WATER FRAMEWORK DIRECTIVE (WFD) ASSESSMENT

For

A LARGE-SCALE RESIDENTIAL DEVELOPMENT

LISDARAN

CAVAN

CO. CAVAN

Prepared for

Lisdaran Developments Ltd.

Prepared by

Traynor Environmental Ltd.

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This document is a Water Framework Directive (WFD) Assessment for the construction of a proposed development for Lisdarn Developments Ltd. at Lisdaran Cavan, Co. Cavan.

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1.0 INTRODUCTION

Traynor Environmental Ltd has been commissioned by Lisdaran Developments Ltd. (hereafter referred to as the Applicant) to undertake a Water Framework Directive (WFD) Assessment for the proposed Large-scale Residential Development at Lisdaran, Cavan Co. Cavan (hereafter referred to as the 'site' and 'Proposed Development').
This report presents the findings of the WFD Assessment for the site and Proposed Development.

1.1 Project Objective

The overall objective of this WFD assessment is to determine if any specific components or activities associated with the proposed development will compromise WFD Article 4 objectives, cause a deterioration in the status of any surface water or groundwater body and/or jeopardise the attainment of good surface water or groundwater status. This assessment also aims to identify any waterbodies with the potential to be impacted, describe the proposed standard construction measures, and define any residual potential impacts.

1.2 Project Scope of Work

The scope of the water framework directive assessment included the following tasks:

- A desk-based review of published information and information pertaining to the Site and Proposed Development provided by the Applicant.
- Develop a hydrological / hydrogeological Conceptual-Site-Model and identify any potential source-pathway-receptor linkages.
- Identify and assess any potential impacts of the Proposed Development on the WFD status of sensitive receptors associated with the receiving water environment.

1.3 Professional Competency

The report was prepared by Nevin Traynor Environmental Consultant with Traynor Environmental; with over 25 years' experience in the environmental sector. Nevin has an honours degree in Environmental Science from Atlantic Technological University Sligo and a HDIP in IT From Maynooth NUI. His project experience includes the management and productions of numerous hydrological and hydrogeological assessments for various developments across Ireland, Nevin Traynor is professionally competent and accredited to undertake water framework directive assessments.

2.0 Methodology

2.1 Legislative Context

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU, and 2014/101/EU ("WFD"), was established to ensure the protection of the water environment. The Directive was transposed in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

The WFD requires that all member states protect and improve water quality in all waters, with the aim of achieving good status by 2027 at the latest. Any new development must ensure that this fundamental requirement of the WFD is not compromised. The Article 4 objectives, which have been considered as part of the design process of the Proposed Development, include:

- Protect, enhance, and restore all bodies of surface water and groundwater with the aim of achieving good surface water status by 2027.
- Prevent deterioration and maintain a 'high' status where it already exists.
- Implement the necessary measures with the aim of progressively reducing pollution in surface waters and groundwater.
- Ensure waters in protected areas meet requirements.

The WFD is implemented through the River Basin Management Plans (RBMP), which comprise a six-yearly cycle of planning, action, and review. RBMPs include identifying river basin districts, water bodies, protected areas, and any pressures or risks, monitoring, and setting environmental objectives. In Ireland, the first RBMP covered the period from 2010 to 2015, with the second cycle plan covering the period from 2018 to 2021.

The Water Action Plan 2024 (RBMP 3rd Cycle) Programme of Measures outlines comprehensive measures to protect and improve water quality across various sectors. The Programme of Measures (PoM) for RBMP is a comprehensive set of actions designed to achieve the environmental objectives set out in the Water Framework Directive. The PoM includes both basic and supplementary measures:

Basic measures are mandatory actions required to fully implement existing water protection directives. The 11 key EU Directives which form the Basic Measures are: Bathing Waters Directive, Birds Directive, Habitats Directive, Drinking Waters Directive, Major Accidents and Emergencies Directive, Environmental Impact Assessment Directive, Sewage Sludge Directive, Urban Wastewater Treatment Directive, Plant Protection Products Directive, Nitrates Directive, and Industrial Emissions Directive.

Supplementary measures augment basic actions to achieve water objectives and include codes of practice, voluntary agreements, demand reduction, education, rehabilitation or research programmes, and legal, administrative, and economic instruments.

Key elements of the PoM include:

- Integrated Catchment Management: The PoM uses an integrated catchment management approach, focusing on identifying the right measures for specific locations to maximize effectiveness.
- Collaboration: Implementation involves collaboration between various government departments, local authorities, the EPA, and other stakeholders, with the Programme Delivery Office overseeing and coordinating efforts.
- Monitoring and Reporting: An enhanced monitoring and reporting programme tracks the implementation progress and assesses the effectiveness of the measures.
- Targeted Actions: The PoM identifies specific actions under each pressure/issue affecting water quality, assigning lead organizations, timelines, and key performance indicators.
- Multiple Benefits: The PoM aims to deliver multiple benefits for water, biodiversity, and climate change mitigation and adaptation.
- Environmental Assessment: All measures and projects arising during the third-cycle RBMP are subject to further environmental assessments, including Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA), as required.

The sources provide numerous specific examples of measures within the PoM, categorized by the sector driving the impact:

- **Agriculture:** Implementation of a stronger and more targeted Nitrates Action Programme, including tighter controls on nutrient applications, a livestock excretion banding system, a national fertilizer sales database, and enhanced inspection and enforcement programmes.
- **Hydromorphology:** Developing a new Controlled Activities for the Protection of Waters regime to address pressures on the physical condition of waters.
- **Forestry:** Increasing the area of forests with appropriate water setbacks, seeking improvements to the licence applications process for key forestry activities, and rolling out schemes that promote water protection.
- **Urban Wastewater:** Continued investment in urban wastewater infrastructure and a review of water bodies where urban wastewater is a significant pressure.
- **Peatlands:** Updating the National Peatlands Strategy and continuing the national programme of peatland restoration.

These measures are designed to ensure that all new developments comply with the WFD's fundamental requirements and contribute to the overall goal of achieving good water status by 2027.

This assessment takes into account and meets all the requirements and objectives outlined above, ensuring compliance with the WFD.

2.2 Desk-based Study

A desk-based study was undertaken including a review of relevant information from the following publicly available sources and information provided by the Applicant:

- Ordnance Survey Ireland Online mapping (OSI, 2025).
- Geological Survey of Ireland Online mapping (GSI, 2025).
- Environmental Protection Agency Online mapping (EPA, 2025).
- National Parks & Wildlife Services, Protected Sites Web Mapping (NPWS, 2025).
- Relevant drawings and design reports for the proposed development provided by the Applicant.

2.3 Risk Based Impact Assessment

A risk-based and receptor-focussed approach was adopted to include an assessment of any impact to the receiving hydrological and hydrogeological (water) environment associated with the Proposed Development.

The basis for a risk assessment is the CSM or Source-Pathway-Receptor (SPR) model which underpins the Directive 2000/60/EC (Water Framework Directive) amended by Directives 2008/105/EC, 2013/39/EU, and 2014/101/EU. These directives have been transposed into Irish legislation through the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003) and subsequent amendments, as well as the EPA Guidance on the Authorisation of Discharges to Groundwater (EPA, 2011) and the EPA Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA, 2013) on the protection of groundwater and surface water resources.

A risk assessment is undertaken to provide an understanding of the risk associated with the presence of any potentially contaminating materials and/or activities on a site. This is informed by the assessment of potential for viable pollutant linkage(s) to be present. A pollutant linkage is established when there is a viable or potentially viable Source, a Pathway and a Receptor. If one or more of the three elements are missing, the exposure pathway is considered incomplete and there is no risk associated with the activity or contaminant source (i.e., a viable means of exposure is not considered to be present or is unlikely to be present).
The objective of the Water Framework Directive (WFD) is to ensure no deterioration of the water quality status, and the "prevent or limit" objective is a key element of achieving that WFD status for all water bodies regardless of their current water

quality status. The 'prevent or limit' objective involves measures to avoid and mitigate impacts, serving as the first line of defence in restricting pollutant inputs from a development (i.e., "source" removal) and preventing any potential impact or deterioration of the water quality status or WFD status of the receiving water body.

In this assessment all three elements of the Source-Pathway-Receptor model will be identified to develop a CSM, and any potential linkages evaluated and assessed to determine if the development could potentially impact upon the WFD Status of the water bodies associated with the site.

2.4 Conceptual Site Model

A CSM represents the characteristics of the site and identifies the possible relationship and potential risk between contaminant sources (i.e., characteristics of the Proposed Development), pathways and receptors (receiving environment) These three essential elements of the CSM are described as:

- A **source** – a substance that is in, on or under the land and has the potential to cause harm or pollution.
- A **pathway** – a transport route or means by which a receptor can be exposed to, or affected by, a contaminant source.
- A **receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.

The term pollutant linkage is used to describe a particular combination of source-pathway- receptor. Each of these elements can exist independently, but they create a risk only where they are linked together so that a particular contaminant affects a particular receptor through a particular pathway (i.e., a pollutant linkage). The preliminary CSM for the site of the Proposed Development is initially defined and this is then revised throughout the risk-based assessment process.

3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

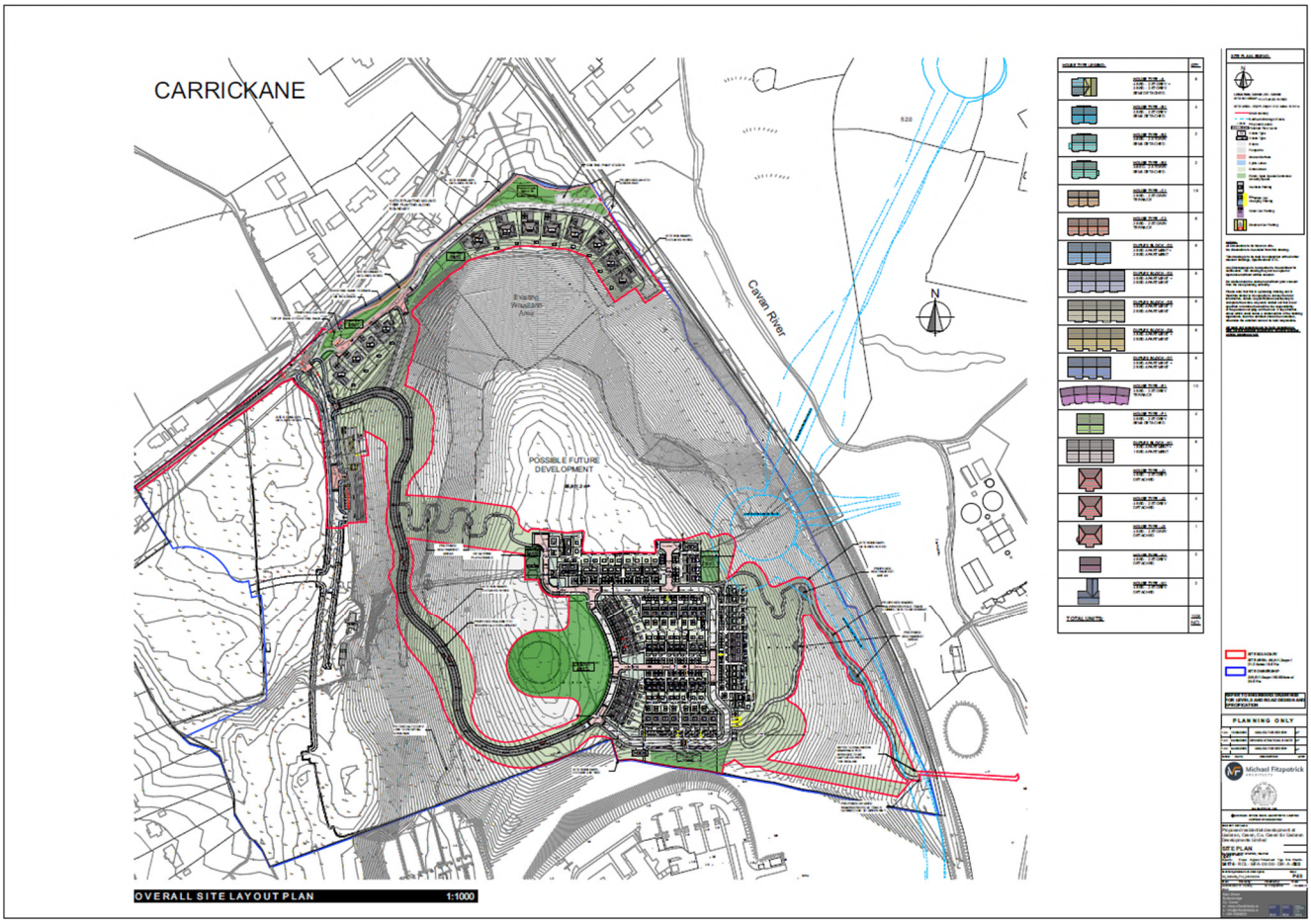
The site is located at Lisdaran, Cavan, accessed off L-1513-0, Loreto Road. The site area comprises a partly brownfield/partly greenfield parcel of lands measuring 4.35ha. The total development area is 8.6Ha. The subject lands are located within the settlement boundary of Cavan Town and zoned mainly as 'Proposed Residential', Proposed Low Density Residential Development" and "Public and Community", a very small proportion is zoned as "Strategic Residential Reserve".

