DOSA

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RESIDENTIAL DEVELOPMENT, COUNTESS ROAD, KILLARNEY, CO. KERRY

SITE SPECIFIC FLOOD RISK ASSESSMENT

DATE 05/06/2026

REVISION 4

JOB NO. 7334

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1 Introduction

1.1 General

Denis O'Sullivan & Associates (DOSA), Consulting Engineers were commissioned to carry out a Site-Specific Flood Risk Assessment for a proposed residential development. This Report will assess the risk to the proposed Development from all potential sources of flooding and propose suitable mitigation measures where appropriate. This FRA should be read in conjunction with DOSA's Infrastructure Report.

1.2 Objectives

The aim of the FRA is to identify, quantify and communicate to decision makers and other stakeholders the risk of flooding associated with the proposed development.

The FRA has been carried out in accordance with 'The Planning System and Flood Risk Management Guidelines' (hereafter referred to as the FRM Guidelines) published in November 2009 jointly by the then Department of the Environment, Heritage and Local Government, DEHLG, (now the Department of the Environment, Community and Local Government, DECLG) and the Office of Public Works (OPW) and the report assesses the site in accordance with the requirements of "The Planning System and Flood Risk Management Guidelines for Planning Authorities".

1.3 Existing Site

The application site is located on Countess Road, less than 1km from Killarney town centre. The development lands consist primarily of undeveloped greenfield sites with some mature hedgerows and planting. The north-eastern part of the site is currently occupied by two existing dwellings, which are to be demolished. The site is bounded to the west by existing private residential houses and the Countess Grove residential estate. To the south, the site abuts the Doire Collie residential estate. To the north, the site fronts onto Countess Road, and to the east, it adjoins existing residential developments and large, undeveloped farmland currently zoned for residential development.

A snapshot of the site location is outlined in Figure 1.3 below.



Figure 1.3 – Site Location

1.4 Site Topography

The site is sloping in nature and care has been taken to design a layout to work with existing contours where possible. The topography of the site slopes from the south and the north to a low point in the middle of the south and then slopes downwards towards the western boundary. The elevation height along the perimeter on the northern boundary rises from +34.50m to +35.75m at its high point, the southern boundary rises from +31.50m to +38.75m at the high point, the eastern boundary rises from +31.50m to +38.75m at the high point and then down to levels of +29.0m along the western boundary. A snapshot of the existing topography is outlined in Figure 1.4 below.



Figure 1.4 – Site Topography

1.5 Existing Flow Path

The current natural discharge of the surface water on the site is indicated on the Flow Path Layout Drawing No. 7334-1008-RevA included in Appendix C and outlined in Figure 1.5 below. As outlined above, the site has two natural drainage paths with the southern portion running towards the N70 roadway and the majority of the site currently draining towards the site's western boundary. As the site will be attenuated to a greenfield runoff rate, this will have no increase on the existing runoff rate.

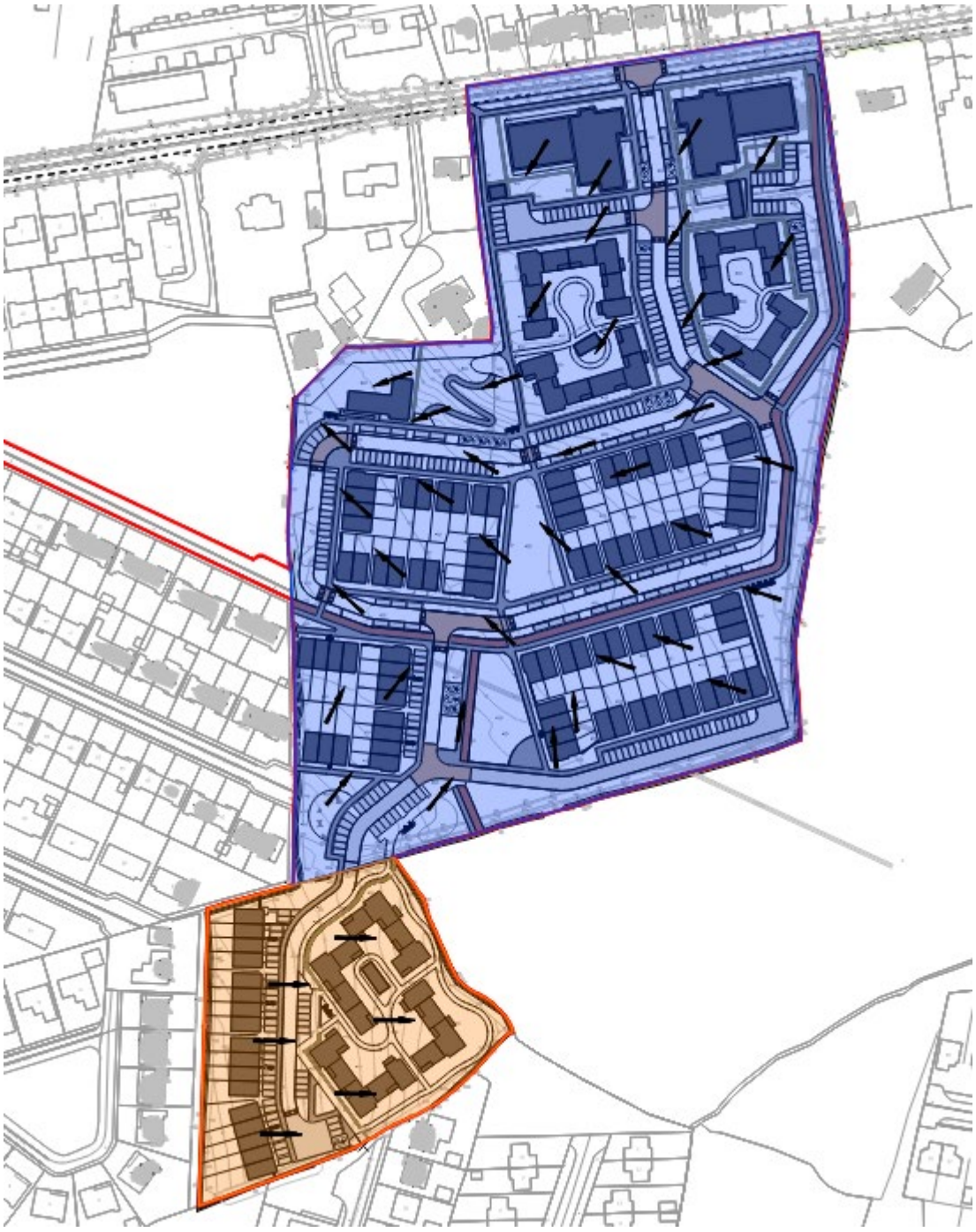


Figure 1.5 – Existing Flow Path

1.6 Proposed Development

The proposed development will consist of the construction of a residential development of 259 no. residential units with ancillary single storey creche, landscaping and all associated site development works.

The proposed development includes the demolition of 2 no. existing two-storey semi-detached dwelling houses and an existing ruinous structure on the site and construction of 103 no. two storey houses (3-bed units), comprising of 27 no. terraced units, 62 no. end of terrace units, and 14 no. side entry units, 82 no. courtyard apartment units over 2 no. storeys (42 no. 1-bed units, 40 no. 2-bed units), and 74 no. apartment units (34 no. 1-bed units, 40 no. 2-bed units) in 2 no. part 3 storey and part 4 storey blocks.

Vehicular access to the proposed development will be via one entrance from Countess Road (L3904) to the north, with the entrance design including improvement works on the public road inclusive of a raised crossing point. The design includes pedestrian/cycle infrastructure to/from Countess Road and internally within the development site and to adjoining areas.

Ancillary site works include car parking, provision of bicycle parking and bin storage facilities serving the proposed apartment/courtyard apartment buildings and creche, 2 no. ESB substations, landscaping, water services and drainage infrastructure (including foul and storm network upgrades in Countess Grove), and all associated site development works. The proposed development also provides for the demolition of an existing site boundary walls along Countess Road.

