

Appendix 1.1. EIAR Scoping Report¹

¹ Since the publication of the Scoping Report in 2025, the proposed development has undergone further refinement as part of the iterative design and environmental assessment process. The EIAR assesses the proposed development as defined at the time of application submission, reflecting the current design and incorporating all relevant modifications that have occurred subsequent to the scoping stage. It should be noted that the contents of the scoping report were correct at the time of preparation in 2025





MORTARSTOWN WASTEWATER TREATMENT PLANT (WWTP) UPGRADE

Notice

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1. Introduction

AtkinsRéalis on behalf of Uisce Éireann are currently delivering engineering and environmental services in respect of the upgrade of the existing Mortarstown Wastewater Treatment Plant (WwTP) and construction of a new pumping station at the treatment plant site which will replace the existing Kilkenny Road Pump Station at Mortarstown, Co. Carlow. The proposed project involves a new outfall pipe from WwTP and new microtunnel gravity sewer from the previous Kilkenny Road Pump Station location to the new pumping station. The proposed project is 10.766 hectares (ha) in size. The Site location and proposed red-line boundary is presented in Figure 1-1.

The existing Mortarstown WwTP is located on the southern side of Carlow town centre, located off Green Road, Mortarstown Upper, Co. Carlow, at approximate grid reference 52°49'09.2"N 6°56'19.1"W. The WwTP is bounded by agricultural land and the Carlow Institute of Further Education to the South; agriculture land and the Kilkenny Road (R448) to the West; agricultural land and existing residential developments to the North; and agricultural land, residential properties and residential development under construction to the East.

The existing Pumping Station site is bounded by Kilkenny Road (R448) and vegetation/trees to the South; vegetation/trees and River Barrow to the West; partially cleared vegetation/trees and River Barrow to the North; and Kilkenny Road (R448), Carlow Institute of Technology and student accommodation to the East. The existing Kilkenny Road Pump Station is located on the southern side of Carlow town centre, adjacent to the River Barrow at approximate grid reference 52°49'37.2"N 6°56'16.0"W. The proposed microtunnel gravity sewer will run along Kilkenny Road and is 775m in length, which runs from the previous Kilkenny Road pumping station location to the new pumping station.

The current hydraulic loading capacity of the Mortarstown WwTP is 36,000 Population Equivalent (P.E). It is proposed to upgrade the Mortarstown WwTP and construct a new pumping station, in order to:

- Meet the requirements of the existing Wastewater Discharge Licence (WWDL) D0028-01;
- Meet Department of Environmental, Housing and Local Government Guidance and Urban Waste Water Treatment Directive criteria in relation to storm water storage and overflows;
- Alleviate current overloading of some process units; and,
- Provide additional capacity to treat future predicted catchment growth.

The information presented in this document is preliminary and based on currently available information. All final details relating to the proposed development, the baseline receiving environment, any identified potential environmental or human health impacts, and any mitigation measures as may be required, will be fully detailed and documented within the final EIAR which will be submitted as part of the planning application.

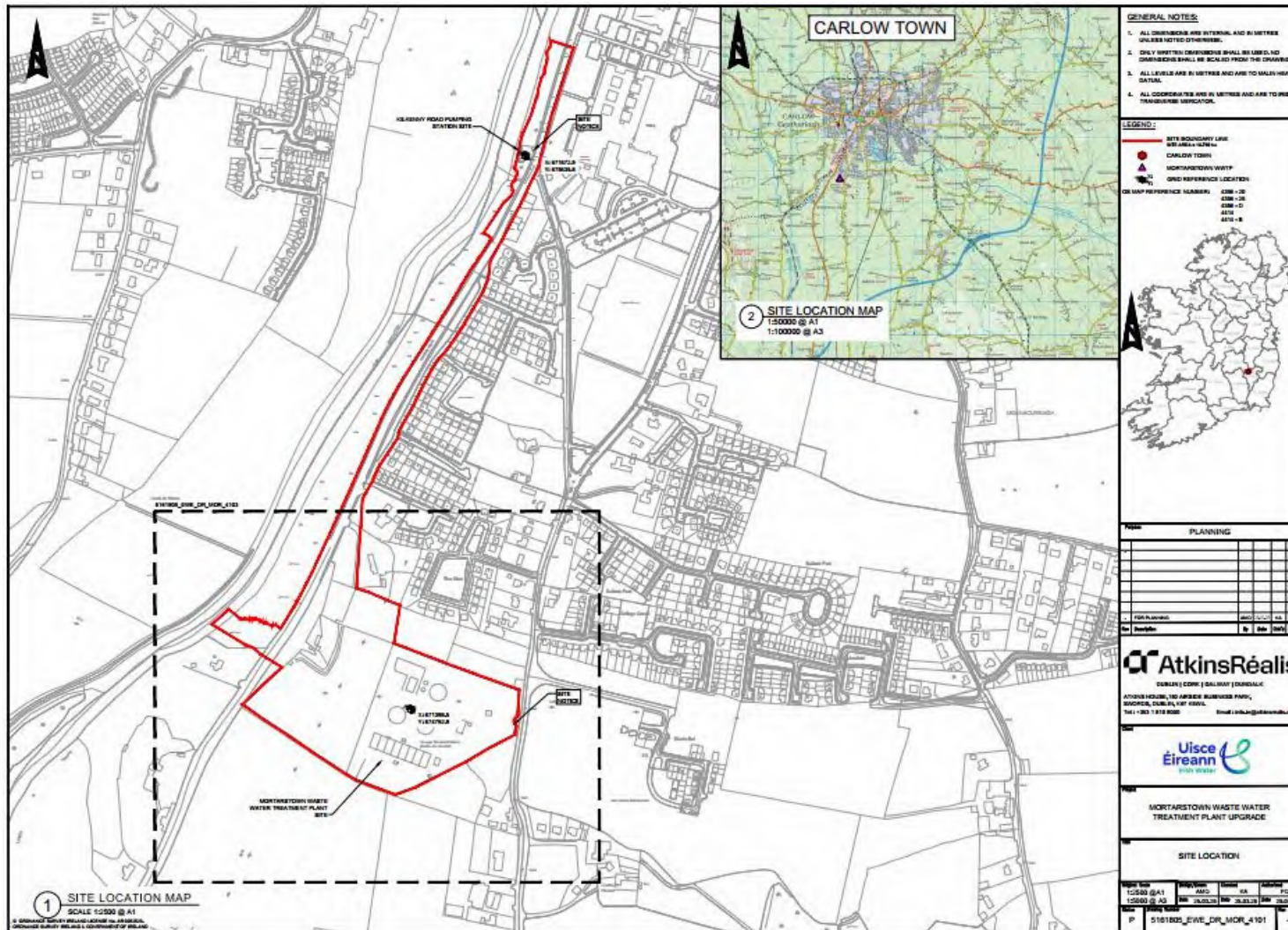
1.1 Planning Process

Consultation is currently under way with An Bord Pleanála¹ in relation to the planning process for the upgrades of the existing Mortarstown WwTP, construction of a new pumping station, and new microtunnel gravity sewer (hereafter referred to as 'the proposed development' or 'the site'). The proposed development is likely to be considered Strategic Infrastructure Development, as the proposed development is likely to meet the criteria set out in Section 37(A)(2) of the Planning and Development Act 2000 (as amended).

As part of the planning application an Environmental Impact Assessment Report (EIAR) is currently being prepared by AtkinsRéalis in order to assess the potential for environmental impacts which may occur as a result of the construction and operation of the proposed development.

¹ At the time of preparing this report, the planning authority was An Bord Pleanála (ABP), which has since been renamed An Coimisiún Pleanála (ACP)





1.2 Need for the Project

The proposed development is currently included within the Uisce Éireann 2020-2024 Investment Plan which presents a capital investment portfolio in water services infrastructure developed to address national strategic objectives as laid out in Uisce Éireann's Water Service Strategic Plan (2015-2020). To assist the progression and development of the 2020-2024 Investment Plan, fifty-one Wastewater 'Above Ground' (i.e. treatment) projects have been identified nationally, the proposed development is one of these projects.

The Water Services Strategic Plan – A Plan for the Future of Water Services ('Strategic Plan'), as per Section 33 of the Water Service (No. 2) Act 2013, was published by Uisce Éireann in October 2015 to set out the strategic delivery of water services to 2040. The Strategic Plan details current and future challenges which affect the provision of water services and identifies priorities to be tackled in the short and medium term.

The Strategic Plan identifies that many urban agglomerations do not have sufficient wastewater treatment. Achieving compliance with the Wastewater Discharge Licence (D0028-01) is an immediate priority for Uisce Éireann and the Strategic Plan recognises that substantial upgrading of the wastewater treatment network is required. Specifically, the following responsibilities for wastewater treatment are outlined:

'Our responsibilities for wastewater commence when effluent reaches the public wastewater network. We are responsible for its transfer to wastewater treatment plants, its treatment and the subsequent discharge of the treated effluent back into the water environment. We are also responsible for the treatment and disposal of the sludge that is generated from both our water and wastewater treatment plants'.

The relevant Water Services Strategic Plan objective to 'Provide effective management of Wastewater' identifies 3no. aims under this objective, which the proposed development help achieve, as follows:

- Manage the operation of wastewater facilities in a manner that protects environmental quality;
- Manage the availability and resilience of wastewater services now and into the future; and,
- Manage wastewater in an efficient and economic manner.

The Urban Waste Water Treatment Regulations 2001 as amended, require relevant authorities to provide appropriate wastewater collection systems and treatment for agglomerations such as Mortarstown. The key objective is to upgrade the plant by either the optimisation of existing assets, the addition of assets, or the replacement of existing assets, to:

- Alleviate current overloading;
- Provide headroom to treat future predicted catchment growth;
- Continue compliance with the Urban Wastewater Treatment Directive (UWWTD) and wastewater discharge licence D0028-01 (WWDL) discharge standards; and,
- Treated effluent shall comply with the current Wastewater Discharge Licence (WWDL) Emission Limit Values (ELV's) as presented in Table 1.1.