The development will consist of the provision of a total of 109no. residential units along with provision of a crèche. Particulars of the development comprise as follows:

- Site excavation works to facilitate the proposed development to include excavation and general site preparation works.
- The provision of a total of 65no. residential dwellings which will consist of 23no. 2 bed units, 26no. 3 bed units and 16no. 4 bed units. The dwelling types range from detached units to terrace units and are 2storey.
- The provision of a total of 44no. duplex apartment units consisting of 8no.1 bed units, 18no. 2bed units and 18no. 3 bed units. The duplex units range in height from 2storey to 3storey.
- Provision of a two storey creche with associated parking, bicycle and bin storage.
- Provision of associated car parking at surface level via a combination of in-curtilage parking for dwellings and via on-street parking for the creche and duplex apartment units.
- Provision of electric vehicle charge points with associated site infrastructure ducting to provide charge points for residents throughout the site.
- Provision of associated bicycle, bin and bulky items storage facilities for duplex apartment units.
- Upgrading the existing access point from Loreto Road with associated works to include for provision of a right turning lane, provide for internal access roads, footpaths and associated site works.
- Provision of internal access roads and footpaths and associated works to include for regrading of site levels as required along with connections onto the Greenway.
- Provision of residential communal open space and public open space areas to include formal play areas along with all hard and soft landscape works with public lighting, planting and boundary treatments to include boundary walls, railings & fencing.
- Internal site works and attenuation systems which will include for provision of hydrocarbon and silt interceptors prior to discharge.
- All ancillary site development/construction works to facilitate foul, water and service networks for connection to the existing foul via a rising main and provision of a foul pumping station, water connections and ESB network connections along with provision of an ESB substation.

A Natura Impact Statement (NIS) has been prepared and accompanies this application.

Figure 3.1: Proposed Site Layout



3.1 Construction Phase

Phasing and Scheduling of the Development

It is proposed that the project will proceed to construction if planning is successful, and all associated statutory procedures have been approved. While the precise sequencing of the sites phasing construction will be the subject of greater detailed, it is envisaged that the project will be delivered in three phases.

3.2 Operational Phase

3.2.1 Foul Water Drainage

As documented in the Civil Engineering Report prepared by Alan Traynor Consulting Engineers September 2025. The foul water from the residential units located towards the south of the site at the top of the hill will be collected using a suitably sized gravity sewer network and discharged to the existing foul sewer manhole at the southeast of the corner of the site where it will combine with the foul discharge from the existing foul water pumping station and proceed to be discharged to existing Uisce Eireann infrastructure to the east of the site. The foul sewer network at the top of the hill has been sized to cater for possible future development.

The proposed creche along with the first four low density residential units will be connected directly to the existing gravity foul water sewer running along the western and northern boundary of the site. A new foul sewer network will be constructed to service the remaining eight low-density residential units which will discharge to the existing foul sewer at the north corner of the site upstream of the existing foul water pumping station. A Pre-connection Enquiry was submitted to Uisce Eireann for an overall master plan development of the area which included the proposed development, and a Confirmation of Feasibility letter received. A connection agreement with Uisce Eireann for the foul sewer will be in place prior to any works commencing onsite.