A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application. A snapshot of the proposed development is outlined in Figure 1.6 below.

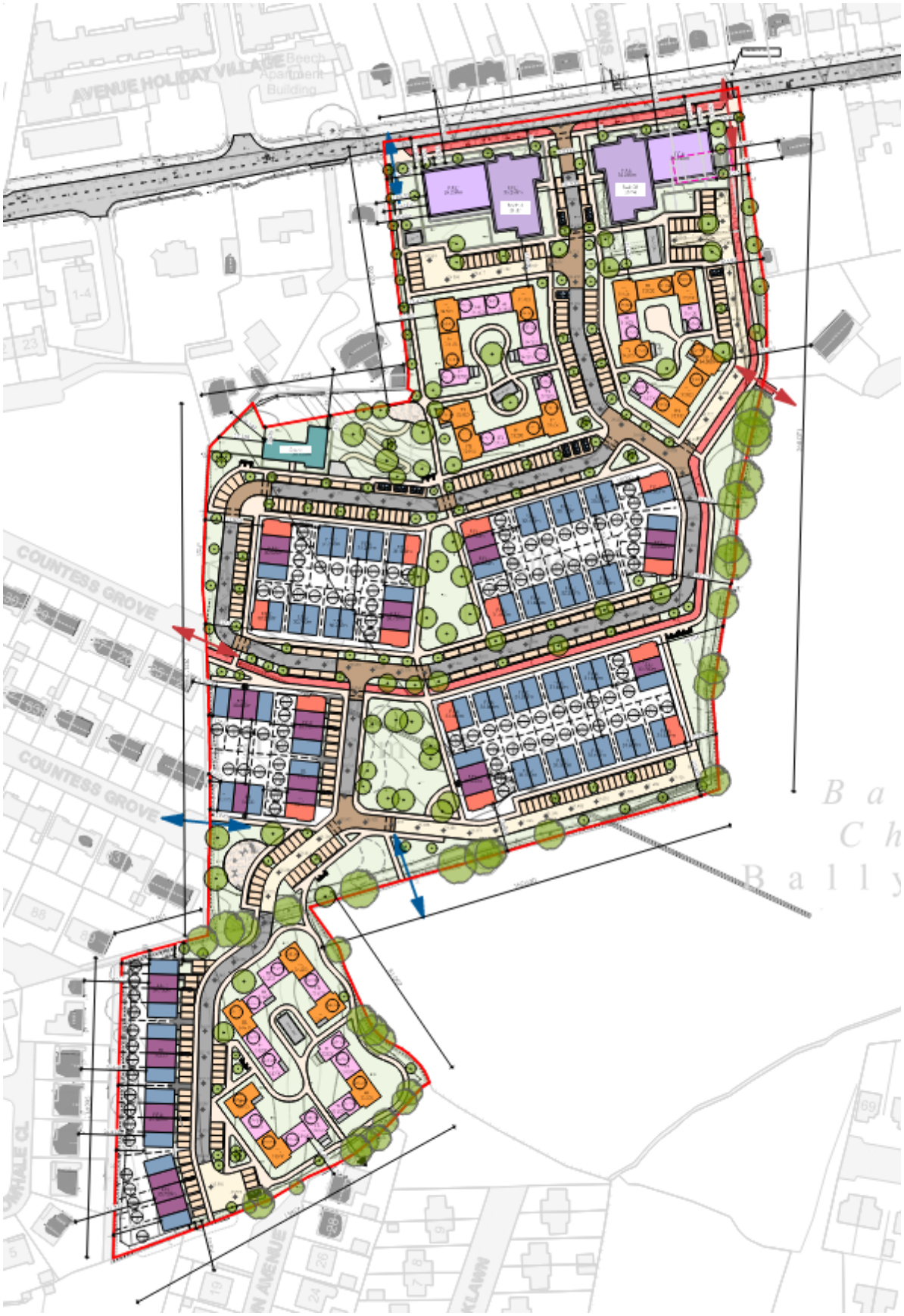


Figure 1.6 – Proposed Development

2 Flood Risk Assessment Methodology

2.1 Methodology

The methodology used for the flood risk assessment for the proposed development is based on 'The Planning System and Flood Risk Management, Guidelines for Planning Authorities' (2009)'. The FRM Guidelines require the planning system at national, regional and local levels to:

- Avoid development in areas at risk of flooding, particularly floodplains, unless there are proven wider sustainability grounds that justify appropriate development.
- Adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction and then mitigation of flood risk; and
- Incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

The sequential approach (see Figure 3.1 of the FRM Guidelines below) in flood risk management requires the following three steps to identify the necessity for the justification test for a development:

- Step 1: Identification of the Flood Zone at the proposed development site (Section 2.23 of the FRM Guidelines);
- Step 2: Identification of the vulnerability of the type of the proposed development (Table 3.1 of the FRM Guidelines); and
- Step 3: Using the matrix of vulnerability versus Flood Zone (Table 3.2 of the FRM Guidelines), identify the necessity for the justification test for the proposed development.

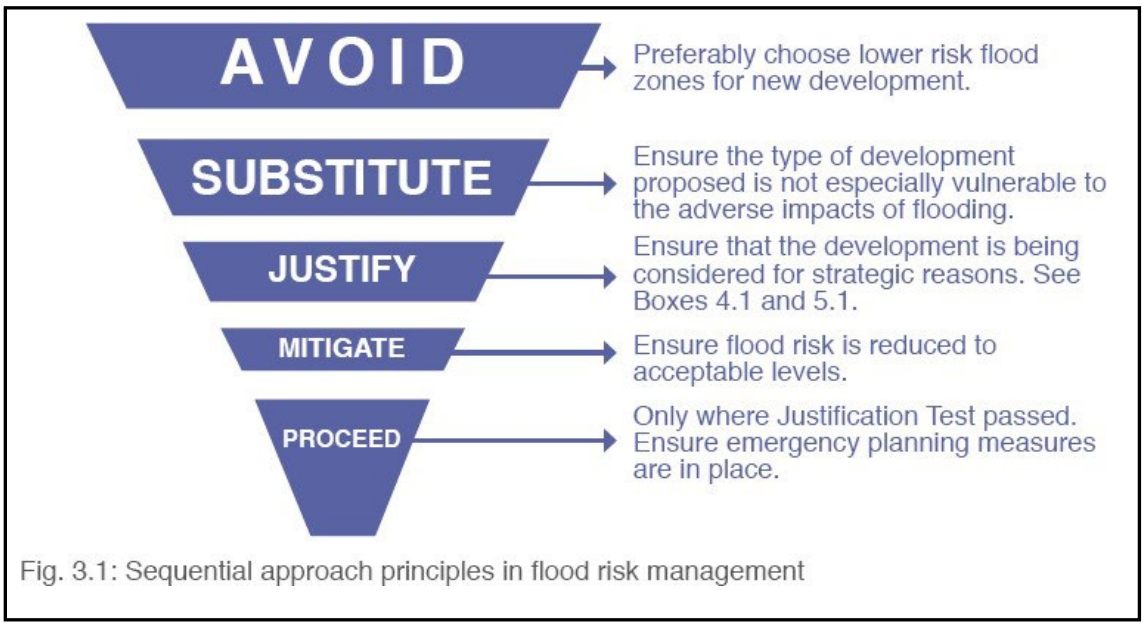


Figure 2.1 – Extract of Figure 3.1 of the FRM Guidelines

While Figure 3.1 of The FRM Guidelines sets out the broad philosophy underpinning the sequential approach in the flood risk management, Figure 3.2 of the Guidelines (shown below) describes the mechanism of the sequential approach for use in the planning process.