Table 1-1 - Emission Limit Values (ELV's) Limits

Parameter	Emission Limit Values (ELVs)
BOD	15 mg/L
COD	125 mg/L
Suspended Solids	35 mg/L
Ammonia	2 mg/L
Phosphate, total	1 mg/L
Sludge	18% DS or greater

The population of Carlow is growing steadily. The census population change % for the catchment over the 6 year period between the census in 2016 and the census in 2022 equates to an increase of 12.4% or an annual increase of 2.06%. The proposed development is needed to treat future predicted catchment growth, and to ensure compliance with the Wastewater Discharge Licence.

In this context, Policy objective WW.01 of the Carlow Graiguecullen Joint Urban Local Area Plan 2024 – 2030, support wastewater treatment infrastructure investment and provision by Uisce Éireann in Carlow-Graiguecullen, including any maintenance works and planned upgrades for Mortarstown WWTP and the associated wastewater network serving the joint urban area, including the safeguarding of existing such infrastructure corridors, in order to ensure that zoned lands are adequately serviced over the period of the Plan and in accordance with the Core Strategies of Carlow and Laois County Councils.

The proposed development will ensure that the water quality standards set down by regulatory bodies will be achieved, therefore safeguarding the quality of the aquatic environment.

By reference of Map 12.1 of the Carlow Graiguecullen Joint Urban Local Area Plan 2024 – 2030, the lands on which the upgrades to the existing WwTP are proposed are zoned Q. Transport and Utilities, the objective for which is *To provide for transport infrastructure and public utilities*. Utility Structures and Facilities are Permitted in Principle. The site of the new pumping station is part zoned Q. Transport and Utilities and part zoned B. Existing/Infill Residential. The objective of the Existing/Infill Residential zone is *To protect and improve existing residential amenity; to provide for appropriate infill residential development; to provide for new and improved ancillary services*. Utility Structures are Open for Consideration. are proposed have been designated by Carlow County Council (CCC) as '*Utilities & Strategic Infrastructure*' zoning with the objective '*to provide for the needs of all transport users and other utility providers*'. The area to the north of the WwTP attracts a Roads Objective for the Carlow Bypass. The microtunnel gravity sewer would be laid along the existing Kilkenny Road which is not zoned and partly along grass verge which is zoned as O. Open Space and Amenity, the objective of which is *To protect, provide for and enhance open space, amenity facilities, and recreational uses*. Utility Structures are Open for Consideration. The proposed new outfall pipe is part zoned O. Open Space & Amenity and part zoned B. Existing/Infill Residential. The outfall pipe will be underground.

1.3 Environmental Constraints

There are a number of environmental constraints associated with the proposed development that will be taken into account as part of the EIAR process. These include (but are not limited to) the following at this preliminary juncture (and based on available information):

- Residential, commercial, and educational receptors in the vicinity of the proposed development;
- Users of the River Barrow for recreational activities;
- Terrestrial and aquatic fauna and flora;
- 2no. European Sites are within the zone of influence of the proposed development. The River Barrow and River Nore Special Area of Conservation (SAC) (002162) is located within the site and Slaney River Valley SAC (000781) is located ca. 12km east of the site. The proposed development is hydrologically connected to the River Barrow and River Nore SAC. There are no Special Protection Areas (SPAs) located within 15km of the proposed development; and,
- 5no. proposed Natural Heritage Area (pNHAs) are within the zone of influence of the of the proposed development. Cloghrick Wood (000806) is located ca. 4.3km south, Oakpark is located ca. 5.4km north, Ardristan Fen is located ca. 11.70km east, Ballymoon Esker is located ca. 12km south and Whitehall Quarries is located ca. 14.3km south of the proposed development. There are no Natural Heritage Areas (NHAs) within 15km of the proposed development.

This concise report has therefore been prepared as part of the initial scoping stage of the EIAR in order to provide all consultees with a concise overview of the proposed development, and to clearly set out the proposed structure of the EIAR, the list of topics which will be assessed by experienced EIAR specialists / Subject Matter Experts (SMEs), and the assessment methodology to be applied. The overall objective of this scoping document is to elicit any relevant feedback which consultees may have regarding the proposed development, specifically in the context of the receiving environment. Any comments received from this consultation will be incorporated into the EIAR where relevant.



2. Project Description

2.1 Nature and Extent of the Proposed Development

It is proposed to upgrade the existing Mortarstown WwTP, construct a new pumping station at the treatment plant site, and the construction of a new microtunnel gravity sewer between the existing and the new pumping station along Kilkenny Road. The layout of the proposed development is presented in Figure 2-1 to Figure 2-6.

The proposed hydraulic loadings for the agglomeration are presented in Table 2-1. To enable ease of future expansion, some elements of the works (primarily civil works) are being sized to cater for additional future loading from Stage 2.

Table 2-1 - Proposed Hydraulic Loading Rates (2037)

Parameter	Unit	Hydraulic Loads
Design population served	capita	52,500
Dry Weather Flow Rate QDWF	m ³ /hr	370
Full Flow to Treatment QFFT	m ³ /hr	1,110
Peak Flow (Formula A)	m ³ /hr	3,800

A summary of the works required is provided in the following sections.

2.1.1 Microtunnel Gravity Sewer

Provision of 775m microtunnel gravity sewer (Ø1200mm internal diameter) from the south side of Kilkenny Road Pumping Station to the wet well of the new pumping station to be constructed adjacent to the new inlet works of the upgraded WwTP. The microtunnel to be routed along the R448 Kilkenny Road before they cross fields to connect to the WwTP.

Refer to Figure 2-1 and Figure 2-2 for the proposed microtunnel plan and long sections.

2.1.2 New Pumping Station

- Provision of 1 no. terminal pump station.
- Provision of 4 no. raw sewerage pumps inclusive of MEICA works.
- Provision of 1 No. standby generator and associated fuel storage.
- Provision of 1 no. odour control unit.
- Provision of 1 no. flow meter chamber

The new PS will be designed for 4 No. pumps configured on a duty/assist/assist/standby basis to deliver a future 2052 design horizon Formula A flow of 1,055 l/s (3,800 m³/h). Each pump will be rated to deliver 389 l/s (1,400m³/hr) so that 3 no. pumps configured on a duty/assist/standby basis will service the current Formula A flow of 695 l/s (2,503m³/hr).



The size of the pumps dictated that the proposed pump station would be configured as a wet well/dry type pump station. As the pumping station will be utilised as the main launch shaft of the microtunnel gravity sewer, a circular structure have been proposed.

The circular well is designed on a 15.0m diameter circular concrete chamber with a dividing wall and 6m segment for the wet well and an 8.6m segment for the dry well. Refer to Figure 2-3 for the proposed layout of the New Pumping Station.

2.1.3 Mortarstown WwTP

- Provision of foul pumping station for local agglomeration adjacent to existing inlet works (supplemented by standby generator)
- Provision of a fuel storage tank and standby diesel generator to service the WWTP.
- Provision of new inlet works to include fine screening, mechanically raked by-pass screen, screening compaction and conveyance to skips, grit removal, grit classification and conveyance to skips. The new inlet works to be provided with an odour treatment unit.
- Provision of 2 no. stormwater storage tanks and 2 no. stormwater return pumps.
- Existing final settlement tanks and associated RAS/WAS to be retained, cleaned and decommissioned.
- Provision of 4 no. primary settlement tanks and scraper systems.
- Provision of 4 no. primary sludge pumps.
- Provision of 4 no. air blowers and modifications to existing air delivery pipework
- Provision of new air blower building.
- Provision of new fine bubble diffused air system in existing aeration tanks.
- Provision of 2 no. final settlement tanks with half-bridge scrapers.
- Provision of new RAS/WAS pumping station and station fitted with 2 no. RAS pumps and 2 no. WAS pumps.
- Structural refurbishment of picket fence tanks.
- Mechanical and electrical refurbishment of existing picket fence thickener and conversion of second existing tank to a sludge blending tank.
- Provision of 2 no. additional picket fence tank thickener.
- Provision of 1 no. belt press, polymer prep unit and polymer dosing pumps.
- Provision of new pumped sludge transfer system.
- Provision of sludge import facility.
- Provision of 1 no. new outfall chamber and outfall pipe.
- Modifications to existing administration building.
- Provision of MEICA and SCADA upgrades.
- New storage shed and associated gantry.
- Demolition of existing inlet works structure.
- Existing service relocations.
- General civil site works.

Refer to Figure 2-4 for the proposed layout of the WwTP.



