wingspan ecology

Natura Impact Statement

Proposed Residential Development

'Bridgegate', Drogheda Road, Ardee, Co. Louth

Mulladrillen Limited

February 2026

Report prepared by:

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Client:

Mulladrillen Limited

Project:

Proposed Residential Development, 'Bridgegate', Drogheda Road, Ardee, Co. Louth

Issue and Revision Record

Revision	Date	Author	Signature	Description
F1	2026.02.03	D. Woods		Final for planning

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Figures

1 Introduction

1.1 Overview

Wingspan Ecology were commissioned by Mulladrillen Limited, the applicant, to provide the information necessary to allow the competent authority to conduct an Article 6(3) Screening for Appropriate Assessment in regards to the proposed residential development at 'Bridgegate', Drogheda Road, Ardee, Co. Louth.

The proposed development broadly comprises an amendment to part of the previously permitted Strategic Housing Development at Bridgegate, Drogheda Road, Ardee (ABP Ref. 313083-22) involving the replacement of 48 approved duplex units with 40 two-storey houses, resulting in a reduction of eight units across the overall scheme (from 272 to 264 dwellings).

The proposed development site is situated on the outskirts of Ardee in County Louth, approx. 800m to the south-east of the town centre, in the townland of Rathgory and Mulladrillen. The site currently comprises two former agricultural fields left unmanaged and used for soil storage, with a stream (a tributary of the Rathgory Stream) bisecting the site. The site is bounded to the north and north-east by the existing De la Salle Crescent and Moorehall residential developments, to the west by the existing Cherrybrook residential estate and by lands currently under development (Planning ref. 10/174), and on all other sides by agricultural lands.

Plate 1-1. Proposed development site.

This report contains information for the competent authority, in this case Louth County Council, to undertake a screening exercise for appropriate assessment in relation to the proposed development. The purpose of this report is to assess the potential for significant effects on relevant Natura 2000 sites (hereafter referred to as "European sites") from the proposed development in the context of the qualifying features and conservation objectives of such sites.

1.2 Statement of Competency

This report has been prepared by Donnacha Woods (M.Sc., B.Sc.). Donnacha has over 10 years' experience working as an ecologist across both private consultancy and conservation. Donnacha holds a B.Sc. in Zoology from University College Dublin and a M.Sc. in Biodiversity and Conservation from Trinity College. He has worked on a wide range of projects both in Ireland and abroad and has significant experience in appropriate assessment in Ireland. He also holds a Diploma in Environmental Impact Assessments from Portobello Institute and a Certificate in Wild Plant Identification from IT Sligo.

1.3 Legislative Context

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (hereafter referred to as "The Habitats Directive") provides a legal protection to both habitats and species of European Community interest. Articles 3 to 9 of the Directive give the legislative means to provide this protection via the designation and conservation of an EU-wide network of sites. This network of sites is composed of Special Areas of Conservation (SACs), designated under the Habitats Directive, and Special Protection Areas (SPAs), designated under the Conservation of Wild Birds Directive 79/409/ECC (hereafter referred to as "The Birds Directive"), which together form the Natura 2000 network of protected sites.

Articles 6(3) and 6(4) of the Habitats Directive layout the decision-making process for any projects or plans likely to affect European sites. Article 6(3) states:

"*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site, in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*."

1.4 Management of European Sites

The proposed project comprises a residential development and is not connected to, or necessary for, the management of any European site.

2 Methodology

2.1 Legislation and Guidance

The following guidance documents were consulted and followed in the completion of this report:

- Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2021);
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (Department of Environment, Heritage and Local Government, 2010);
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPW 1/10 & PSSP 2/10;
- Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2001); and
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (European Commission, 2018).

2.2 Stage 1 Screening Methodology

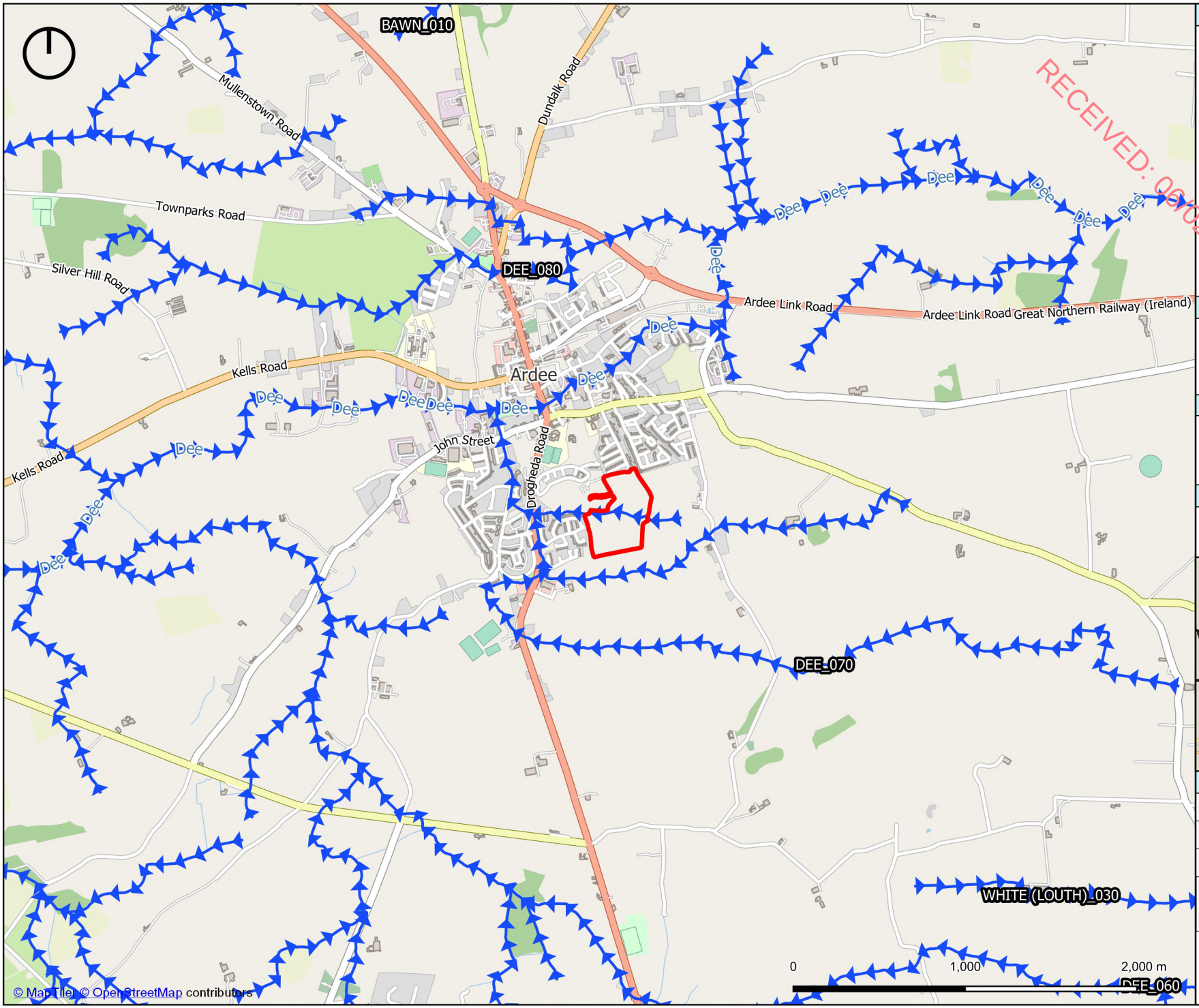
The methodology utilised in this report follows the above guidance. This includes adherence to the following steps:

- Establish whether the plan is directly connected with or necessary for the management of a European site;
- Description of the plan or project and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the European site;
- Identification of European sites potentially affected;
- Identification and description of potential effects on the European site;
- Assessment of the likely significance of the impacts identified on the European site; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

2.3 Desktop Study

A review of available relevant information was conducted in order to reach the conclusions outlined in this report. This review, completed in January 2026, relied on the following information sources:

- Information on European sites and their qualifying features and conservation objectives, available from the National Parks and Wildlife Service (NPWS) at www.npws.ie;
- Information on waterbodies, water quality data and catchment areas available from the Environmental Protection Agency (EPA) at www.epa.ie;
- Information on geology, soils and hydrogeology available from the Geological Society of Ireland (GSI) available at www.gsi.ie;
- Satellite imagery and mapping available from multiple sources including: Ordnance Survey Ireland (OSI), Google, Bing and Digital Globe;
- Information on the status of EU protected species and habitats in Ireland (NPWS 2019a & 2019b);
- Information on any relevant consented, in-progress or existing developments available from the respective County Council online resources;
- Information on the location, design and extent of the proposed development provided by the applicant and/or their agents; and
- Results of ecological surveys described in EIAR Biodiversity Chapter for Bridgegate SHD Application (Altemar, 2021).



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Legend

Site Boundary

Rivers (EPA)

Title

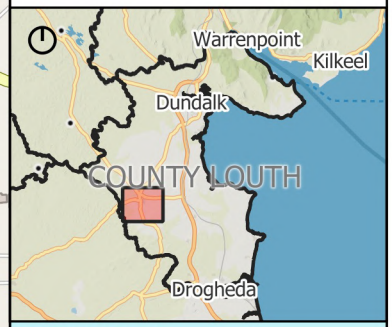
Figure 2-1.
Location of proposed development site.

Project

Proposed Residential Development,'Bridgegate', Drogheda Road, Ardee, Co. Louth.

Client

Mulladrillen Limited



Additional Information

Drawn by: D. Woods	**Date:** 26/01/2026
Project no.: 2500	**Projection:** IRENET95
Scale: 1:30,000 @ A4	**Imagery:** OpenStreetMaps

Notes:

Site boundaries shown are for demonstrative purposes only and do not represent exact planning or legal boundaries.

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Legend

Site Boundary

Rivers (EPA)

Title

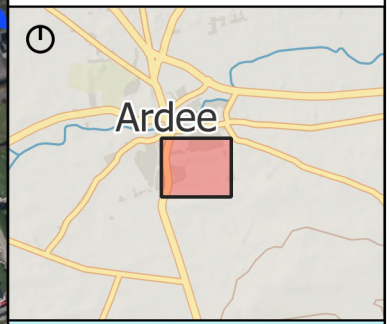
Figure 2-2.
Existing layout of proposed development site.

Project

Proposed Residential Development,'Bridgegate', Drogheda Road, Ardee, Co. Louth.

Client

Mulladrillen Limited



Additional Information

Drawn by: D. Woods	**Date:** 26/01/2026
Project no.: 2500	**Projection:** IRENET95
Scale: 1:5,000 @ A4	**Imagery:** OpenStreetMaps

Notes:

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3 Characteristics of the Project

3.1 Site Location

The subject site forms part of the wider Bridgegate lands at Rathgory and Mulladrillan, Ardee, Co. Louth, located to the east of Ardee town centre. The lands are situated within an area identified for planned residential expansion and occupy part of the permitted Strategic Housing Development under ABP Reg. Ref. 313083-22. The site comprises greenfield lands historically in agricultural use, now forming part of a sequentially developed residential neighbourhood.

The proposed development site is wholly located outside of any European sites and there are no European sites within the immediate surrounding area. The closest European site to the proposed development is Stabannan-Braganstown SPA, situated approximately 5.1km to the north-east. All other European sites are greater than 10km distant from the proposed development site.

3.2 Description of Proposed Development

3.2.1 Summary of Proposed Development

The proposed development will consist of:

- The replacement of 48 no. duplex apartments (8 no. 1-bed, 24 no. 2-bed, 16 no. 3-bed) and communal open space at Bridgegate Avenue with 40 no. two-storey residential dwellings (6 no. 2 bed, 36 no. 3-bed) with rear garden private amenity spaces at Bridgegate Avenue and an extended Bridgegate Green. The proposals result in total of 264 no. dwellings within the overall SHD scheme.
- An extension of Bridgegate Green to facilitate access to 16 no. proposed dwellings, resulting in a slight reduction in overall provision of public open space within the development by c. 0.6 ha to c. 4.86 ha, with reconfigured landscape layout at public park.
- The provision of 483 no. surface car parking spaces (mix of on and off curtilage) to serve residential units, and internal road and shared pedestrian/cycle paths (480 no. permitted) and provision of 630 no. cycle parking spaces (708 no. permitted) with on curtilage parking provided for proposed replacement dwellings alongside bin and bike stores.
- Reconfiguration of site layout in the southern part of the development included amended landscaping, road and parking layouts to provide on curtilage parking, omission and amendments to rear laneways, elevational amendments to permitted House Type 6 and Duplex Types D7/D8, minor repositioning of block layouts and building lines to provide for bin and bike stores.
- Provision of reconfigured water services infrastructure layout, public lighting, landscaping and all associated works necessary to facilitate the development.

3.2.2 Granted Development vs Proposed Development

The subject development as granted is summarised in the tables below:

Table 3-1: Units as Granted.

Unit Type	Description	Floor Area (m^2)	Units	Parking	Bicycle Parking	Bin Store
D1	2-bed duplex, mid/end terrace	87.7	12	On-street, unallocated	Communal	Communal
D2	3-bed duplex, two-storey, mid/end terrace	118.4	12	On-street	Communal	Communal
D3	2-bed duplex, end terrace	93	4	On-street	Communal	Communal
D4	3-bed duplex, two-storey, end terrace	123.3	4	On-street	Communal	Communal
D5	1-bed duplex, mid-terrace	63.9	8	On-street	Communal	Communal

Unit Type	Description	Floor Area (m²)	Units	Parking	Bicycle Parking	Bin Store
D6	2-bed duplex, two-storey, mid-terrace	88	8	On-street	Communal	Communal

Table 3-2: Development Summary as Granted.

Metric	Value (As Granted)
Units subject to amendment	48
Total number of units	272
Gross site area	13.032 ha
Net site area	7.696 ha
Density	35.34 units/ha
Public open space	5.336 ha

The proposed development under the subject amendment application is set out in the tables below:

Table 3-3: Units as Proposed

Unit Type	Description	Floor Area (m²)	Units	Parking	Bicycle Parking	Bin Store
Type 1	2-bed, two-storey terrace/mid-terrace houses	88.78	6	In curtilage	In curtilage	In curtilage
Type 2	3-bed, two-storey semi-detached houses	111.6	24	In curtilage	In curtilage	In curtilage
Type 3	3-bed, two-storey semi-detached houses	109.6	10	In curtilage	In curtilage	In curtilage

Table 3-4: Development Summary as Proposed.

Metric	Value (As Proposed)
Units subject to amendment	40
Total number of units	264
Gross site area	13.032 ha
Net site area	8.163 ha
Density	32.34 units/ha
Public open space	4.869 ha

3.2.3 Site Layout

The proposed site layout introduces a more appropriate and context-responsive arrangement of housing that better reflects the topography, setting and established character of the wider Bridgegate development. The amendment replaces the previously permitted 48 three-storey duplex units with 40 two-storey houses, addressing concerns about scale, market suitability and the quality of the park edge. The revised layout extends the existing pattern of tiered streets that follow the site contours, with 24 houses arranged along the lower level facing south across the linear park and 16 houses positioned at the upper level overlooking the main public park, providing passive supervision and creating a stronger, more positive frontage to this significant area of open space.