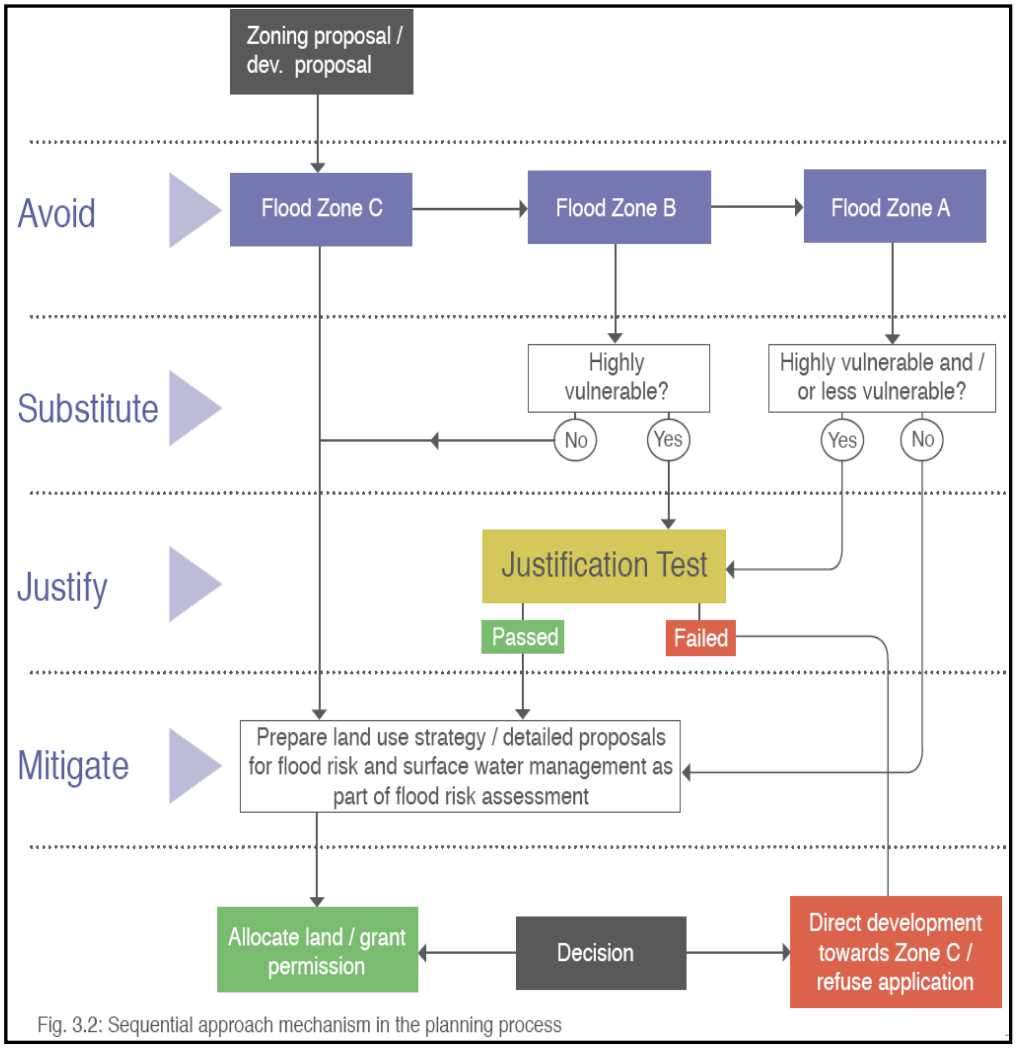


Figure 2.2 – Extract of Figure 3.2 of the FRM Guidelines

According to the FRM Guidelines, Flood Zones are graphical areas within which the likelihood of flooding is in a particular range. They are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning. There are three Flood Zones, namely,

- Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% AEP or 1 in 100 year for river flooding or 0.5% or 1 in 200 for coastal flooding);
- Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% AEP or 1 in 1000 year and 1% AEP or 1 in 100 year for river flooding and between 0.1% AEP or 1 in 1000 year and 0.5% AEP or 1 in 200 year for coastal flooding); and
- Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% AEP or 1 in 1000 for both river and coastal flooding).

Flood Zones A, B and C are based on the current assessment of the 1% AEP and the 0.1% AEP fluvial events and the 0.5% AEP and 0.1% AEP tidal events, without the inclusion of climate change

factors. Table 3.1 of the FRM Guidelines (see below) shows the classification of the vulnerability to flooding of different types of development.

Vulnerability class	Land uses and types of development which include*:
Highly vulnerable development (including essential infrastructure)	Garda, ambulance and fire stations and command centres required to be operational during flooding;
	Hospitals;
	Emergency access and egress points;
	Schools;
	Dwelling houses, student halls of residence and hostels;
	Residential institutions such as residential care homes, children's homes and social services homes;
	Caravans and mobile home parks;
	Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and
	Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions;
	Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans;
	Land and buildings used for agriculture and forestry;
	Waste treatment (except landfill and hazardous waste);
	Mineral working and processing; and
	Local transport infrastructure.
Water-compatible development	Flood control infrastructure;
	Docks, marinas and wharves;
	Navigation facilities;
	Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location;
	Water-based recreation and tourism (excluding sleeping accommodation);
	Lifeguard and coastguard stations;
	Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and
	Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).
*Uses not listed here should be considered on their own merits	

Table 3.1 Classification of vulnerability of different types of development

Figure 2.3 – Extract of Table 3.1 of the FRM Guidelines

Table 3.2 of the FRM Guidelines (shown below) identifies the types of development that would be appropriate for each Flood Zone and those that would be required to meet the Justification Test. Since dwelling houses are classified as Highly vulnerable development' the section highlighted in Table 3.2 presents the required actions for each flood zone.

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 2.4 – Extract of Table 3.2 of the FRM Guidelines

The FRM Guidelines (Chapter 2) outlines the following three stages of flood risk assessment:

- Stage 1: Flood risk identification – to identify whether there may be any flooding or surface water management issues relating to the proposed development site that may warrant further investigations.
- Stage 2: Initial flood risk assessment – to confirm sources of flooding that may affect the proposed development site, to appraise the adequacy of existing information and to determine what surveys and modelling approach is appropriate to match the spatial resolution required and complexity of the flood risk issues. This stage involves the review of existing studies and hydraulic modelling to assess flood risk and to assist with the development of FRM measures.
- Stage 3: Detailed flood risk assessment – to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development, of its potential impacts on flood risk elsewhere and of the effectiveness of any proposed mitigation measures. This will typically involve use of an existing or construction of a hydraulic model across a wide enough area to appreciate the catchment wide impacts and hydrological process involved.

2.2 Data Collection

Data required for the flood risk assessment was obtained from various sources, as described below.

- The historic flood data was obtained from the National Flood Hazard Mapping website www.floodmaps.ie;
- The Subsoil and Aquifer vulnerability data was obtained from the Geological Survey of Ireland website www.gsi.ie;
- National CFRAM Study;
- Greater Dublin Strategic Drainage Study

3 Existing Hydrological Environment

3.1 Relevant Hydrological Features

The main hydrological feature of the area is the River Flesk to the south. Figure 3-1 below illustrates the main hydrological features associated with the area in the vicinity of the site.



Figure 3.1: Hydrological Features of the Area

3.2 Existing Geology and Hydrogeology of the Area

The Geological Survey of Ireland (GSI) website provides information on their public online mapping service at www.gsi.ie on aquifer vulnerability. The map presented in Figure 3.2 depicts the aquifer vulnerability for the proposed development site.