Figure 3.2: Foul & Stormwater Layout. 1 of 4

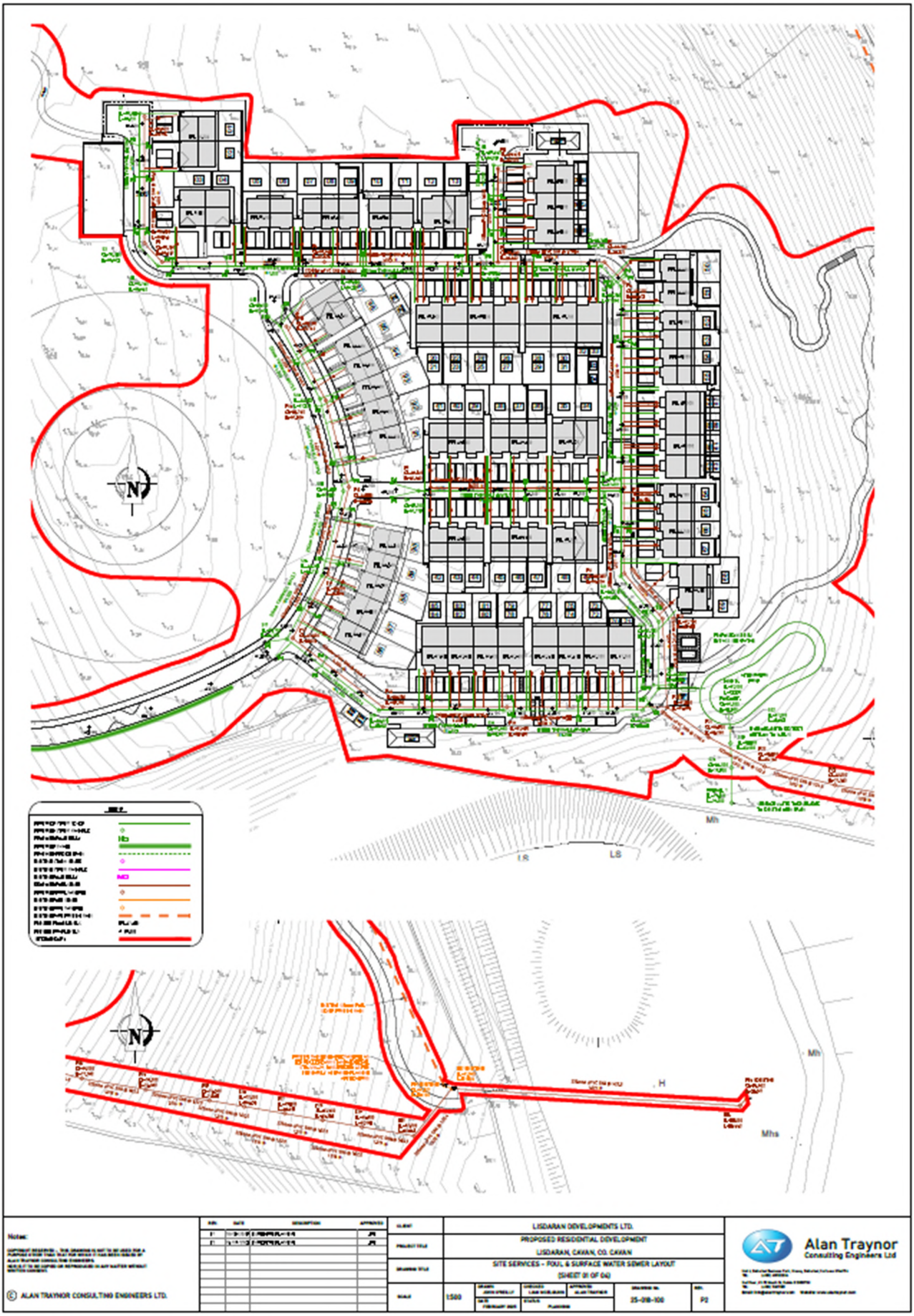


Figure 3.3: Foul & Stormwater Layout. 2 of 4

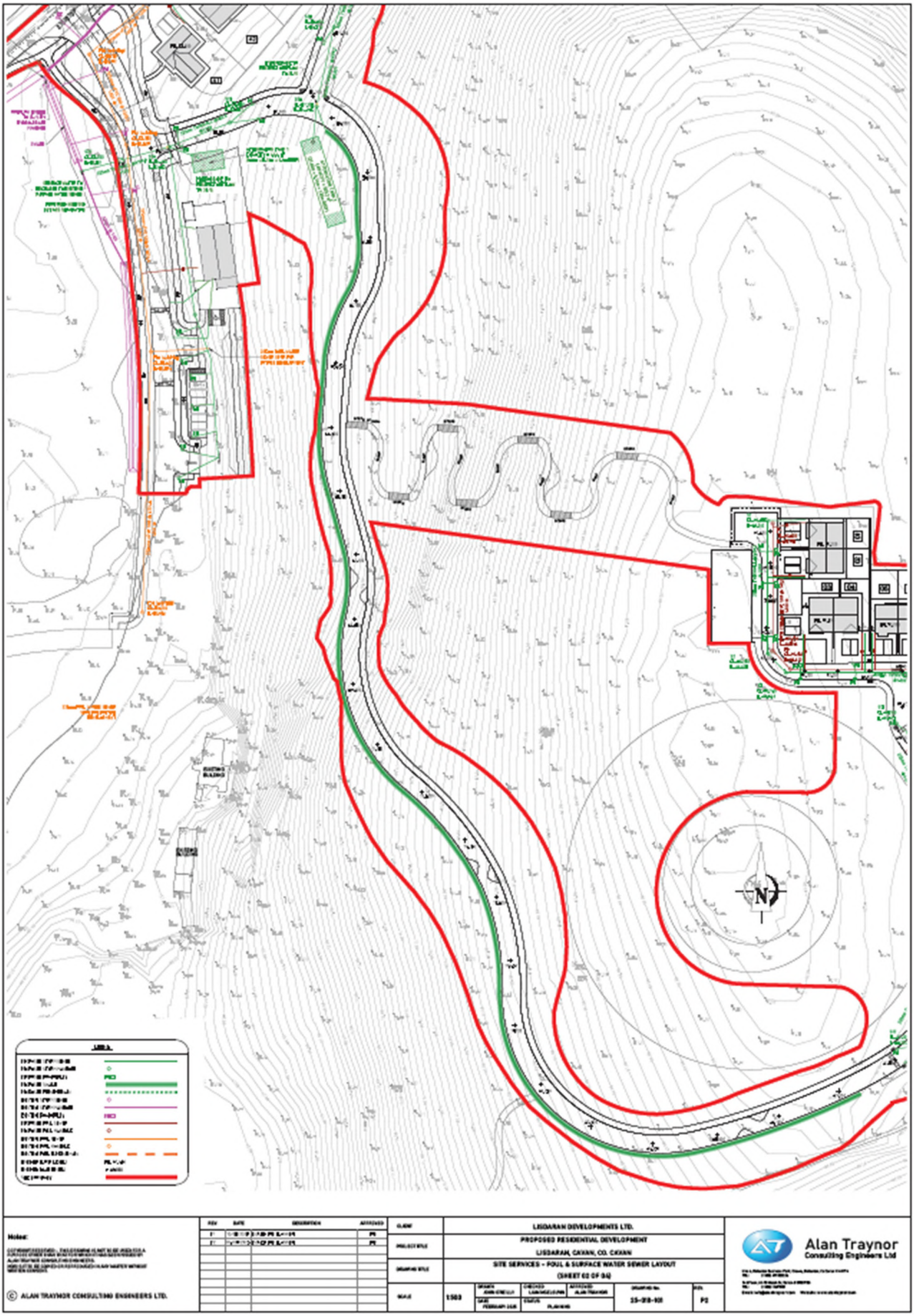


Figure 3.4: Foul & Stormwater Layout. 3 of 4

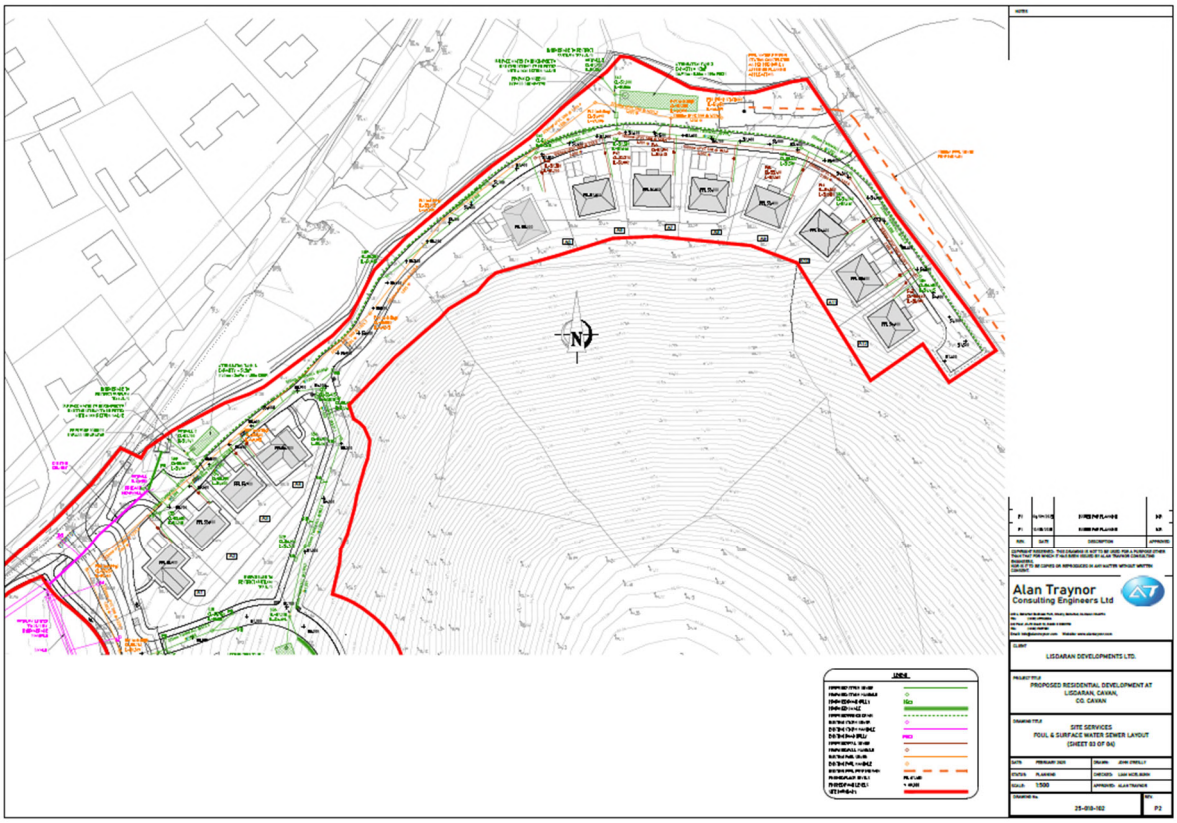
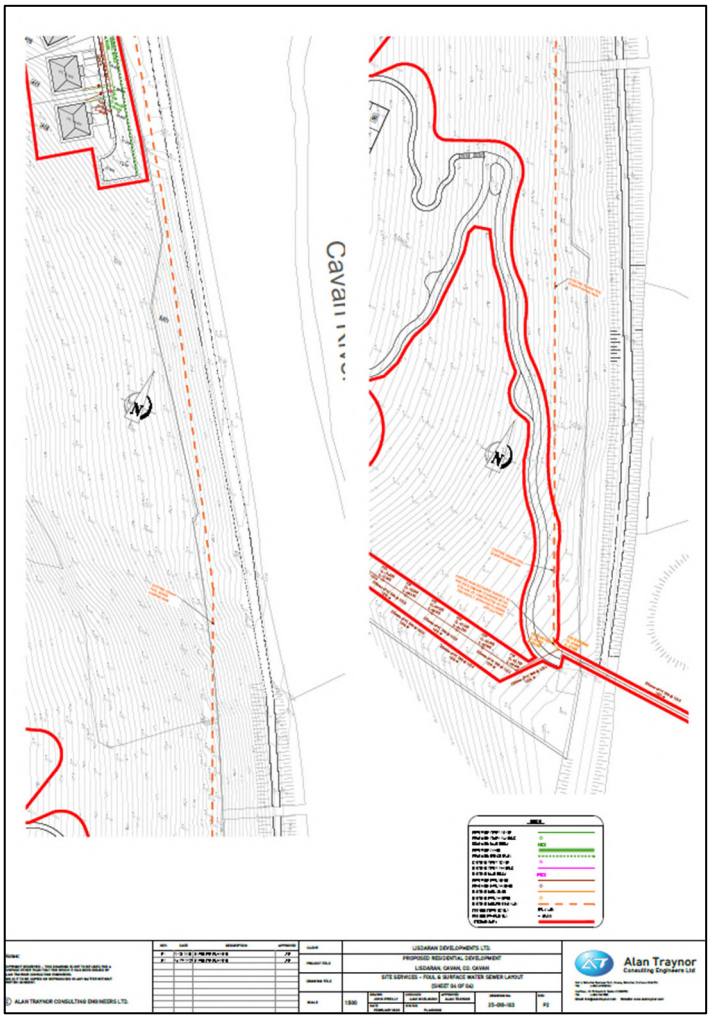


Figure 3.5: Foul & Stormwater Layout. 4 of 4



3.2.2 Surface Water Drainage

As documented in the Civil Engineering Report prepared by Alan Traynor Consulting Engineers.

It is proposed to use permeable paved parking areas, gullies, downpipes, and a suitably sized network to collect all run-off from the proposed hardstand/roof areas. Permeable paving systems will reduce peak discharges into the drainage system and treat run off by providing a 70-90% removal efficiency rate for hydrocarbons and 60-95% removal of suspended solids thereby improving the quality of water being discharged. A swale will be used to collect the surface water runoff from the majority of the access road to the high-density residential units which will be constructed with a single crossfall towards the swale. Due to the size and scope of the development, it is proposed divide the development into four surface water drainage networks, each of which will have its own outfall/discharge point. The discharge value for each network (Q-bar) was calculated using the UKsuds website and where required was set to a minimum of 2.0l/s to prevent build-up of vegetation in the infrastructure.

The first surface water sewer network will serve the high-density residential units located at the top of the hill towards the south of the site. The surface water runoff will be discharged to the open drain at the southern boundary of the site. The discharge from the proposed network to the open drain will be restricted to maximum value of 14.5l/s by means of a hydrobrake fitted to the first storm water manhole upstream of the discharge point. When the discharge restriction is exceeded, all excess water will be attenuated in an attenuation pond (minimum capacity 583.4m^3) located in the green area beside the discharge point at the south of the site.

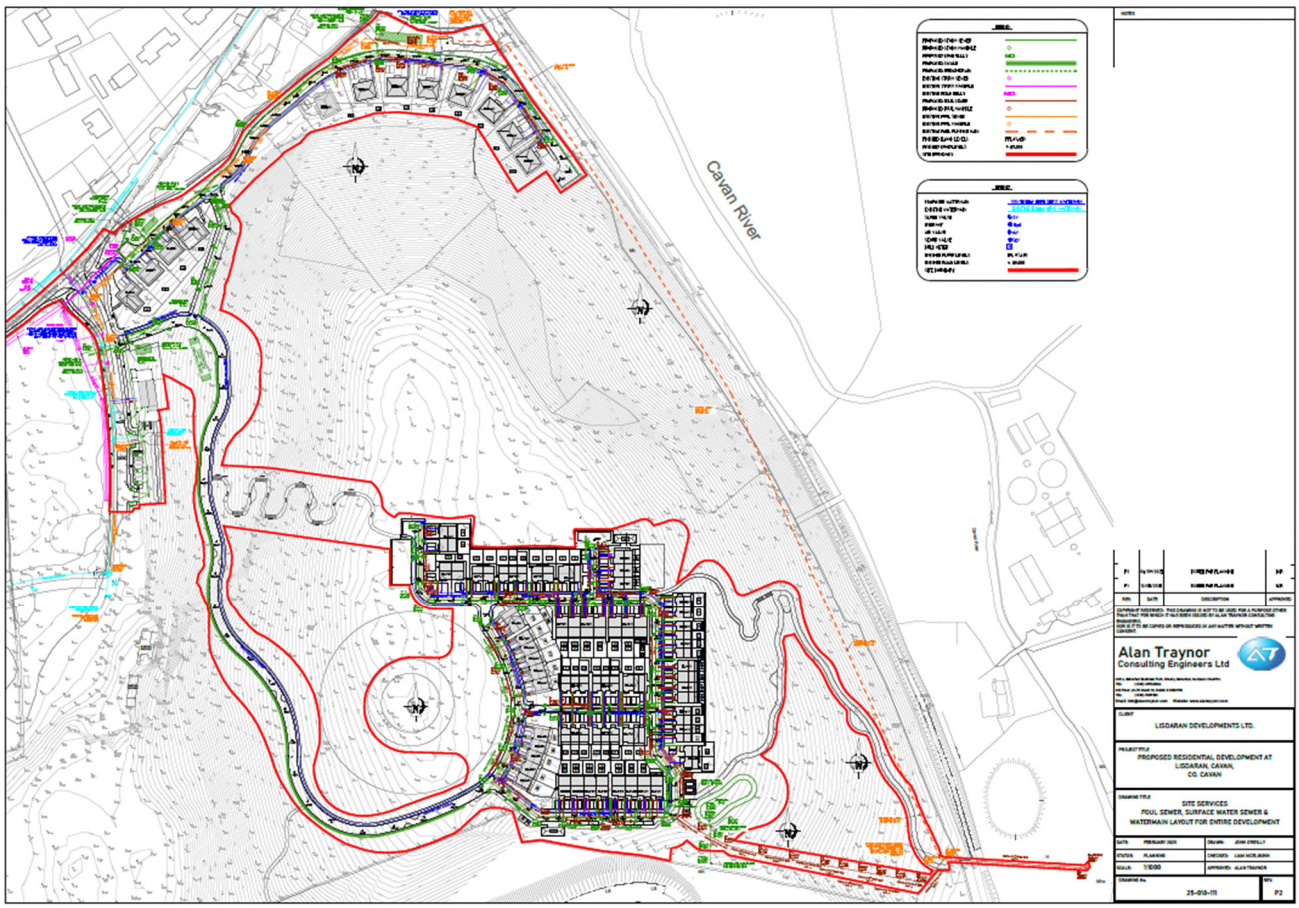
The second surface water sewer network will serve the beginning of the access road to the high-density units, as far as the junction with the access road to the low-density residential units, and the creche and associated carpark. The surface water runoff will be discharged to existing surface water infrastructure to the west of the existing access road. The discharge from the proposed network will be restricted to maximum value of 2.0l/s by means of a hydrobrake fitted to the first storm water manhole upstream of the discharge point. When the discharge restriction is exceeded, all excess water will be attenuated in an attenuation tank (Attenuation Tank 1, Capacity 47.4m^3) located in green area to the north of the proposed creche.

The third surface water sewer network will serve the majority of the access road to the to the high-density residential units along with the first four houses of the low-density residential units and the associated access road and hardstand areas. The surface water runoff will be discharged to the open drain / small stream to the north of site at a location just to the northeast of the entrance to the site. The discharge from the proposed network will be restricted to maximum value of 4.0l/s by means of a hydrobrake fitted to the first storm water manhole upstream of the discharge point. When the discharge restriction is exceeded, all excess water will be attenuated in an attenuation tank (Attenuation Tank 3, Capacity 59.8m^3) located in green area and road just to the north of the first four low density residential units. Due to the length and area of the access road to the high-density residential units the flow proceeding downstream at the end of the swale will be restricted to 2.0l/s by means of a hydrobrake fitted on the first manhole downstream of the swale. When the discharge restriction is exceeded, all excess water will be attenuated in an attenuation tank (Attenuation Tank 2, Capacity 203.2m^3) located in green area to the northeast of the proposed creche beside the access road.

The fourth and final surface water sewer network will serve the remaining low density residential units and associated access road and hardstand areas. The surface water runoff will be discharged to the open drain / small stream to the north of site at the northern corner of the site beside the existing foul water pumping station. The discharge from the proposed network will be restricted to maximum value of 4.0l/s by means of a hydrobrake fitted to the first storm water manhole upstream of the discharge point. When the discharge restriction is exceeded, all excess water will be attenuated in an attenuation tank (Attenuation Tank 4, Capacity 132m^3) located in green area beside the existing foul water pumping station.

The attenuation tanks have been sized to cater for a 1 in 100-year storm event with an allowance for an additional 20% increase in rainfall quantities due to climate change. The surface water runoff will pass through a petrol interceptor prior to being discharged at any of the four discharge locations.