3.2.3.1 *Open Space*

The proposed development forms part of the wider Bridgegate masterplan and benefits from the extensive open space network already permitted under ABP Ref. 313083-22. The permitted SHD includes a

3.62 ha public park located to the north of the site, which, when combined with substantial open spaces delivered under Phases 1–3, provides a total of approximately 8.6 ha of public open space across the overall landholding. This exceeds the minimum 4.9 ha public park requirement identified in Objective 4 of the Louth County Development Plan 2021–2027.

The proposed amendment—replacing 48 duplex units with 40 houses—retains the established open space structure and continues to integrate directly with the large public park. While the Design Statement notes a 6.5% reduction in the northern park area (from c.9.2 ha to c.8.6 ha), this reduction occurs within lands zoned residential rather than designated amenity lands and does not diminish the functionality or quality of the public amenity. The revised layout improves passive surveillance and creates a stronger interface with the park by positioning 16 no. houses fronting onto the main open space, thereby delivering an enhanced urban edge.

3.2.3.2 *Car and Bicycle Parking*

Car parking provision complies with the Louth County Development Plan and aligns with earlier Bridgegate phases. Each dwelling will be provided with on-curtilage car parking, at a rate of 2 no. spaces per house, consistent with development plan standards. The reconfigured layout also results in a net increase of 2 parking spaces compared to the permitted arrangement, with the removal of on-street parking south of Bridgegate Avenue marginally increasing public open space in that area.

Bicycle parking will be accommodated within private rear gardens, with access facilitated via rear lanes and dedicated paths, supporting sustainable travel choices and complementing the internal pedestrian network. Opportunities for future pedestrian connections to adjoining lands are also identified, reinforcing the permeability strategy for the wider Bridgegate neighbourhood.

3.2.3.3 *Demolition*

There is no demolition of habitable or any other structures relating to the proposed development.

3.2.3.4 *Residential Development*

The proposed development will provide for 40 no. residential units, all of which comprise two-storey houses arranged as a mix of 6 no. 2-bedroom terraced or mid-terrace houses and 34 no. 3-bedroom semi-detached houses. These units replace the 48 no. previously permitted duplex units (24 no. 2-bed, 16 no. 3-bed and 8 no. 1-bed) under ABP Ref. 313083-22.

Table 3-5: Overall Mix of Units.

Unit Type	No. Units	Percentage
2-bed house	6	15%
3-bed house	34	85%
Total	**40**	**100%**

3.2.3.5 *Access, Permeability and Parking*

The proposed amendment will continue to utilise the established internal road network of the permitted Bridgegate development, with vehicular access provided from the west via Bridgegate Avenue and an extension of Bridgegate Green, ensuring seamless integration with earlier development phases. The amendment includes minor realignments to sections of the permitted road layout but does not alter the overall access strategy or circulation hierarchy within the wider SHD.

3.3 Services

3.3.1 Storm Water Infrastructure

3.3.1.1 *Existing Stormwater Drainage Infrastructure*

At present the subject lands does not have any engineered drainage system in place. The open nature of the site and the natural existing gradients has led the majority of the site to drain to the south into a tributary of the River Dee. As noted, the site does have an existing watercourse (tributary of Rathgory Stream) through the centre of the site.

3.3.1.2 *Permitted Stormwater Drainage Arrangement*

The permitted development was required to retain stormwater volumes predicted to occur during extreme rainfall events. This was defined as the volume of stormwater generated during a 1-in-100-year storm event, with a 20% allowance applied to account for predicted climate change effects.

The attenuation storage volume required for the permitted development under this event was calculated as 2,957 m³. It was proposed to install 4no Stormtech attenuation systems at various locations across the development, providing a total attenuation storage volume of 2,951 m³.

The outfall to the public drainage system was to discharge either to the adjacent storm sewers or to a tributary of the River Dee. The site contained an existing open-channel watercourse forming a tributary of the River Dee.

As part of the permitted development, it was proposed to re-align this watercourse to facilitate the sustainable use of the site and to achieve the required housing densities within the subject site area. The hydraulic conveyance capacity of the stream was to be maintained, and compliance with OPW hydraulic requirements was to be addressed through the submission of a Section 9 Application following the grant of planning permission.

3.3.1.3 *Proposed Stormwater Drainage Arrangement*

Stormwater from the proposed amended section of the development will be attenuated using a combination of permeable paving and an attenuation tank. The drainage area is proposed to be divided into two catchments.

Surface water from the north catchment attenuation system will pass through a petrol interceptor before discharging by gravity into the 300mm concrete storm pipe currently under construction. Surface water from the south catchment attenuation system will pass through a petrol interceptor before discharging into the realigned stream.

It should be noted that the flow control manholes will limit the discharge to a maximum of 1.4L/s for the north catchment and 2.0L/s for the south catchment, respectively.

Refer to CS Consulting drawing A112-CSC-XX-XX-DR-C-0201 for the proposed amendment of stormwater drainage layout for the proposed development.

The topography of the subject site indicates that the development site is steep, albeit falls from north to south. The proposed amendment development site has been divided into two principal catchments areas for the collection and disposal of stormwater runoff from impermeable areas:

- North Catchment of 0.68ha - All storm water from this Catchment shall be collected in a designed detention basin of total volume approx. 195m^3. All storm water from this catchment shall discharge into the existing open ditch that traverses the centre of the subject site.
- South Catchment of 0.97ha - All storm water from this Catchment shall be collected in a designed detention basin of total volume approx. 358m3. All storm water from this catchment shall discharge into the existing channel that traverses the centre of the subject site.

For each catchment, the surface water runoff shall be collected in separate storm water pipes of size 225mm diameter and shall be discharged into detention basins. The attenuated waterfrom each of the detention basins shall then pass through a petrol interceptor and a hydrobrake (proposed separately

for each detention basin) before discharging into there aligned stream and the new stormwater network currently under construction, respectively.

The proposed development's surface water drainage network has been designed through InfoDrainage Design and Modelling Software to cater for the 1-in-100-year storm event, increased by 20% for the predicted effects of climate change.

In summary, no changes are proposed to the permitted stormwater drainage arrangement, with the exception of an additional stormwater network designed to provide adequate drainage for the North Catchment.

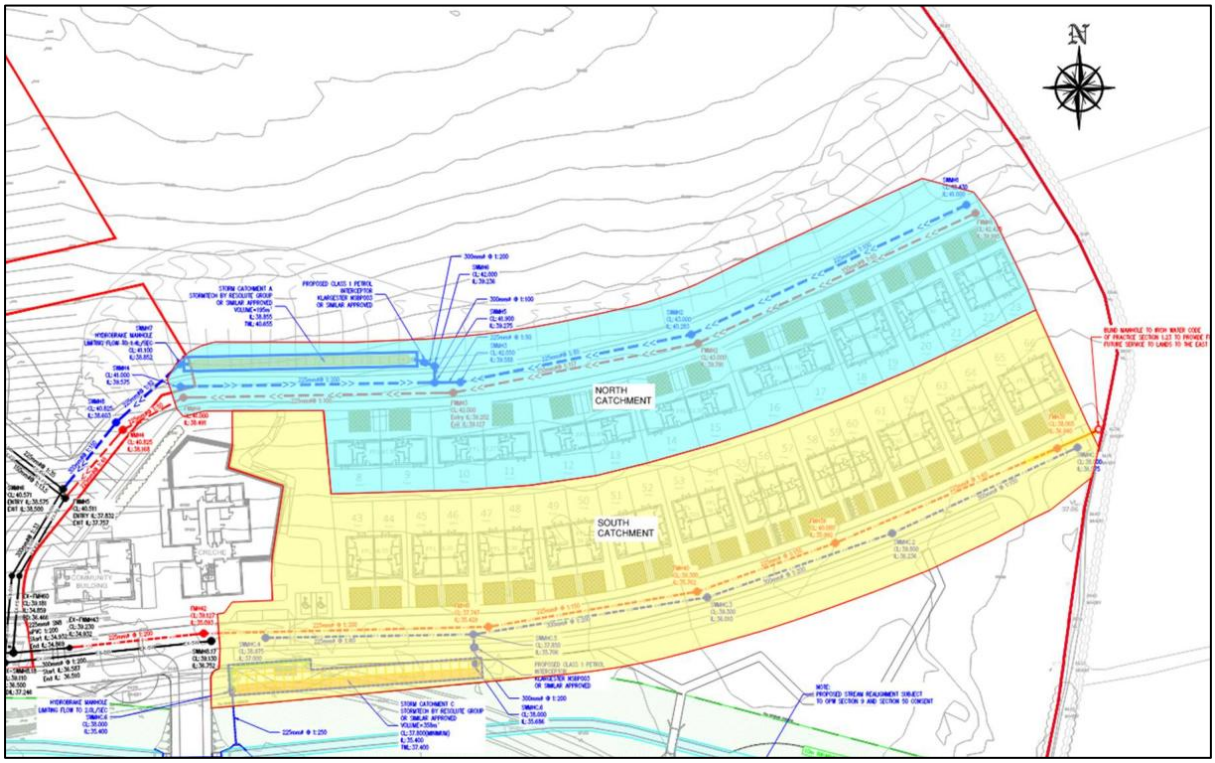

Figure 3-1. Proposed storm catchments (CS Consulting).

3.3.2 Foul Drainage

3.3.2.1 *Existing Foul Drainage Infrastructure*

The current site is not currently developed and as such no sewers are located on the subject lands. All effluent generated in Ardee is conveyed to the Regional Wastewater Treatment Plant (EPA Licence Number D0117/01). The Regional Treatment Plant has recently been upgraded and has expanded capacity from 5000 PE (population equivalent) to 10,000 PE.

3.3.2.2 *Foul Effluent Generated by the Proposed Development*

The development will consist of provision of 264no. residential units.

The Uisce Éireann Code of Practice for Wastewater Infrastructure specifies an average foul rate of 165 litres per person per day for domestic dwellings (150 litres per person per day, plus a 10% allowance for external infiltration) and an average occupancy of 2.7 persons per residential unit. The development's maximum design population is therefore 713 people (713pe).

3.3.2.3 *Permitted Foul Drainage Arrangements*

The foul drainage network for the permitted development has been designed to discharge into the foul drainage network serving the adjacent permitted development to the west (Planning References 10/174

and 19/336), which is currently under construction. The downstream foul drainage network has been designed to accommodate the additional foul flows from the subject site, in conjunction with flows generated by the adjacent development.

3.3.2.4 *Proposed Foul Drainage Arrangements and Outfall*

The proposed development will require a new separate foul drainage network to collect and convey the effluent generated by the proposed development. The drainage network for the proposed development has been designed in accordance with:

- the Greater Dublin Regional Code of Practice Drainage Works
- the Greater Dublin Strategic Drainage Study
- the Uisce Éireann Water Code of Practice for Wastewater Infrastructure

The subject development's foul drainage network shall outfall into that of the adjacent permitted development (planning refs. 10/174 and 19/336) to the west, which is currently under construction. This proposed development's foul drainage network has been designed to cater for the flows from the subject site, in addition to its own.

In summary, no changes are proposed to the permitted foul drainage arrangement, with the exception of an additional foul network designed to provide adequate drainage for the North Catchment.

3.3.3 Flood Risk Assessment

A Site Specific Flood Risk Assessment has been completed by CS Consulting. The Assessment concluded the following:

A review of the relevant flood maps indicates that the site is located within Flood Zones B and C. As all residential areas are situated within Flood Zone C, no Justification Test is required.

- Historical records show that the development site has not experienced past flood events, according to the OPW's historical flood maps.
- Predicted fluvial flood hazard mapping indicates that the site is at low risk from river flooding, with appropriate mitigation measures in place.
- The site is also at low risk from tidal flooding.
- Onsite flooding due to hydrogeological conditions is considered negligible.
- The inclusion of stormwater attenuation measures ensures that overall flood risk at the site is effectively managed.

The proposed development is deemed to be suitable for the site location, as historical and potential flood routes have been reviewed and the likelihood of the development being subject to flooding is low, given the implementation of the mitigation measures described.

BRIDGEGATE RESIDENTIAL DEVELOPMENT, MULLADRILLAN, RATHGORY, ARDEE, CO. LOUTH

Landscape Masterplan
sc 1/1000

Legend

Red line site boundary

SOFT LANDSCAPING

- **Proposed Trees** (to be read in conjunction with planting plan)
- **Existing Trees & Hedgerows** To be retained and protected (see arborist drawings and report)
- **Grass Lawn** 150mm topsoil
- **Rear Private Gardens** 150mm topsoil
- **Ornamental Planting Mix - Front Gardens** 300mm topsoil (to be read in conjunction with planting plan)
- **Ornamental Planting Mix - Public Open Spaces** 300mm topsoil (to be read in conjunction with planting plan)
- **Ornamental Grasses Mix- Public Open Spaces** 300mm topsoil (to be read in conjunction with planting plan)
- **Irish Wildflower Mixtures (WF01/ WF02/ WF04)** (to be read in conjunction with planting plan)
- **Proposed Woodland** (to be read in conjunction with planting plan)
- **Proposed Irish Traditional Native Hedgerow** (to be read in conjunction with planting plan)
- **Siberian Mix** (to be read in conjunction with planting plan)
- **Evergreen Planting Mix** (to be read in conjunction with planting plan)

HARD LANDSCAPING

- **Roads** Asphalt Surface
- **Parking Area** Permeable paving
- **Footpath** Concrete
- **Plaza** Permeable paving
- **Back Gardens** Concrete
- **Footpath through Open Spaces** Ballylusk dust
- **Play Area** Wood chip

FURNITURE

- **Play Elements** Equipment, large boulders, large logs
- **Monobloc Concrete Bench** Zuera supplied by Escofet.com

BOUNDARIES

- Lighting Refer to lighting plan

BOUNDARIES

- **Boundary Type 1** Proposed retaining wall
- **Boundary Type 2** 1.5m high bow top railing
- **Boundary Type 3** 1.8m high concrete post and timber panel fence
- **Boundary Type 4** 2m high rendered block wall
- **Boundary Type 5** 1.2m high estate railing with hedge
- **Boundary Type 6** 2m high concrete post and concrete panel fence
- **Boundary Type 7** 1.2m high mild steel railing

WORKS & SUDS

- **OPW 5m level access** For works and access, to be left clear
- **Storm Catchments Location** to engineer's specifications

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REV	DATE	REVISION	DRAWN	CHECKED
E	21/01/26	Landscape Masterplan	CDG	JG
D	17/12/25	Updated Layout	CDG	JG