The interactive web-mapping site classifies the aquifer vulnerability in this region as having a high vulnerability rating. The GSI state that "Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater

may be contaminated by human activities". The GSI further describes that the vulnerability of groundwater depends on:

- The time of travel of infiltrating water (and contaminants);
- The relative quantity of contaminants that can reach the groundwater; and
- The contaminant attenuation capacity of the geological materials through which the water and contaminants infiltrate

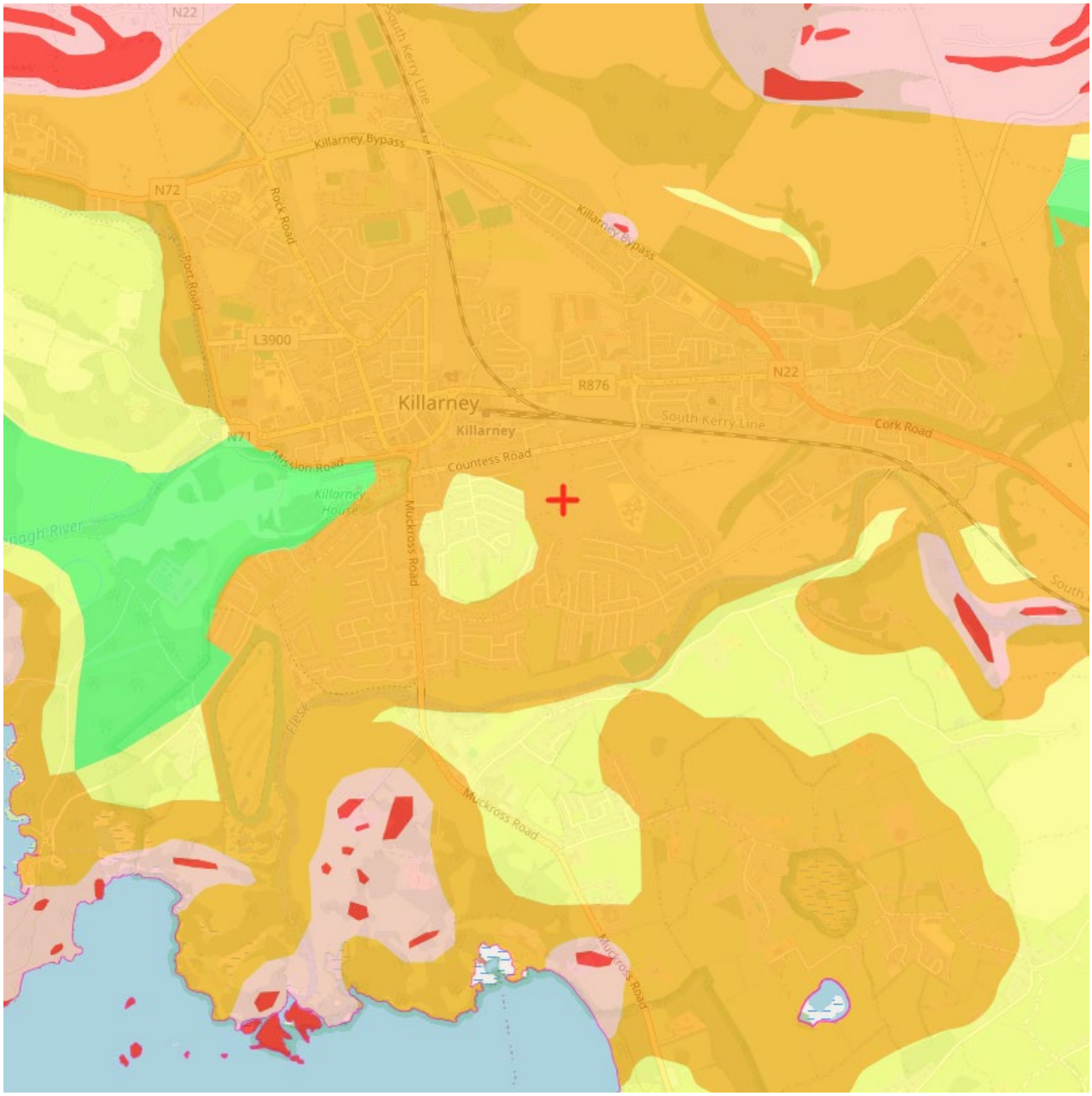


Figure 3.2: GSI Aquifer Vulnerability Mapping of the Area

3.3 Area Flooding

The National Flood Hazard Mapping Website www.floodmaps.ie does not show any records of historic flooding occurring at the proposed development site. However, it does show instances of historical flooding around Killarney town.

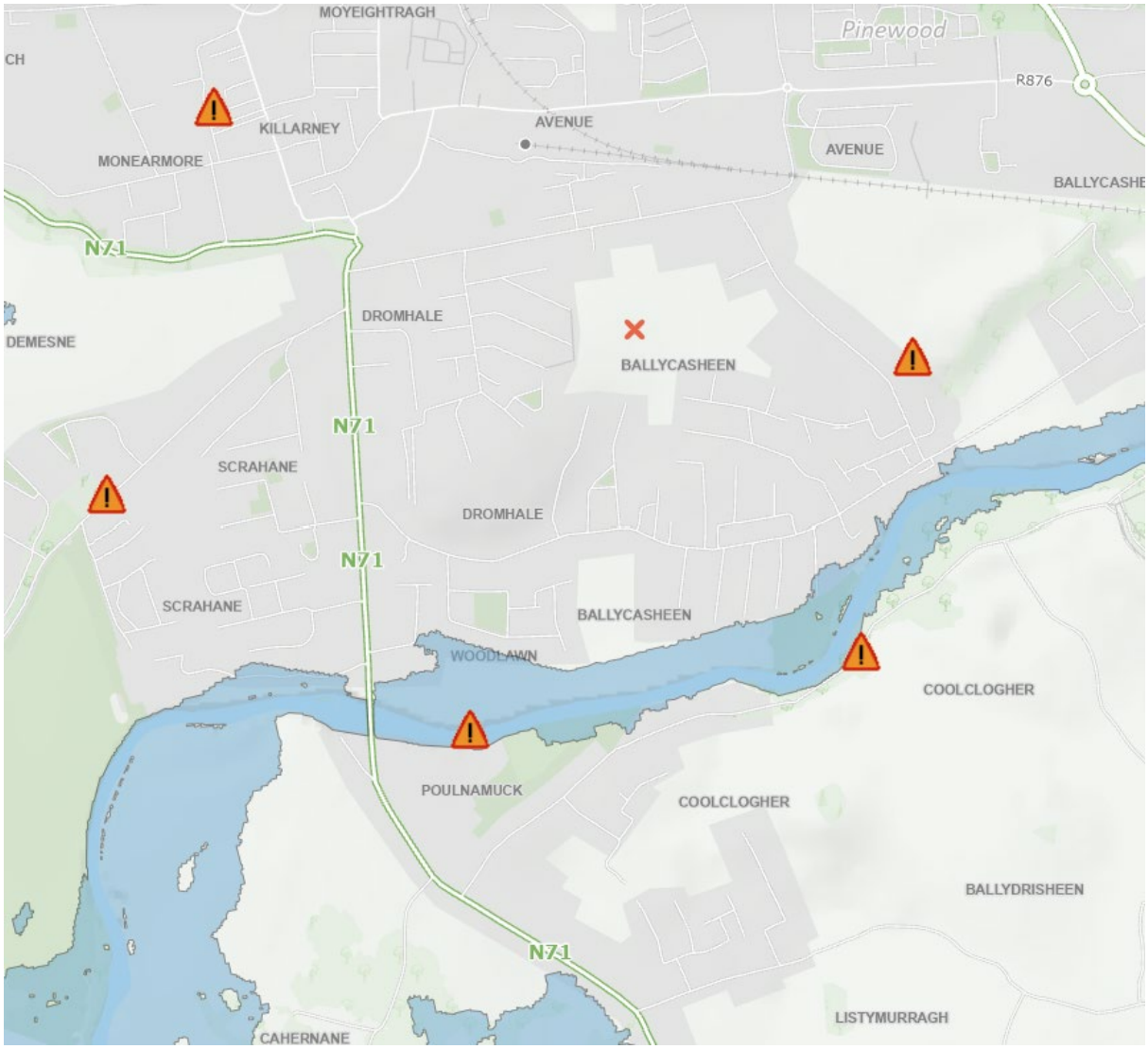


Figure 3.3: Extract from Floodmap.ie

3.4 Existing Flood Studies

3.4.1 CFRAM Study

The OPW, as lead agency for flood risk management in Ireland, is producing Flood Risk Management Plans (FRMP), in line with National Flood Policy and the requirements of the EU Floods Directive. Draft FRMP's are currently being produced by the OPW under the CFRAM Study. The Draft FRMP's make use of the information provided through the flood maps that have previously been produced under the CFRAMS Programme and previous parallel projects. The Draft FRMP's set out a range of proposed measures and actions to manage and reduce flood risk within the catchments and coastal reaches covered by each Draft Plan, focusing on the 300 areas of potentially significant flood risk around Ireland that were identified under the PFRA. The Flood Maps associated with the FRMP's are currently being finalised and will be made available online to view when the Draft Plans are published for consultation.