Figure 3.3: Foul, Surface Sewer & Watermain Layout Entire Development



3.2.3 Water

It is proposed to connect to one of the existing spurs with a 150mm watermain which will be used to service the high-density residential units towards the south of the site at the top of the hill. A 150 mm spine watermain will be laid in the footpath along the main road through the development where possible with appropriate loops servicing the side roads of the development where required. A 100mm connection to the existing watermain will be required to service the 12 low density residential units and foul water pumping station at the north of the site. This connection will consist of a single line terminated in a loop. The creche will be connected directly to the existing watermain running along the access road to the site. Sluice valves, air valves, scour valves, and hydrants will be located as required by Irish Water Standards and Code of Practice. Due to the scale of the development a bulk meter will be required for the watermain servicing the high-density residential units and a by-pass flow meter for the watermain servicing the low-density residential units. The exact configuration of the meters required will be confirmed with the Uisce Eireann Design Engineer during the connection application process. A connection agreement with Uisce Eireann for the watermain will be in place prior to any works commencing onsite.

Figure 3.4: Site Services Watermain Layout, 1 of 3

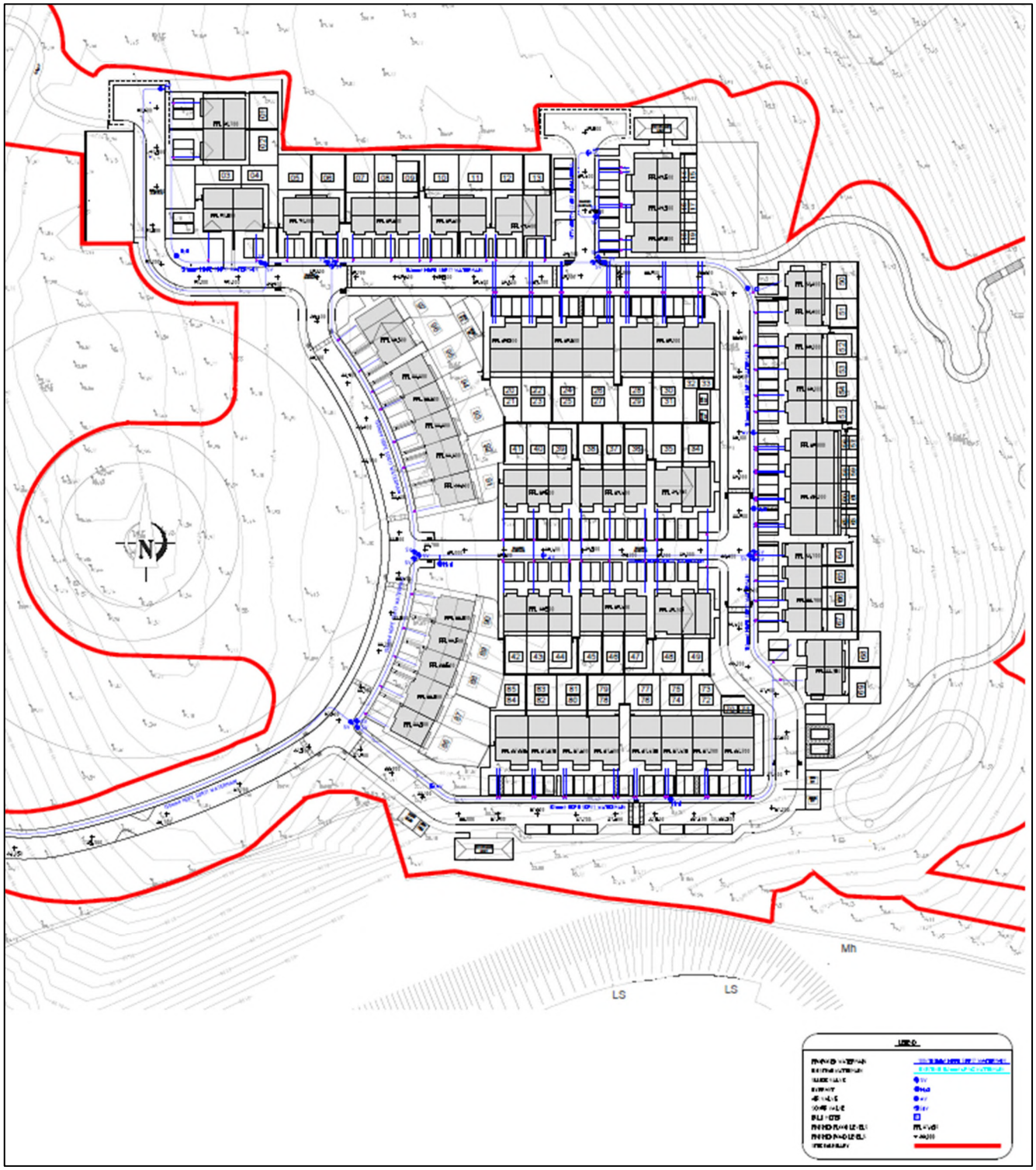


Figure 3.5: Watermain Layout 2 of 3

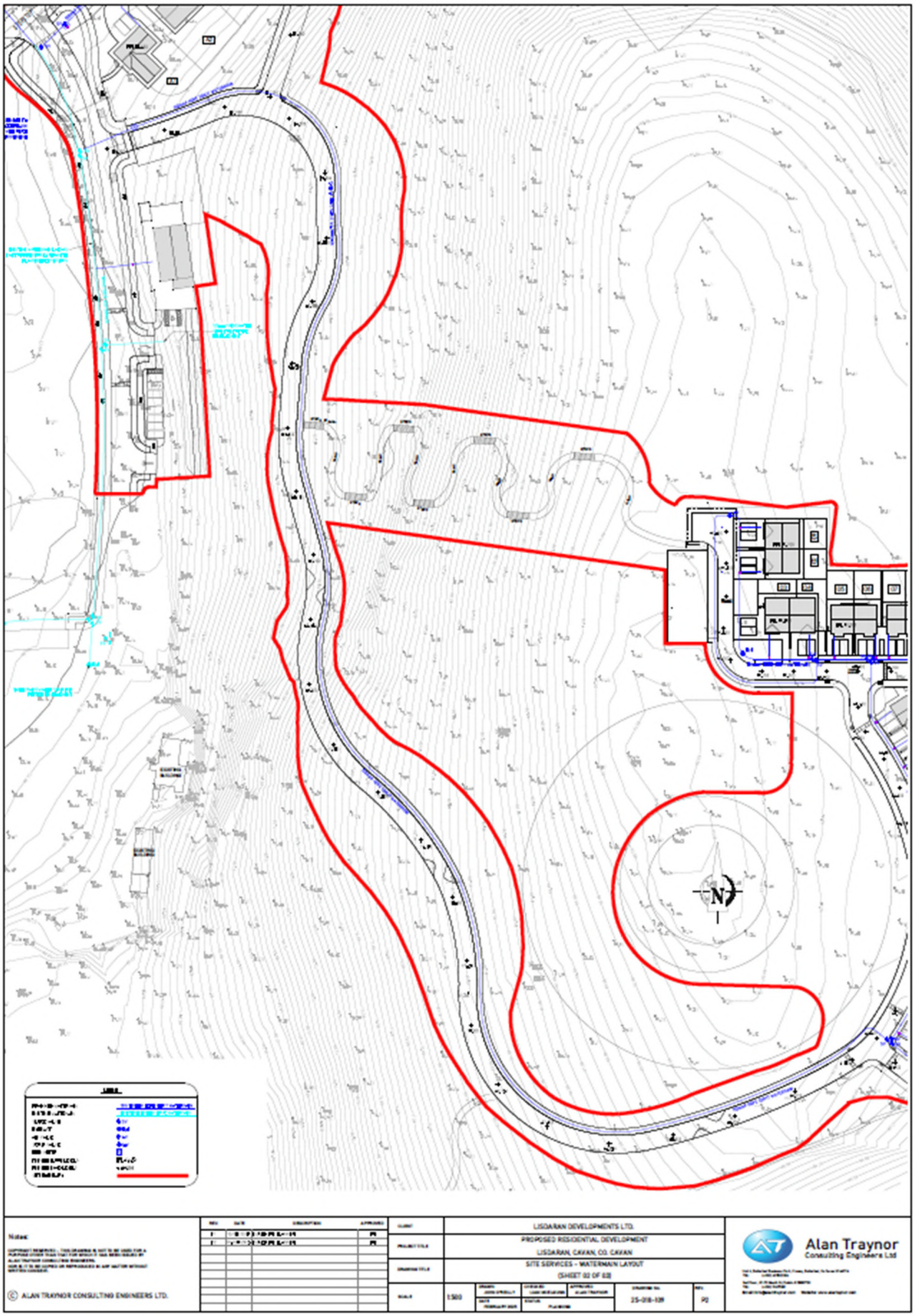
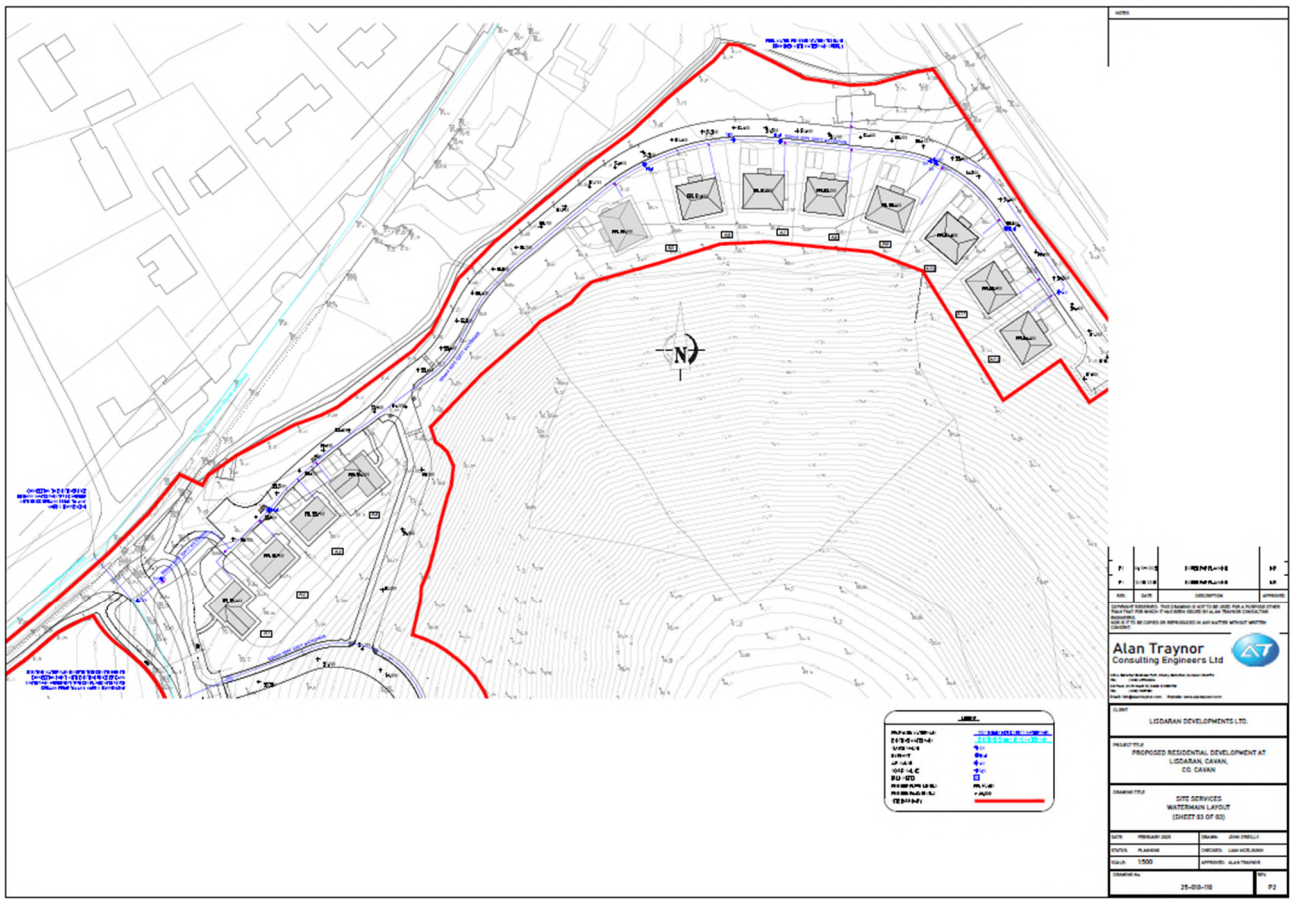


Figure 3.6: Watermain Layout 3 of 3



4.0 SITE SETTING AND RECEIVING ENVIRONMENT

4.1 Site Location and Description

The Proposed Development, measuring approximately 8.6ha, is located on the lands between L1514 Golf Link Road and L1513 Lisdarn Road, in the townland of Lisdarn, Cavan, Co. Cavan. The site is located approximately 1.72km west of the N3 Cavan Bypass Road and 919m south of the Cavan Institute. The Proposed Development site location is presented in Figure 4.1.