2.1.4 Outfall

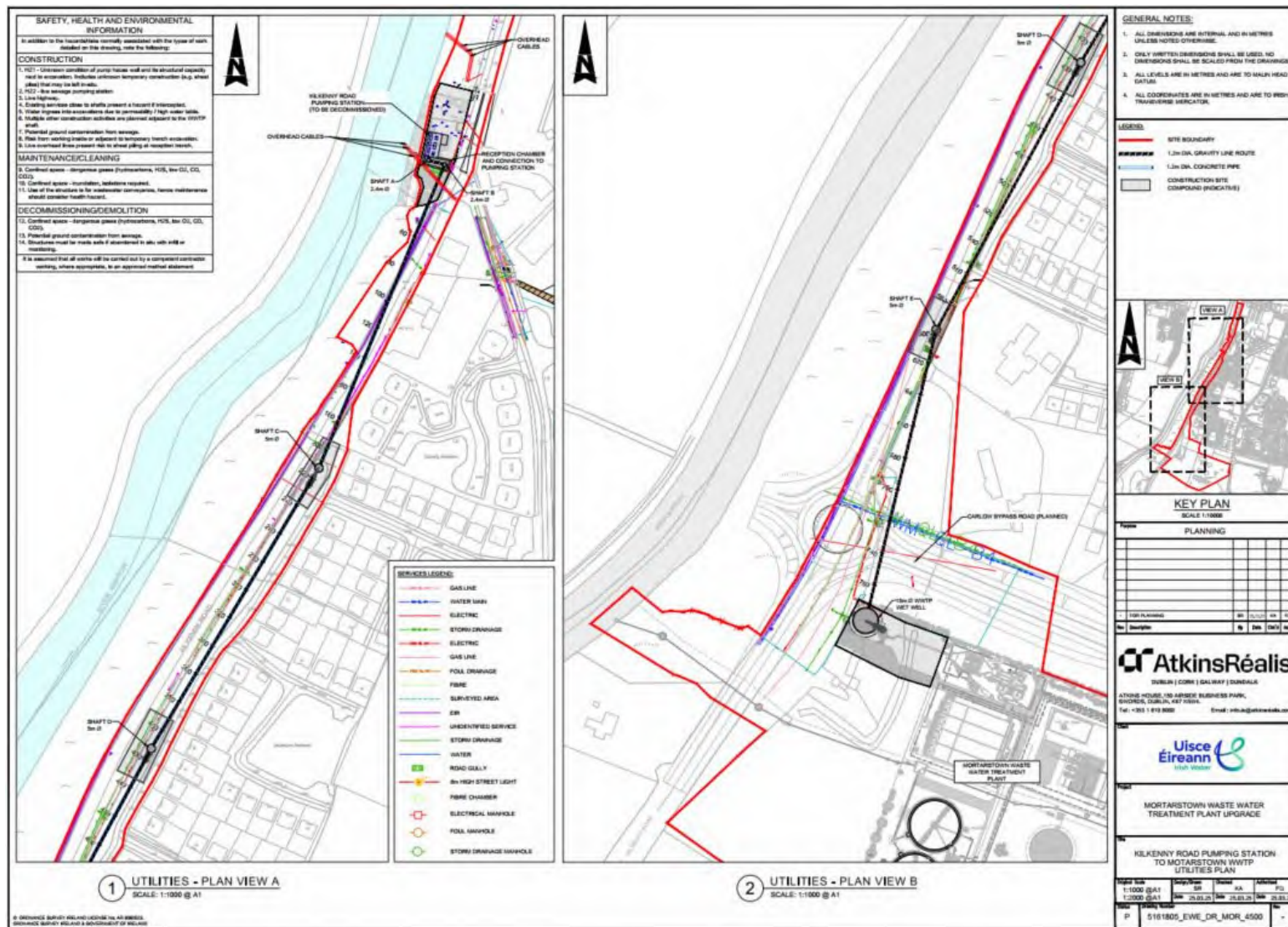
It is proposed to replace the existing 600mm diameter outfall pipe with a new 900mm diameter gravity outfall pipe 250m in length. The outfall pipe will be constructed to the south side of the existing outfall, the pipe will cross the R448 and enter the previously cleared woodland that is adjacent to the existing residential dwellings to the west of the road. A cofferdam / temporary shoring will be required to construct the head wall on the riverbank, it is proposed that the outfall pipe will enter the river ca. 1.5m below the low water level. Refer to Figure 2-5 for the proposed outfall pipe plan and section.

The WwTP will be designed to comply with the Emission Limit Values (ELV's) which have been calculated in a separate WAC Assessment Report. The report is currently under review by Uisce Éireann and the final ELVs determined post approval. To follow as reference, current Wastewater Discharge Licence (WWDL) Emission Limit Values (ELV's) as presented in Table 2-2.

Table 2-2 - Current WwTP Design ELVs

Parameter	Unit	ELV
Oxygen demand, c-biological	mg/L O ₂	15
Oxygen demand, chemical	mg/L O ₂	125
Solids, suspended total	mg/l SS	35
Nitrogen, Ammonia	mg/L as N	2
Phosphate, total	mg/L as P	1
pH	-	6 – 9

It should be noted that the layout of the proposed development is indicative at this juncture and may be subject to slight changes as the design of the project progresses further, however the proposed layout included in Figures 2-1 to 2-5 will be the basis of the final design.