Figure 3.4 below is an extract from the CFRAMS flood extent map showing the flood extent concerning the proposed development site. The full CFRAMS flood extent map showing the flood

extent of the local rivers and estuary is included in Appendix A. The map shows that the flood extent does not extend to the proposed development site and demonstrates that the site lies outside of the 0.1% Fluvial AEP event and is therefore located within Flood Zone C.

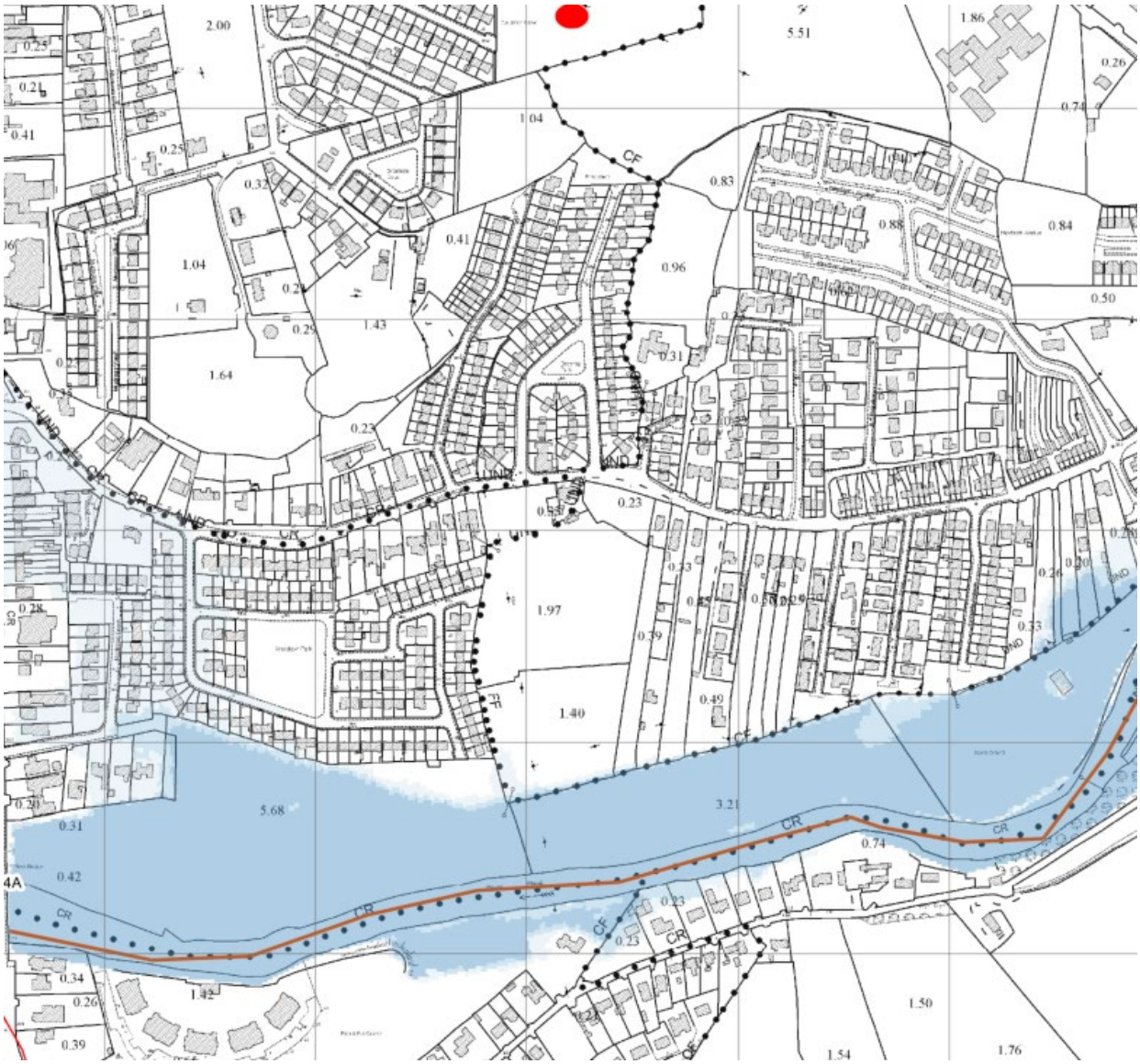


Figure 3.4: Extract CFRAMS Fluvial Flood Extent Map

4 Flood Risk Assessment

4.1 Introduction

As outlined in Section 2 of this report the FRM guidelines identifies three stages of Flood Risk Assessment namely;

- Stage 1: Flood Risk Identification
- Stage 2: Initial Flood Risk Assessment
- Stage 3: Detailed Flood Risk Assessment

4.2 Flood Risk Identification

According to the FRM Guidelines, flood risk identification is the process for deciding whether a plan or project requires further investigation. This is a desk-based exercise based on existing information. All the existing information is described in Section 3 and the identification of flood risk from each of the five sources of flooding (coastal, fluvial (river), groundwater, pluvial (rainfall) and from artificial drainage systems) is considered.

4.2.1 Fluvial Flood Risk

The CFRAMS Map in Appendix A indicates that the proposed development site lies outside of the 0.1% AEP fluvial flood event and hence is located within Flood Zone C for fluvial flood risk, where the risk of flooding is low.

4.2.2 Groundwater Flood Risk

The aquifer vulnerability map (refer to Figure 3.2) classifies the site as having a high vulnerability and there is no historical evidence of groundwater flooding at the site. There is no indication on the maps of any springs or wells on this site. Groundwater risk is therefore not considered to be significant.

4.2.3 Pluvial Flood Risk

The Flood Maps data shows no indication of previous pluvial related flooding at the site. During extreme rainfall events the application of SuDS principles will ensure surface water is managed sufficiently and sustainably discharged to the drainage network in accordance with the GDSDS. With these mitigation measures in place pluvial flood risk is not considered to be significant.

4.3 Initial Flood Risk Assessment

The Flood Risk Assessment has identified that there is a low flood risk to the site. Under the sequential approach identified in the FRM Guidelines a three-step approach is required to confirm the appropriateness of the development in terms of flood risk.

Step 1: Identification of the Flood Zone at the proposed development site

Using the Flood Zone criteria from the FRM Guidelines and as defined in Section 2 previously, the flood zones for each of the sites were determined.

- **Flood Zone A** – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 year for river flooding or 0.5% or 1 in 200 for coastal flooding);
- **Flood Zone B** – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 year and 1% or 1 in 100 year for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 year for coastal flooding); and
- **Flood Zone C** – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding).

As discussed in Section 4.2 above, the proposed development site lies within **Flood Zone C** – where risk of flooding is lowest.

Step 2: Identification of the vulnerability of the type of the proposed development (Table 3.1 of the FRM Guidelines)

The different types of proposed infrastructure are then assigned a vulnerability classification according to the definitions in 'Table 3.1 – Classification of vulnerability of different types of development' of the FRM Guidelines. As described in Section 1.2 above, the proposed development is dwelling houses. This is classified as 'highly vulnerable development'.