The site is currently a greenfield/partly brownfield, which is surrounded by residential developments, industrial buildings and scrub land. The site boundary generally consists of L1513 to the north and existing once of housing, there is a Greenway to the east which is also the entrance to Cavan Wastewater Treatment Plant. Cavan General Hospital Carpark is located to the south. There is existing once of housing to the west.

The subject site is located on the northwestern side of Cavan Town at Lisdarn, Cavan. The site's location in the context of Cavan is illustrated in Figure 4.1 below. The site is zoned as 'Proposed *Residential*', '*Residential Strategic Reserve*', '*Proposed Low Density Residential*' and 'Public and Community in the Cavan County Development Plan 2022-2028. It is also located within the settlement boundary of Cavan Town. There are existing public transport facilities in the area including the 175, bus route operated by Bus Éireann. This route facilitates Cavan, Cootehill and Monaghan Town and is located within a 5-minute walking distance from the development site along the L1514 Gold Link Road. The closet bus station (Cavan Bus Station) is a 10-minute drive from the development site, this station connects Cavan with Dublin, Donegal and Dublin Airport.

Figure 4.1: Site Location

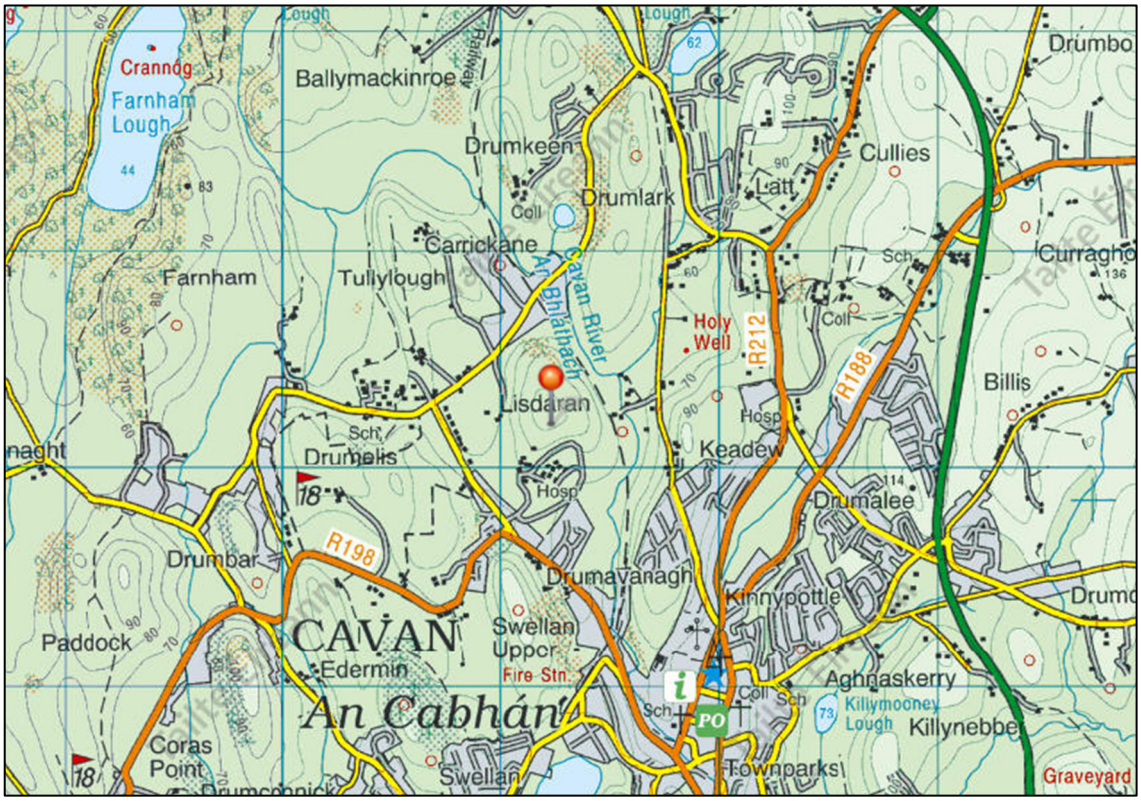


Figure 4.2: Aerial Photography of Site

4.2 Topography

There are significant level changes on the site with approximately 41.5m between the lowest part of the site, along the northern boundary of the site, and the highest part, a hill towards the south of the site. The ground level falls steeply in all directions from the crest of the hill.

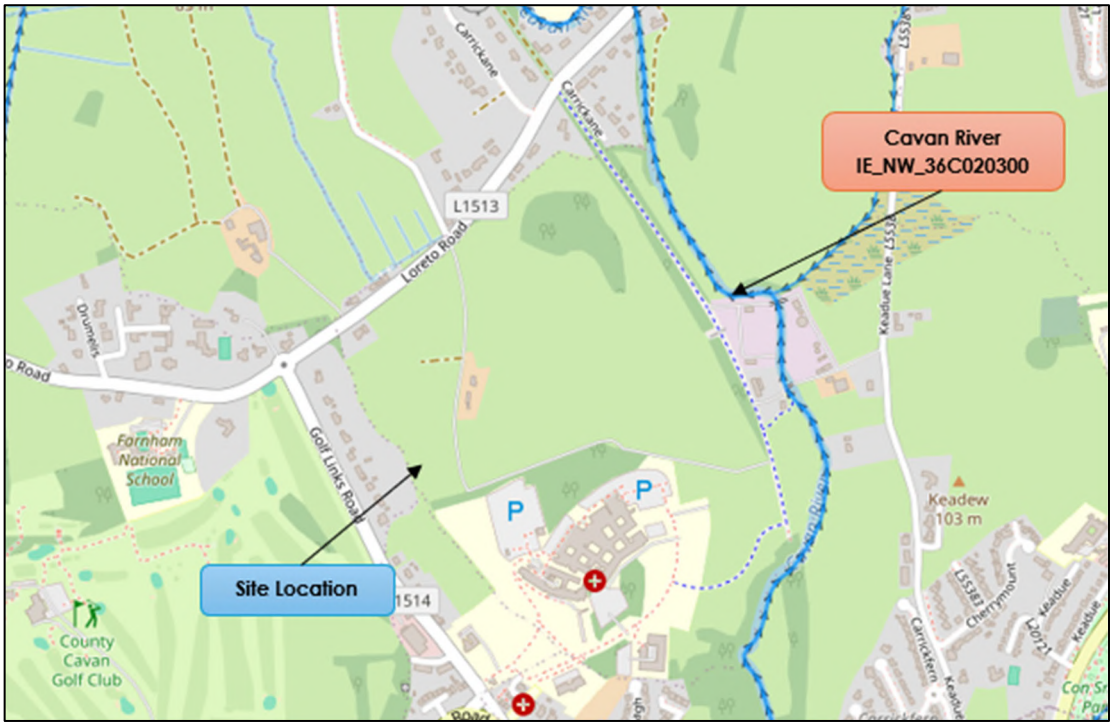
4.3 Hydrology

The site is mapped by the EPA (EPA, 2025) to be within the WFD Catchment of the Erne (36) & Hydrometric Area 36, the Cavan _SC_010 WFD Sub-catchment, the Cavan_20 (IE_NW_36C020400) and Cavan_10 (IE_NW_36C020300) WFD River Sub Basin.

The closest surface water feature to the site and Proposed Development is mapped by the EPA (EPA, 2025) as the Cavan River (WFD Name: Cavan 36; River Waterbody Code: IE_NW_36C020300) which is located to the east of the Proposed Development site. The Cavan River flows west of Cavan town in a northerly / north-westerly direction until it flows into Coalpit Lough, then Derrygid Lough and then eventually into the Annalee River.

There is a direct, surface hydrological pathway from the development site to the Cavan River.

Figure 4.3 Site Location in the Context of the Wider Surface Water Environment



According to the EPA Maps, the application site is located within the Erne Hydrometric Area 36. The EPA refer to the river that flows to the east of the site as the Cavan River (IE_NW_36C020300). The Cavan River flows north into the Coolpit Lough (36_633). The Cavan River continues to flow into the Derrygid Lough (36_580) which is connected the Annelee River (IE_NW_36A021400). From Annalee River the water flows into the River Erne (IE_NW_36E011300) where finally the water is deposited into the Erne Lough (Upper) (IE_NW_36_672).

The Environmental Protection Agency (EPA, 2025) on-line mapping presents the available water quality status information for water bodies in Ireland. The Cavan River (Cavan_010) waterbody (IE_NW_36C020300) located to the east of the site achieved "Poor" status in the latest WFD Cycle (2016-2021). The Cavan River discharges into the Coolpit Lough (36_633) and Derrygid Lough (36_580) which is also achieved as 'Poor' status in the latest round (2016-2021). Downstream the Derrygid Lough the water from the Cavan River flows in a northerly direction through two more rivers, Annelee River (IE_NW_36A021400) and River Erne (IE_NW_36E011300). The Annelee River has achieved 'Moderate' status in the latest round of WFD monitoring (2016-2021). The River Erne achieved moderate status and then falls back to 'Poor' Status just passed the L1510, it increases again to Moderate and then Good as it flows north past Belturbet Town. It continues flowing in a northerly direction until it finally flows into Lough Erne (Upper) (IE_NW_36_672) which is of Poor status, in the latest round of the WFD monitoring (2016-2021).

4.4 Hydrogeology

4.4.1 Groundwater Body

The bedrock aquifer beneath the site is mapped by the GSI (GSI, 2025) to be within the Killashandra Groundwater Body (GWB) (EU Code: IE_NW_G_062). The Killashandra GWB covers approximately 148 km² and spans areas across the hydrometric area 36 of Cavan and Leitrim. The entire GWB is dominated by drumlin topography, which have and approximately N-S alignment. Typical inter-drumlin elevations range from 50 mAOD around Lough Oughter to c.80 mAOD in the north and northwest. The drumlin peaks are generally an additional 40-60 m. The interconnected lakes of the Lough Oughter network in the central-eastern area are the predominant surface water feature in the GWB, with rivers and streams generally flowing eastwards into Lough Oughter.

Recharge in the vicinity of the site is described as being diffuse via rainfall percolating through the thinner/more permeable subsoil and via outcrops. Due to the low permeability and thickness of some of the subsoil (thicker tills and peat), and the aquifers in the GWB, a high proportion of the effective rainfall will discharge to the streams. In addition, the steep drumlin slopes will promote surface runoff. The relatively high stream density is likely to be influenced by the lower permeability rocks as well as the subsoil.

The GSI (Killashandra) identifies that the majority of groundwater flow direction in the aquifer are expected to follow topography – overall in a easterly direction. Groundwater flow in the Killashandra GWB are likely to be short (30-300 m) with groundwater discharging rapidly to nearby lakes, streams and small springs. Locally, groundwater flow within the vicinity of the site is considered likely to be to the northwest and north towards the Cavan River and Coolpit & Derrygid Lough.