CLIENT
Ashcroft Development

PROJECT TITLE
Bridgegate Residential Development, Mulladrillan, Rathgory, Ardee, Co. Louth

PROJECT ARCHITECT
COMMA

SHEET TITLE
Landscape Masterplan

SHEET NO.
25192_Bridgegate_LandscapePlan_PH8

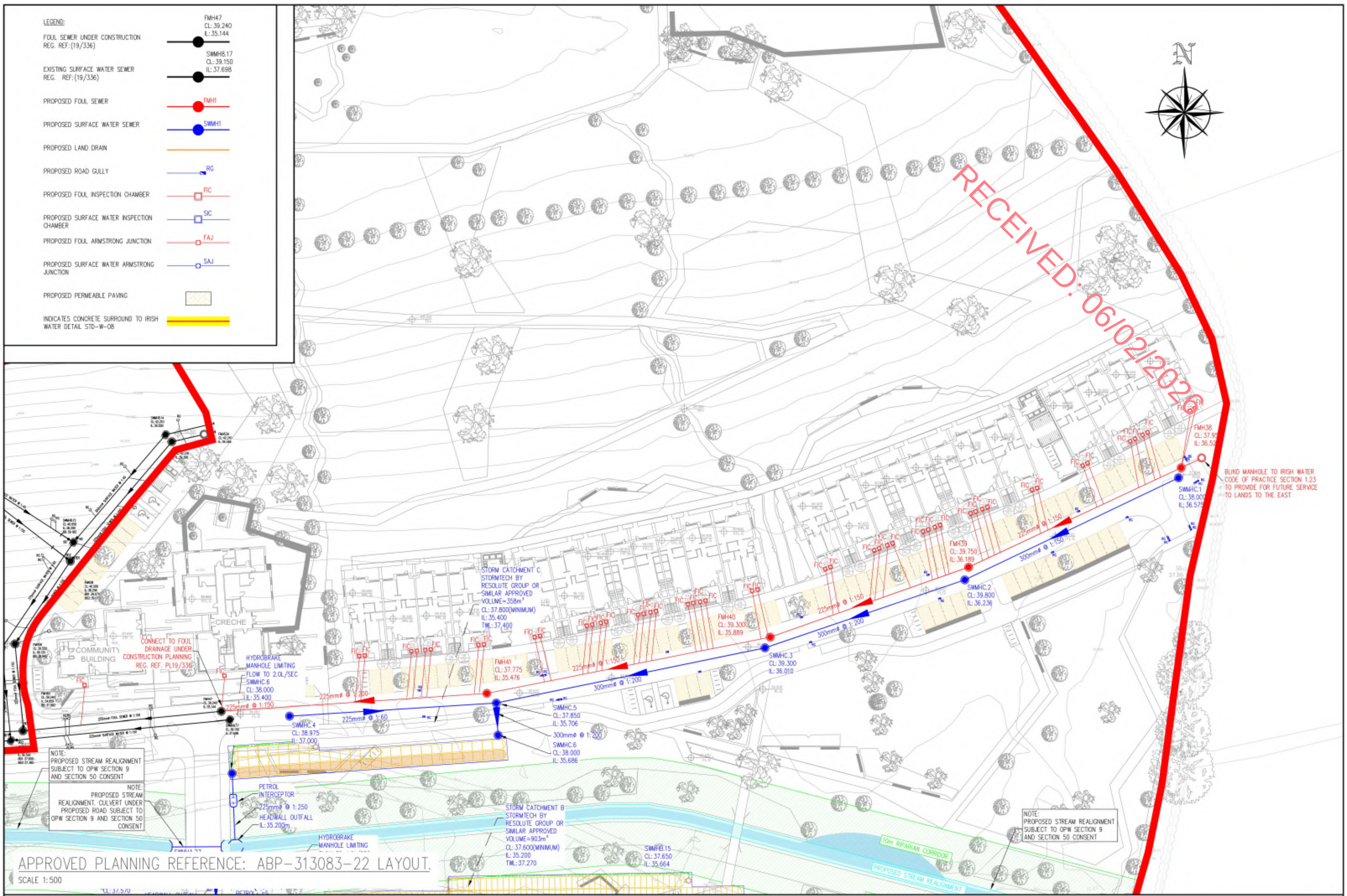
SHEET SIZE
A1

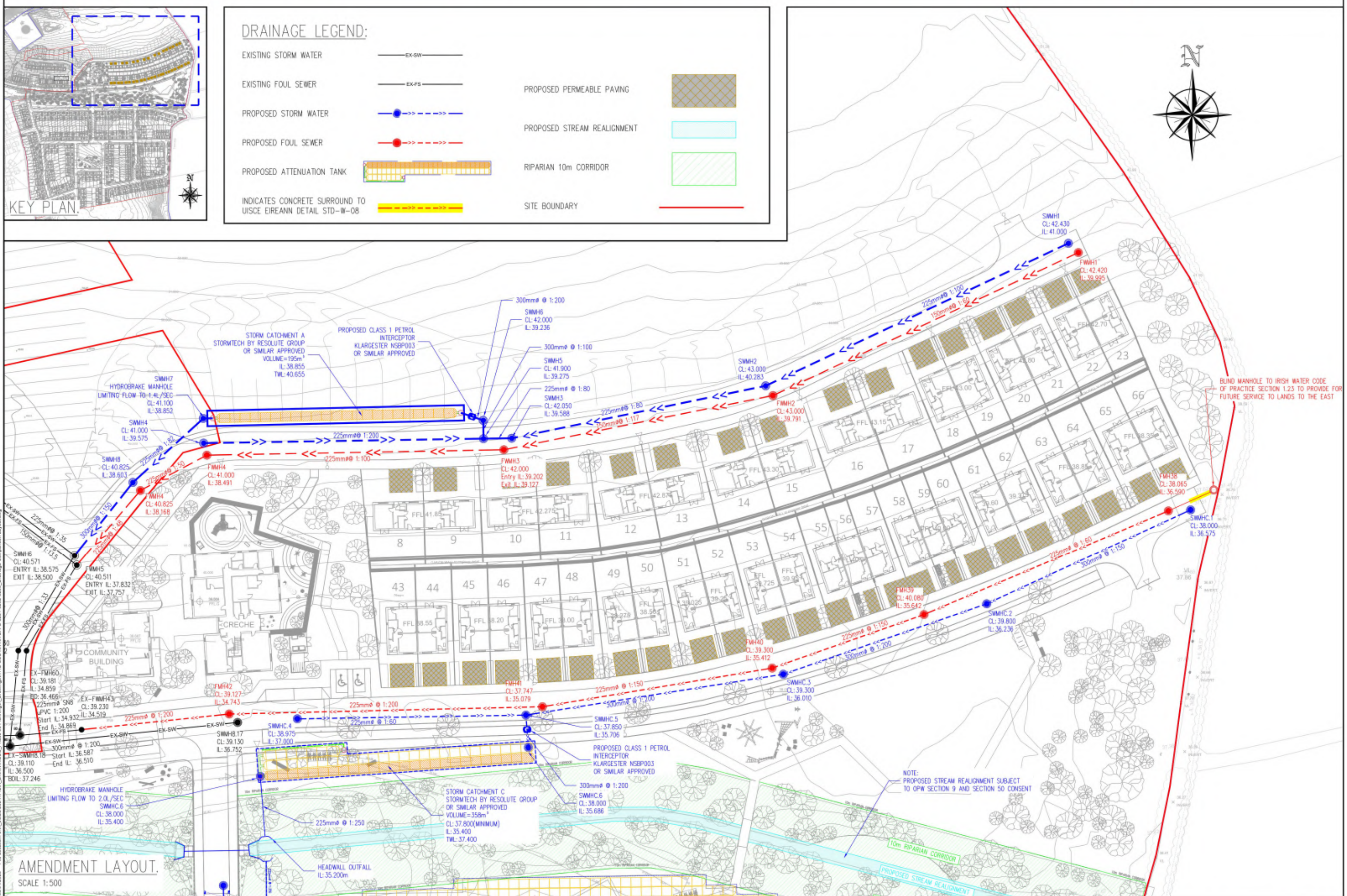
SCALE
1/1000

REVISION
E

STAGE
Compliance

DATE
January 2026





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NOTES

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REV	DESCRIPTION	DRN. BY	CHK. BY	DATE
P1	Issued for Planning	JS	NA	27.01.2026

PROJECT	Proposed Residential Development At Bridgegate
CLIENT	Mulladrillen Limited
JOB No.	A112
DRAWING No.	A112-CSC-XX-XX-DR-C-0201
STATUS	Status S4 - Suitable for Stage Approval
TITLE	Drainage Comparison Layout Sheet 1 of 3

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	SCALE 1:500 @ A1	DATE JAN 2026

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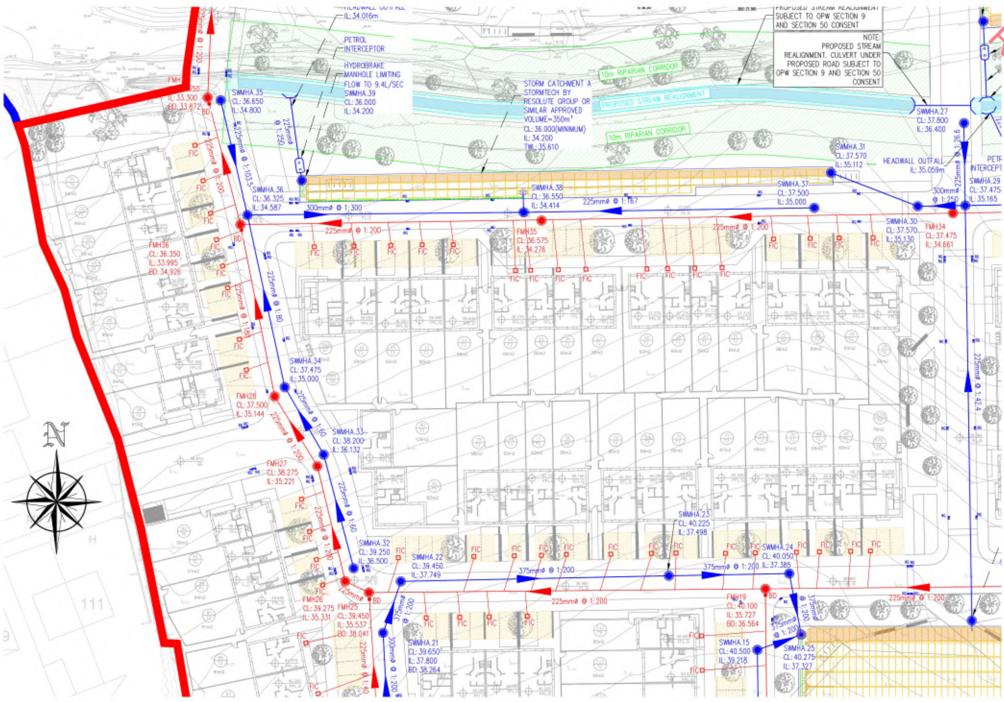
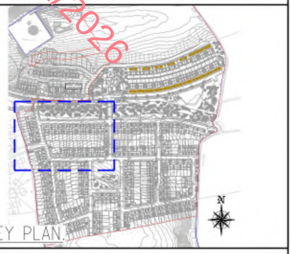


APPROVED PLANNING REFERENCE: ABP-313083-22 LAYOUT.

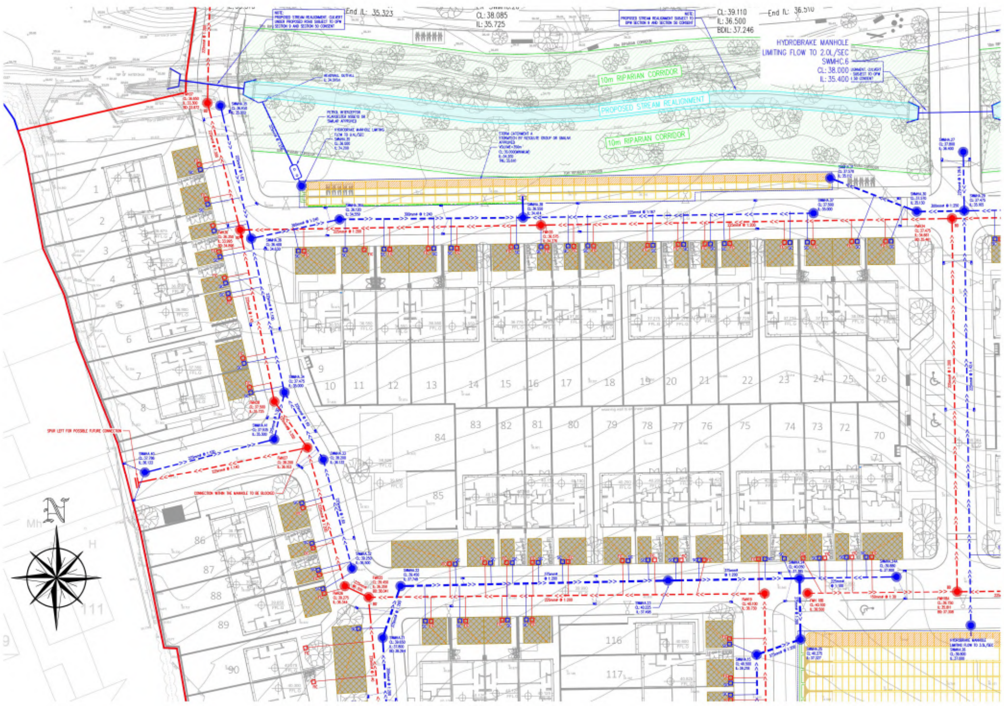
SCALE 1:500

LEGEND:

- FOUL SEWER UNDER CONSTRUCTION REG. REF:(19/336) — FMH47 CL: 39.240 IL: 35.144
- EXISTING SURFACE WATER SEWER REG. REF:(19/336) — SWMH8.17 CL: 39.150 IL: 37.698
- PROPOSED FOUL SEWER — FMH1
- PROPOSED SURFACE WATER SEWER — SWMH1
- PROPOSED LAND DRAIN
- PROPOSED ROAD GULLY — RG
- PROPOSED FOUL INSPECTION CHAMBER — FIC
- PROPOSED SURFACE WATER INSPECTION CHAMBER — SIC
- PROPOSED FOUL ARMSTRONG JUNCTION — FAJ
- PROPOSED SURFACE WATER ARMSTRONG JUNCTION — SAJ
- PROPOSED PERMEABLE PAVING
- INDICATES CONCRETE SURROUND TO IRISH WATER DETAIL STD-W-08



KEY PLAN



AMENDMENT LAYOUT.