Step 3: Using the matrix of vulnerability versus Flood Zone (Table 3.2 of the FRM Guidelines), identify the necessity for the justification test for the proposed development

The proposed development site is located in Flood Zone C and is categorised as Highly Vulnerable Development. Table 3.2 of the FRM guidelines and Figure 3.2 – Sequential approach mechanism in the planning process (FRM guidelines) stipulate that a justification test is not required for such a development and is deemed appropriate development for the flood zone categories. Figure 4.1 below highlights the matrix of vulnerability versus flood zone.

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Figure 4.1: Matrix of Vulnerability versus Flood Zone to illustrate appropriate development

5 Detailed Flood Risk Assessment

5.1 General

As the Initial Flood Risk Assessment considers all proposed dwellings within the site to be located in Flood Zone C, the Detailed Flood Risk Assessment Stage will only consider pluvial flood risk to dwellings in relation to the following;

- Proposed Surface Water Management Measures and SuDS
- Flood Exceedance.
- Impact on Adjacent Areas.
- Climate Change.
- Access and Egress for Emergency Services during Flood Events.
- Residual Risks.
- Effectiveness of Flood Mitigation Measures.

Following from Stage 2 – Initial Flood Risk Assessment, it was determined that there is no requirement to undertake a detailed flood risk assessment on the proposed development. The vulnerability matrix as shown in Figure 4.1 identifies that there is no need for a Justification Test to be undertaken.

5.2 Surface Water Management Measures and SuDS

Surface water runoff from the development will be attenuated to greenfield runoff rates (Q-bar) before discharging to the watercourse to the northern boundary of the site.

The proposed surface water drainage network has been designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS). Surface water discharge rates from the proposed surface water drainage network will be controlled by a Hydrobrake type flow control device or similar and associated underground attenuation storage (attenuation tank and detention basin and oversized pipe). Surface water will also pass through a specified separator (Kingspan Bypass separator or equivalent approved), placed before attenuation systems.

5.2.1 SuDS Methodologies

The following methodologies are being implemented as part of a SuDS treatment train approach:

- Attenuation of the 2 and 100-year return period storms within the attenuation area.
- Installation of a vortex flow control device (Hydrobrake or equivalent), limiting surface water discharge from the site to predevelopment runoff.
- Surface water discharge will also pass via a Class 1 full retention fuel / oil separator (sized in accordance with permitted discharge from the site and in accordance with IS EN 858).

5.2.2 Surface Water Attenuation Storage

Surface water runoff from the overall development lands will be attenuated to allowable greenfield runoff rate (Qbar). The rate of surface water runoff from the site will be restricted to greenfield runoff rates and the attenuation system sized accordingly.

5.3 Flood Exceedance

For storms greater than the 1% AEP, the development's drainage network design will be exceeded and areas with low ground levels may begin to flood. Generally, proposed road levels fall towards the site's northern boundary and overland flow is therefore directed towards the existing stream.

5.4 Impact on Adjacent Areas

The proposed development layout was designed to minimise the impact on adjacent areas. The development's storm-water drainage design attenuates discharges to green-field run-off rates in accordance with the GDSDS accepted design guidelines. Storms greater that the 1% AEP (exceeding the design capacity of the site's drainage system) may result in overland flow being directed toward the adjoining stream to the north with no impact on adjoining lands likely.

5.5 Climate Change

The potential impact of climate change has been allowed for as follows:

- Pluvial flood risk - drainage system and attenuation storage design allow for 20% increase in rainfall intensities as requested by Kerry County Council and recommended the GDSDS.

5.6 Access and Egress for Emergency Services During Flood Events

Access and egress to the site is provided by way of the proposed connection to the existing estate road serving Annabella Park located to the south of the site.

All of the estate roads will be located in Flood Zone C. It is expected that the proposed dwellings can be safely accessed during storm events up to 0.1% AEP event from the development road network.

5.7 Residual Risk

Remaining residual flood risks, following the detailed assessment include the following:

1. Pluvial flooding from the private drainage system related to a pipe blockage, flood exceedance or mechanical failure;
2. Pluvial flooding from the development's drainage system for storms in excess of the 1% AEP storm event;

5.8 Mitigation Measures

Proposed mitigation measures to address residual flood risks are summarised below:

M1	Proposed drainage system to be maintained on a regular basis to reduce the risk of a blockage.
M2	In the event of storms exceeding the 1% AEP design capacity of the attenuation system, possible overland flow routing towards open space areas should not be blocked. At these locations the site's boundaries should be permeable to facilitate flood routing onto adjacent public spaces.
M3	Proposed residential development shall be set above the Flood Zone B

	(0.1% AEP) including an appropriate freeboard:

5.8.1 Effectiveness of Mitigation Measure

It is considered that the flood risk mitigation measures if implemented are sufficient to provide a suitable level of protection to the proposed development. A regularly maintained drainage system will ensure that it remains effective and in good working order should a large pluvial storm occur.

Should extreme pluvial flooding occur that is in excess of the development's attenuation capacity (i.e., greater than 1% AEP), then overland flow routes directed towards open space areas are provided in order to protect the proposed development.

6 *Justification Test*

This Justification Test is outlined below and has been carried out in accordance with Section 5.15 of the OPW's Guidelines for Planning Authorities (see extract below).

Box 5.1 Justification Test for development management (to be submitted by the applicant)

When considering proposals for development, which may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2, the following criteria must be satisfied:

1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines.
2. The proposal has been subject to an appropriate flood risk assessment that demonstrates:
   - (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;
   - (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;
   - (iii) The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access; and
   - (iv) The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.

The acceptability or otherwise of levels of residual risk should be made with consideration of the type and foreseen use of the development and the local development context.

Note: See section 5.27 in relation to major development on zoned lands where sequential approach has not been applied in the operative development plan.

Refer to section 5.28 in relation to minor and infill developments.

Justification Test as per Section 5.15 of the OPW's Guidelines for Planning Authorities		
1.	The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines.	Yes, the proposed site is identified as New/proposed residential in the Kerry County Council Development Plan.
2(i)	The development has been subject to an appropriate FRA that demonstrates: *The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;*	The development site lies outside Flood Zones A & B A number of SuDS Methodologies are being proposed as part of the surface water drainage proposals for the site. These include attenuation of surface water runoff to greenfield runoff rates. Refer to Section 5.2 Surface Water Management Measures and SuDS.
2(ii)	The development has been subject to an appropriate FRA that demonstrates: *The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;*	As mentioned previously all residential units are located in Flood Zone C and therefore considered appropriate. The GDSDS requires a minimum freeboard of 500mm above the 1% AEP flood level (in order to allow for future climate change). The lowest proposed FFL is 30.0m and approximately 2.5m above the River Flesk. Refer to Section 4.2 Initial Fluvial Flood Risk Assessment Risk of flooding to people, property and the environment is therefore considered to be very low.

2(iii)	The development has been subject to an appropriate FRA that demonstrates: *The development proposed includes measures to ensure that residual risks to the area and / or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency access;*	Residual Risks are identified in **Section 5.6** of this report (pluvial flooding due to pipe blockage and pluvial flooding from the link road's drainage system for storms in excess of the 1% AEP). Proposed Mitigation Measures to address same are outlined in **Section 5.7** of this report (maintenance of drainage system and provision of overland flow routes towards open spaces). All proposed access points to the development are located above the 1% AEP design Flood Level for the site as per the recommendations of the CFRAMS and Flood Risk Management Guidelines. The access points to the proposed development from the Countess Road will provide access to Emergency Services during flood events
2(iv)	The development has been subject to an appropriate FRA that demonstrates: *The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.*	Urban Design is addressed in detail in other documents submitted as part of this application. Proposed surface water infrastructure, SuDS Methodologies and flood mitigation measures have been integrated with the overall site layout / open space areas and as such are considered compatible with the achievement of wider planning objectives in relation to development of good urban design The subject site is also identified as residential in the Kerry County Council Development Plan

On completion of the Justification Test outlined above, the proposed site is considered appropriate as each of the criteria from Section 5.15 (Box.5.1) of the OPW's Guidelines for Planning Authorities have been demonstrated.