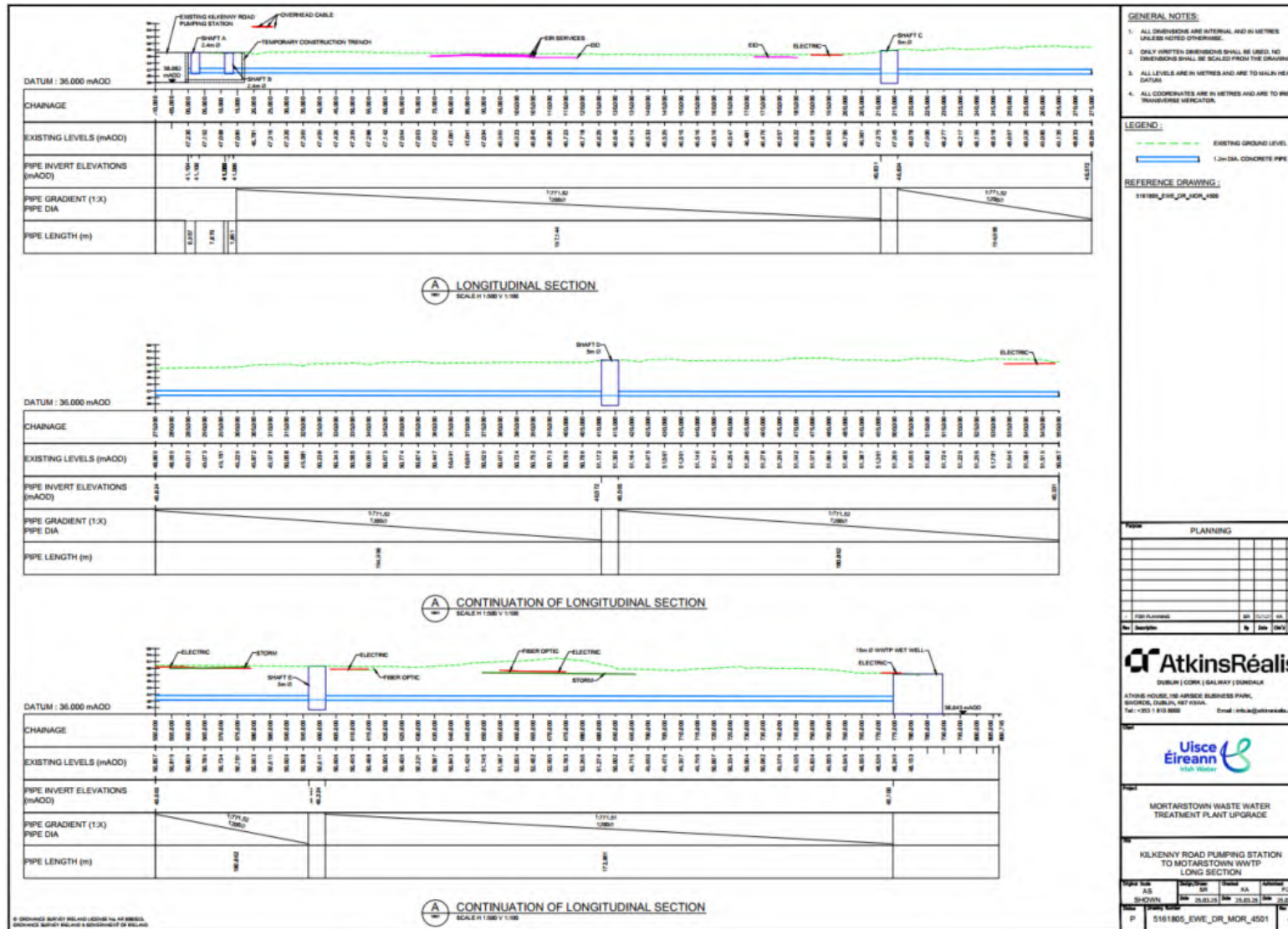


Figure 2-2 – Microtunnel longitudinal section

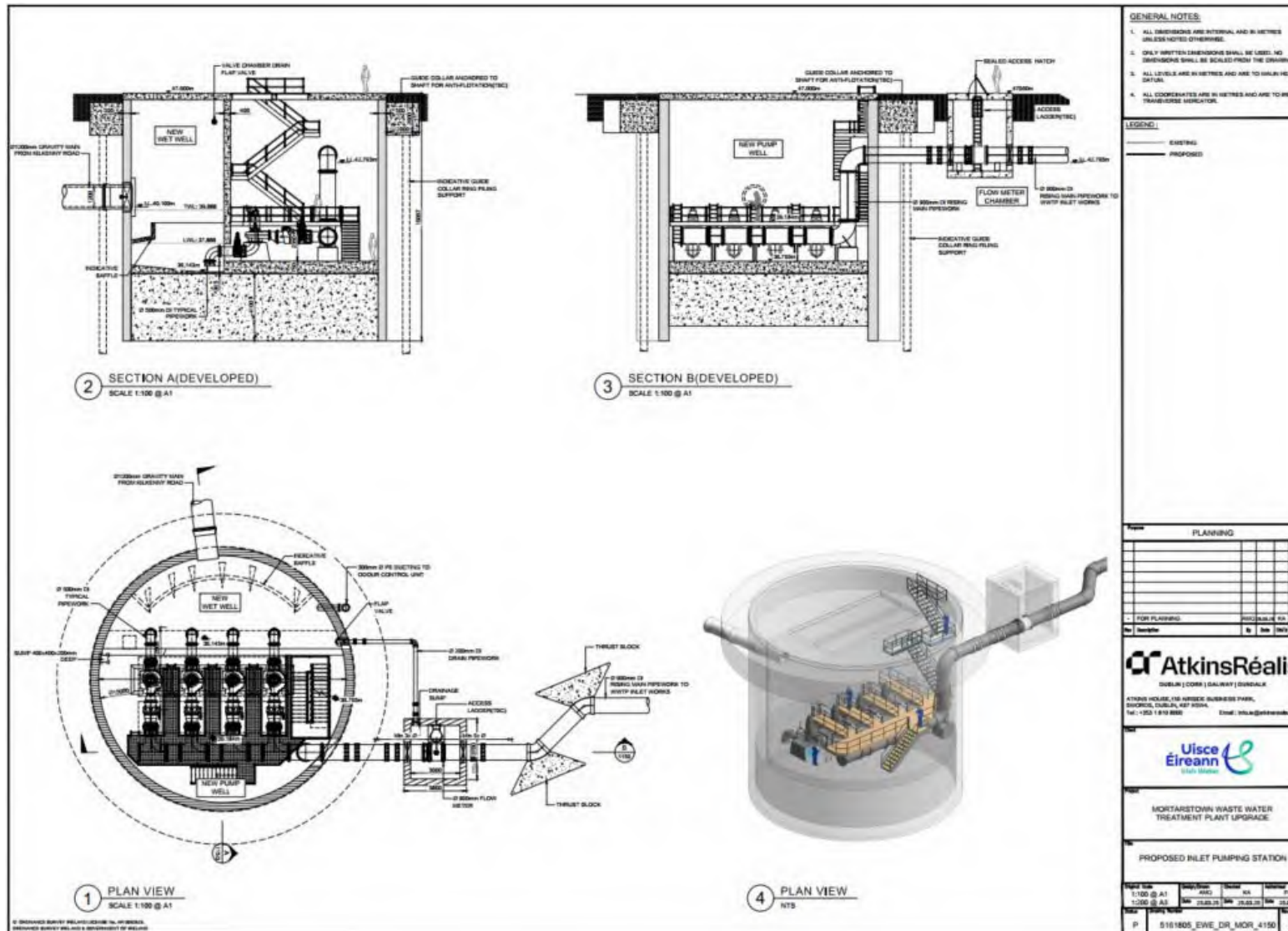


Figure 2-3 – New Pumping Station plan and sections

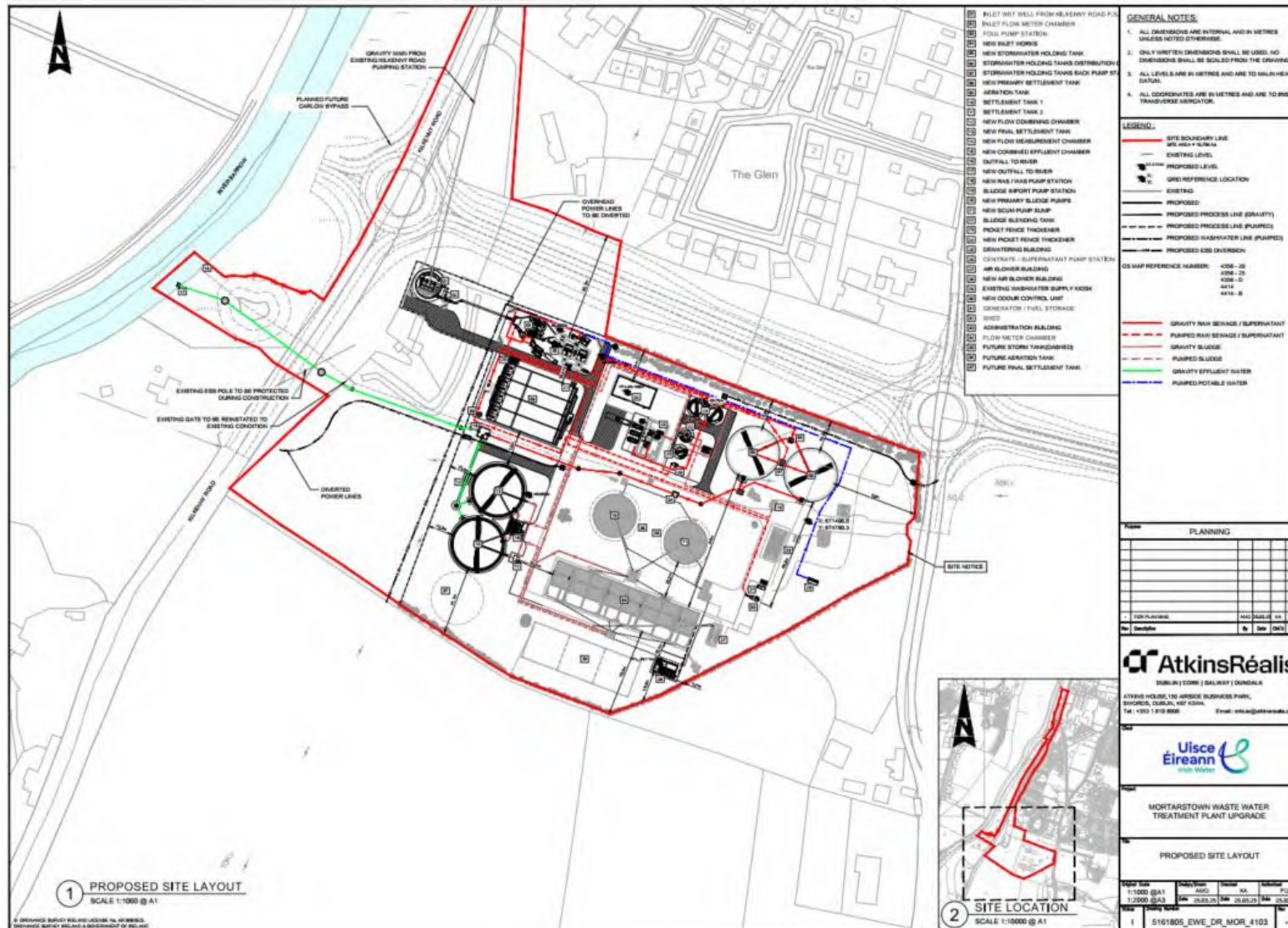


Figure 2-4 – Proposed WwTP Layout



2.2 Construction Phase

The total construction period will be ca. 18 months. A description of the construction phase at this preliminary juncture is as follows:

2.2.1 The New Pumping Station at the WwTP Site

- Construction and commission of a new dry/wet well, significant temporary works will be required here, including;
 - Sheet piling and/or caisson; and,
 - Dewatering.
- Construct cross connection between existing wet well and new interception shaft;
- Undertake upgrade works to existing wet well, including
 - the removal of pumps and baffle walls,
 - Installation of mass concrete benching
 - Provision of new screen to existing outfall,
- Construction of the, flow meter chamber, new odour control unit, a standby generator with associated fuel storage tank and electrical upgrades to the control building.

2.2.2 Microtunnel Gravity Sewers

- Construction and commission of Ø1200mm microtunnel gravity sewer along the R448 between the Kilkenny Road Pumping Station and the new pumping station at the WwTP;
- Provision of 4 no. (indicative) tunnel shafts along the route of the rising mains.

2.2.3 Mortarstown WwTP

- Construct and commission the new PS, microtunnel gravity sewer, inlet works and primary settlement tanks before decommissioning existing infrastructure. The existing PS will continue to pump to the existing inlet works via the existing rising mains.
- Divert flows to the new inlet works and construction of a temporary pipeline to upstream of the existing aeration tanks followed by the decommission and demolishing of the existing inlet works;
- Demolish the existing stormwater tank and commence the construction of the new stormwater tanks;
- Commence the mechanical upgrades to the existing aeration tanks following the commissioning of the primary settlement tanks;
- Construction of the new picket fence thickener and sludge reception area;
- Construction of various pipework, outfall chamber and small sludge pump sumps and,
- Mechanical upgrades to the sludge dewatering process, along with the construction of a new sludge cake transfer facility and provision of enclosed sludge skips.
- The installation of a new outfall pipe, this will involve the construction of a temporary instream cofferdam, open trench and/or trenchless techniques to install the outfall pipe, headwall and associated non-return valves.
- When the new infrastructure is commissioned the connection to Flow Distribution Chamber No. 3 will be the changeover point. There will be a period of commissioning where the existing infrastructure will act as back up.



2.3 Demolition Phase

Existing plant/items to be demolished as part of the proposed development is as follows:

- Kilkenny Road pumping station;
- Storm tank;
- Control building for the weigh bridge;
- Inlet works;
- Dewatering building;
- Various small chambers within the site; and,
- Existing sludge cake transfer facility.

2.4 Decommissioning Phase

Existing plant/items to be decommissioned as part of the proposed development is as follows:

- Existing rising main
- Existing settlement tanks



3. EIA Process

'The Environmental Impact Assessment Report (EIAR) is the principal document that the EIA process is based on' (EPA, 2022). An EIAR is defined in the EPA (2022) Guidance as:

'A report or statement of the effects, if any, that the proposed project, if carried out, would have on the environment'.

The EIAR is prepared by the developer and is submitted to a competent authority (An Bord Pleanála in this instance) as part of a consent process. The competent authority uses the information provided to assess the environmental effects of the project and, in the context of other considerations, to help determine if consent should be granted. The information in the EIAR is also used by other parties to evaluate the acceptability of the project and its effects and to inform their submissions to the competent authority.

The main elements of the EIA process are as follows:

- Screening: Is an EIAR required?;
- Scoping: What should the EIAR cover?;
- Consideration of Alternatives: The presentation and consideration of the various reasonable alternatives investigated;
- Project Description: A description of the whole proposed project, comprising information on the site, design, size and other relevant features of the project, within the EIAR;
- Description of Receiving Environment: After the description of the proposed project, the description of the baseline scenario is the second of the two factual foundations of the EIAR. The baseline scenario refers to the current state of environmental characteristics. It involves the collection and analysis of information on the condition, sensitivity and significance of relevant environmental factors which are likely to be significantly affected by the project;
- Identification and Assessment of Impacts: The main purpose of an EIAR is to identify, describe and present an assessment of the likely significant impacts of a project on the environment;
- Monitoring and Mitigation Proposals: A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements;
- Scrutiny and Consent: An Bord Pleanála or Carlow County Council (as the competent authority) will assess the EIAR to ensure that it is compliant with the requirements of the Regulations and determine whether the proposed development should be granted consent; and,
- Enforcement and Monitoring: If consent has been granted and the project proceeds, then the developer is obliged to adhere to the specific mitigation measures and monitoring commitments contained in the EIAR, as modified by any conditions attached to the consent.