SCALE 1:500

DRAINAGE LEGEND:

- EXISTING STORM WATER
- EXISTING FOUL SEWER
- PROPOSED STORM WATER
- PROPOSED FOUL SEWER
- PROPOSED ATTENUATION TANK
- INDICATES CONCRETE SURROUND TO UISCE EIREANN DETAIL STD-W-08
- PROPOSED PERMEABLE PAVING
- PROPOSED STREAM REALIGNMENT
- RIPARIAN 10m CORRIDOR
- SITE BOUNDARY

PLANNING DRAWING

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ALL LEVELS GIVEN ARE RELATIVE TO ORDNANCE DATUM.
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NOTES

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2. This drawing to be read in conjunction with all other Architectural and Engineering drawings and all other relevant drawings and Specifications.
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4.
5. Ordnance Survey Ireland Licence Number EN 0074026

REV	DESCRIPTION	DRN. BY	CHK. BY	DATE
P1	Issued for Planning	JS	NA	27.01.2026

PROJECT	Proposed Residential Development At Bridgegate
CLIENT	Mulladrillen Limited
JOB No.	A112
DRAWING No.	A112-CSC-XX-XX-DR-C-0202
STATUS	Status S4 - Suitable for Stage Approval
TITLE	Drainage Comparison Layout Sheet 2 of 3

CS CONSULTING
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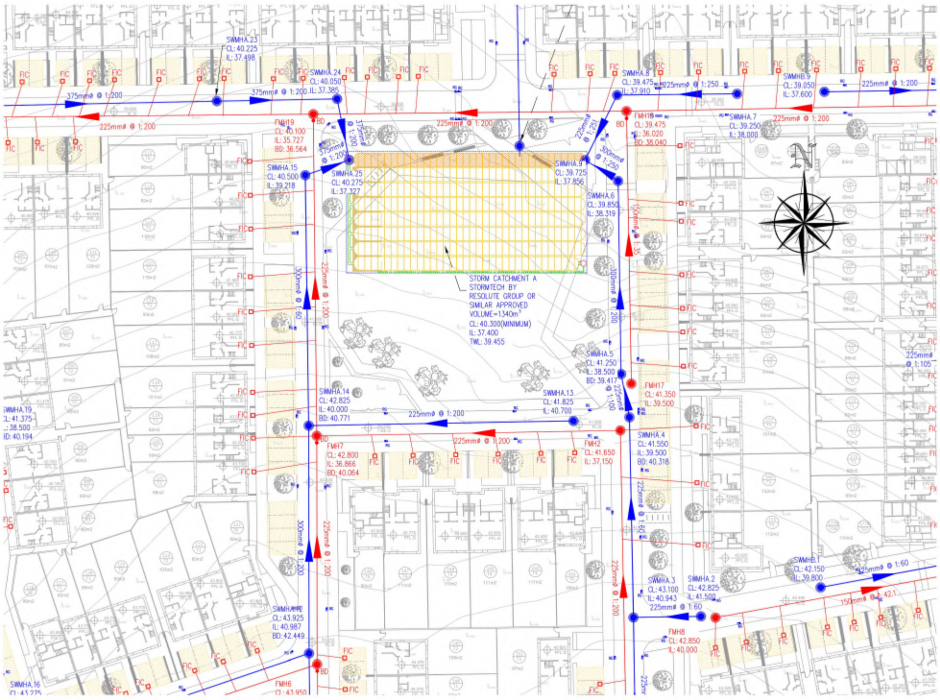
DRAWN BY	CHECKED BY	REVISION
JS	NA	P1

SCALE	DATE
1:500 @ A1	JAN 2026

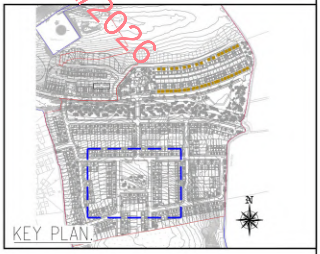


APPROVED PLANNING REFERENCE: ABP-313083-22 LAYOUT.

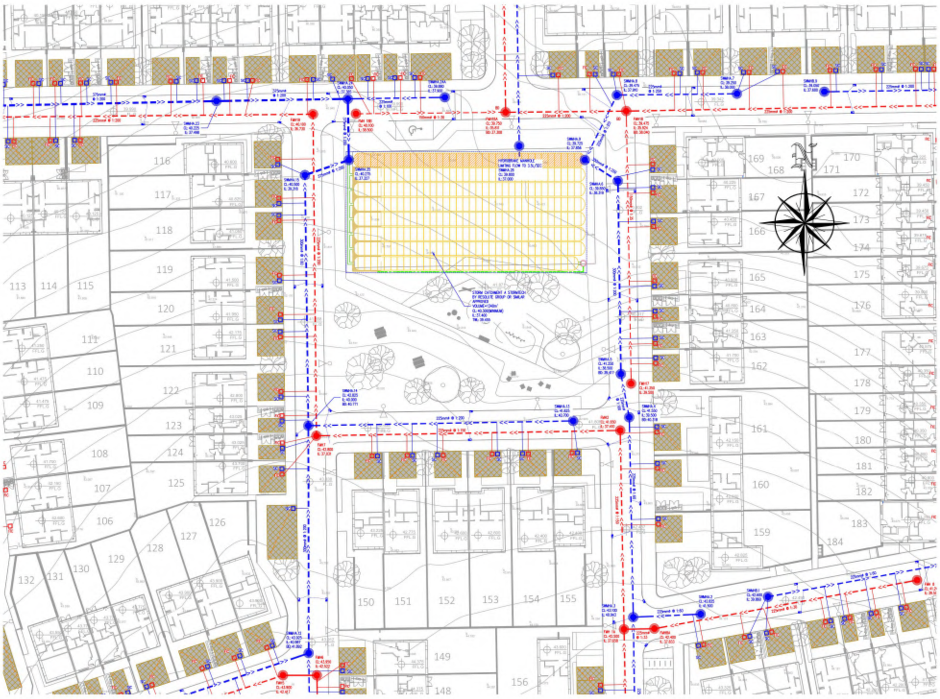
SCALE 1:500

LEGEND:

FOUL SEWER UNDER CONSTRUCTION REG. REF:(19/336)	FMH47 CL: 39.240 IL: 35.144
EXISTING SURFACE WATER SEWER REG. REF:(19/336)	SWMH8.17 CL: 39.150 IL: 37.698
PROPOSED FOUL SEWER	FMH1
PROPOSED SURFACE WATER SEWER	SWMH1
PROPOSED LAND DRAIN	
PROPOSED ROAD GULLY	RG
PROPOSED FOUL INSPECTION CHAMBER	FIC
PROPOSED SURFACE WATER INSPECTION CHAMBER	SIC
PROPOSED FOUL ARMSTRONG JUNCTION	FAJ
PROPOSED SURFACE WATER ARMSTRONG JUNCTION	SAJ
PROPOSED PERMEABLE PAVING	
INDICATES CONCRETE SURROUND TO IRISH WATER DETAIL STD-W-08	



KEY PLAN.



AMENDMENT LAYOUT.

SCALE 1:500

DRAINAGE LEGEND:

- EXISTING STORM WATER (EX-SW)
- EXISTING FOUL SEWER (EX-FS)
- PROPOSED STORM WATER
- PROPOSED FOUL SEWER
- PROPOSED ATTENUATION TANK
- INDICATES CONCRETE SURROUND TO UISCE EIREANN DETAIL STD-W-08
- PROPOSED PERMEABLE PAVING
- PROPOSED STREAM REALIGNMENT
- RIPARIAN 10m CORRIDOR
- SITE BOUNDARY

PLANNING DRAWING

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NOTES

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REV	DESCRIPTION	DRN. BY	CHK. BY	DATE
P1	Issued for Planning	JS	NA	27.01.2026

PROJECT	Proposed Residential Development At Bridgegate
CLIENT	Mulladrillen Limited
JOB No.	A112
DRAWING No.	A112-CSC-XX-XX-DR-C-0203
STATUS	Status S4 - Suitable for Stage Approval
TITLE	Drainage Comparison Layout Sheet 3 of 3

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JS	NA	P1

SCALE	DATE
1:500 @ A1	JAN 2026

3.4 Baseline Environment

3.4.1 Habitats

The development site formerly comprised two agricultural fields used for arable crop production prior to the commencement of the Bridgegate Park residential development in *c.*2019 (source: Google satellite historic imagery). The proposed development site has been left largely idle since the construction of this neighbouring development ceased in *c.*2021.

The proposed development site currently comprises largely unmanaged grassland (GS2[a]) in the former agricultural land, with recolonising bare ground (ED3) in areas that were previously disturbed. The site is bound be hedgerows to the east, north and partially to the west. There is a watercourse (FW2) which flows from east to west through the centre of the site (see Section 3.4.2 below for further detail).

Plate 3-1. Example of unmanaged grassland (GS2) which extends across much of the proposed development site.

3.4.2 Hydrology

The proposed development site is situated within a catchment area of the River Dee (EPA sub-basin: 06D010710). A tributary of the Rathgory Stream (EPA code: 06D27) flows through the centre of the proposed development site from east to west for a distance of approximately 350m. This watercourse is characterised as a lowland/depositing stream (FW2) and rises in agricultural land east of the proposed development site. The stream has been modified as a drainage channel. The EPA have not carried out water quality testing on this watercourse, however the downstream section of the River Dee as it flows through Ardee town has been assigned '*Good*' status (Water Framework Directive Status 2019-2024).

The tributary joins the Rathgory Stream approximately 300m downstream of the proposed development site. The Rathgory Stream outflows to the River Dee a further 700m downstream. The Rathgory Stream is largely culverted as it flows through Ardee, with a short open channel section north of John Street. The River Dee ultimately outflows into the Irish Sea at Annagassan, over 20km downstream.

[a] Fossit (2000) habitat codes.

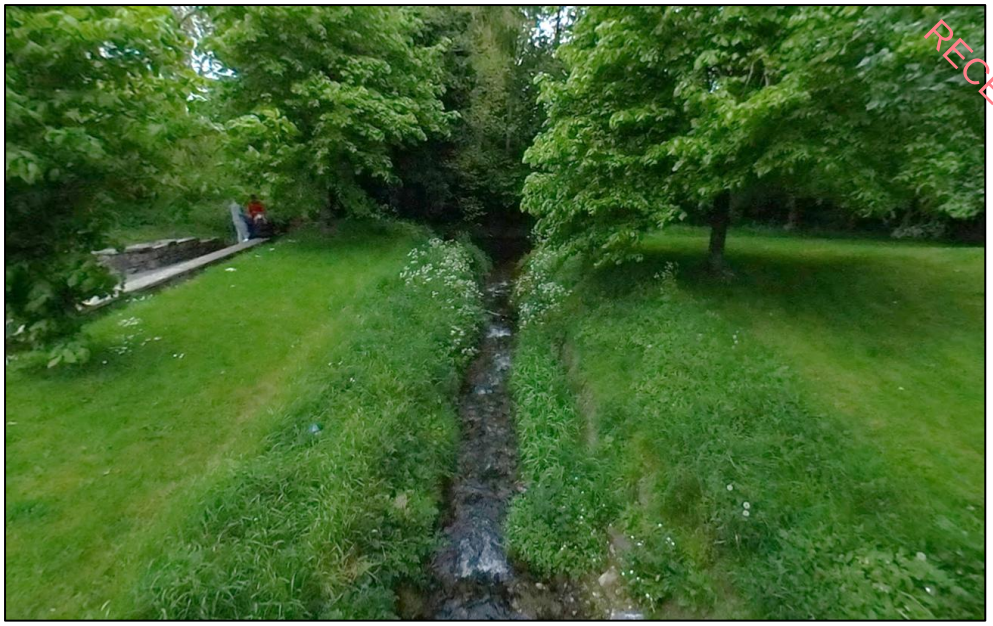


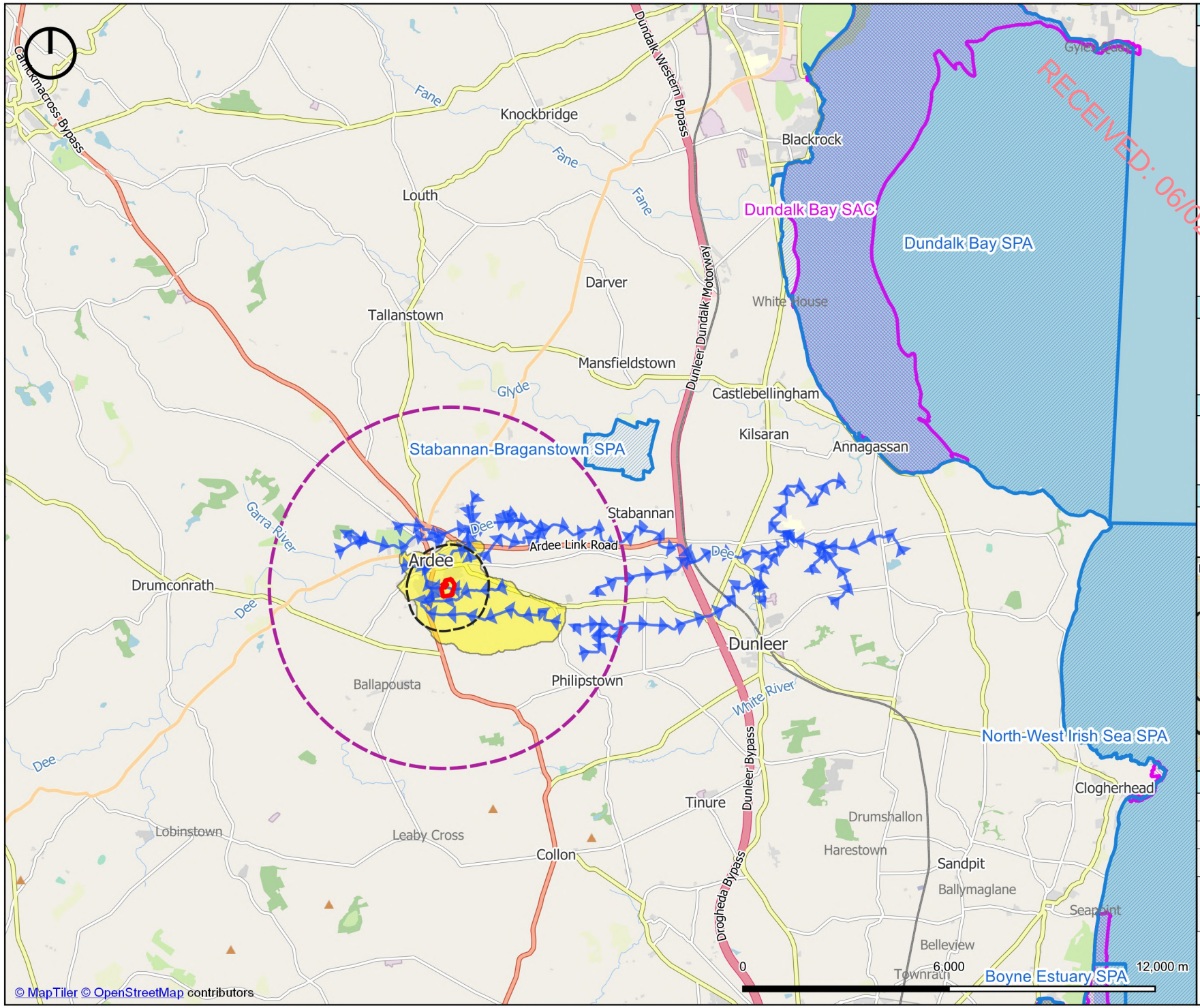
Plate 3-2. Outflow point of Rathgory Stream to River Dee in Ardee town centre, approximately 1km downstream of the proposed development site.