7 Conclusions

7.1 Summary of Results

A flood risk assessment for the proposed residential development on Countess Road, Killarney has been undertaken in accordance with the methodology recommended in the FRM Guidelines. The following is the summary of the flood risk assessment:

The site including all proposed residential dwellings is located in Flood Zone C as defined by the requirements of "The Planning System and Flood Risk Management, Guidelines for Planning Authorities" and its Technical Appendices.

Following the Flood Risk Assessment Stage 2 (Initial Flood Risk Assessment), it was determined that a Justification Test was not required but notwithstanding same, one was carried out.

On completion of the Justification Test (refer to Section 6.0 of this report) the proposed development is considered appropriate.

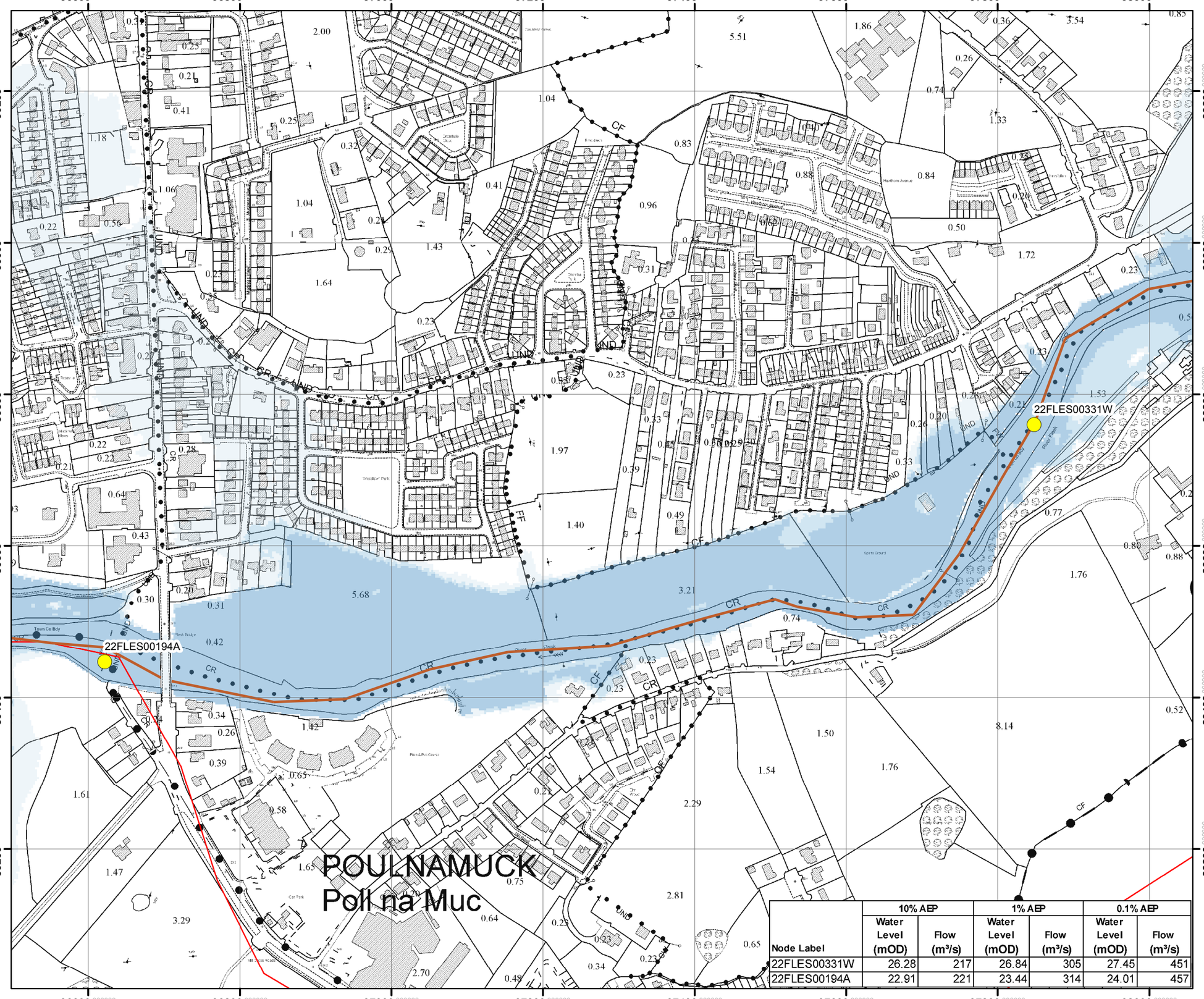
It is concluded that:

- Proposed residential development is appropriate for the site's flood zone category.
- The sequential approach outlined in Planning System and Flood Risk Management Guidelines has been adhered to.
- As stated above, a conservative approach has been undertaken even though the proposed site including all residential dwellings was found to be in Flood Zone C.
- The proposed site passed the Justification Test in accordance with Box 5.1 of the Guidelines.
- The proposed development will not increase run-off rates when compared with the existing site and satisfies the requirement of the SSFRA to not increase flooding.

In conclusion, the proposed development is considered to have the required level of flood protection up to and including the 1% AEP storm event.

Note: The existing available published flood data has predominantly been extracted from CFRAMs. This indicates no flooding within the site boundaries.

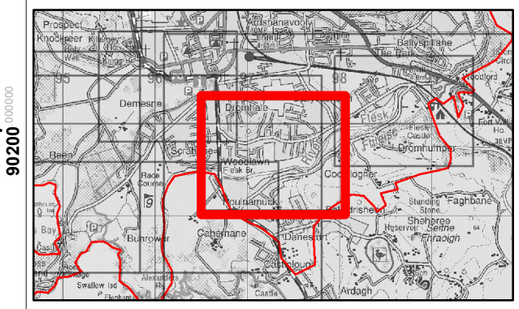
Appendix A – CFRAMS Flood Map



Node Label	10% AEP Water Level (mOD)	10% AEP Flow (m³/s)	1% AEP Water Level (mOD)	1% AEP Flow (m³/s)	0.1% AEP Water Level (mOD)	0.1% AEP Flow (m³/s)
22FLES00331W	26.28	217	26.84	305	27.45	451
22FLES00194A	22.91	221	23.44	314	24.01	457

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Location Plan:



Legend:

- Model Nodes
- Flood Defence - Embankment
- Modelled River Centreline
- Defended Area
- AFA Boundary
- Upstream limit to tidal influence
- 10% AEP Flood Extent
- 1% AEP Flood Extent
- 0.1% AEP Flood Extent

IMPORTANT USER NOTICE: THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

SOUTH WESTERN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

OPW
Office of Public Works
Jonathan Swift Street
Trim Co. Meath

MOTT MACDONALD
Mott MacDonald Ireland
5 Eastgate Avenue
Little Island
Co. Cork

Project:	South Western CFRAM Study
Map:	Killarney/flesk 2 - Flood Extent
Map type:	Flood Extent
Source:	Fluvial Flooding
Map area:	Urban Area
Scenario:	Current
Drawn by:	Emily Shipton Date: Nov-17
Checked by:	Barry O'Connor Date: Nov-17
Approved by:	Fintan McGivern Date: Nov-17
Map No.:	MMD/296235/E/DR/I22HKY37/EXFCDEXF/F2/Sht004
Sheet:	4 of 9 Revision: F2
Drawing Scale:	1:5,000 Plot Scale: 1:1@A3