3.1 EIA Screening Phase

The proposed development has been screened against the types of development, various processes and activities listed in Schedule 5 Part 2 of the Planning and Development Regulations as amended 2001-2022, including S.I. No. 296 of 2018 – European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

In accordance with Section 11(c) an Environmental Impact Assessment Report (EIAR) would be required if a wastewater treatment plant has a capacity greater than 10,000 population equivalents as defined in Article 2, point (6), of Directive 91/271/EEC not included in Part 1 of this Schedule.

The proposed development will be increasing the capacity to 58,000 population equivalents (PE) and will be designed to cater for future expansion with mechanical upgrades. Mortarstown WwTP capacity is increasing the PE over the threshold of 10,000 population equivalent as defined in Article 2, point (6), of Directive 91/271/EEC not included in Part 1 of this Schedule. An EIA is therefore required, as the proposed development exceeds the specific threshold.

In accordance with Section 13 (a) an Environmental Impact Assessment Report (EIAR) would be required if any change or extension of development already authorised, executed or in the process of being executed (not being a change or extension referred to in Part 1)

(i) result in the development being of a class listed in Part 1 or paragraphs 1 to 12 of Part 2 of this Schedule,

(ii) result in an increase in size greater than:

- 25 per cent, or

- an amount equal to 50 per cent of the appropriate threshold,

whichever is the greater.

(In this paragraph, an increase in size is calculated in terms of the unit of measure of the appropriate threshold.)

The upgrades of the Mortarstown WwTP and installation of a new Pumping Station will increase the capacity of the WwTP by greater than both 25% in size; and 50 percent of the relevant threshold, and therefore an EIAR is also required under Part 13. An EIA is therefore required, as the proposed development exceeds the specific thresholds.

An EIAR is a mandatory requirement as the proposed upgrades to Mortarstown WwTP and installation of a new Pumping Station onsite will exceed the threshold of 10,000 PE in accordance to the requirements outlined in part 11(c) 'other projects' and the thresholds set out under part 13 of Schedule 5 Part 2 of the Planning and Development Regulations EIAR Scoping Phase

The scoping study is a key element of the EIAR process and signifies commencement of the development of an EIAR. 'Scoping' is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. It is defined in the European Commission Guidance as:

'determining the content and extent of the matters which should be covered in the environmental information to be submitted in the EIAR'.



The EPA (2022) document ‘Guidelines on the Information to be contained in Environmental Impact Assessment Reports’ states that ‘All parties should be aware of the need to keep the EIAR as tightly focussed as possible. This focuses the effort and resources of all parties on the key significant issues. Scoping is usually guided by the following criteria:

- Use ‘Likely’ and ‘Significant’ as the principal criteria for determining what should be addressed. Any issues that do not pass this test should be omitted (scoped out) from further assessment. A section of the EIAR should describe the scoping process explaining why such issues have been scoped out and they are not being considered further. All the prescribed environmental factor needs to be listed in the scoping section of the EIAR. It is important to note that the environmental factors themselves cannot be scoped out and must feature in the EIAR. Only subtopics and headings related to each factor can be scoped in or out. Each environmental factor should be clearly covered by one or more specific section headings in the EIAR. If scoping determines that no likely significant issues arise under any heading, then an explanatory text should be included.
- Precedence - where EIARs for similar projects on similar sites or for other project proposals for the same site are available, these can be useful references.
- Interactions – careful consideration of pathways - direct and indirect – that can magnify effects through the interaction or accumulation of effects – for instance the potential for cumulative significant effects to arise from multiple non-significant impacts.

As part of the scoping process, a preliminary environmental scoping exercise has been carried out, to define the preliminary scope of the EIAR. It has been determined during this exercise that the following key topics will require assessment within the EIAR. An overview of the proposed scope of the EIAR is presented in Table 3.1.

- Population & Human Health;
- Biodiversity;
- Landscape and Visual;
- Air Quality, Odour & Climate;
- Noise & Vibration;
- Traffic;
- Land, Soils & Geology;
- Water;
- Cultural Heritage; and,
- Material Assets.

The EIAR will consider the demolition, construction and operational phases of the proposed development and will take into consideration the potential for cumulative impacts with other projects / developments, where relevant, which have been granted planning permission, within the surrounding area and within the town of Carlow.



Table 3-1 - Overview of Scoping Exercise

Environmental Aspect		Scoped in / out	Explanation
Population & Human Health		In	The demolition, construction, and operational phases of the proposed development have the potential to impact on population and human health within the vicinity of the proposed development.
Biodiversity		In	The demolition, construction and operational phases of the proposed development may impact on existing terrestrial and aquatic flora, fauna and habitats in the vicinity of the proposed development. The treated effluent will outfall into the River Barrow SAC.
Landscape and Visual		In	The demolition, construction and operational phases of the proposed development may alter the nature of the existing views and landscape.
Air Quality, Odour & Climate		In	The demolition, construction, operational phases and, construction and operational traffic have the potential to give rise to air quality & climate impacts. The operation of the proposed development may have the potential to generate odour.
Noise & Vibration		In	The demolition, construction, and operational phases and, construction and operational traffic will generate noise and vibration.
Traffic		In	The construction work will have an impact on the existing traffic within the vicinity of the proposed development.
Land, Soils & Geology		In	The intrusive nature of the construction activities may directly impact on existing soils and geology. An area of greenfield site will be used for the proposed construction of the proposed development, which may have an impact on land, soil and geology.
Water		In	Given the intrusive nature of the construction activities and works within the river channel, the proposed development may impact on existing hydrological conditions. Given the construction activities the proposed development may impact on existing hydrogeology conditions.
Cultural Heritage		In	The construction of the proposed development may impact on unknown and/or unrecorded subsurface features.
Material Assets		In	The proposed development may indirectly impact existing material assets during construction and operation. During the demolition, construction and operation of the proposed development waste will be generated.
Cumulative		In	The location and nature of the proposed development may have cumulative impacts with completed or granted applications within the vicinity of the proposed development.
Interactive		In	There is the potential for interactions between impacts on different factors for direct or indirect effects to result in an accumulation or magnified effects from the proposed development.



Transboundary	Out	The nature and scale of the proposed development would not result in any significant transboundary effects.
Radiation	Out	It is concluded that the construction, demolition and operation of the proposed development does not pose a risk with regard to potential radiation impacts, as no proposed or existing plant / equipment on site contains or emits radiation. Therefore, potential radiation impacts do not warrant consideration within the EIAR.



3.1.1 Consultations

As part of the EIAR assessment process, consultation will be undertaken with statutory organisations at various stages of the pre-planning process. All consultees will be consulted by letter or email regarding any environmental or planning interests that they may have in relation to the proposed development. This EIA Scoping report will be issued to the full list of consultees provided below;

- An Chomhairle Ealaíon (Arts Council)
- An Taisce - the National Trust for Ireland
- BirdWatch Ireland
- Carlow County Council (CCC) - Planning
- CCC - Environment
- CCC - Traffic
- CCC - Water Services
- Commission for Regulation of Utilities (CRU) Department of Housing, Local Government and Heritage
Department of the Environment, Climate and Communications Department of Agriculture, Food and the Marine
- Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media Department of Transport
- Development Applications Unit
- Electricity Supply Board (ESB)
- Environment Protection Agency (EPA)
- Fáilte Ireland
- Geological Survey of Ireland
- Inland Fisheries Ireland (IFI)
- Irish Wildlife Trust
- National Monuments Service / Architecture
- National Parks and Wildlife Service (NPWS)
- National Transport Authority (NTA)
- Office Public Works (OPW)
- The Eastern & Midland Regional Assembly



- The Health and Safety Authority
- The Health Services Executive, Environmental Health
- The Heritage Council
- Transport Infrastructure Ireland (TII)
- Waterways Ireland

All relevant comments from the various consultees, along with comments from any pre-application meetings which may take place as part of the planning process, will be fully addressed as required within the EIAR.



4. Proposed EIAR Structure and Methodology

4.1 Structure of the EIAR

The EIAR will include all necessary technical studies to address the likely environmental impacts of the construction, demolition and operation of the proposed development. The disciplines identified for inclusion in the EIAR, along with the technical content, have been determined based on a review of all available baseline information, including the completion of the scoping exercise undertaken by AtkinsRéalis within this EIA Scoping report.

The EIAR will be presented in three volumes as follows;

- Volume 1 - Non-Technical Summary;
- Volume 2 - EIAR; and,
- Volume 3 - EIAR Appendices.
- Within the main body of the EIAR (Volume 2), Chapter 1 will set out the introduction, identify the information required in an EIAR and methodology, while Chapter 2 will describe the project and characteristics of the proposed development, identify the reasonable alternative, cumulative effects with other projects and planning. The environmental topics where there is potential for significant impacts to arise will be addressed in Chapters 3 to 12 as follows;
 - Chapter 3 Population and Human Health;
 - Chapter 4 Biodiversity;
 - Chapter 5 Landscape & Visual;
 - Chapter 6 Air Quality & Odour ;
 - Chapter 7 Climate
 - Chapter 7 Noise & Vibration
 - Chapter 8 Traffic;
 - Chapter 9 Land, Soils & Geology;
 - Chapter 10 Water;
 - Chapter 11 Cultural Heritage; and,
 - Chapter 12 Material Assets.

Interactions between disciplines will be addressed in Chapter 13 and the Schedule of Environmental Commitments will be presented in Chapter 14.



Where appropriate, each of the main sections of this report will be structured in the same general format, as follows:

- An introduction describing the purpose of the section;
- A description of the methodology used in the section;
- A description of the aspects of the existing environment relevant to the environmental topic under consideration;
- Characteristics of the proposed development under consideration;
- An assessment of the impact of the proposed development on the environmental topic (including impacts during the construction and operational phases, cumulative impacts, and interactions etc.);
- Recommendations for mitigation measures to reduce or eliminate any significant negative impacts identified; and,
- An assessment of the residual impact that will remain, assuming that recommended mitigation measures are fully and successfully implemented.

Sources of information mentioned in the text will be either i) listed in full in the bibliography or ii) referenced in full in the text.

4.2 Information within the EIAR

As outlined in Annex IV of the EIA Directive identifies that the following information must be provided in an EIA Report. This information will be included with the EIAR.