3.4.3 Fauna

The qualifying faunal species of nearby European sites comprise a range of overwintering waterbird and breeding seabird species. The proposed development site, comprising terrestrial site over 12km from the coast, does not offer suitable habitat for breeding seabirds.

Some of the SCI overwintering waterbird species of Dundalk Bay SPA can utilise terrestrial habitats to varying degrees for foraging at times during the winter (NPWS, 2011b). These species rely on short sward heights for terrestrial foraging grounds (Gillings & Fuller, 1999), and are known to utilise grazed agricultural grassland/pasture, managed amenity grassland and arable farmland (NPWS, 2011b). The proposed development site, comprising rank grassland and areas of bare ground and scrub, does not comprise valuable habitat for these species.

Winter bird surveys carried out over ten separate visits across winter 2020/21 by Brian Keeley as part of the Bridgegate SHD application (Altemar, 2021) recorded no overwintering waterbirds or SCI species of Dundalk Bay SPA within the proposed development site. In the time interval since these surveys were carried out, the proposed development site has been largely left idle and the former agricultural land and bare ground now comprise rank grassland and scrub, further reducing the sites suitability for such species.


Legend
Site Boundary
Sub-basin
River Dee System
1km Radius
5km Radius
SACs
SPAs
RECEIVED: 06/02/2026
Dundalk Bay SAC
Dundalk Bay SPA
Stabannan-Braganstown SPA
North-West Irish Sea SPA
Boyne Estuary SPA
Ardee
Stabannan
Ardee Link Road
Drumconrath
Dunleer
Philipstown
Ballapousta
Tinure
Collon
Lobinstown
Leaby Cross
Knockbridge
Louth
Darver
Tallanstown
Mansfieldstown
Castlebellingham
Kilsaran
Annagassan
Blackrock
White House
Clogherhead
Drumshallon
Harestown
Sandpit
Ballymaglane
Seapoint
Belleview
Townrath
Dundalk Western Bypass
Dunleer Dundalk Motorway
Dunleer Bypass
Drogheda Bypass
Carrickmacross Bypass
Fane
Glyde
Garra River
White River
Dee
0
6,000
12,000 m
© MapTiler © OpenStreetMap contributors
Title
Figure 3-1.
European sites in the vicinity of the proposed development site.
Project
Proposed Residential Development,'Bridgegate', Drogheda Road, Ardee, Co. Louth.
Client
Mulladrillen Limited
Monaghan
Dundalk
Drogheda
Additional Information
Drawn by: D. Woods
Date: 26/01/2026
Project no.: 2500
Projection: IRENET95
Scale: 1:150,000@ A4
Imagery: OpenStreetMaps
Notes:
Site boundaries shown are for demonstrative purposes only and do not represent exact planning or legal boundaries.
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w: www.wingspan.ie

4 Stage 1 – Screening for Appropriate Assessment

4.1 Identification of Relevant European Sites within the Potential Zone of Influence

In order to assess the potential for likely significant effects on European sites, it is first necessary to identify 'relevant European sites' in relation to the proposed development. The identification of relevant European sites has been undertaken based on a potential 'zone of influence' (ZOI) of the proposed development.

The following criteria have been used to establish the potential zone of influence of the proposed development within which there is a potential for a likely significant effect to occur on a European site either individually or in combination with other plans and projects as a result of the proposed development, adopting a precautionary approach in all instances and inclusive of any elements or activities related to the proposed development that may occur outside of the proposed development site boundary:

- Any European sites which directly encompass, partly encompass or border the proposed development have been included.
- Any European sites which occur within the same hydrological catchment area(s) as the proposed development site, and/or which occur downstream of waterbodies within the catchment area(s), have been included as within the potential zone of influence in relation to potential hydrological effects. The relevant catchment area(s) and waterbodies are shown in Figure 4-1.
- The potential zone of influence for noise and visual effects is dependent on both the nature of the source and nature and sensitivity of the receptor. As an initial step, and informed by published research and best available information[b], and adopting a highly precautionary approach, a broad zone of influence in relation to noise and visual effects of 1km from the proposed development has been applied in respect of relevant European sites.
- In relation to dust effects, the Institute of Air Quality Management '*Guidance on the Assessment of dust from demolition and construction*' (IAQM, 2024) provides a broad screening distance for ecological receptors (including European sites) of 50m[c]. As such, having regard to the above and adopting a precautionary principle, a broad zone of influence in relation to dust effects of 50m has been applied.
- The potential for e*x-situ* connectivity with the proposed development site has also been considered on a site-by-site and species-by-species basis. This has been informed by published research and best available information[d] on the ecology of relevant species, their habitat requirements, known usage areas, foraging/home ranges and any other available relevant information to determine the potential for *ex-situ* effects. The habitats present within the proposed development site and adjacent areas and their potential to support qualifying interest / special conservation interest species of European sites has also been considered.
- Any European sites not included in the above, but for which specific connectivity has been identified as a result of the nature of the proposed development and the nature of the European site and qualifying habitat(s) and/or species have been included as relevant, as detailed in Table 4-1 where required.

A list of relevant European sites has therefore been established based on the above:

[b] E.g. NRA (2009) in relation to otter; IECS (2013) in relation to disturbance effects to overwintering waterbirds from construction works; Goodship & Furness (2022) in relation to disturbance effects to birds from human activity; and further additional information sources as appropriate dependant on the specific European site and its designated species as detailed in Table 4-1 where relevant.

[c] The Institute of Air Quality Management '*Guidance on the Assessment of dust from demolition and construction*' (IAQM, 2024) prescribes potential dust emission risk classes to ecological receptors. The guidelines specify that, for highly sensitive ecological receptors, sensitivity to dust is 'High' up to 20m from the source, 'Medium' up to 50m from the source and reduces to 'Low' at distances over 50m from the source.

[d] E.g. Conservation objectives supporting documents issued by the NPWS for relevant European sites; SNH (2016) in relation to potential connectivity between the proposed development and Special Protection Areas for relevant species; Ó'Néill (2009) in relation to otter foraging ranges from relevant SAC populations (i.e. 7.5km for females and up to 21km for males via hydrological pathways); any other specific studies or published research available providing information on the potential for *ex-situ* effects in relation to the proposed development as detailed in Table 4-1 where relevant.

- Dundalk Bay SAC;
- Dundalk Bay SPA; &
- North-West Irish Sea SPA.

All other European sites occur outside the potential zone of influence of the proposed development, and no potential connectivity has been identified between the proposed development and any other European sites, e.g.:

- Stabannan-Braganstown SPA – This SPA is situated over 5km from the proposed development site and within a different surface water catchment area. The SPA is designated for wintering greylag geese. The proposed development site does not offer suitable *ex-situ* habitat for this species.
- River Boyne and River Blackwater SAC – This SAC is situated over 14km distant from the proposed development site and within a different surface water catchment area. The SAC is situated within a separate river system, and there is no channel connectivity between the SAC and the proposed development site or River Dee network.

4.2 Source-Pathway-Receptor Assessment

In order to identify any connectivity between the proposed development and European sites, and to identify any potential effects on European sites as a result of the proposed development, a source-pathway-receptor approach has been applied.

In order for there to be a potential effect on a European site from the proposed development, there must be connectivity via an identified source (e.g., noise emissions or surface water run-off), a receptor (e.g., a qualifying interest or special conservation interest of a European site) and a pathway between the source and the receptor (e.g., a watercourse). As a starting point, and adopting the precautionary principle, all European sites within the likely zone of influence have been included for source-pathway-receptor assessment. Where source-pathway-receptor connectivity is identified between the proposed development and a European site, the potential effect is then further assessed for its significance.

Table 4-1. European sites within the potential ZOI of the proposed development.

Site Name and Distance	Qualifying Features[e]	Source-Pathway-Receptor Assessment	Potential for Likely Significant Effects
Special Areas of Conservation (SACs)			
Dundalk Bay SAC [000455] Distance: 12.1km	• [1130] Estuaries • [1140] Tidal Mudflats and Sandflats • [1220] Perennial Vegetation of Stony Banks • [1310] *Salicornia* Mud • [1330] Atlantic Salt Meadows • [1410] Mediterranean Salt Meadows Detailed conservation objectives for this site, (NPWS, 2011a), were reviewed as part of the assessment and are available at www.npws.ie	The SAC is situated within the same hydrological catchment area as the proposed development site – the River Dee Sub-basin. As such, the SAC lies within the potential ZOI in relation to potential hydrological effects. The SAC is designated for a range of marine and coastal habitats which could be sensitive to reductions in water quality as a result of contaminated surface waters during the construction phase (i.e. suspended solids, hydrocarbons and cementitious materials). **This connectivity is therefore assessed for its significance**. During the operational phase foul waters will connect to existing networks (currently under construction as part of Phase 1 – Planning ref. no.: 19/336), to the north of the proposed development site. Foul water from the development will be processed in the existing Regional Wastewater Treatment Plant. Any pollutants or silt will be treated in the WWTP under licence and existing compliance requirements, dispersed and diluted. There will be no significant impact via direct or indirect pathways. As per the drainage design for the development, surface water will be directed to an on-site attenuation area prior to outfall to the tributary of the Rathgory Stream via petrol interceptor and hydrobrake. As such, no functional hydrological connectivity is identified during the operational phase.	Water quality effects A source-pathway-receptor link was identified between the proposed development and the SAC via a tributary of the Rathgory Stream which flows through the proposed development site. The Rathgory Stream outflows to the River Dee, which subsequently outflows to the SAC at Annagassan, over 20km downstream of proposed development site. The qualifying interest habitat at this location within the SAC comprises 'Mudflats and sandflats not covered by seawater at low tide [1140]'. A reduction in water quality as a result of the proposed development has the potential to negatively impact this habitat. Therefore, in the absence of mitigation measures or further analysis, the possibility of negative effects to the qualifying interest habitats of the SAC as a result of water quality impacts **cannot be excluded in view of the relevant conservation objectives**.
Special Protection Areas (SPAs)			
Dundalk Bay SPA [004026] Distance: 12.1km	• [A005] Great Crested Grebe (*Podiceps cristatus*) • [A043] Greylag Goose (*Anser anser*) • [A046] Light-bellied Brent Goose (*Branta bernicla hrota*) • [A048] Shelduck (*Tadorna tadorna*) • [A052] Teal (*Anas crecca*) • [A053] Mallard (*Anas platyrhynchos*) [A053] • [A054] Pintail (*Anas acuta*) • [A065] Common Scoter (*Melanitta nigra*)	The SPA is situated within the same hydrological catchment area as the proposed development site – the River Dee Sub-basin. As such, the SPA lies within the potential ZOI in relation to potential hydrological effects. The SPA is designated for a range of overwintering waterbirds and associated wetland habitats which could be sensitive to reductions in water quality as a result of contaminated surface waters during the construction phase (i.e. suspended solids, hydrocarbons and	Water quality effects A source-pathway-receptor link was identified between the proposed development and the SAC via a tributary of the Rathgory Stream which flows through the proposed development site. The Rathgory Stream outflows to the River Dee, which subsequently outflows to the SAC at Annagassan, over 20km downstream of proposed development site. The qualifying interest habitat at this location comprises 'Mudflats

[e] Qualifying Interests (QI)/Species of Special Conservation Interest (SCI) for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie, on the 26/01/2026; * = priority; numbers in brackets are Natura 2000 codes.

Site Name and Distance	Qualifying Features[e]	Source-Pathway-Receptor Assessment	Potential for Likely Significant Effects
	• [A069] Red-breasted Merganser (*Mergus serrator*) • [A130] Oystercatcher (*Haematopus ostralegus*) • [A137] Ringed Plover (*Charadrius hiaticula*) • [A140] Golden Plover (*Pluvialis apricaria*) • [A141] Grey Plover (*Pluvialis squatarola*) • [A142] Lapwing (*Vanellus vanellus*) • [A143] Knot (*Calidris canutus*) • [A149] Dunlin (*Calidris alpina*) • [A156] Black-tailed Godwit (*Limosa limosa*) • [A157] Bar-tailed Godwit (*Limosa lapponica*) • [A160] Curlew (*Numenius arquata*) • [A162] Redshank (*Tringa totanus*) • [A179] Black-headed Gull (*Chroicocephalus ridibundus*) • [A182] Common Gull (*Larus canus*) • [A184] Herring Gull (*Larus argentatus*) • [A999] Wetland and Waterbirds Detailed conservation objectives for this site, (NPWS, 2011b), were reviewed as part of the assessment and are available at www.npws.ie	cementitious materials). **This connectivity is therefore assessed for its significance**. During the operational phase foul waters will connect to existing networks (currently under construction as part of Phase 1 – Planning ref. no.: 19/336), to the north of the proposed development site. Foul water from the development will be processed in the existing Regional Wastewater Treatment Plant. Any pollutants or silt will be treated in the WWTP under licence and existing compliance requirements, dispersed and diluted. There will be no significant impact via direct or indirect pathways. As per the drainage design for the development, surface water will be directed to an on-site attenuation area prior to outfall to the tributary of the Rathgory Stream via petrol interceptor and hydrobrake. As such, no functional hydrological connectivity is identified during the operational phase.	and sandflats not covered by seawater at low tide [1140]'. A reduction in water quality as a result of the proposed development has the potential to negatively impact this habitat. Therefore, in the absence of mitigation measures or further analysis, the possibility of negative effects to the qualifying features of the SPA as a result of water quality impacts **cannot be excluded in view of the relevant conservation objectives**.
North-West Irish Sea SPA [004236] Distance: 17.8km	• [A001] Red-throated Diver (*Gavia stellata*) • [A003] Great Northern Diver (Gavia immer) • [A009] Fulmar (Fulmarus glacialis) • [A013] Manx Shearwater (*Puffinus puffinus*) • [A017] Cormorant (*Phalacrocorax carbo*) • [A018] Shag (*Phalacrocorax aristotelis*) • [A065] Common Scoter (*Melanitta nigra*) • [A179] Black-headed Gull (*Chroicocephalus ridibundus*) • [A182] Common Gull (*Larus canus*) • [A183] Lesser Black-backed Gull (*Larus fuscus*) • [A184] Herring Gull (*Larus argentatus*) • [A187] Great Black-backed Gull (*Larus marinus*) • [A188] Kittiwake (*Rissa tridactyla*) • [A192] Roseate Tern (*Sterna dougallii*) • [A193] Common Tern (*Sterna hirundo*) • [A194] Arctic Tern (*Sterna paradisaea*) • [A199] Guillemot (*Uria aalge*) • [A200] Razorbill (*Alca torda*) • [A204] Puffin (*Fratercula arctica*) • [A862] Little Gull (*Hydrocoloeus minutus*) • [A885] Little Tern (*Sternula albifrons*)	The SPA is situated within a downstream connected waterbody to the proposed development site – the Irish Sea. As such, the SPA lies within the potential ZOI in relation to potential hydrological effects. The SPA is designated for a range of breeding seabirds and associated marine waters **This connectivity is therefore assessed for its significance**. During the operational phase foul waters will connect to existing networks (currently under construction as part of Phase 1 – Planning ref. no.: 19/336), to the north of the proposed development site. Foul water from the development will be processed in the existing Regional Wastewater Treatment Plant. Any pollutants or silt will be treated in the WWTP under licence and existing compliance requirements, dispersed and diluted. There will be no significant impact via direct or indirect pathways. As per the drainage design for the development, surface water will be directed to an on-site attenuation area prior to outfall to the tributary of the Rathgory Stream via petrol interceptor and hydrobrake. As such, no functional hydrological connectivity is identified during the operational phase.	The SPA is situated within the Irish Sea beyond the outflow of the River Dee and distant from Dundalk Bay and comprises an expanse of open marine water. Given the nature of this SPA and the significant dilution factor which would reduce any potential pollutants to insignificant levels, there is no functional hydrological connectivity to the SPA. There is no potential pathway for effects and therefore **no potential for significant effects on the SPA as a result of the proposed development.**

