AtkinsRéalis

Flood Risk Assessment Planning Submission

Aeval Unlimited Company

May 2026

DG0007

WOODBROOK DART GATEWAY RESIDENTIAL DEVELOPMENT

Notice

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Client signoff

Client	Aeval Unlimited Company
Project	WOODBROOK DART GATEWAY RESIDENTIAL DEVELOPMENT
Job number	100119017
Client signature/date	

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1. Introduction

This Flood Risk Assessment report has been prepared in support of the planning application under the Residential Development provisions on lands at R119 Dublin Road, Woodbrook, Co. Dublin. Atkins has been appointed by Aeval Unlimited Company to undertake this assessment for the Dart Gateway Phase of the development.

The proposed development will comprise of 359 no. units consisting of 2 blocks, Block P: 154no units (consisting of 83no. 1-Bed, 18no. 2-Bed(3P), 46no. 2-Bed(4P), 4no. 3-Bed(4P) and 3no Duplexes (5P). Block Q: 205no units (consisting of 77no. 1-Bed, 34no. 2-Bed(3P), 91no. 2-Bed(4P) and 3no. 3- Bed(5P) Duplexes). Communal space of 2540sqm, Ground level comprising (a) ESB substation (b) car, bicycle and motorcycle parking; (c) bin storage; (d) bulk storage area; (e) bus turning and taxi turning area; and (f) supporting mechanical, electrical and water infrastructure. Landscaping works including (a) Tree protection, tree removal and tree planting; (b) green roofs; (c)boundary treatment; (d) internal roads and footpaths; and (e) electrical services. All associated site development works including (a) provisions for water services; (b) foul and surface water drainage and connections; and (c) attenuation proposal.

1.1 Relevant guidance

This FRA has been undertaken in consideration with 'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' DOEHLG November 2009, which is the latest guidance document. The guidance has been issued to ensure that flood risk is a key consideration for developers, planning & regional authorities, and the public in preparing and submitting development proposals. The principles of the guidance are as follows:

- Avoid the risk, where possible
- Substitute less vulnerable uses, where avoidance is not possible, and
- Mitigate and manage the risk, where avoidance and substitution are not possible.

A staged approach is recommended within the guidance document in relation to identifying and assessing flood risk. The three stages of appraisal and assessment are as follows:

- Stage 1 Flood risk identification
- Stage 2 Initial flood risk assessment
- Stage 3 Detailed flood risk assessment

1.2 Flood Risk

Flood risk can be quantified by relating the probability of the flood event occurring to the consequence of the flood. Probability, in flood event terms, is gauged by potential annual occurrence/return period and flood consequence is dependent on the nature of the flood hazard and the vulnerability of the inundated area. The source-pathway-receptor model considers the components of flood risk.

The source is the hazard with the potential to cause harm through flooding (e.g., rainfall, high sea levels). The pathway is the mechanism by which the source can affect the receptor (e.g., inadequate drainage, overtopping of coastal defences) and finally, the receptor is anything which is affected by the flood event (e.g., people, infrastructure, property).

1.3 Causes of Flooding

The Planning System and Flood Risk Management Guidelines requires an FRA to consider all potential causes of flooding including the following:

- Coastal flooding
- Inland flooding
  - Overland flow
  - River flooding
  - Flooding from artificial drainage systems
  - Groundwater flooding
  - Estuarial flooding

1.4 Floodplains

A river flood plain is a low-lying area which receives excess flood water when the flow within the watercourse exceeds the capacity of the channel. A coastal flood plain is an area which, during high tide or increased sea levels, becomes inundated with sea water.

1.5 Assessing Flood Risk

In the context of the 'Planning System and Flood Risk Management Guidelines, DOEHLG, 2009' three flood zones are designated in the consideration of flood risk to a particular site. The three flood zones are described in **Table 1-1** below.

Table 1-1 - Flood Zones

Flood Zone	Description
Flood 'Zone A'	where the probability of flooding from watercourses is the highest (greater than 1% or 1 in 100 year for watercourse flooding or 0.5% or 1 in 200 for coastal flooding).
Flood 'Zone B'	where the probability of flooding from watercourses is moderate (between 0.1% or 1 in 1000 year and 1% or 1 in 100 year for watercourse flooding, and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding).
Flood 'Zone C'	where the probability of flooding from watercourses and the sea is low or negligible (less than 0.1% or 1 in 1000 year for both watercourse and coastal flooding). Flood Zone 'C' covers all areas which are not in Zones 'A' or 'B'.

The planning implications for each of the flood zones are:

Zone A - High probability of flooding. Most types of development would be considered inappropriate in this zone. Development in this zone should be avoided and/or only considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the Justification Test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone.

Zone B - Moderate probability of flooding. Highly vulnerable development, such as hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses and primary strategic transport and utilities infrastructure, would generally be considered inappropriate in this zone, unless the requirements of the Justification Test can be met. Less vulnerable development, such as retail, commercial and industrial uses, sites used for short-let for caravans and camping and secondary strategic transport and utilities infrastructure, and water-compatible development might be considered appropriate in this zone. In general, however, less vulnerable development should only be considered in this zone if adequate lands or sites are not available in Zone C and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to and from the development can or will adequately be managed.

Zone C - Low probability of flooding. Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast) but would need to meet the normal range of other proper planning and sustainable development considerations.

2. Site Description

2.1 Site location

The proposed area in which development is proposed (c 2.5 ha) is generally bounded by an active railway line on the east, Woodbrook Golf Club on the south, a cemetery and open space greenfields to the North, and the permitted phase 2 of the Woodbrook development to the west. The M11 Motorway is located approximately 970m West of the proposed site. Figure 2-1 below indicatively outlines the proposed development location within the green line.