1. Description of the project, including in particular:

a) a description of the location of the project;

b) a description of the physical characteristics of the whole project, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;

c) a description of the main characteristics of the operational phase of the project (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;

d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.

2. A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.



4. A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.

5. A description of the likely significant effects of the project on the environment resulting from, *inter alia*:

- a) the construction and existence of the project, including, where relevant, demolition works;
- b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
- c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
- d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
- e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
- f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;
- g) the technologies and the substances used.

The description of the likely significant effects on the factors specified in Article 3(1) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project.

6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.

7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

8. A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council (*) or Council Directive 2009/71/Euratom (**) or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.

9. A non-technical summary of the information provided under points 1 to 8.



10. A reference list detailing the sources used for the descriptions and assessments included in the report.

The Environmental Protection Agency (2022) '*Guidelines on the Information to be contained in Environmental Impact Assessment Reports*' states that EIAR content should include the following. Which will be included within the EIAR.

i) key alternatives considered

ii) proposed project

iii) receiving environment

iv) likely significant effects

v) mitigation and monitoring measures and

vi) residual effects.

A non-technical summary must also be provided.

The receiving environment and the effects of the project are explained by reference to its possible effects on a series of environmental factors:

- Population and Human Health
- Biodiversity
- Land & Soils
- Water
- Air
- Climate
- Material Assets
- Noise and Vibration
- Traffic
- Cultural Heritage
- Landscape
- Interactions



4.3 Methodology

The EIAR currently being undertaken by AtkinsRéalis will be prepared in accordance with Planning and Development Regulations as amended 2001-2022, and with due regard to the following EIAR guidance;

- Environmental Protection Agency (EPA) (2022) '*Guidelines on the Information to be contained in Environmental Impact Assessment Reports*' published in 2022;
- EPA (2015) '*Advice Notes for Preparing Environmental Impact Statements Draft*' published in September 2015'.
- Department of Housing, Planning and Local Government (DoHPLG) '*Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*' published in August 2018;
- European Commission '*Environmental Assessments of Plans, Programmes and Project – Rulings of the court of Justice of the European union*' published in October 2020;
- European Commission '*Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report*' published in 2017
- European Commission '*Environmental Impact Assessment of Projects – Guidance on Scoping*' published in 2017; and,
- European Commission '*Environmental Impact Assessment of Projects – Guidance on Screening*' published in 2017.

Additionally, discipline specific best practice guidance will be consulted by each specialist for each of the topics (Population & Human Health; Biodiversity; Landscape and Visual; Air Quality, Odour & Climate; Noise & Vibration; Traffic; Land, Soils & Geology; Water; Cultural Heritage; and, Material Assets) during the preparation of the EIAR. The receiving environment, surveys/site walkovers, methodology, potential impacts and mitigation measures will be incorporated and included within each disciplines chapter within the EIAR. The methodology for each discipline is outlined below and will be included in detail within the EIAR report.

4.4 Planning

The proposed development will be considered in the context of national, regional and local planning policy, including:

- National Planning Framework (NPF) 2018 and the Draft Revised NPF 2024 (and any subsequent final NPF);
- National Development Plan 2021;
- Climate Action Plan 2024;
- Regional Spatial and Economic Strategy for the Southern Region 2020;
- Carlow County Development Plan 2022-2028;
- Laois County Development Plan 2021-2027;



- Joint Spatial Plan for the Greater Carlow-Graiguecullen Urban Area 2024-2030 and,

The proposed development will also be assessed in the context of planning history for the site and for lands in the vicinity.



5. Population and Human Health

The assessment of effects on population and human health will involve a desk study of the relevant policies and other demographic information relevant to the area from the Central Statistics Office (CSO). Population aspects of relevance to this assessment include social considerations, traffic and accessibility, land use and economic activity. Human health aspects are primarily considered through an assessment of the environmental pathways by which health may be affected (i.e. the determinants of health) such as air, noise, water or soil. The assessment on human health will therefore draw on the findings of other sections of the EIAR as necessary to ensure that the likely significant effects that have the potential for significant effects on human health are considered herein.

The assessment of the likely significant effects of the proposed development on population and human health will take account of the policy and legislative documents listed in section 4.3 of this EIAR Scoping Report, particularly Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).

The term human health was introduced in the amended 2014 EIA Directive. However, no definition or advice on how this new factor should be considered is provided in the Directive. Subsequent Guidance from the European Commission in 2017 (EC, 2017a) stated the following:

“Human health is a very broad factor that would be highly Project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population.”

This section of the EIAR will also have regard to the guidance provided in recent national publications on the EIA Directive by the European Commission (EC, 2017b¹), the Department of Housing Planning and Local Government (DHPLG, 2018²) and the EPA (EPA, 2017³).

The identification of the sensitive receptors to the proposed development have been identified based upon the EPA Guidelines (EPA, 2017b and 2002) and Advice Notes (EPA, 2015 and 2003). These documents identify sensitive receptors as neighbouring landowners, local communities and other parties which are likely to be directly affected by the proposed development. In particular, homes, hospitals, hotels and holiday accommodation, schools and rehabilitation workshops and commercial premises are noted. Regard is also given to transient populations including drivers, tourists and walkers.

The issue of land use and compatibility with the surrounding areas has been assessed at the strategic level by the Strategic Environmental Assessments (SEAs) completed for the Carlow County Development Plan (2022).

¹ EC, 2017b, Commission Implementing Decision (EU) on greenhouse gas emissions for the year 2015 covered by Decision No 406/2009/EC of the European Parliament and of the Council

² DHPLG (August 2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment

³ EPA (August 2017) Guidelines on the information to be contained in Environmental Impact Assessment Reports

The SEA Environmental Report for the Carlow County Development Plan includes a Strategic Environmental Objective (SEO) for Population and Human Health (PHH1: *To protect populations and human health from exposure to incompatible land uses*).

Faite Ireland EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects will also be considered within the assessment.



6. Biodiversity

The Biodiversity Chapter of the EIAR will be undertaken in accordance with relevant legislation, policies and plans, and the following guidance:

- All-Ireland Pollinator Plan 2021-2025. National Biodiversity Data Centre Series 25. National Biodiversity Data Centre, Waterford. March 2021.
- Birds Directive (2009/147/EC). Official Journal of the European Union L 20/7-25.
- Carlow County Development Plan 2022-2028, particularly Chapter 9: Landscape and Green Infrastructure and Chapter 10: Natural and Built Heritage. Carlow County Council, Carlow.
- *Draft Carlow Graiguecullen Joint Urban Local Area Plan 2023-2029* (including any updates)
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 – Updated April 2022. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). Bat Conservation Trust, London..
- EIA Directive (2011/92/EU, as amended by 2014/52/EU). Official Journal of the European Union L 26:1-21, 124:1-18.
- EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports. May 2022. Environmental Protection Agency, Wexford.
- European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). S.I. No. 477/2011, 499/2016, 355/2015, 293/2021.
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018 (as amended). S.I. No. 296/2018, 404/2018, 646/2018, 418/2019, 456/2021, 457/2021, 708/2022.
- Flora (Protection) Order, 2022. S.I. No. 235/2022.
- Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. 2007 Reprint. The Heritage Council, Kilkenny.
- Habitats Directive (92/43/EEC). Official Journal of the European Communities L 206/7-50.
- IAS Regulation (EU) No 1143/2014 (invasive alien species). Official Journal of the European Union L 317/35-55. [Consolidated text: <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02014R1143-20191214>>.]
- IFI (2016) Guidelines on Protection of Fisheries during Construction Works in and adjacent to Waters. Inland Fisheries Ireland, Dublin.
- IFI (2020) Planning for Watercourses in the Urban Environment. Inland Fisheries Ireland, Dublin.
- Ireland's 4th National Biodiversity Action Plan 2023 - 2030. Department of Housing, Local Government and Heritage.



- Uisce Éireann's Biodiversity Action Plan. Spring 2021. Uisce Éireann, Dublin.
- National Biodiversity Action Plan 2017-2021. Department of Culture, Heritage and the Gaeltacht, Dublin.
- NRA (2006) Guidelines for the Treatment of Bats during the Construction of National Roads Schemes. National Roads Authority, Dublin.
- NRA (2008) Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes. National Roads Authority, Dublin.
- NRA (2009a) Guidelines for Assessment of Ecological Impacts of National Roads Schemes. Revision 2. National Roads Authority, Dublin.
- NRA (2009b) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. National Roads Authority, Dublin.
- O'Flynn, C., Kelly, J. and Lysaght, L. (2014) Ireland's invasive and non-native species – trends in introductions. National Biodiversity Data Centre Series 2, National Biodiversity Data Centre, Waterford.
- Planning and Development Act, 2000. No. 30 of 2000. Unofficial consolidation: <<http://revisedacts.lawreform.ie/eli/2000/act/30/revised/en/html>>. Law Reform Commission, Dublin.
- Smith, G.F., O'Donoghue, P., O'Hara, K. and Delaney, E. (2011) Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council, Kilkenny.
- Wildlife Act, 1976. No. 39 of 1976. Unofficial consolidation: <<https://revisedacts.lawreform.ie/eli/1976/act/39/revised/en/html>>]. Law Reform Commission, Dublin.

Data sources will include online databases, online mapping systems, and published and unpublished reports. Habitat and species-specific surveys. The following ecology survey have been completed:

- Ecological walkover;
- Alluvial woodland surveys;
- Invasive alien species survey;
- Terrestrial mammal survey (badgers and otters);
- Bat survey;
- Electro-fishing (fisheries stock assessment and evaluation); and,
- Lamprey ammocoete habitat mapping (using bathymetric survey and habitat survey).

The above surveys will be updated as required during the preparation of the EIAR. The detailed results of site surveys and assessments, including all plates, figures and tables, will be provided within the Biodiversity Chapter of the EIAR. Technical reports will be appended to the EIAR, such as an invasive species survey report, bat survey report, fisheries stock assessment and evaluation, and lamprey ammocoete habitat mapping.