Figure 4.4 Groundwater Body Map (Killashandra Groundwater Body (GWB) (EU Code: IE_NW_G_062)

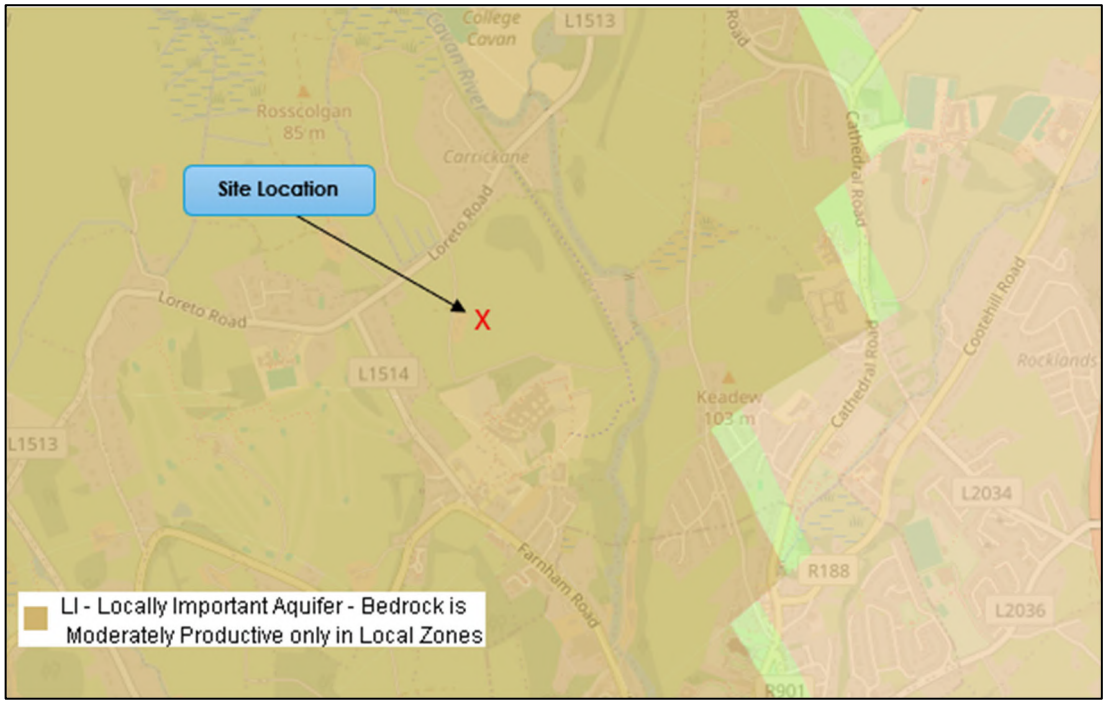
4.4.2 Aquifer Classification

The GSI provides a methodology for aquifer classification based on resource value (regionally important, locally important, and poor) and vulnerability (extreme, high, moderate, or low). Resource value refers to the scale and production potential of the aquifer whilst vulnerability refers to the ease with which groundwater may be contaminated by human activities (vulnerability classification primarily based on the permeability and thickness of subsoils).

The GSI has classified the bedrock aquifer of the Tournaisian Limestone in the area and within the surrounding areas as a Locally Important Aquifer which is moderately productive only in local zones (Ll).

As documented by the GSI a description of Irish Aquifer Categories, Locally Important aquifers are capable of supplying locally important abstractions (e.g. smaller public water supplies, group schemes), or 'good' yields (100-400 m3/d). Groundwater flow occurs predominantly through fractures, fissures, and joints. It is noted that there is no gravel aquifers mapped within a 2.0km radius of the site. The bedrock aquifer is presented in Figure 4-5.

Figure 4.5 Locally Important Aquifer - (LI)



4.4.3 Groundwater Vulnerability

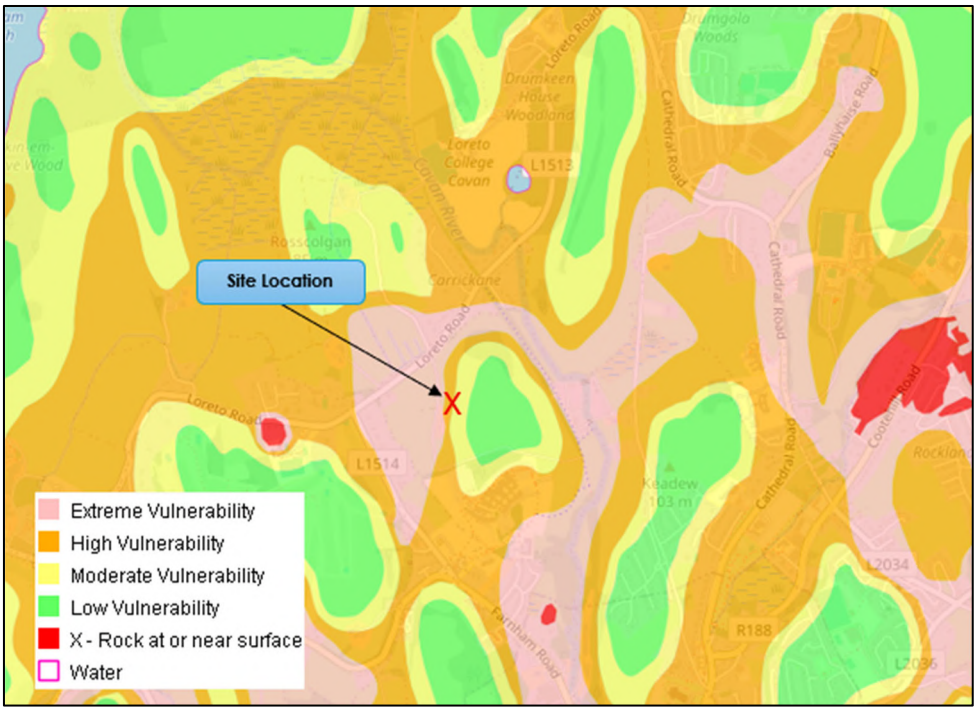
The vulnerability categories, and methods for determination, are presented in the Groundwater Protection Schemes publication (DEHLG/EPA/GSI, 1999) and summarised in Table 4.1. The publications state that 'as all groundwater is hydrologically connected to the land surface, it is the effectiveness of this connection that determines the relative vulnerability to contamination. Groundwater that readily and quickly receives water (and contaminants) from the land surface is considered to be more vulnerable than groundwater that receives water (and contaminants) more slowly and in lower quantities. The travel time, attenuation capacity and quantity of contaminants are a function of the following natural geological and hydrogeological attributes of any area.'

Table 4-1. Vulnerability Mapping Criteria

Hydrological Requirements					
Subsoil Thickness	**Diffuse Recharge**			**Point Recharge**	**Unsaturated Zone**
	Subsoil Permeability & Type			**(Swallow holes, losing streams)**	**(sand & gravel aquifer only)**
	High Permeability (Sand & Gravel)	**Moderate permeability (sandy subsoil)**	**Low permeability (clayey subsoil. Clay, Peat)**	**(Swallow holes, losing streams)**	**(sand & gravel aquifers only)**
0-3m	Extreme	Extreme	Extreme	Extreme (30m radius)	Extreme
3-5m	High	High	High	N/A	High
5-10m	High	High	Moderate	N/A	High
>10m	High	Moderate	Low	N/A	High
Notes: (i) N/A= not applicable (ii) Permeability classification relate to the material characteristics as described by the subsoil description and classification method.					

The GSI (GSI, 2025) has assigned a groundwater vulnerability rating as Low → Moderate→High for the groundwater beneath the majority of the Site. It is difficult to assign the bedrock based on the varying vulnerability.

Figure 4.6 Groundwater Vulnerability

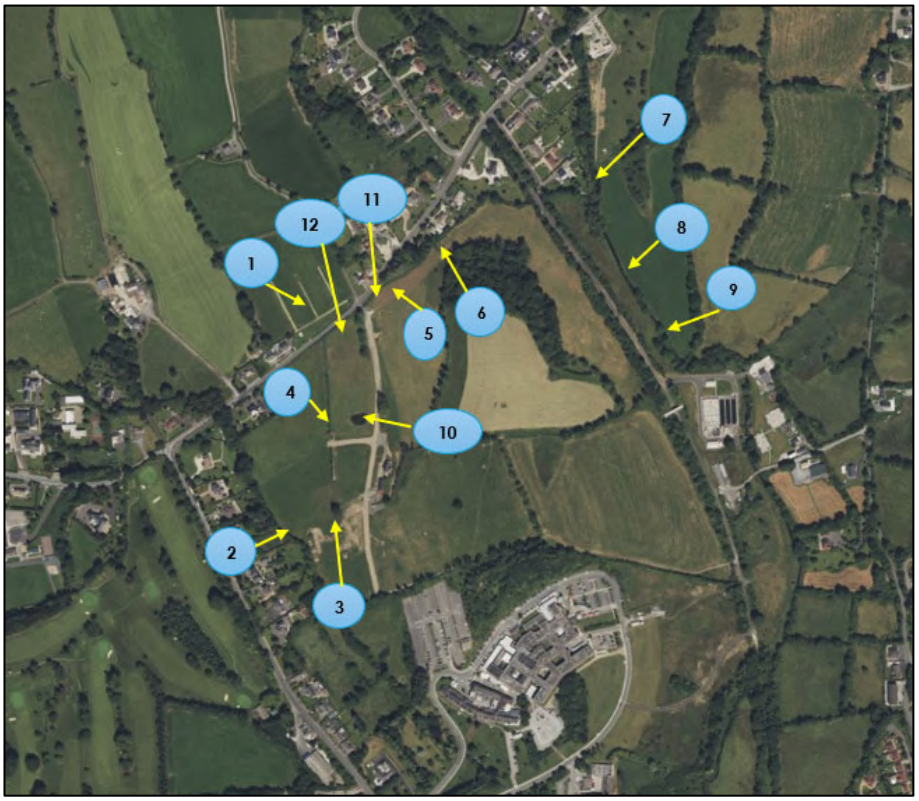


4.5 Site Walkover and Water Sampling

The site will be visited in September 2025 and the river will be walked and sampled and taken at different locations along the Cavan River present a snapshot of the overall quality of the river in terms of pH and Ammonia.

In October 2023 a Small Stream Risk Score Assessment was complete by Uisce Eireann on the Cavan River upstream and downstream of the Cavan Town wastewater treatment plant (WWTP).

Figure 4.7 Water Locations 16TH September 2025.



4.5.1 Photographs – Surrounding waterbody Points (16th September 2025)

Sample Location No. 1

Sample Location No. 2

Sample Location No. 3

Sample Location No. 4

Sample Location No. 5

Sample Location No. 6

Sample Location No. 7

Sample Location No. 8

Sample Location No. 9

Sample Location No. 10

Sample Location No. 11

Sample Location No. 12

Table 4.2 Locations of sites sampled upstream and downstream of Cavan Town WWTP

Location	Cavan Town WWTP Upstream	Cavan Town WWTP Downstream
EPA Code	RS36C020200	RS36C020300
Station	Bridge next to WWTP	Br SSE Loretto College
River	Cavan	Cavan
Easting	241530	241290
Northing	306426	306914

Table 4.3 Physio Chemical Sampling Results from the Cavan River by Uisce Eireann in 2023

Monitoring Station	DO% Saturation	DO% mg/l	Temp	Conductivity	pH
Upstream Cavan WWTP	87.4	9.54	11.3	272	7.13
Downstream Cavan WWTP	87.3	9.31	12.3	301	7.30

From the water samples sampled on the October 2023, Water chemistry data indicate no significant difference on Cavan upstream and downstream of the site values as each parameter was comparable.

Table 4.4 Water Sampling Results from the River Groody

Monitoring Station	DO Levels (mg/l	pH (pH Units)
Indicative Quality Threshold	-	6 – 9 (Good Water Quality)
1	9.75	8.50
2	9.94	8.51
3	9.62	8.54
4	9.61	8.50
5	9.72	8.45
6	9.49	8.41
7	9.45	8.38
8	9.47	8.36
9	9.49	8.18
10	9.24	8.65
11	9.82	8.16
12	9.95	8.27
13	9.72	8.21
14	9.83	8.43

4.6 Flood Risk

According to the Flood Risk Assessment report carried out by Traynor Environmental Ltd the results concluded that:

- Will not be at risk of flooding.
- Will not obstruct or impede important flow paths.

- Will not result in residual risks to the area and/or development that cannot be managed to an acceptable level.
- The access road is not at risk of flooding.

4.7 Water Use and Source Protection

A review of the GSI wells and springs database (GSI, 2025) was conducted to identify registered wells and groundwater sources. There are no regional groundwater supplies or Source Protection Areas (SPA) identified within this area. The Cavan River flows into Lough Oughter and Associated Loughs SAC (000007) and the Lough Oughter Complex SPA (004049) 1.4km and 1.69km northwest respectively.

4.8 Water Quality

4.8.1 Published Regional Groundwater Quality

The EPA groundwater monitoring data (EPA, 2025) was reviewed and there are no groundwater quality monitoring stations within a 2km radius of the site or that are hydraulically connected to the site.

4.8.2 Published Regional Surface Water Quality

The EPA surface water quality monitoring database (EPA, 2025) was consulted. A summary of the most recent published EPA water quality monitoring data for waterbodies which have a potential hydraulic connection to the site is presented in Table 4.3.

4.8.3 Receiving Water Quality – Cavan Wastewater Treatment Plant (WWTP)

Foul water from the site will be discharged via the Cavan WWTP to the Cavan Wastewater Treatment Plant. The WWTP is operated under relevant statuary approvals. The most recent available Annual Environmental Report (AER) for the Cavan WWTP is 2023 (UE,2023).

The AER identified that the final effluent was compliant with the Emission Limit Values (ELV) specified in the discharge license (D0020-01). The parameters met the ELV's included biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), total nitrogen and total phosphorus.