Site Name and Distance	Qualifying Features[e]	Source-Pathway-Receptor Assessment	Potential for Likely Significant Effects
	Detailed conservation objectives for this site, (NPWS, 2023), were reviewed as part of the assessment and are available at www.npws.ie		

4.3 Screening Statement

In conclusion, upon the examination, analysis and evaluation of the relevant information including, in particular, the nature of the proposed development and the likelihood of significant effects on any European site, in addition to considering possible in-combination effects, and applying the precautionary principles, it is concluded by the authors of this report that, on the basis of objective information, the possibility may not be excluded that the proposed development will have a significant effect on the following European sites:

- Dundalk Bay SAC [000455]; and
- Dundalk Bay SPA [004026].

The potential for the proposed development to result in adverse effects on the integrity of the above European sites is therefore examined below.

5 Stage 2 – Appropriate Assessment

5.1 Characteristics of Relevant European Sites

5.1.1 Dundalk Bay SAC

A brief overview of the SAC is given below, from the Site Synopsis complied for the site (NPWS, 2014):

"*Dundalk Bay, Co. Louth, is a very large open, shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16 km from Castletown River on the Cooley Peninsula in the north, to Annagassan/Salterstown in the south. The bay encompasses the mouths and estuaries of the Rivers Dee, Glyde, Fane, Castletown and Flurry.*"

The qualifying interests of this SAC, in addition to the corresponding current site conservation statuses and national conservation statuses, are listed below.

Table 5-1. Qualifying interests of Dundalk Bay SAC.

Annex I Habitats (* indicates priority habitat)	Site Conservation Status (NPWS, 2011a)	National Conservation Status (NPWS, 2025a)
[1130] Estuaries	Favourable	Bad
[1140] Tidal Mudflats and Sandflats	Favourable	Inadequate
[1220] Perennial Vegetation of Stony Banks	Favourable	Inadequate
[1310] *Salicornia* Mud	Unfavourable	Bad
[1330] Atlantic Salt Meadows	Favourable	Bad
[1410] Mediterranean Salt Meadows	Favourable	Inadequate

The Annex I habitats for which this site is designated are described hereunder.

5.1.1.1 *Marine Habitats - Estuaries [1130] & Mudflats and Sandflats [1140]*

The habitats of '*estuaries*' and '*mudflats and sandflats*' within the SAC are made up of three marine community types:

- Fine sand community complex; and
- Muddy fine sand community.

A brief description of these three community types is provided below (taken from the 'Conservation Objectives Supporting Documents for marine habitats' for the SAC - NPWS, 2011c).

Fine sand community complex

"*The development of a community complex target arises when an area possesses similar abiotic features but records a number of biological communities that are not regarded as being sufficiently temporally or spatially stable and/or distinct to become the focus of conservation efforts. In this case, multivariate analysis of the data from Dundalk Bay identified a series of biological communities whose species composition overlapped significantly. Such biological communities are grouped together into what experts consider are sufficiently stable units for conservation targets. This complex occurs both intertidally and subtidally within this site and reflects the gradation of fine sediment across the bay. The intertidal element is present from the upper to the lower shore and occurs in the Annex I habitat Mudflat and sandflat not covered by sea water at low tide. The subtidal element occurs in the shallow channels running through the sandflat at the western margins of the site and the larger channel of the Castletown River (within the Annex I habitat Estuary) and extends throughout the open waters of the bay. The substrate is that of fine (1-93%) or very fine sand (2 -93%) with mud or medium sand occasionally present. The distinguishing species of the community complex are the bivalves Angulus tenuis and Fabulina fabula and the polychaetes Capitella capitata, Spio martinensis, Sigalion mathildae and Lanice conchilega*" (NPWS, 2011c).

Muddy fine sand community

"*This intertidal community is confined to the upper shore sediments; it is associated with the estuarine areas of the Castletown River and runs in a narrow band along the eastern margin of the bay to the mouth of the River Glyde south of Castlebellingham. The sediment is that of very fine sand (>65%) with variable amounts of fine sand (3-31%) and with a low proportion of silt-clay (<7%). The distinguishing species for this community indicate that this is low or variable salinity sediment. The polychaete Pygospio elegans, the amphipod Corophium volutator and the bivalve Macoma balthica, frequently occur in high densities here; other species commonly present include the polychaetes Eteone longa and Hediste diversicolor, the oligochaete Tubificoides benedii and the bivalve Scrobicularia plana*" (NPWS, 2011c).

5.1.1.2 *Saltmarsh Habitats - Salicornia Mud [1310], Atlantic Salt Meadows [1330] and Mediterranean Salt Meadows [1410]*

The Saltmarsh Monitoring Project (McCorry & Ryle, 2009) surveyed, mapped and assessed a total of four saltmarsh sub-sites within the SAC. A description of these sub-sites is provided below (taken from the 'Conservation Objectives Supporting Documents for coastal habitats' for the SAC - NPWS, 2011d).

Castlebellingham Marsh

"*This large saltmarsh is found in the southern part of the bay and extends from the shoreline adjacent to Dromiskin Village north to the southern side of Blackrock Town. This saltmarsh has developed in a fairly uniform elongated block adjacent to the shoreline that is 3.7 km long and between 500-600 m wide at the widest section. The extent of saltmarsh tapers off at both the northern and southern ends of the saltmarsh. The upper boundary is marked by a tall berm along most of the shoreline that divides the saltmarsh from adjacent low-lying farmland. This farmland has developed in previously reclaimed saltmarsh behind the berm, which is now drained and improved. Drains on the landward side of the berm occasionally contain elements of brackish vegetation but there is no development of saltmarsh. Some Twitch dominated vegetation has developed along the base of the berm in places. This zone also contains species such as Sow-Thistle (Sonchus sp.), Sea Beet (Beta maritima) and Curled Dock (Rumex crispus)".*

Dundalk Marsh

"*This sub-site is probably the largest single unit of saltmarsh in the country. The saltmarsh extends from north of Blackrock Town to the main estuary channel in Dundalk Harbour. It is under 4 km long and over 1 km wide in the widest section. Its structure is similar to that of Castlebellingham Marsh. This saltmarsh is also dominated by ASM with extensive patches of Spartina sward and Spartina sward/ASM mosaic towards the seaward boundary. A narrow band of Salicornia flats is found along the seaward side of the more established saltmarsh and further seaward there are scattered clumps of Common Cordgrass spreading on the adjacent mud and sandflats*".

Castletown Estuary

"*This saltmarsh is the most typical estuarine saltmarsh in the site, being found within the Castletown River estuary. Much of this saltmarsh is also relatively young and has only developed in the past 200 years. Its development is related to reclamation works mainly on the north side of the estuary and the construction of a railway bridge and embankment to carry the Dundalk to Carlingford Railway. The railway bridge/embankment was constructed across the largest area of established saltmarsh in the estuary. The railway is now dismantled and this embankment and bridge now carries the main Belfast-Dundalk road*".

Bellurgan-Jenkinstown

"*This saltmarsh is found along the northern shoreline of Dundalk Bay. It has developed adjacent to a fairly open part of the shoreline. This is a relatively young saltmarsh and most of the marsh has only developed since the drawing of the OSI 2nd edition six inch map. The saltmarsh is dominated by Spartina swards and there is an extensive zone of mudflats with scattered clumps of Common Cordgrass seaward of the more established sward. It is not known if the development of the marsh predated colonisation by Common Cordgrass. However, this is the likeliest scenario and colonisation by common Cordgrass is likely to have further promoted the expansion of this marsh. Common Cordgrass*

seems to be spreading vigorously on the mudflats in this area. It should also be noted that there is some development of ASM at the seaward edge of the Spartina sward in places, which is an indicator of quite rapid habitat succession probably related to accretion along the estuarine channel".

5.1.1.3 *Perennial Vegetation of Stony Banks [1220]*

The extent of this habitat within the SAC is currently unknown. An extract from the Conservations Objectives document for the site states the following: "*Exact current area unknown, but shingle is known to occur almost continuously from Salterstown to Lurgan White House in the south bay and from Jenkinstown to east of Giles Quay in the north bay. Shingle is estimated to cover 12ha. Probably less than 25% of this would be vegetated*".

5.1.2 Dundalk Bay SPA

A brief overview of the SPA is given below, from the Site Synopsis available for the site (NPWS, 2014):

"*Dundalk Bay is a large open shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16 km from Castletown River on the Cooley Peninsula, in the north, to Annagassan/Salterstown in the south. The extensive sand flats and mud flats have a rich fauna of bivalves, molluscs, marine worms and crustaceans which provides the food resource for most of the wintering waterfowl. The outer part of the bay provides excellent shallow-water habitat for divers, grebes and sea duck. In summer, it is thought to be a major feeding area for auks from the Dublin breeding colonies. The bay is used at night for roosting by wintering flocks of Greylag Goose, Greenland White-fronted Goose and Whooper Swan from Stabannan/Braganstown (inland of Castlebelligham) and other inland sites*".

The qualifying features (special conservation interest species and associated wetland habitats) of this SPA, in addition to the corresponding current site conservation statuses and national conservation statuses, are listed below.

Table 5-2. Qualifying features of Dundalk Bay SPA.

Qualifying Features	Site Conservation Status (NPWS, 2011a)	National Conservation Status (Gilbert *et al.*, 2021)
[A005] Great Crested Grebe (*Podiceps cristatus*)	Favourable	Amber
[A043] Greylag Goose (*Anser anser*)	Favourable	Amber
[A046] Light-bellied Brent Goose (*Branta bernicla hrota*)	Favourable	Amber
[A048] Shelduck (*Tadorna tadorna*)	Favourable	Amber
[A052] Teal (*Anas crecca*)	Favourable	Amber
[A053] Mallard (*Anas platyrhynchos*)	Favourable	Amber
[A054] Pintail (*Anas acuta*)	Favourable	Amber
[A065] Common Scoter (*Melanitta nigra*)	Favourable	Red
[A069] Red-breasted Merganser (*Mergus serrator*)	Favourable	Amber
[A130] Oystercatcher (*Haematopus ostralegus*)	Favourable	Red
[A137] Ringed Plover (*Charadrius hiaticula*)	Favourable	Amber
[A140] Golden Plover (*Pluvialis apricaria*)	Favourable	Red
[A141] Grey Plover (*Pluvialis squatarola*)	Favourable	Red
[A142] Lapwing (*Vanellus vanellus*)	Favourable	Red
[A143] Knot (*Calidris canutus*)	Favourable	Red
[A149] Dunlin (*Calidris alpina*)	Favourable	Red
[A156] Black-tailed Godwit (*Limosa limosa*)	Favourable	Red
[A157] Bar-tailed Godwit (*Limosa lapponica*)	Favourable	Red
[A160] Curlew (*Numenius arquata*)	Favourable	Red
[A162] Redshank (*Tringa totanus*)	Favourable	Red
[A179] Black-headed Gull (*Chroicocephalus ridibundus*)	Favourable	Amber
[A182] Common Gull (*Larus canus*)	Favourable	Amber
[A184] Herring Gull (*Larus argentatus*)	Favourable	Amber
[A999] Wetland and Waterbirds	Favourable	-

5.2 Impact Prediction

The source-pathway-receptor assessment identified the following connectivity between the proposed works and European sites:

- Construction Phase:
  - Accidental surface water run-off containing construction-related pollutants to Dundalk Bay SAC and Dundalk Bay SPA via the Rathgory Stream.

- **Note**: no source-pathway-receptor connectivity was identified for the Operational Phase: As outlined in Section 4.2 further above, during the operational phase foul waters will connect to existing networks (currently under construction as part of Phase 1 – Planning ref. no.: 19/336), to the north of the proposed development site. As per the drainage design for the development, surface water will be directed to an on-site attenuation area prior to outfall to the tributary of the Rathgory Stream via petrol interceptor and hydrobrake. As such, there is no potential for hydrological impacts associated with the operational phase of the development.

The potential impacts on these European sites from the above connectivity are described hereunder. Any impacts identified are then further assessed in Section 5.3 for their potential to result in adverse effects on site integrity.

Construction Phase

There is potential for pollutants generated during the construction phase to enter the tributary of the Rathgory Stream via surface water run-off, in the absence of mitigation, i.e.:

- Sediment generated from earth works and site clearance;
- Hydrocarbons from vehicles/spills;
- Cementitous material from construction works involving concrete/cement; and
- In-stream works required for the realignment of Rathgory Stream tributary, culverting section of stream under the proposed new road, and installation of headwalls for outflow of storm water drainage system.

Operational Phase

No potential for impact.

5.2.1 Dundalk Bay SAC

The potential pathway for impacts to the qualifying interest habitats of Dundalk Bay SAC from impacts to water quality are outlined below.

Table 5-3. Pathway for impacts to qualifying interests of Dundalk Bay SAC.

Annex I Habitats (* indicates priority habitat)	Pathway for Impact
[1130] Estuaries	A potential hydrological connection exists between the proposed development and these qualifying interest habitats. There is therefore a potential for impact to these habitats via contaminated surface water discharge during the construction phase, should the pollutants by of sufficient quantity and/or duration to affect water quality. **The potential impact on these qualifying interests is therefore examined below.**
[1140] Tidal Mudflats and Sandflats	
[1310] *Salicornia* Mud	
[1330] Atlantic Salt Meadows	
[1410] Mediterranean Salt Meadows	
[1220] Perennial Vegetation of Stony Banks	This habitat is restricted to areas above the high-tide line (NPWS, 2011d). There is no pathway for impact from contaminated surface water discharge during the construction phase of the proposed development. **The potential for impact on this qualifying interest as a result of the proposed development is therefore excluded.**

The qualifying interest habitats for which a pathway for impact exists are further examined below.