An Appropriate Assessment (AA) Screening Report was prepared for the of proposed development at WwTP and Pumping Station, Co. Carlow. Due to the nature, scale and location of the proposed project, it is considered that it



has the potential to give rise to likely significant effects of the River Barrow and River Nore SAC. Thus, it is recommended that it is necessary for the proposed project to proceed to AA.

A Natura Impact Statement (NIS), an assessment of the implications of the proposed project for European sites (Special Areas of Conservation and Special Protection Areas), will be included as part of the planning application.

7. Landscape and Visual

The Landscape and Visual Impact Assessment (LVIA) will be undertaken with reference to the following guidelines:

- Landscape Institute and Institute of Environmental Management and Assessment (2013);
- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Oxon: Routledge;
- Carlow County Development Plan; and,
- Laois County Development Plan.

The two components of LVIA as defined by Landscape Institute and Institute of Environmental Management and Assessment (2013) are:

- Assessment of landscape effects: assessing effects on the landscape as a resource in its own right; and,
- Assessment of visual effects: assessing effects on specific views and on the general visual amenity experienced by people.

7.1 Landscape Baseline

The aim of the landscape baseline is to *'provide an understanding of the landscape in the area that may be affected, its constituent elements, its character and the way it varies spatially, its geographic extent, its history, its condition and the way the landscape is experienced, and the value attached it'* (Landscape Institute and Institute of Environmental Management and Assessment, 2013).

The baseline study will be undertaken by a mix of desktop study and fieldwork to identify and record the character of the landscape and the elements, features and aesthetic and perceptual factors which contribute to it. The baseline study will also consider the landscape condition and the value attached to landscape. Sources of information for the desktop study will include; ordnance survey maps, aerial maps of the site and surrounding area, existing landscape character assessments and relevant planning policy.

7.2 Visual Baseline

The aim of the visual baseline is *'to establish the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points'* (Landscape Institute and Institute of Environmental Management and Assessment, 2013).

The baseline study will be undertaken by desktop study followed by a field survey. The Zone of Theoretical Visibility (ZTV) or areas of land from which the development may be potentially visible will be identified. The ZTV will be estimated and mapped using a manual approach using map interpretation, and visual envelope mapping on site to



establish the outer limit of land that may be visually connected with the proposal. The ZTV is not always precise and is an indication only of the area within which the most significant visual effects may be expected.

7.3 Arboricultural Impact Assessment

The survey will be compliant with 'BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*' and will record; tree species, height, stem diameter, crown spread, height of crown clearance, age class, physiological and structural condition, management recommendations, estimated remaining contribution in years, BS 5837 retention category and root protection areas. The significant trees will be tagged with numbered alloy tags for identification and cross reference with the site drawing and survey schedule. Groups of similar trees, hedges and shrub masses will be assessed and described collectively where appropriate.

- A general summary/description of the survey findings (including photographs).
- Tree Survey Schedule (spreadsheet table of the individual tree and tree group attributes).
- Tree Survey/Constraints Plan drawing showing the tree locations, BS5837 category, crown spreads and root protection areas.
- Arboricultural Impact Assessment and Arboricultural Method Statement for the proposed development including a schedule of trees to be removed.
- Tree Protection Plan drawing showing trees to be removed and the protection measures recommended for the trees retained on the property.

8. Air Quality

A baseline air quality testing will be performed for Classical air pollutants Benzene, Toluene, Ethyl Benzene, Xylene isomers, NO₂, SO₂, PM₁₀ and Total depositional dust. Baseline data from EPA reference sites will be assessed for CO, Benzene, Toluene, Ethyl Benzene, Xylene isomers, NO₂, SO₂, PM_{10/2.5}

Odour sampling and testing will be performed on the Mortarstown WwTP and Kilkenny Road Pumping Station in order to establish baseline odour levels in the vicinity of the facilities.

8.1 Legislative framework

The European Union (EU) has introduced several measures to address the issue of air quality management. In 1996, Environmental Ministers agreed a Framework Directive on ambient air quality assessment and management (Council Directive 96/62/EC). As part of the measures to improve air quality, the European Commission has adopted proposals for daughter legislation under Directive 96/62/EC.

The first of these directives to be enacted, 1999/30/EC, set limit values in April 2001 that replaced previous limit values that were set by Directives 80/779/EEC, 82/884/EEC and 85/203/EEC. This was again updated through the implementation of the Ambient Air Quality and Cleaner Air for Europe (I) Directive 2008/50/EC. New limit values for Sulphur dioxide, PM₁₀, PM_{2.5} and Nitrogen dioxide set by the CAFÉ Directive are detailed in *Table 2.1*.

The National Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002) transpose those parts of the "Framework" Directive 96/62/EC on ambient air quality assessment and management not transposed by the EPA Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (S.I. No. 33 of 1999). The 2002 Regulations



also transpose, in full, the 1st two “Daughter” Directives 1999/30/EC relating to limit values for Sulphur dioxide, Nitrogen dioxide and Oxides of nitrogen, Benzene, Particulate matter and Lead in ambient air, and 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air.

Council Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe has revised and combined several existing Ambient Air Quality Standards including Council Directives 96/62/EC, 1999/30/EC and 00/69/EC. With regard to existing ambient air quality standards, it will not modify the standards but will strengthen existing provisions to ensure that non-compliances are removed. It does however set a new ambient standard for PM_{2.5}. With regard to PM_{2.5}, the proposed approach is to establish a limit value of 25 µg/m³, as an annual average (to be attained by 2015), coupled with a non-binding target to reduce human exposure generally to PM_{2.5} between 2010 and 2020. This exposure reduction target is currently proposed at 20% of the average exposure indicator (AEI). The AEI is based on measurements taken in urban background locations averaged over a three year period.

In 2011, SI 271 of 2002, Air Quality Standards Regulations 2002 was replaced with SI 180 of 2011, Air Quality Standards Regulations 2011 which transposes 2008/50/EC into Irish law.

In terms of Toluene, Ethyl benzene and Xylene isomers, a fractional exposure limit value is established using the recommended procedure contained in Environment Agency H1 Part 2 guidance document. The published 8 hr OEL value contained in Chemical Agents CoP 2016 is divided by 100 to establish an appropriate limit value based on a 24 hour exposure.

With regards to monitoring for classical air pollutants, 4no. fixed monitoring locations will be selected within the boundary of the WwTP. This data will be compared against EPA baseline data collected from similar Air quality zones throughout Ireland for comparison purposes.

8.2 Odour sampling

In order to obtain air samples for odour assessment, a static sampling method will be used where air samples will be collected in 40 to 60 litre pre-conditioned NalophanNA bags using a vacuum sampling device over a 5 to 10 minute period. The sampler operates on the 'lung principle', whereby the air is removed from a rigid container around the bag by a battery powered SKC vacuum pump at a rate of 5 to 9 l min⁻¹. This causes the bag to fill through a stainless steel and PTFE tube whose inlet is placed in ambient air, with the volume of sample equal to the volume of air evacuated from the rigid container. For odour control unit and ambient air samples, each sample bag will be flushed with pre-conditioned air to remove any interference from the sample material.

Samples will be taken from all odour sources identified on site.

8.3 Olfactometry

Olfactometry using the human sense of smell is the most valid means of measuring odour (Dravniek et al, 1986) and at present is the most commonly used method to measure the concentration of odour in air (Hobbs et al, 1996). Olfactometry is carried out using an instrument called an olfactometer. Three different types of dynamic dilution olfactometers exist:

- Yes/No Olfactometer
- Forced Choice Olfactometer
- Triangular Forced Choice Olfactometer.



In the dynamic dilution olfactometer, the odour is first diluted and is then presented to a panel of screened panellists of no less than four (CEN, 2003). Panellists are previously screened to ensure that they have a normal sense of smell (Casey et al., 2003). According to the CEN standard this screening must be performed using a certified reference gas *n*-butanol. This screening is applied to eliminate anosmia (low sensitivity) and super-noses (high sensitivity). The odour analysis has to be undertaken in a low odour environment such as an air-conditioned odour free laboratory. Analysis should be performed preferably within 8 to 12 hours of sampling.

8.4 Odour measurement in accordance with the EN13725:2003

An ECOMA TO8 dynamic yes/no olfactometer will be used throughout the measurement period to determine the odour threshold concentration of the sample air. The odour threshold concentration is defined as the dilution factor at which 50% of the panel can just detect the odour. Only those panel members who pass screening tests with *n*-butanol (certified reference gas, CAS 72-36-3) and who adhered to the code of behaviour were selected as panellists for olfactometry measurements (CEN, 2003). Odour measurement will be carried out in an odour free laboratory in accordance with EN13725:2003.

8.5 Dispersion modelling

In order to assess the odour impact of the facilities, the odour emission rate data will be input into a dispersion model in accordance with EPA Guidance AG4 in order to assess the impact associated with the existing and proposed WwTP and Pumping Station.

9. Climate

Environmental impacts associated to climate can comprise of the contribution by the project/development to climate change and the vulnerability of the project to climate change effects.

The receiving environment therefore comprises of the general environment with regard to climate change impacts (i.e. GHG emissions) and the surrounding environment with regard to vulnerability issues (i.e. rise in sea level).

Significant impacts will be studied with regard to project construction and operation on climate change together with vulnerability of the project/development.

Guidelines and literature produced by public and industry organisations will be used as data sources to inform the assessment. The consideration of climate change impacts will be assessed using accepted reference tools such as the EPA Carbon Calculator. The impact of more intensive meteorological events likely to occur due to climate change will also be considered relative to OPW and IPPC guidance.

10. Noise and Vibration

In order to assess the noise impact of the proposed development, the following methodology will be adopted:

- Baseline noise monitoring will be undertaken in the vicinity of the proposed development in order to characterise the existing noise environment;
- The nearest noise-sensitive locations to each element of the proposed development will be identified.