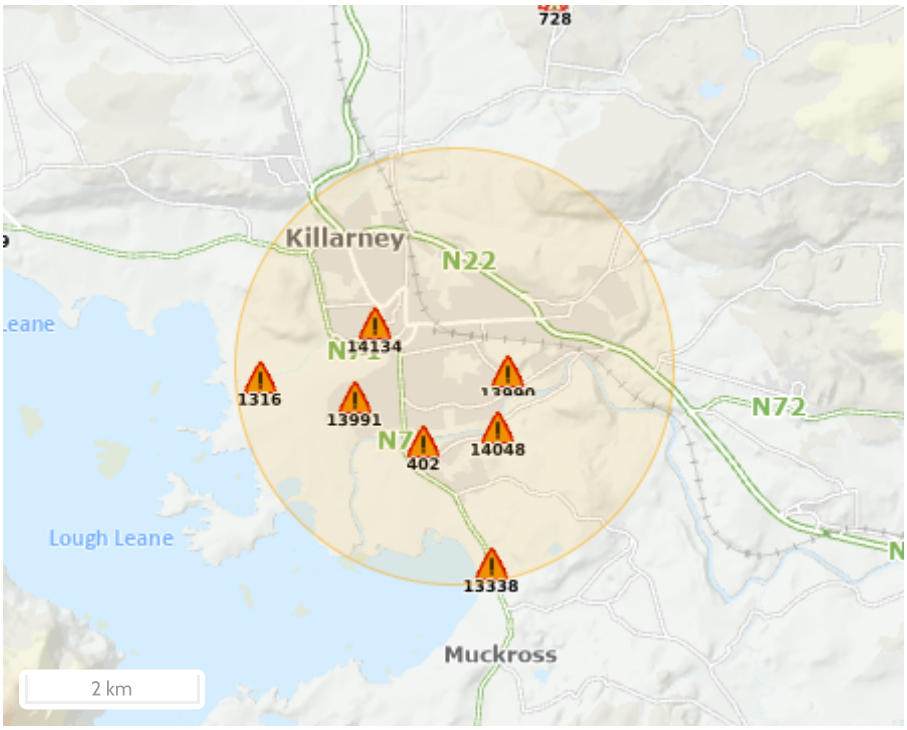
Appendix B- Flood Map

Past Flood Event Local Area Summary Report

Report Produced: **22/10/2025 8:37**

This Past Flood Event Summary Report summarises all past flood events within 2.5 kilometres of the map centre.

This report has been downloaded from www.floodinfo.ie (the "**Website**"). The users should take account of the restrictions and limitations relating to the content and use of the Website that are explained in the Terms and Conditions. It is a condition of use of the Website that you agree to be bound by the disclaimer and other terms and conditions set out on the Website and to the privacy policy on the Website.



Map Legend

- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

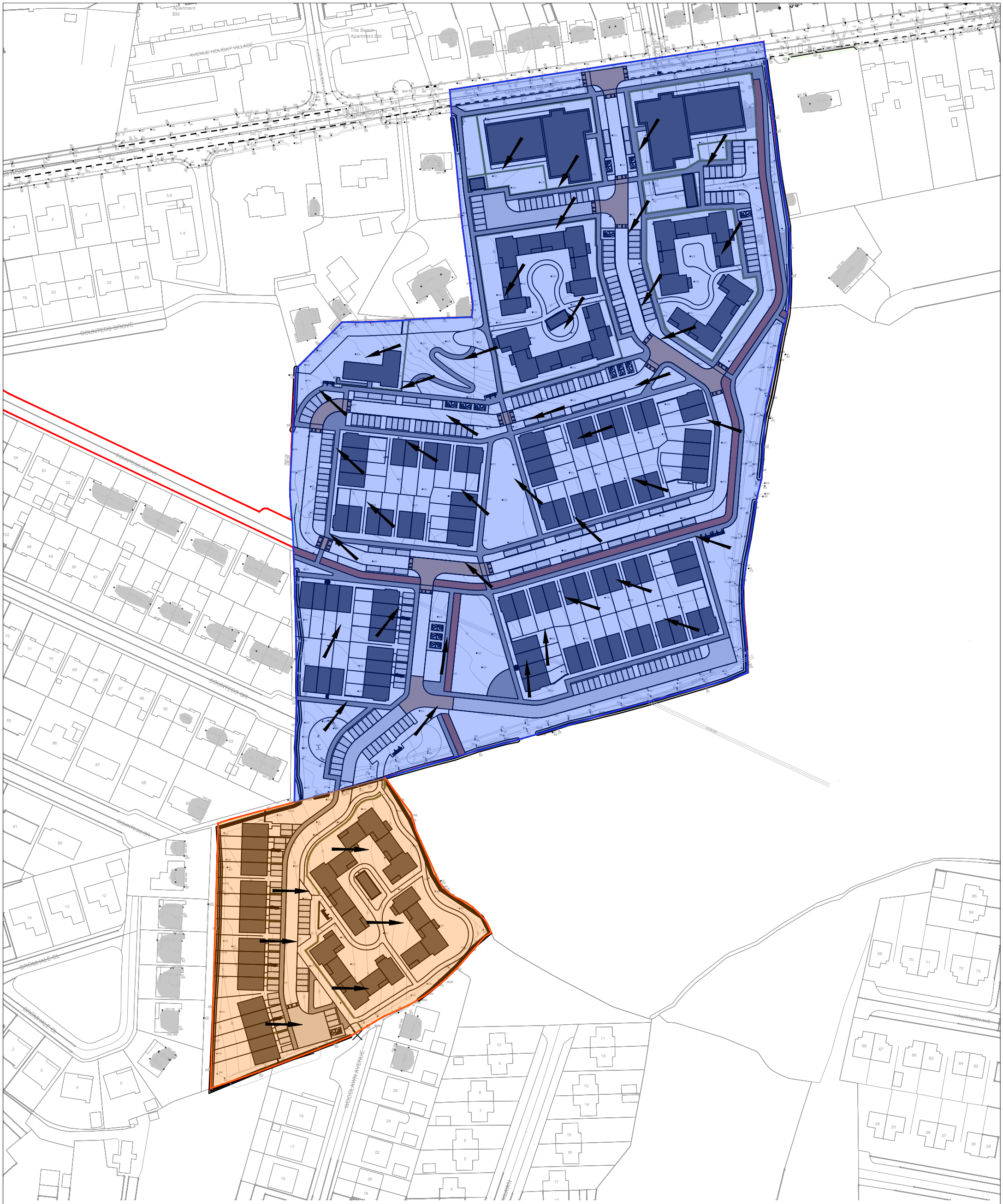
7 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Flooding at Mill Road Killarney on 23/02/2021 (ID-14048)	23/02/2021	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
2.	Flesk Killarney Nov 1980 (ID-402)	01/11/1980	Approximate Point
	Additional Information: Reports (1) Press Archive (0)		
3.	Deenagh Killarney August 1986 (ID-1316)	04/08/1986	Approximate Point
	Additional Information: Reports (1) Press Archive (0)		
4.	Flooding at Killarney Ballycasheen on 05/12/2015 (ID-13990)	05/12/2015	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
5.	Flooding at Killarney, Ross Road on 05/12/2015 (ID-13991)	05/12/2015	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
6.	Flooding at Killarney Muckross Road on 05/12/2015 (ID-13338)	05/12/2015	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		

	Name (Flood_ID)	Start Date	Event Location
7.	Flooding at Killarney on 26/06/2019 (ID-14134)	26/06/2019	Approximate Point

Additional Information: Reports (0) Press Archive (0)

Appendix C – Existing Flow Path



N

Legend

- Natural Draining To West of Site Boundary
- Natural Draining To East of Site Boundary
- Direction of Natural Drainage

Proposed Site Layout

Scale : 1:750

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REV.	DRAWN	CHKD	APPRVD	DATE	DETAILS
C	D.O'S.	S.O.'G.	S.O'G.	16.03.'26	Issued for Information

CLIENT: Gallentia Unlimited Company

PROJECT: Countess Road, Killarney, Co. Kerry

DRAWING TITLE: Flow Path Layout

SHEET	SCALE	PROJECT NO.	DRAWING NO.	STATUS/ISSUE
A1	1:750	7334	1008	C