments are carried out by someone with FETAC level 6 in SSA.
- At the Bonniconlon BPS, wastewater from welfare facilities will be collected by the proposed wastewater network within the site, and discharged into an underground wastewater holding tank. The contents will be tankered away periodically and disposed of offsite in an appropriate licenced wastewater treatment facility.
- At the Lough Talt WTP, an existing septic tank is located near the south-western end of the site. As part of the proposed works, wastewater flows from the retained welfare facilities will be diverted to a new wastewater manhole or holding arrangement fitted with a Bauer connection. Wastewater will be collected and removed from site by tanker for treatment at an appropriately authorised wastewater treatment facility. Any redundant wastewater infrastructure affected by the works will be isolated or decommissioned.

16.5.2.3 Potable Water Supply

- As part of the construction of the Proposed Development, water supplies may require diversion or temporary outages. At the Bonniconlon BPS, a potable water connection for the BPS site's water supply will be taken from the existing 100 mm diameter watermains along the R294 road. Appendix 3-2 shows where the proposed pipeline and structures may intercept existing water supplies.

  The requirement for temporary works such as diverting a potable water supply line or connection to a new line will have a likely negligible adverse effect which is temporary and reversible. The sensitivity of the receptors are

low and the magnitude of the effect, in the absence of mitigation measures, is negligible resulting in a Not Significant adverse effect

16.5.2.4 Power Supply

- At the Wherrew RWI&PS, there is provision for emergency backup power supply in the form of a temporary mobile generator. The mobile generator will mitigate the potential disruption to the raw water supply in the event of a power outage at the Wherrew RWI&PS site. It is proposed to include a set down area, a concrete slab, for a temporary generator connection as a backup power source via mobile generating equipment, located to the west of the site. The temporary mobile generator and associated fuel will be kept off site and will be brought to site when required.
- At Lisglennon WTP, a new ESB medium voltage (MV) substation incorporating a 300 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 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.
- At the Bonniconlon BPS, an ESB MV substation will be provided at for the pump station site, maintained and operated by the ESB. A substation and transformer of 400 kVA is proposed to provide sufficient power to the site. The substation will be supplied by the ESB and will be via either underground cable connection overhead line, from the R294. A back-up power supply, in the form of a permanent standby 400 kVA diesel generator, will be provided in the event of a power outage to keep two pumps operational and prevent the resulting interruption of water supply. The proposed generator will have a built-in fuel storage tank capable of powering the generator for 6 hours, the estimated size of the embedded fuel tank will be approximately 800 – 1000 L, based on currently available models. The generator will be appropriately bunded.
- At the Bonniconlon Reservoir, no upgrade to the existing power supply is proposed as it is anticipated to be sufficient to supply the proposed extension of the site. The existing ESB pole will be relocated to facilitate the installation of the dechlorination chamber.
- At Windy Gap BPT, a new ESB connection will be required at this site to power instruments, telemetry outstation and site lighting, which is subject to an application submitted to the ESB, via overhead line. It is anticipated that ESB will provide connection via the existing MV Overhead lines to the west of the site subject to detail design and further engagement with ESB.

16.5.3 Difficulties Encountered in Compiling Information

Consultations and data requests were submitted to the utility providers to provide records where available. Details of the services particularly close to the proposed pipeline are presented in Table 16-1. The Appointed Contractor will carry out utility surveys prior to any excavation works and if unknown services are identified, the Contractor will manage them using the same measures set out in this assessment. The information that has been used for this assessment is sufficient to identify likely significant effects on material assets. The limitations described in this assessment are not considered to have a material impact on the conclusions of the assessment.

16.5.4 Potential effect on Material Assets during the construction phase

16.5.4.1 Utilities

16.5.4.1.1 Water, Wastewater and Site Drainage

During the construction phase of the Proposed Development there is potential for impacts on existing public water supply infrastructure, wastewater infrastructure and surface water drainage systems arising from construction activities, including accidental damage, service disruption and contamination. The following measures and mitigation have been incorporated into the design, and therefore significant effects are unlikely.

- Existing utilities and services will be identified, protected, diverted or supported as required in agreement with the utility/service providers.
- Where works require modification or relocation of existing utilities, or associated service, these works will be confirmed during the Appointed Contractor's design phase and undertaken in consultation with the relevant utility provider. Such works will be planned to maintain safe working conditions and avoid unnecessary disruption to site operations or public infrastructure.
- Where installation of the dechlorination chamber or associated pipework requires modification or relocation of existing utilities, or associated service, these works will be confirmed during detailed design and undertaken in consultation with the relevant utility provider.
- The construction works at Lisglennon WTP will be undertaken in a planned and phased manner, with the objective of maintaining continuity of water treatment operations throughout the construction period, insofar as practicable. The existing treatment stream will remain operational while new process units, tanks, buildings, pipework and associated mechanical, electrical, instrumentation, control and automation infrastructure are constructed offline. Where temporary shutdowns, isolations or tie-ins are required, these will be planned in advance in consultation with Uisce Éireann Operations. Appropriate operational controls, including the use of available treated water storage, will be implemented to maintain continuity of supply.