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Table 4.5 Receiving Water Quality – Cavan Wastewater Treatment Plant (WWTP) AER 2023.

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	9	938	414
Suspended Solids	9	772	128
Total Nitrogen	9	97	45
BOD, 5 Days within Inhibition (Carbonaceo mg/l)	9	348	142
Ammonia-Total (as N) mg/l	9	57	28
Total Phosphorus (as P) mg/l	9	22	5.20
Hydraulic Capacity	N/A	10255	6176

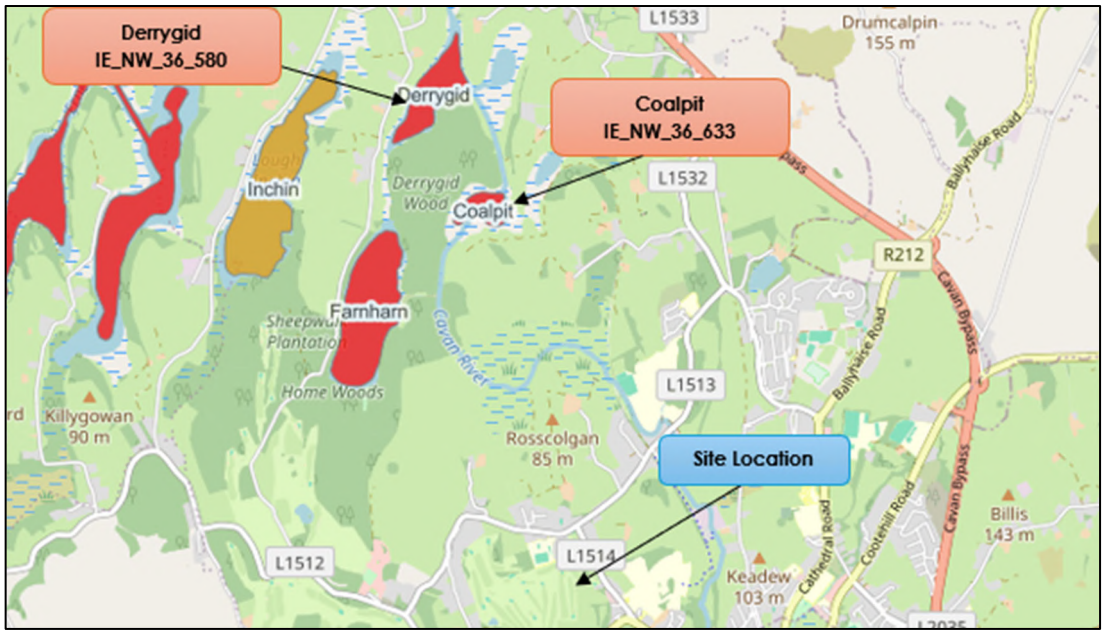
4.9 Water Framework Directive

The WFD status for river, lake and groundwater water bodies that have a potential hydraulic connection to the subject site as recorded by the EPA (EPA, 2025) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 4.5.

Table 4.6. Water Framework Directive Status

Waterbody Name	Waterbody EU Code	Location from Site	Distance from Site (km)	WFD Status (2016-2021)	WFD Risk
Surface water Bodies					
Cavan River	IE_NW_36C020300	East	0.1km	Poor	At Risk
Coolpit Lough	IE_NW_36_633	North	1.88km	Poor	At Risk
Derrygid Lough	IE_NW_36_580	North	2.73km	Poor	At Risk
Annalee River	IE_NW_36A021400	North	4.31km	Moderate	At Risk
River Erne	IE_NW_36E011300	North	5.18km	Poor/Moderate/Good	At Risk
Erne Lough (Upper)	IE_NW_36_672	North	16.57km	Poor	At Risk
Groundwater Bodies					
Killashandra Groundwater Body	IE_NW_G_062	N/A	N/A	Good	Not At Risk

Figure 4.8 Lakes that have potential hydrological activity to the subject site



4.9.1 Nature Conservation

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the

designation of Special Protection Areas (SPAs). SACs and SPAs are collectively known as Natura 2000 or European sites (referred to hereafter as Natura 2000 site). National Heritage Areas (NHAs) are designations under the Wildlife Acts to protect habitats, species, or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with SAC and/or SPA Sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs), they are offered protection in the meantime under planning policy which normally requires that planning authorities give recognition to their ecological value.

Table 4.7 European Sites within 15km of the development site (EPA, 2025)

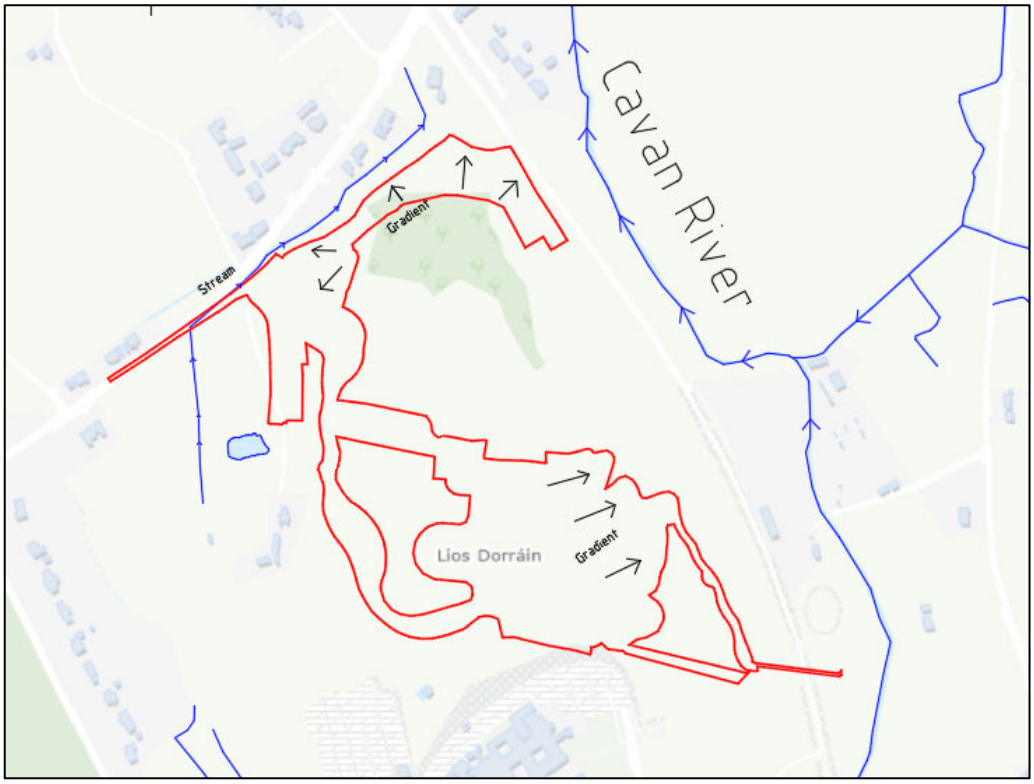
European Site	Distance from Proposed Development	Screening Summary
Lough Oughter and Associated Loughs SAC (000007)	1.4km north	There are direct pathways to the Cavan River via surface water and wastewater respectively through Coolpit and Derrygid Lough and so on to the Lough Oughter SAC/SPA. However these are at a relatedly fair distance from the site.
Lough Oughter Complex SPA (004049)	1.69km north following water courses	

Figure 4.9 European Sites within 15km of the development site (EPA, 2025)

These are the only two Natura 2000 sites to fall within the zone of influence of this project as there are no pathways to any other such areas. There are no direct or indirect, terrestrial or hydrological pathways to any other Natura 2000 site. The Natura 2000 sites are summarised in Table 4-5.

Flynn Furey Environmental Consultants Ltd was commissioned by the Applicant to prepare an Appropriate Assessment (AA) Screening Report in relation to the Proposed Development.

Figure 4.10 River Flow Directions & Site Gradients



Accordingly, an AA Screening Report (Flynn Furey Environmental Consultants Ltd) was prepared for the Proposed Development and the conclusion is as follows:

Conclusion of AA Screening Report

The proposed project was screened for AA and this has concluded that significant effects are not likely to arise, either alone or in combination with other plans or projects to the Natura 2000 network. No mitigation measures were relied upon to make this assessment. This conclusion is based upon the best available scientific evidence.

4.9.2 Drinking Water

The river drinking water protected areas (DWPA) are represented by the full extent of the Water Framework Directive (WFD) river waterbodies from which there is a known qualifying abstraction of water for human consumption as defined under Article 7 of the WFD. There are no surface water drinking water sources, under Article 7 of the Water Framework Directive, identified by the EPA (EPA, 2025) within a 2km radius or hydraulically downstream of the site.

4.9.3 Shellfish Areas

Although the Shellfish Waters Directive (SWD) has been repealed, areas used for the production of shellfish that were designated under the SWD, are protected under the WFD as 'areas designated for the protection of economically significant aquatic species.

The requirement from a WFD perspective is to ensure that water quality does not impact on the quality of shellfish produced for human consumption. In Ireland, 64 areas have been designated as shellfish waters (S.I. No. 268 of 2006, S.I. No. 55 of 2009, S.I. 464 of 2009). There is no designated Shellfish Area location near the site.

4.9.4 Nutrient Sensitive Areas

EU member states are required under the Urban Wastewater Treatment Directive (91/271/EEC) to identify nutrient-sensitive areas. These have been defined as "natural freshwater lakes, other freshwater bodies, estuaries and coastal waters which are found to be eutrophic or which in the near future may become eutrophic if protective action is not taken." The EPA Maps have identified that Cavan River is a nutrient sensitive area and therefore protective measures need to be adhered to at all

times.

4.9.5 Bathing Waters

Bathing waters are designated under Regulation 5 of Directive 2006/7/EC. Designated Bathing Waters exist under S.I. No. 79/2008 and S.I. No. 351/2011 Bathing Water Quality (Amendment) Regulations 2011. EC Bathing Water Profiles - Best Practice and Guidance 2009.

The closest designated Bathing Water location is Keeldra Lough IESHBWL26_624_0100 located proximately 60 km downstream of the site. This site has a bathing water quality status of Excellent.

4.9.6 Water Action Plan (WAP) 2024-2027 Programme of Measures

The Water Action Plan sets out the actions planned for implementation between now and the end of 2027. With only 52% of rivers; 48% of lakes and 63% of coastal waterbodies currently reaching the required water quality standard set by EU and national law, immediate and comprehensive action is essential to succeed in this Plan and achieve improvements. The Water Action Plan (WAP) provides information on the status and planned actions for various water bodies in Ireland including the River Shannon. These entries offer insights into the specific measures being considered or implemented to improve the ecological status of this watercourses. Agriculture is the top significant pressure impacting 60% of the 35 At Risk waterbodies within the Lower Shannon and Mulkear Catchment, followed by 26% impacted by Hydromorphological Pressures and 11% by Forestry.

5.0 WFD ASSESSMENT

5.1 Screening of Potential Effects to Waterbody Status

5.1.1 Surface Waterbodies

Potential effects of the proposed development on the WFD surface waterbody status both during construction and operation have been considered. Immediate downstream waterbody the Cavan River IE_NW_36C020300 have been screened in due to its proximity to the site. The upstream element of the Cavan River and its adjoining lakes has been screened out for further assessment as it is upstream of site and Proposed Development and there are no proposed construction or operational activities that could propagate upstream and adversely affect the waterbody. The River Erne and downstream waterbodies have been excluded based on their significant distance from the site and Proposed Development. The Proposed Development is anticipated to have no potential to cause a deterioration in the status of these waterbodies or hinder the future attainment of good surface water quality objectives.

There are direct, surface hydrological pathways from the development site to the Cavan River however the distance is relatively far to Coolpit Lough and Derrygid Lough so both lakes have been screened out. There are indirect pathways to the Cavan River via surface water and wastewater downstream.

5.1.2 Groundwater bodies

The underlying Killashandra GWB has been screened in due to its proximity to the works. No other groundwater bodies are seen to be sufficiently close or hydraulicly connected to have their status impacted as a result of the Proposed Development.

5.2 Risk Evaluation of Source-Pathway-Receptor Linkages

A risk-based assessment of the Source-Pathway-Receptor Model and the potential risk linkages associated with the Construction Phase and Operational Phase of the Proposed Development was undertaken. The results were evaluated to determine if the Proposed Development could potentially impact any potential receptors associated with the Site.