5.2.1.1 *Estuaries [1130] & Mudflats and sandflats [1140]*

The marine communities of '*muddy fine sand community'* and '*fine sand community complex'* occur downstream at the outflow point of the River Dee. These habitat types exist is in a constant state of variation and is subject to ongoing biotic and abiotic variables. As detailed in the conservation objectives supporting document (NPWS, 2011c); "*Anthropogenic disturbance may be considered significant when it causes a change in biotic and/or abiotic variables in excess of what could reasonably be envisaged under natural processes*". A pollution event during the construction phase could potentially impact biotic variables within the immediate receiving areas of the benthic community in excess of existing natural fluctuations.

Increased turbidity as a result of sediment release could potentially reduce habitat suitability for suspension feeders within this habitat type by means of blockages to feeding apparatuses and energetic costs, thereby favouring deposit feeder species (ABPmer, 2013). The introduction of hydrocarbons to tidal flats can have a variety of impacts. Oils can be directly toxic to component species in addition to physically impacting on filter-feeding apparatuses (ABPmer, 2013). The introduction of concrete to aquatic environments can alter the existing pH resulting in associated impacts to component fauna (EA, 2011). The potential introduction of pollutants to this habitat from surface waters during the construction phase therefore has the potential to result in a temporary indirect negative impact on the Annex I habitats of 'estuaries' and 'mudflats and sandflats not covered by seawater at low tide' of Dundalk Bay SAC, and subsequently the qualifying feature of 'Wetlands [A999]' of Dundalk Bay SPA.

5.2.1.2 *Salicornia mud [1310], Atlantic salt meadows [1330] & Mediterranean Salt Meadows [1410]*

These habitats occur in various areas across the inner estuary. (NPWS, 2011c). The closest recorded occurrence of these habitats to the outflow point of the River Dee is approximately 4km to the north (McCorry & Ryle, 2009).

These habitats, while located some distance from the outflow of the River Dee, are hydrologically dependant habitats and, as such, adopting the precautionary principle, there is potential for impact to the flora of these habitats from potential contaminated surface waters as a result of the proposed development (e.g. hydrocarbons and concrete). The introduction of concrete to aquatic environments can alter the existing pH which can have impacts on vegetation biomass in saltmarsh habitats (Caldwell, 2015). In addition, hydrocarbons have the potential to impact on the condition of flora in saltmarsh habitat (e.g. Hershner & Lake, 1980 & Culberston *et al.*, 2008). The potential introduction of pollutants to this habitat from surface waters during the construction phase therefore has the potential to result in a temporary indirect negative impact on the Annex I habitats of '*Salicornia* mud [1310]', 'Atlantic salt meadows [1330]' & 'Mediterranean Salt Meadows [1410]', and subsequently the qualifying feature of 'Wetlands [A999]' of the Dundalk Bay SPA.

5.2.2 Dundalk Bay SPA

5.2.2.1 *Wetlands and Waterbirds [A999]*

This qualifying feature of the SPA represents the habitats that support the SCI species for which the SPA is designated, and comprises the qualifying interest habitats of Dundalk Bay SAC. The potential for impact to these habitats is discussed above and is analogous to this qualifying feature.

The release of pollutants to the estuary, from contaminated surface waters during the construction phase, has been identified as a potential impact on the benthic communities within the qualifying habitat of 'Estuaries' and 'Mudflats and sandflats' and a potential impact on the vegetation within the saltmarsh habitats of '*Salicornia* mud', 'Atlantic salt meadows' and 'Mediterranean Salt Meadows'.

5.3 Potential for Adverse Effects on Site Integrity

European and national legislation requires that the habitats and species designated under the Natura 2000 Network of protected sites are maintained at favourable conservation status. Conservation objec-

tives have been set for European sites which define the favourable conservation status for the designated habitats and species. The conservation objectives for a site provide a reference point from which an assessment may be made of whether a project could adversely affect the integrity of a site.

Articles 1(e) and 1(i) of the Habitats Directive define favourable conservation status as follows:

"The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- its natural range and areas it covers within that range are stable or increasing; and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable'.

The conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' when:

- the population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations."

For a proportion of European sites, site-specific conservation objectives have been developed which give detailed measurable targets relative to the ecology of individual species or habitats for which a site is designated. These targets must be achieved or maintained in order to meet favourable conservation status. Site-specific conservation objectives have been published for Dundalk Bay SAC and Dundalk Bay SPA.

5.3.1 Assessment of Potential for Adverse Effects on Dundalk Bay SAC & Dundalk Bay SPA

Potential impacts to the European sites of Dundalk Bay SAC & Dundalk Bay SPA[f] have been identified as a result of the proposed development, in the absence of mitigation.

The habitat of 'Estuaries' and 'Mudflats and sandflats' within Dundalk Bay are currently at favourable conservation status (NPWS, 2011a). The release of pollutants to the estuary, from contaminated surface waters during the construction phase, has been identified as a potential impact on the benthic communities within these habitats.

The habitats of 'Atlantic salt meadows' and 'Mediterranean salt meadows' within Dundalk Bay are currently at favourable conservation status while the habitat of '*Salicornia* mud' is currently at unfavourable conservation status (NPWS, 2011a). The release of pollutants to the estuary, from contaminated surface waters during the construction phase, has been identified as a potential impact on the vegetation within these habitats.

The potential for these impacts to have an adverse effect on site integrity of Dundalk Bay SAC & Dundalk Bay SPA is presented below.

[f] The qualifying feature of 'Wetlands [A999]' of Dundalk Bay SPA represents the wetland habitat that supports the SCI species for which the site is designated. This qualifying feature comprises the wetland habitats of the Dundalk Bay, which are designated as part of Dundalk Bay SAC.

Table 5-4. Assessment for potential for adverse effects on qualifying features of Dundalk Bay SAC and Dundalk Bay SPA.

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Dundalk Bay SAC				
Estuaries [1130]				
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	The proposed development is wholly located outside the boundary of the SAC. There will be no direct loss of habitat area as a result of the proposed development.	No potential for adverse effects on site integrity.
Community distribution	Hectares	Conserve the following community types in a natural condition: Intertidal estuarine mud and fine sand with *Hediste diversicolor* and *Corophium volutator* community; and Subtidal fine sand dominated by polychaetes community.	The marine communities of 'muddy fine sand community' and 'fine sand community complex' occur within the SAC downstream of the River Dee outflow. A potential impact to the benthic fauna of these community types was identified from the release of contaminated surface waters during the construction and/or operational phases, in the absence of mitigation.	A temporary impact to the natural condition of the listed community types has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Mudflats and sandflats not covered by seawater at low tide [1140]				
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	The proposed development is wholly located outside the boundary of the SAC. There will be no direct loss of habitat area as a result of the proposed development.	No potential for adverse effects on site integrity.
Community distribution	Hectares	The Muddy fine sand community and Intertidal fine sand community complex should be conserved in a natural condition.	The marine communities of 'muddy fine sand community' and 'fine sand community complex' occur within the SAC downstream of the River Dee outflow. A potential impact to the benthic fauna of these community types was identified from the release of contaminated surface waters during the construction and/or operational phases, in the absence of mitigation.	A temporary impact to the natural condition of the listed community types has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Salicornia and other annuals colonizing mud and sand [1310]				
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites surveyed: 35.00ha	The proposed development is wholly located outside the boundary of the SAC. There will be no direct loss of habitat area as a result of the proposed development.	No potential for adverse effects on site integrity.
Habitat distribution	Hectares	No decline or change in habitat distribution, subject to natural processes.	The proposed development is wholly located outside the boundary of the SAC. There will be no declines or changes to habitat distribution as a result of the proposed development.	No potential for adverse effects on site integrity.
Physical structure: sediment supply	Presence / absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions.	The natural function and development of this habitat is dependant on continued sediment supply. The proposed development is wholly located outside the boundary of the SAC and there will be no in-stream works such as to cause an obstruction to the circulation of sediments and/or organic matter within the SAC. There will be no interference to the sediment supply of this habitat.	No potential for adverse effects on site integrity.

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession.	Creek density is influenced by vegetation cover, sediment supply and tidal influence (NPWS, 2011d). The proposed development will not affect the sediment supply or tidal patterns within the SAC.	No potential for adverse effects on site integrity.
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime.	The tidal regime is central to the development, growth and survival of this habitat within the SAC (NPWS, 2011d). The proposed development is wholly located outside the boundary of the SAC and will not have any effects on the tidal regime of Dundalk Bay.	No potential for adverse effects on site integrity.
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession.	In order to ensure the ecological functioning of all of the saltmarsh habitats it is vital to maintain the zonations and transitions to other habitats (NPWS, 2011c). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to the vegetation structure and zonation, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Vegetation structure: height	Centimetres	Maintain structural variation within sward.	The vegetation height of the sward is maintained by grazing. Overgrazing can lead to loss of species and destruction of the vegetation cover, while undergrazing can lead to a loss of plant diversity due to competitive exclusion (NPWS, 2011d). There is no grazing by livestock at the SAC and the proposed development will not affect the grazing regime within the SAC. There will be no impacts on vegetation height.	No potential for adverse effects on site integrity.
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated.	Vegetation cover can have a major effect on saltmarsh development by reducing the velocity of the tide and thereby enhancing the deposition of sediment (NPWS, 2011d). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat. Localised effects on vegetation has the potential to affect vegetation cover.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to vegetation cover, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009).	Saltmarsh habitat contains several distinct zones: lower marsh, low-mid marsh and mid-upper marsh, each of which are characterised by different species sub-communities (NPWS, 2011d). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat. Localised effects on vegetation has the potential to impact on species communities of this habitat.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to the composition of the sub-communities, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this**

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
				would constitute negative effect on site integrity.
Vegetation structure: negative indicator species- *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.	Common cordgrass is found in estuaries, mudflats and salt marshes (Fitzpatrick *et al.*, 2014). The proposed development site comprises arable agricultural land and does not support this species. There is no potential for the expansion of common cordgrass within the SAC as a result of the proposed development.	No potential for adverse effects on site integrity.
Atlantic salt meadows (*Glauco-uccinellietalia maritimae*) [1330]				
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For the sub-site (357.57ha) and potential areas (22.42ha) mapped: 379.98ha	The proposed development is wholly located outside the boundary of the SAC. There will be no direct loss of habitat area as a result of the proposed development.	No potential for adverse effects on site integrity.
Habitat distribution	Hectares	No decline or change in habitat distribution, subject to natural processes.	The proposed development is wholly located outside the boundary of the SAC. There will be no declines or changes to habitat distribution as a result of the proposed development.	No potential for adverse effects on site integrity.
Physical structure: sediment supply	Presence / absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions.	The natural function and development of this habitat is dependent on continued sediment supply. The proposed development is wholly located outside the boundary of the SAC and there will be no in-stream works such as to cause an obstruction to the circulation of sediments and/or organic matter within the SAC. There will be no interference to the sediment supply of this habitat.	No potential for adverse effects on site integrity.
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession.	Creek density is influenced by vegetation cover, sediment supply and tidal influence (NPWS, 2011d). The proposed development will not affect the sediment supply or tidal patterns within the SAC.	No potential for adverse effects on site integrity.
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime.	The tidal regime is central to the development, growth and survival of this habitat within the SAC (NPWS, 2011d). The proposed development is wholly located outside the boundary of the SAC and will not have any effects on the tidal regime of Dundalk Bay.	No potential for adverse effects on site integrity.
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession.	In order to ensure the ecological functioning of all of the salt-marsh habitats it is vital to maintain the zonations and transitions to other habitats (NPWS, 2011c). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to the vegetation structure and zonation, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this**

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
				would constitute negative effect on site integrity.
Vegetation structure: height	Centimetres	Maintain structural variation within sward.	The vegetation height of the sward is maintained by grazing. Overgrazing can lead to loss of species and destruction of the vegetation cover, while undergrazing can lead to a loss of plant diversity due to competitive exclusion (NPWS, 2011d). There is no grazing by livestock at the SAC and the proposed development will not affect the grazing regime within the SAC. There will be no impacts on vegetation height.	No potential for adverse effects on site integrity.
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated.	Vegetation cover can have a major effect on saltmarsh development by reducing the velocity of the tide and thereby enhancing the deposition of sediment (NPWS, 2011d). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat. Localised effects on vegetation has the potential to affect vegetation cover.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to vegetation cover, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in Saltmarsh Monitoring Project (McCorry and Ryle, 2009).	Saltmarsh habitat contains several distinct zones: lower marsh, low-mid marsh and mid-upper marsh, each of which are characterised by different species sub-communities (NPWS, 2011d). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat. Localised effects on vegetation has the potential to impact on species communities of this habitat.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to the composition of the sub-communities, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Vegetation structure: negative indicator species- *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), No new sites for this species and an annual spread of less than 1% where it is already known to occur.	Common cordgrass is found in estuaries, mudflats and salt marshes (Fitzpatrick *et al.*, 2014). The proposed development site comprises arable agricultural land and does not support this species. There is no potential for the expansion of common cordgrass within the SAC as a result of the proposed development.	No potential for adverse effects on site integrity.
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]				
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: 0.045ha.	The proposed development is wholly located outside the boundary of the SAC. There will be no direct loss of habitat area as a result of the proposed development.	No potential for adverse effects on site integrity.
Habitat distribution	Hectares	No decline or change in habitat distribution, subject to natural processes.	The proposed development is wholly located outside the boundary of the SAC. There will be no declines or changes to habitat distribution as a result of the proposed development.	No potential for adverse effects on site integrity.