The construction of the Proposed Development may require diverting some of the existing potable water supplies and foul sewers in the study area. The Appointed Contractor will contact Uisce Éireann in advance of any required diversions or outages necessary. Table 16-1 illustrates where the proposed pipeline will cross or come in contact with existing water and wastewater services. The requirement for temporary works such as diverting a foul water line or connection to a new line will have a likely negligible adverse effect which is temporary and reversible. The sensitivity of the receptors are medium and the magnitude of the effect, in the absence of mitigation measures, is negligible resulting in a Not Significant adverse effect.

16.5.4.1.2 Electricity / ESB

During the construction phase of the Proposed Development there is potential for damage to existing underground power supply and overhead lines near the Site, from accidental interception of the assets. Along sections of the Proposed Development, pipelines will be installed parallel to existing utilities, as detailed in Section 16.4, and presented in the Design Drawings in Appendix 3-2. At the detailed design stage, roads where the new water mains will be laid will be surveyed in detail to ensure safe installation and avoidance of existing assets. At the Bonniconlon Reservoir, the existing ESB pole will be relocated to facilitate the installation of the dechlorination chamber, and Medium Voltage ESB substations are proposed at Lisglennon WTP and Bonniconlon BPS, which will be operated and maintained by ESB. There is potential for the temporary loss of connection to the ESB infrastructure while connecting to the existing power supply during construction works and during relocation of the ESB pole however such works will be undertaken by ESB.

As set out in Section 16.4.3 Electricity/ESB Supply the proposed pipeline will intercept 8 crossings of UGC. The pipeline will be crossed by 74 OHL of low, medium and high voltage capacities. 39 of these OHLs will be low voltage

transmission lines, 25 medium voltage lines and 10 high voltage lines. The construction technique for the installation of the proposed pipeline will mean that this stage of construction can be completed without interrupting power supplies. Therefore there will be no requirement to divert power lines during the installation of the pipeline so there is minimal adverse effect which is temporary and reversible. The sensitivity of the receptors are low to medium and the magnitude of the effect, in the absence of mitigation measures, is negligible resulting in a Not Significant adverse effect.

Construction at the various sites will require the re-routing of OHL, for example at the Lisglennon WTP. The Bonniconlon BPS site will require a power supply which will require the placement of either an UGC or OHL. In these cases, the diversion route will be constructed first so that the supply can be continued while the exiting line is decommissioned. These operations may result in outage to several dwellings which will result in a moderate adverse effect which is temporary and reversible. The sensitivity of the receptors are low to medium and the magnitude of the effect, in the absence of mitigation measures, is negligible resulting in a Not Significant adverse effect.

16.5.4.1.3 Telecommunications

During the construction phase of the Proposed Development there is potential for damage to existing underground and overhead lines near the Site. There is potential for loss of connection to the telecommunications infrastructure while connecting to the existing supply during construction works. All utilities will be located by the Contractor, and best practice measures implemented to minimise the potential of striking of these assets. Therefore, likely adverse effects may be characterised as brief with moderate effect. At the detailed design stage, roads where the new water mains will be laid will be surveyed in detail to ensure safe installation and avoidance of existing assets.

16.5.5 Potential impact during the operational phase

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. Operations of the Proposed Development will be managed and maintained by Uisce Éireann. Chapter 3, Project Description describes the operation, management and maintenance that will be carried out by Uisce Éireann.

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.

16.6 Mitigation Measures

Embedded mitigation has been incorporated within the Proposed Development as outlined in Chapter 3 of the EIAR. Where avoidance was not possible, (for example laying of the pipeline close to existing services along the road network), steps will be taken by the Appointed Contractor to identify and avoid underground services.

16.6.1 Mitigation during Construction

16.6.1.1 Separation Distance

The proposed works are generally located away from existing utilities where known, to protect the existing and proposed assets. Where existing utilities need to be crossed by the proposed utilities, minimum separation distances will be maintained in accordance with the relevant utility standard guidelines. Where it is not possible to construct proposed works without intervening with the existing utilities, it is proposed to divert/relocate the existing utilities in coordination with the stakeholder and in line with the relevant guidelines. In all instances separation distances and exclusion zones will be maintained. Relevant standard guidelines for utilities are as below:

- Code of Practice for Avoiding Danger from Underground Services (HSA);

- Code of Practice for Avoiding Danger from Overhead Electricity Lines (ESB); and
- Code of Practice for Water Infrastructure (Water).

16.6.1.2 Road Maintenance

Where the proposed works are in road sections, permanent reinstatement will be carried out in accordance with "Guidelines for Managing Openings in Public Roads" Department of Transport, Tourism and Sport April 2017 (Rev 1). For proposed works in road sections, the Reinstatement schedule, and traffic management measures will be agreed with the Mayo County Council and Sligo County Council. Where there are planned road works by MCC or SCC, the relevant Local Authority will be consulted, and a construction strategy will be agreed with LA and UÉ, prior to construction in those road sections.