Table 5-1. Conceptual Site Model (Source- Pathway Receptor) and Risk Evaluation

Source	Pathway	Receptor	Risk Evaluation
Construction Phase			
Discharge of Surface Water Runoff (i.e., Rainwater)	Discharge to surface water bodies	Cavan River Killashandra GWB Protected Sites	**Low to Moderate Risk (worst-case unmitigated scenario)** During groundwork and excavations, the groundwater vulnerability will be increased and there will be a more direct pathway for surface contaminants to enter the underlying bedrock aquifer and migrate towards downgradient receiving surface water bodies. Soil removal during the construction of the project will be an unavoidable consequence of the development. However, based on the relatively limited recharge potential, it is considered that there is some protection of groundwater from migration of dissolved phase contaminants to the aquifer which will likely be confined to the immediate vicinity of the site. In a worst-case scenario during the construction phase (e.g., accidental release of fuels, chemicals or oils through the failure of secondary containment or a materials handling accident) in the absence of any best practice construction measures there is potential for discharge of contaminants to groundwater and downgradient receiving surface water receptors (i.e., Cavan River) Taking account of the distance downstream, the attenuation/dilution which will occur and the lack of hydrological connectivity to the site, it is considered that there is an indirect negligible risk to the downstream receiving waterbodies. The limited nature of the construction works means any impacts during construction are likely to be confined to the immediate receiving waterbodies
Foul Water Discharge	Discharge to Mains Sewer	Receiving Surface Waterbodies (i.e., Cavan River Protected Sites	**Low Risk** Foul water during the construction phase of the Proposed Development will be either removed by tankers in accordance with waste management legislation and managed accordingly or discharged under consent to the mains UE drainage network and ultimately discharged to the receiving surface waterbodies. Foul water from the site will only be discharged to the UE network under the appropriate consents from the UE and therefore, the Proposed Development will not cause a potential impact on the WFD status of any receiving waterbody or protected sites.
Flooding of Site During Construction	Mobilisation of Construction Materials and Sediments	Receiving Surface Waterbodies Cavan River	**Low Risk** The Flood Risk Assessment carried out by Traynor Environmental Ltd confirms that the site is not at risk of flooding.
Operational Phase			
Discharge of	Discharge to	Receiving Surface	**Low Risk**

Surface Water Runoff	existing Surface Water Drainage Network	Waterbodies Cavan River Protected Sites	Based on the design of the Proposed Development, there is limited potential sources of contamination during the Operational Phase and there will be limited potential for discharge of contaminants associated with surface water runoff. Appropriate drainage design, as stated in the Civil Engineering Report, will prevent any potential impact to the receiving water quality of downstream waterbodies (i.e., Cavan River (IE_NW_36C020300) and protected sites.
Discharge of Contaminants to Ground / Groundwater	Vertical and Lateral Groundwater Migration in Bedrock Aquifer	Killashandra GWB Receiving Surface Waterbodies (i.e., Protected Sites	**No / Low Risk** Based on the design of the Proposed Development there is limited potential sources of contaminants to ground/groundwater. contamination during the Operational Phase and there will be limited potential for discharge of contaminants associated with surface water runoff to ground via unpaved, permeable areas due to the low infiltration potential at the site. Ongoing regular operational monitoring and maintenance of drainage and the protected measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no potential impacts to the receiving water quality of the Killashandra GWB and downstream water bodies (i.e., the Cavan River) and protected sites.
Foul Water Treatment and Discharge	Discharge to Mains Sewer	Receiving Surface Waterbodies (i.e., Cavan River). Protected Sites	**Low Risk** Foul water during the operational phase of the Proposed Development will be discharged to the UE Infrastructure east of the site and ultimately discharged to the Cavan River via the Cavan WWTP Foul water from the Site will only be discharged to the UE network under the appropriate consents from UE, and therefore, the Proposed Development will not have a potential impact on the WFD status of any receiving waterbody or protected sites.

Table 5.2. Summary of WFD Status for Without Standard construction measures

WFD Waterbody I.D. (Segment Code)	WFD Status (2016-2021)	Assessed Potential Status Change without standard construction measures.
Construction Phase		
Cavan River (east of site)	Poor	Poor
Killashandra GWB	Good	Moderate
Operational Phase		
Cavan River (east of site)	Poor	Poor
Killashandra GWB	Good	Moderate

6.0 DESIGN AVOIDANCE AND STANDARD CONSTRUCTION MEASURES

The assessment of the potential impacts on the receiving environment takes account of the embedded design avoidance measures and standard good practice construction methods to reduce the potential for impacts to the water environment. These are outlined below together with additional specific measures based on the findings of this assessment.

6.1 Construction Phase

During the construction phase, all works will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) submitted with the planning application. The CEMP considers the proposed standard construction measures. An Natura Impact Assessment will also be submitted with the planning application. Following appointment, the contractor will be required to further develop the CEMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to the ground with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001).

The CEMP will be implemented for the duration of the construction phase, covering construction and waste management activities that will take place during the construction phase of the Proposed Development. Standard construction measures will be adopted as part of the construction works for the Proposed Development. These measures will address the main activities of potential impact which include:

- Control and Management of surface water runoff.
- Control and management of shallow groundwater during excavation and dewatering (if required).
- Management and control of soil and materials.
- Appropriate fuel and chemical handling, transport, and storage.
- Management of accidental release of contaminants at the site.

Surface water runoff management will be required to prevent runoff entering excavations during construction. Surface water will require diversion around the open excavations using standard temporary drainage methods to ensure that surface water is effectively conveyed around works areas.

Managing silt and sediment at the source is the most effective method to prevent siltation of watercourses. Silt fencing will be used to isolate the Site from receiving surface water bodies, and to isolate designated surface water percolation areas. Vegetation buffers will be retained, measured, and marked out wherever possible in advance of works commencing. Silt fencing will then be installed along all watercourses including drains within the site, in advance of works commencing. Silt fencing is also required around the following areas prior to works commencing stockpiles, percolation areas associated with settlement tanks, and the water management system onsite.

Every precaution will be taken to ensure that the installation of the silt fencing itself does not result in emissions of silt into watercourses. To this end, sequential excavation, and reinstatement of turves as the silt fence is trenched will be implemented. Silt fencing will be placed as close as possible to the construction works while allowing for sufficient space for maintenance and clearance of silt and debris. Regular inspections of the silt fences will be undertaken to ensure they are functioning as intended, and no damage has occurred (e.g., holes, blown over in wind). The silt fencing will be amended as required and will remain in place for the duration of works and until exposed soils have revegetated.

Any drains within the site will be blocked or treated to prevent silt entering downstream watercourses. This will be accomplished with either dams, silt curtains in series downstream of the works, straw bales firmly posted to exit points to catch silt before leaving the site, or via dewatering bags on outflow pipes. These measures will be in place prior to works beginning.

Where water must be pumped from the excavations during the construction phase of the Proposed Development, water will be discharged by the contractor, following appropriate treatment (e.g., settlement or hydrocarbon interceptor) to sewer in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from LCC under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water. The Contractor will be required to provide a site-specific

dewatering plan, clearly setting out proposed excavation methodology, estimated dewatering rates, details of the proposed treatment system, and discharge location. Under no circumstances will any untreated wastewater generated onsite (from washing equipment, road sweeping etc.) be released to ground or to drains. Where required, all public sewers will be protected to ensure that any untreated wastewater generated onsite enters the public sewers.

Standard foundation types will be used for the proposed residential buildings. The process of pilling will not occur on site and therefore bedrock level will not be breached by the proposal.

Pumping of concrete will be monitored to ensure that there is no accidental discharge. All work will be carried out in the dry and effectively isolated from any onsite drains. A suitable risk assessment for wet concrete will be completed prior to works being carried out. There will be no mixer washings or excess concrete discharged onsite. All excess concrete is to be removed from Site and all washout of concrete chutes to be captured in a tank which shall be removed offsite for disposal at an authorised waste facility.

Fueling and lubrication of equipment will be carried out in a designated area of the Site away from any watercourses and drains (where it is not possible to carry out such activities offsite). Any diesel, fuel or hydraulic oils stored onsite will be stored in designated areas. These areas will be bunded and located away from surface water drainage and features. Bunds will have regard to Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or
- 25% of the total volume of substance that could be stored within the bunded area.

Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Proposed Development Site. Only emergency breakdown maintenance will be carried out on-site. Drip trays and spill kits will be available on-site to ensure that any spills from vehicles are contained and removed off-site.

Spill kits will be made available onsite and identified with signage for use in the event of an environmental spill or leak. A spill kit will be kept in close proximity to the fuel storage area for use in the event of any incident during refuelling or maintenance works. Heavy machinery used on the Site will also be equipped with its own spill kit.
There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times. Emergency procedures will be developed by the appointed contractor in advance of works commencing and spillage kits will be available on-site including in vehicles operating on-site.

Construction staff will be familiar with emergency procedures in the event of accidental fuel spillages. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements. All below ground drainage infrastructure will be constructed in accordance with current UE requirements to ensure that there are no potential impacts to groundwater quality.

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the Construction Phase of the Proposed Development will either be discharged to temporary holding tank(s), the contents of which will periodically be tankered off site to a licensed facility or discharged to public sewer in accordance with the necessary temporary discharge licences issued by UE.

6.2 Operational Phase

Based on the design of the Proposed Development there is limited potential sources of contamination during the

Operational Phase and there will be limited potential for discharge of contaminants associated with surface water runoff to ground via unpaved, permeable areas due to the low infiltration potential at the site. Surface water will be managed in accordance with the principles and objectives outlined in the engineers services report.

Ongoing regular operational monitoring and maintenance of drainage measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no impacts on water quality and quantity (flow regime) during the Operational Phase of the Proposed Development.

Foul water during the operational phase of the Proposed Development will ultimately discharge via the Cavan WWTP to the Cavan River under the appropriate consents from UE. As mentioned above, the Cavan WWTP, which is operated in accordance with relevant statutory approvals issued by UE, is currently undergoing upgrade works to improve the final effluent discharge of several parameters from the facility including BOD, suspended solids, ammonia, DIN and MRP.

Foul water from the Site will only be discharged to the UE network under the appropriate consents from UE, and therefore, the proposed development will not cause a potential impact on the WFD status of any receiving waterbody or protected sites.

6.3 Residual Risk to Waterbody Status

The effect of the design avoidance and standard construction measures have been assessed and summarised in Table 6.1. In all cases the proposed measures are sufficient to meet WFD objectives.

Table 6.1. Summary of WFD Status for With Standard construction measures

WFD Waterbody I.D.	WFD Status (2016-2021)	Assessed Potential Status Change with standard construction measures.
Construction Phase		
Cavan River	Poor	Moderate
Killashandra GWB	Good	Good
Operational Phase		
Cavan River	Poor	Moderate
Killashandra GWB	Good	Good

6.4 Potential Impact on Protected Areas Objectives

Based on the findings of this assessment, it is considered that in applying the precautionary principle and assessing a worst-case scenario there is no identified potential negative impact associated with the Proposed Development on the Protected Areas individually or in- combination.

6.5 Potential Impact on Water Action Plan Programme of Measures

Based on the findings of this assessment, it is considered that in applying the precautionary principle and assessing a worst-case scenario the Proposed Development will have no adverse impacts on the implementation of the WAP Programme of Measures. The change of use from agricultural to residential land may reduce agricultural pressures. Adverse impacts associated with historic urbanisation will be negated through the implementation of treatment of foul effluent from the site.

7.0 CONCLUSIONS

A WFD assessment has been undertaken for the proposed development. The assessment was undertaken in a staged approach to ensure that those components of the development and the associated activities are assessed in the context of the quality elements that contribute to overall WFD status.

The key focus of the assessment was to ensure that the construction and operation of the development does not result in a deterioration in the current WFD status of the water bodies within the WFD study area, based on the 2021 baseline as reported by the EPA based on the 2016-2021 WFD monitoring programme, and also to ensure that the development does not compromise the achievement of the WFD objectives for the improvement in the overall status of these water bodies.

The scoping stage of the WFD compliance assessment has concluded that there were a number of components and activities associated with the development that represented a risk to the WFD status and objectives and therefore were scoped into the assessment. e.g. soil removal during the construction of the development will be an unavoidable consequence of the development. The relevant quality elements contributing to the overall status were considered and how each potential impact could affect these.

The potential impact of the different components of the proposed development were assessed in the context of the environmental objectives for the water bodies affected. Design avoidance measures included within the development design and the application of standard construction measures will ensure that there will be no significance effects on the WFD status of the water bodies within the study area. The overall conclusion of the WFD compliance assessment is that there will be no risk of deterioration in status from the development nor will it prevent of the achievement of the objectives for the relevant water bodies including the protected area objectives.

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