- A review of the most applicable standards and guidelines will be carried out in order to set a range of acceptable noise criteria for the construction and operational phases of the proposed development;
- Predictive calculations relating to construction phase impacts will be undertaken at the nearest sensitive locations to the development site British Standard BS5228 Code of Practice for Noise and Vibration Control on Construction and Open Sites. Part 1 – Noise (2009+A1 2014);
- Operational noise levels at the closest noise sensitive locations to the proposed development during the operational phase will be predicted using proprietary noise modelling software which calculates noise levels according to ISO 9613: acoustics – Attenuation of sound during propagation outdoors, Part 2: General method of calculation, 1996.
- Noise levels associated with the construction and operational phases will be reviewed against relevant standards and guidelines for noise to determine the potential impacts with both phases, and;
- A schedule of mitigation measures will be proposed where required or practicable, to reduce the identified potential noise impacts associated with the proposed development.

11. Traffic

This Traffic Chapter and associated assessment will be carried out in accordance with European Union and National level policy, and the following local level policy documents and best practice guidance documents:

- Carlow County Council – Development Plan 2022 - 2028;
- Environmental Protection Agency – Guidelines on the information to be contained in Environmental Impact Assessment Reports - 2022;
- Transport Infrastructure Ireland - Traffic and Transport Assessment Guidelines 2014; and,
- Transport Infrastructure Ireland - PAG Unit 5.3 Travel Demand Projections 2016.

The following tasks will be considered during the preparation of the Traffic Chapter:

- Assess surrounding road and transport infrastructure;
- Identify plans for future road infrastructure and transport upgrades;
- Source historical traffic counts to quantify the base line traffic scenario;
- Determine trip generation, distribution and assignment associated with the proposed development;
- Establish future years and associated traffic flows; and,
- Quantify the predicted traffic impact of the proposed development.



12. Land, Soils and Geology

The following scope of works will be undertaken by AtkinsRéalis in order to complete the land, soils and geology assessment presented in this chapter;

- Desk-based study including review of available historical information; and,
- Site Walkover Survey by an experienced Geo-environmental Scientist.

This assessment will be completed in accordance with relevant best practice guidance from the Institute of Geologists of Ireland, '*Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements*' (IGI, 2013). The IGI guidance document is an updated version of the 2002 guidelines, '*Geology in Environmental Impact Statements, A Guide*' (IGI, 2002), which was revised to take account of legislative changes, and the operational experience developed by geoscientists in the production of relevant environmental assessments.

The desk-based study will involve reviewing information from the following sources: -

- GSI Datasets Public Viewer and Groundwater webmapping;
- EPA Public Viewer and webmapping; and,
- Ordnance Survey webmapping to assess the surface topography and landforms.

Ground investigations for the proposed development have already been completed. A review of the Ground Investigation data will be completed as part of the impact assessment.

13. Water

The following scope of works will be carried out in order to complete this assessment: -

- Desk-based study including review of available historical information;
- Site Walkover Survey;
- Surface water sampling on the River Barrow upstream and downstream of the outfall; and
- Review of any relevant Ground Investigation data;

The purpose of the desk-based task is to characterise the current hydrological and hydrogeological setting of the Site. Relevant background information will be compiled, specifically from the following data sources (but not exclusively);

- Environmental Protection Agency (EPA) web mapping;
- Geological Survey of Ireland (GSI) Datasets Public Viewer and Groundwater web mapping;
- Office of Public Works National Flood Hazard mapping web Site ;
- Ordnance Survey of Ireland (OSI) web mapping to assess the surface topography and landforms;
- National Parks and Wildlife Service (NPWS) Map Viewer;



- Water Framework Directive (WFD) Ireland web mapping; and,
- Flood Risk Assessment Report.

The information obtained during the walkover survey and the geotechnical investigation will be supplemented by data gathered during the desk-based review of all available relevant Site-specific and regional data. This assessment will be completed in accordance with relevant best practice guidance from the Institute of Geologists of Ireland (IGI) 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements' (IGI, 2013). This assessment will also been prepared with regard to the guidelines prepared by the Environmental Protection Agency outlined in 'Revised Guidelines on the Information to be contained in Environmental Impact Statements' published in 2015, 'Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements)' published in 2015, and also 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' published in 2022.

Separately, a Flood Risk Assessment (FRA) will be prepared in accordance with the following guidance document; 'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' DOEHLG 2009.

14. Cultural Heritage

The methodology used for this assessment is based on Environmental Protection Agency (EPA) (2003) *Advice Notes on Current Practice in the preparation of Environmental Impact Statements* and EPA (2002) *Guidelines on the Information to be contained in Environmental Impact Statements*. However more recent (draft) guidance methods have also been utilised per EPA (2015) *Draft Advice Notes for Preparing an EIS* and (2022) *Guidelines for Information to be Contained in EIAR*, in accordance EIA requirements of codified EU Directive 2011/92/EU as amended by EU Directive 2014/52/EU, per current Planning Legislation, concerning EIA assessment: Planning and Development Act, 2000 (as amended) (Part X) and in Part 10 of the Planning and Development Regulations, 2001 (as amended).

The assessment of magnitude will be informed by criteria published in the International Council on Monuments and Sites *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (ICOMOS 2011). There are no formal or legal criteria which grades the values of Irish cultural heritage assets and evaluation of the value of assets used in the assessment will be informed by criteria presented in the International Council on Monuments and Sites *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (ICOMOS 2011, 14-17). While not considered definitive this guidance will be applied as an indicator which contributes to a wider judgment based on the individual circumstances of each feature and, generally, the more criteria that are evident for a given asset, the higher in scale its assigned value. Criteria considered in addition to any legal designations include the condition/preservation; documentary/historical significance; group value; rarity; visibility in the landscape; fragility/vulnerability and amenity value. The value of all known or potential assets that may be affected by the proposed project are ranked according to the following scale: High; Medium; Low and Negligible.

The desktop study and site inspections will be carried out to identify all recorded archaeological, architectural and other cultural heritage sites within the study area and also endeavoured to identify any hitherto unrecorded features or areas of cultural heritage significance. The collated information will provide an insight into the historical development of the study area over time and assisted in an evaluation of the potential presence of unrecorded cultural heritage sites, including sub-surface archaeological features.

The *Sites and Monuments Record* (SMR) and the *Record of Monuments and Places* (RMP) for County Carlow, published by the Archaeological Survey of Ireland will be the principal sources consulted for identifying known archaeological sites. The *Record of Protected Structures* (RPS) and the *National Inventory of Architectural Heritage* (NIAH), including its survey of historic gardens, will be consulted to assess the designated architectural heritage resource.



The following presents an overview of sources which will be consulted as part of the desktop study:

- Carlow County Development Plan 2022 – 2028 and *Joint Spatial Plan for the Greater Carlow Graiguecullen Urban Area 2012 – 2018*:
- *Archaeological Inventory of County Carlow*:
- *UNESCO designated World Heritage Sites and Tentative List*:
- *National Inventory of Architectural Heritage (NIAH)*:
- *Database of Irish Excavation Reports*:
- *Historical publications and cartographic sources*:
- *Aerial and Satellite Imagery*:
- *Placenames Database of Ireland*: and,
- *Irish National Folklore Collection*:

14.1 Underwater Archaeological Impact Assessment

The Underwater Archaeological Impact Assessment will comprise of the following:

- Bankside inspection;
- Dive survey (which will include 20m either side of the infrastructure along the riverbank where the outfall pipe is proposed to be located);
- Metal-detection; and,
- Report.

The Underwater assessment and survey will be as follows:

- Apply for archaeological licences to conduct in-water underwater assessment and survey.
- Deploy an underwater archaeological team of experienced personnel to conduct a comprehensive non-disturbance dive survey the river channel and attendant riverbanks where accessible, and any associated features including bridge structures (piers and foundations), culverts, masonry structures, and natural features present along the route of the River Barrow at the proposed impact locations.
- The survey will also seek to record riverbed topography and include a detailed description of the existing riverside environment.
- All archaeological features encountered, whether actual or potential will be described, photographed and measured.
- A Total Station EDM and/or DGPS unit will be used to assist in the recording of riverbed topography, features present, and to position-fix any archaeology that is encountered.



A project report will set out the observations made in a clear and concise manner; and will include photographic recordings of the work completed and observations made. It will be completed to EIAR standard and assumes inclusion in same as a technical chapter/appendix as required. The report will include:

- Introduction;
- Receiving Environment;
- Archaeological Assessment;
- Impact Assessment;
- Mitigations; and,
- Project drawings.

15. Material Assets

15.1 Built Services

- The methodology used to prepare the built services section of the EIAR will be in accordance with the EPA '*Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EIAR)*' (2022), and '*Advice Notes for Preparing Environmental Impact Statements Draft September 2015*'. The following sources will be used to collate information on built services within the general area of the Site;
 - ESB Network Utility Plans;
 - eir Telecommunications Plans;
 - Gas Network Plans;
 - Wastewater Utilities; and,
 - Water Utilities.
 - Available utility information and maps received from Uisce Éireann and Carlow County Council.
- This information will be supplemented by observations recorded during various Site walkover surveys. Surface water runoff, foul drainage discharge and water supply requirements will also be designed with due regard to the following guidelines:
 - SuDS Manual (CIRIA (2007);
 - Uisce Éireann's Code of Practises and Technical Standards (IW-CDS-5030-01 to 04 & IW-TEC-800); and,
 - Uisce Éireann's Pre-Connection Enquiry Application (water demand and foul water loading).

15.2 Waste Management

- This section of the EIAR will be prepared in accordance with the EPA '*Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EIAR)*' (2022), '*Advice Notes for Preparing Environmental Impact Statements Draft September 2015*', and EPA (2021) '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition.*'



16. Interactions

This chapter describes interactions between impacts on different environmental factors. All potential interactions will be addressed as required throughout the EIAR. During the scoping, baseline assessment and impact assessment stages of this report, contributors will liaise with each other where relevant to ensure that all such potential interactions have been robustly addressed. A detailed description of the residential development will be presented in Chapter 2 – Project Description.

17. Scoping Request

In accordance with best practice guidance and based on the information presented within this scoping report, we would welcome all feedback or opinions in relation to the proposed content and methodology of the Environmental Report. We are currently compiling the planning application. We would therefore appreciate a response if relevant by 22nd May 2025 or earlier if possible.



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