16.6.1.3 Traffic Management

During the construction phase, traffic will be managed via the implementation of the Traffic Management Plan which will be prepared by the Contractor, in accordance with the Outline Traffic Management Plan which is submitted with this planning application. Further details are included in Chapter 15 – Traffic, Roads and Transportation of this EIAR.

16.6.1.4 Watercourse Crossings

There are approx. 30 surface water feature crossings which have been identified along the pipeline route, comprising of approx. eighteen EPA-identified watercourses and twelve field drains. These are described in Chapter 7 – Biodiversity and Chapter 10 Water (Hydrology and Hydrogeology). The locations of these surface water features were validated during site surveys and site investigations and assessed for ecological potential. Where a risk of impact to the watercourse (e.g. aquatic life or habitats) has been identified, the watercourse will be crossed using trenchless techniques, such as pipe jacking or directional drilling, or via existing crossing infrastructure.

There are no works proposed within or under the River Moy, the Proposed Development will instead connect to the existing 450 mm diameter pipeline that crosses the River Moy

16.6.1.5 General Construction Measures

- A project-specific Detailed Construction Environmental Management Plan (CEMP) will be prepared by the Appointed Contractor prior to the commencement of construction works. This document will take account of all of the environmental considerations (including water, dust and noise nuisance control, soil / stockpile management, temporary groundwater management, appropriate site management of compound area, fuel, oil and chemical storage and use; and waste management) set out in the CEMP submitted as part of this planning application;
- The construction compounds will include adequate temporary welfare facilities including foul drainage and potable water supply. Foul drainage discharge from the compound will be removed off site to an appropriately licensed facility for disposal for the duration of the construction and commissioning phase;
- All newly installed utilities/ services will be assessed, tested and certified as required prior to being fully commissioned;
- All works associated with the existing utilities for the Proposed Development will be carried out in strict accordance with the guidelines of the relevant stakeholders (specifically ESB, and Uisce Éireann), Health and Safety Authority and any additional site-specific requirements;
- A copy of all available existing, and as built utility plans will be maintained on Site during the construction of the Proposed Development;
- Any underground utilities including but not limited to power lines, water mains, foul sewers, storm sewers, ESB, telecommunication assets and Uisce Éireann services, located within the red line boundary of the Proposed Development will be clearly marked and all construction personnel will be made aware of the known location of any onsite underground or over ground services during the construction phase;

- The permanent connection to serve the development will follow an agreed methodology, with full notification to existing Uisce Éireann customers affected by short-term water supply interruptions during connection. Contingency plans, such as backup network supply, will be implemented where feasible to minimize disruptions during relocation or diversion works, with users informed in advance;
- Any shutdowns required to connect new and existing water infrastructure will be agreed in advance with Uisce Éireann and the local authority; and
- Where access tracks within private lands are not possible along the route, work areas will be reinstated with excavated soil and either seeded with native species, allowed to vegetate naturally or reinstated with excavated grass turves and will be restored to their original condition.

16.6.2 Mitigation during Operation

16.6.2.1 Built Services

The following mitigation measures will be implemented during operation:

- Scour Management: Dewatering and controlled scour discharges of treated water are required as part of construction, commissioning and maintenance activities along the treated water transfer mains as well at Lisglennon WTP, Bonniconlon BPS, Bonniconlon Reservoir, Windy Gap BPT and Lough Talt WTP. For all pipelines, scour valves are located at low points along the route. When carrying out emergency works, a section of the pipeline will need to be isolated and emptied in a controlled manner by opening the dedicated scour valve. Maintenance activities such as scouring will be infrequent and undertaken in a manner that avoids release of chlorinated water to the environment, with flows directed to appropriate infiltration areas or removed off-site where necessary thereby avoiding discharge to water courses. The incorporation of advanced telemetry and automated control will enable continuous monitoring of flows, pressures and water quality, allowing for rapid response to any potential issues and ensuring the system operates within defined parameters at all times (see Section 3.9 of Chapter 3 – Project Description).

16.7 Cumulative Effects

The potential for cumulative effects are restricted to assets that interact, directly or indirectly, with the Proposed Development, therefore the Zone of Influence for cumulative effects is restricted to the Red Line Boundary. The developments listed in Chapter 20 - Cumulative Impacts and Interactions were reviewed and the following projects were assessed, as they were considered to have potential to result in cumulative effects with the Proposed Development:

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

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

16.8 Interactions

Material Assets attributes interact with other environmental attributes as outlined in Chapter 20 – Cumulative Impacts Assessment and Interactions between Effects of this EIAR and summarised as follows:

- **Traffic** - Traffic is one of the environmental attributes typically assessed under Material Assets. For the purposes of this EIAR a full Traffic Impact Assessment has been undertaken and is presented in Chapter 15 – Roads, Traffic & Transportation, along with all relevant mitigation measures.
- **Waste Management** – Waste Management is one of the environmental attributes typically assessed under Material Assets. For the purposes of this EIAR a Resource and Waste Management Assessment has been undertaken and is presented in Chapter 14 – Resource and Waste Management, along with all relevant mitigation measures.

16.9 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 the counties Mayo and Sligo.

16.10 Monitoring Requirements

16.10.1 Monitoring during the construction phase

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).

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