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Physical structure: sediment supply	Presence / absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions.	The natural function and development of this habitat is dependent on continued sediment supply. The proposed development is wholly located outside the boundary of the SAC and there will be no in-stream works such as to cause an obstruction to the circulation of sediments and/or organic matter within the SAC. There will be no interference to the sediment supply of this habitat.	No potential for adverse effects on site integrity.
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession.	Creek density is influenced by vegetation cover, sediment supply and tidal influence (NPWS, 2011d). The proposed development will not affect the sediment supply or tidal patterns within the SAC.	No potential for adverse effects on site integrity.
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime.	The tidal regime is central to the development, growth and survival of this habitat within the SAC (NPWS, 2011d). The proposed development is wholly located outside the boundary of the SAC and will not have any effects on the tidal regime of Dundalk Bay.	No potential for adverse effects on site integrity.
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession.	In order to ensure the ecological functioning of all of the saltmarsh habitats it is vital to maintain the zonations and transitions to other habitats (NPWS, 2011c). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to the vegetation structure and zonation, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Vegetation structure: height	Centimetres	Maintain structural variation within sward.	The vegetation height of the sward is maintained by grazing. Overgrazing can lead to loss of species and destruction of the vegetation cover, while undergrazing can lead to a loss of plant diversity due to competitive exclusion (NPWS, 2011d). There is no grazing by livestock at the SAC and the proposed development will not affect the grazing regime within the SAC. There will be no impacts on vegetation height.	No potential for adverse effects on site integrity.
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated.	Vegetation cover can have a major effect on saltmarsh development by reducing the velocity of the tide and thereby enhancing the deposition of sediment (NPWS, 2011d). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat. Localised effects on vegetation has the potential to affect vegetation cover.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to vegetation cover, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in Saltmarsh Monitoring Project (McCorry and Ryle, 2009).	Saltmarsh habitat contains several distinct zones: lower marsh, low-mid marsh and mid-upper marsh, each of which are characterised by different species sub-communities (NPWS, 2011d). The release of pollutants as a result of the proposed development was identified as having the potential to impact on vegetation of this habitat. Localised effects on vegetation has the potential to impact on species communities of this habitat.	Any temporary localised impacts to vegetation caused by contaminated surface waters released during the construction and/or operational phases, could result in localised alterations to the composition of the sub-communities, which has the potential to interfere with the conservation objective of maintaining favourable condition. In the absence of mitigation, **this would constitute negative effect on site integrity**.
Vegetation structure: negative indicator species-*Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), No new sites for this species and an annual spread of less than 1% where it is already known to occur.	Common cordgrass is found in estuaries, mudflats and salt marshes (Fitzpatrick *et al.*, 2014). The proposed development site comprises arable agricultural land and does not support this species. There is no potential for the expansion of common cordgrass within the SAC as a result of the proposed development.	No potential for adverse effects on site integrity.
Dundalk Bay SPA				
Wetlands [A999]				
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the areas of 8136, 4374 and 649 hectares respectively for subtidal, intertidal, and supratidal habitats, other than that occurring from natural patterns of variation.	The proposed development is wholly located outside the boundary of the SPA. There will be no direct loss of habitat area as a result of the proposed development.	No potential for adverse effects on site integrity.

5.4 Mitigation Measures to Address Potential Adverse Effects

5.4.1 Adverse Effects on Site Integrity Identified Requiring Mitigation

The potential for adverse effects on relevant European sites as a result of the proposed development, in the absence of mitigation and adopting the precautionary principle, have been determined and are detailed in Section 5.3 above. In summary, the potential adverse effects identified comprise the following:

- Potential impacts to the benthic communities of the qualifying interest 'mudflats and sandflats' due to the release of pollutants during construction phase; and
- Potential reduction in flora species number / condition of 'Atlantic salt meadow', 'Mediterranean salt meadow' and '*Salicornia* mud' habitat due to the release of pollutants during construction phase.

5.4.2 Mitigation Measures

Mitigation measures are prescribed hereunder to address the above impacts such that adverse effects on site integrity of the European sites do not occur.

5.4.2.1 *Construction Phase Measures*

Pollution Control Measures

Pollution control measures will be designed, installed, and maintained in accordance with CIRIA guidelines for '*Environmental Good Practice on Site*' (C741).

General

Best available technology (BAT) mitigation measures designed by project ecologist.

Entry to the drainage ditches when wet by vehicles and/or personnel will not be permitted under normal circumstances.

There will be no direct discharges to surface waters. Local watercourses (Rathgory Tributary) must be protected from dust, silt and surface water throughout the works.

Foul drainage from site offices and compounds, where not directed to the existing wastewater network, will be contained and disposed of off-site in an appropriate manner and in accordance with the relevant statutory regulations, to prevent the pollution of local receiving watercourses.

An Emergency Response Plan detailing the procedures to be undertaken in the event of flooding, a spill of chemical, fuel or other hazardous wastes, a fire, or non-compliance incident will be prepared.

Ensure site staff are trained in the implementation of the Emergency Response Plan and the use of any spill control equipment as necessary.

Siltation

Stockpiling of loose materials will be kept to a minimum of 20m from watercourses and drains. Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses.

Silt fences will be installed along the length of the Rathgory Tributary on either side, in addition to extending along drainage ditches which connect to the stream for a minimum of 50m. Silt fences will also be installed within drainage ditches prior to the connection point with the stream.

The silt fences are to be installed prior to the commencement of any ground disturbance works and will have the following design features:

- the geotextile fabric must be entrenched at least 100mm into the ground during installation;
- the fence posts will have a maximum spacing of 2m in order to prevent sagging of the geotextile fabric; and

- the geotextile fabric will be secured (e.g. stapled) to the fence posts.

Silt fences will remain in-situ until the disturbed areas within the sites have been reinstated and re-vegetated.

Surface water run-off from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden run-off prior to discharge of surface water at a controlled rate.

Weather conditions and seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations, with an objective of minimizing soil erosion. The contractor will avoid work involving moving of soil during heavy rainfall to minimise potential for entrainment of silt. Where forecasts indicate heavy rainfall events, works should be rescheduled accordingly, and stockpiles of fine-grained material will be carried out.

Maintenance of any drainage structures (e.g. de-silting operations) must not result in the release of contaminated water to the surface water network.

The extent of sub-soil and topsoil stripping to be minimised to reduce the rate and volume of the run-off during construction until the topsoil and vegetation are replaced.

A suitably qualified ecologist will undertake a monitoring visit prior to the commencement of construction including site clearance works. This will comprise an assessment and confirmation of the installation of silt fences as to the specifications outlined above. The ecologist may make further recommendations in light of the local conditions in respect to silt fence placement, orientation and design.

Cement-based material

Concrete batching will take place off-site where possible, or if necessary within the site it will take place in a designated area with an impermeable surface.

Pumped concrete will be monitored to ensure no accidental discharge. Mixer washings and excess concrete will not be discharged to surface water. Concrete washout areas will be located remote from any surface water drainage features to avoid accidental discharge to watercourses.

The wash-down of cement contaminated equipment will take place off site. No washing of any plant or equipment used in concreting operations, or concrete transport, will be carried out on site. Where concrete is delivered to the site, only chute cleaning should occur within the site using the minimal volume of water required. There will be no discharge of contaminated waters to the drainage system within the site, or any artificial drain or watercourse.

It will be ensured that excavations are sufficiently dewatered prior to any pouring of concrete. Dewatering will continue while the concrete sets.

Pour sites should be free of standing water, and plastic sheeting/covers will be at-hand in the event of sudden rainfall.

Hydrocarbons

Where oil and fuel are required to be stored on site these will be stored in designated areas which will be housed in a suitably sized bund such that any leaks or spills will be intercepted and will be located away from surface water drainage and features. The bund will be at least 50m away from drains, ditches or the watercourse, excavations and other locations where it may cause pollution.

Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations, including the attenuation tank during construction, that require pumping will not directly discharge to the stream. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality.

The minimal required refuelling or maintenance of construction plant possible will take place on site. Refuelling of construction machinery will be restricted to designated areas away from surface water

drainage and will take place by direct refuelling from delivery truck or via a mobile double-skinned fuel bowser.

Spill-kits and hydrocarbon absorbent packs will be kept in designated areas and operators will be fully trained on the use of this equipment.

All waste fuels, oils and other hazardous wastes will be disposed of in accordance with the requirements of the Waste Management Acts 1996, as amended.

In-stream works

All in-stream works methodologies must have prior approval of Inland Fisheries Ireland.

Staging of project to reduce risks to watercourses from contamination with all instream works being carried out in Phase 1 of the project, where the stream is diverted, landscaped and protected from all subsequent phases.

The proposed development includes the realignment of the Rathgory Stream, culverting under proposed new road and installation of headwalls for the overflow of surface waters from the on-site attenuation areas. These works will follow measures outlined in '*Guidelines on Protection of Fisheries during Construction Works and Adjacent to Waters*' (Inland Fisheries Ireland, 2016), including the below.

The excavation of the diversion should be carried out in the dry with no connections to the existing watercourse, until the works are complete with the exception of the small areas where the stream is currently live. No in-stream works will be undertaken outside the isolated works area.

De-stocking of the Rathgory Tributary may need to be carried out prior to the commencement of works (if required by IFI) and upstream and downstream permeable barriers to remain in place until construction is completed.

In stream works to be carried out in full consultation with and to the advice of Inland Fisheries Ireland and the project ecologist.

Any water present within the works area will be over pumped and discharged a minimum of 10m from the watercourse to a designated vegetated area.

6 Plans and projects which could act in-combination

The potential for the proposed development to contribute to a cumulative impact on European Sites was considered.

A search was conducted using available resources (e.g. county council planning register) for plans and projects which occur in the vicinity of the proposed development site, and/or along the catchment of the Rathgory Stream and have the potential to be progressed through construction phase concurrently with the proposed development, or act in-combination during operation. The majority of projects relate to one-off housing applications and extensions / renovations. Other projects assessed include the following:

- **Planning Reference Number: 25/64**: Extension of Duration for Reg Ref 19/353 for the construction of total of 52.no residential houses at Bridgegate, Rathgory & Mulladrillen, Drogheda Road, Ardee, Co. Louth.
- **Planning Reference Number: 10/174**: Residential development of 281no. dwellings, public park (4.91ha), a single storey community building (167m²), a three storey neighbourhood centre, construction of a section of new Local Collector Road (c.600m in length) and all associated elements and works on site of 19 hecrares at Rathgort, Stoney Land, Ardee, Co. Louth.
- **Planning Reference Number: 19/3336**: Residential development on a site area of c.3.70 hectares across 2 no. parcels of land and is located in the townland of Rathgory and Mulladrillen. The proposed development amends and will supersede elements of the development permitted under Reg. Ref. 10/174 (ABP Ref. PL15.238053), which is presently under construction.
- **Planning Reference Number: 2560834**: Completion of the residential development which was initially granted planning permission under planning reference 04/1477. The development will consist of the construction of 17 no. residential units at Moorhall Rise, Hale Street, Ardee.
- **Planning Reference Number: 2560475**: Mixed-use development on the sites of disused buildings of Odea Agri Seeds Limited and the De La Salle Monastery in Moorehall, Townparks, Ardee, Co. Louth.
- **Planning Reference Number: 2360237**: 122no. residential units along with provision of a crèche on Lands at Dawsons Demesne, Ardee, Co Louth.
- **Planning Reference Number: 2360296**: Works associated with the proposed uprate of the existing Louth – Woodland 220 kV overhead powerline (OHL) between the existing Louth 220 kV substation in the townland of Monavallet, County Louth and the existing Woodland 220 kV substation in the townland of Woodland, County Meath.

The above projects include standard measures to protect watercourses during the construction phase. Based on this, and taking into account the mitigation measures for the proposed development as detailed in Section 5.4 above, it is considered that there is no potential for the proposed development to act in-combination with other developments in the vicinity that may cause likely significant effects to any European sites.

The predominant land uses in the area were also considered in the assessment, these included predominantly agricultural pasture, agricultural arable crop production and residential and commercial developments.

The following Plans were also reviewed and considered as part of this assessment:

- Louth County Development Plan 2021-2027
- 4th National Biodiversity Action Plan 2023-2030-

The review of these Plans is provided in Table 6-1 below.

Table 6-1. Review of plans which could act in-combination with the proposed development.

Plan	Key Policies/Issues/Objectives Relevant to European Sites	Assessment of Potential Effects on European Sites
Louth County Development Plan 2021-2027	**Policy Objective NBG3** • To protect and conserve Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated under the EU Habitats and Birds Directives. **Policy Objective NBG4** • To ensure that all proposed developments comply with the requirements set out in the DECLG '*Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities 2010*'. **Policy Objective NBG5** • To ensure that no plan, programme, or project giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan, either individually or in combination with other plans, programmes or projects. **Policy Objective NBG6** • To ensure a screening for Appropriate Assessment (AA) on all plans and/or projects and/or Stage 2 Appropriate Assessment (Natura Impact Report/ Natura Impact Assessment) where appropriate, is undertaken to make a determination. European Sites located outside of the County but within 15km of the proposed development site shall be included in such screenings as should those to which there are pathways, for example, hydrological links for potential effects. **Policy Objective NBG7** To co-operate with the Regional Planning Assembly and adjoining local authorities, public agencies and community interests to protect regionally significant heritage assets, environmental quality, and to identify threats to existing environmental quality in a transboundary context throughout the region including Northern Ireland.	The Development Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the Natura 2000 network. No potential for cumulative effects, considered in conjunction with the proposed development, were identified.
4th National Biodiversity Action Plan 2023-2030	**Objective 2 - Meet Urgent Conservation and Restoration Needs** • Outcome 2A: The protection of existing designated areas and species is strengthened and conservation and restoration within the existing protected are network are enhanced 29 • Outcome 2B: Biodiversity and ecosystem services in the wider countryside are conserved 32 18 27 Navigation • Outcome 2C: All freshwater bodies are of at least 'Good Ecological Status' as defined under the EU Water Framework Directive 36 • Outcome 2D: Genetic diversity of wild and domesticated species is safeguarded 39 Outcome 2E: A National Restoration Plan is in place to meet EU Biodiversity Strategy 2030 nature restoration targets 41 • Outcome 2F: Biodiversity and ecosystem services in the marine environment are conserved and restored 42 • Outcome 2G: Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment.	The 4th National Biodiversity Action Plan was comprehensively reviewed with particular focus on policies and objectives related to the Natura 2000 network. No negative effects to the Natura 2000 Network were identified with regard to the proposed development.

Following the detailed assessment provided in the preceding sections, it is concluded that, the proposed development will not result in any residual adverse effects on any of the European Sites, their integrity or their conservation objectives when considered on its own. There is therefore no potential for the proposed development to contribute to any cumulative adverse effects on any European Site when considered in-combination with other plans and projects.

7 Outcome

This report assesses the potential for the proposed development to result in adverse effects on the integrity of European sites and has been informed by detailed desktop assessment and field surveys.

Connectivity was identified between the proposed development and the European sites of Dundalk Bay SAC and Dundalk Bay SPA during the construction phase via the Rathgory Stream, which connects to the River Dee which outflows to Dundalk Bay. Potential impacts resulting from this connectivity have been described and have been assessed for their potential to result in adverse effects on site integrity of the European sites. Mitigation measures have been prescribed to address any potential impacts such that adverse effects on site integrity of the relevant European sites does not occur.

In light of the best scientific knowledge with relation to the above 2no. European sites where potential connectivity was identified, this report has examined and analysed the potential impact sources and pathways, how these could impact on the relevant European sites special conservation interest habitats and species, and whether the predicted impacts would adversely affect the integrity of the four relevant European sites. There is no connectivity to any further European sites and there are no other European sites at risk of effects from the works. Accordingly, it has been objectively concluded, following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the construction phase and the prescribed mitigation measures which address any potential impacts, that the proposed development will not adversely affect the integrity of any European site either alone or in combination with other plans or projects.

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