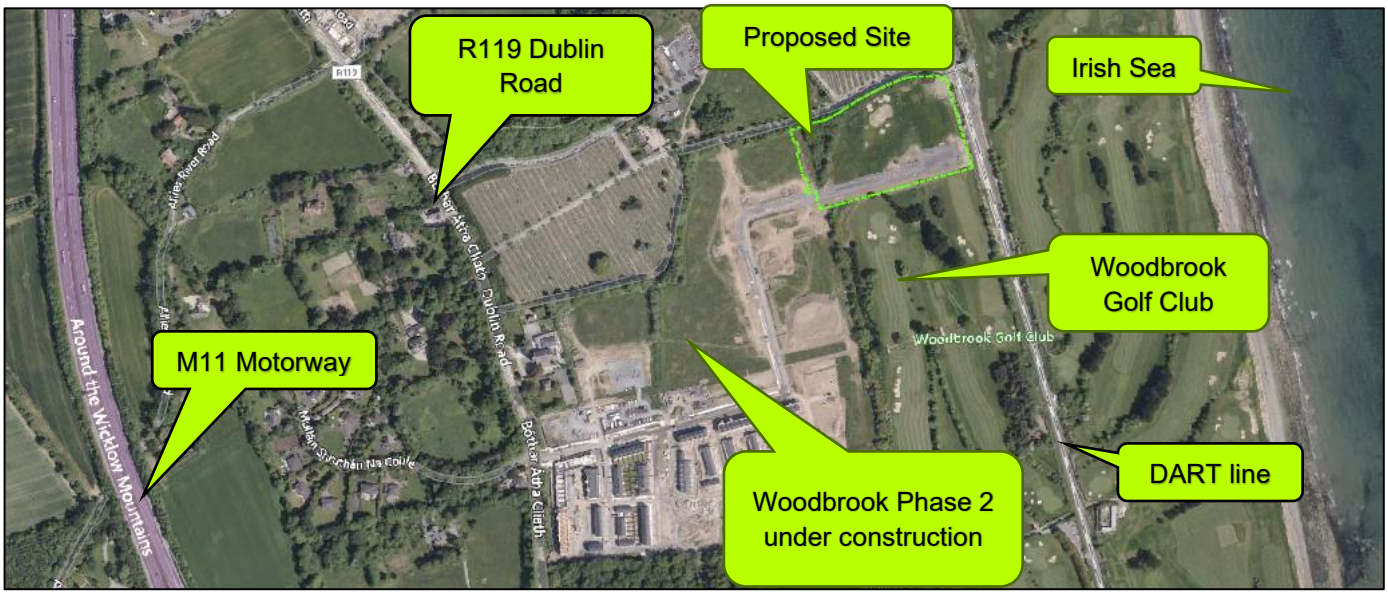


Figure 2-1 - Site Location Map

2.2 Topography

The existing topographical levels within the proposed site range from 21.00 mOD to 25.00 mOD. The highest point is located at the north-eastern corner, while the lowest point is at the north-western corner, with the terrain generally sloping towards the south. Additionally, the levels gradually fall from all directions towards the centre of the southern portion of the site.

2.3 Local Hydrology & Existing Drainage

The most immediate hydrological features in the vicinity of the proposed site are the Dargle Stream (EPA Code: 10D01) and the Irish Sea coastline as shown in Figure 2-2:

Figure 2-2 – Hydrological Features

The Dargle Stream flows in a southerly direction, parallel to the western boundary of the proposed site, at approximately c.740 m. It then veers eastwards and continues to flow parallel to the southern boundary of the proposed site at approximately c.1 km. The Irish Sea lies 360 m to the east. The Dargle Stream discharges directly into the Irish Sea.

3. Flood Risk Identification for the site

In accordance with the planning guidelines, a *Stage 1 Flood risk identification* is required to be undertaken to identify if there are any flooding or surface water management issued related to the proposed development site that may warrant further investigation. Initially, the following possible flood mechanisms for the Proposed Woodbrook Dart Gateway Development have been identified:

Table 3-1 - Possible Flooding Mechanisms

Source/Pathway	Significant?	Comment/Reason
Coastal flooding	No	The site is not at a coastal location.
Overland flow	No	The surrounding topography is relatively shallow.
River flooding	No	The Dargle Stream runs c.740m to the West and c.1km to the South of the proposed site.
Flooding from artificial drainage systems	Yes	There is no urban drainage infrastructure within the site and in the immediate vicinity of the site. The surface water from the site will be attenuated and discharge into the existing storm water network constructed as part of the overall Woodbrook Development and possible blockages and overland flow has been considered as part of the storm drainage network design
Groundwater flooding	No	There are no significant springs or groundwater discharges recorded in the immediate vicinity of the site.
Estuarial flooding	No	The site is not at an estuarial location.
Failure of infrastructure	No	There are no hydraulic structures in the direct vicinity of the site.

Table 3-1 above demonstrates that the site is predominantly not at risk of flooding, however the report will continue to confirm the initial assumptions detailed above.

3.1 Flood Risk Investigation

3.1.1 OPW Flood Maps

The Office of Public Works (OPW) interactive map viewer (http://www.floodinfo.ie/map/floodmaps/) displays the predicted flood extents for both rivers and coastal areas over various return periods. The viewer was consulted in relation to the proposed site and there was no information available on the proposed site. Areas adjacent to the site were indicated as “under review”. However, from the maps it is evident that the site is not at risk from fluvial flooding from the Dargle stream for any return period or flood event.

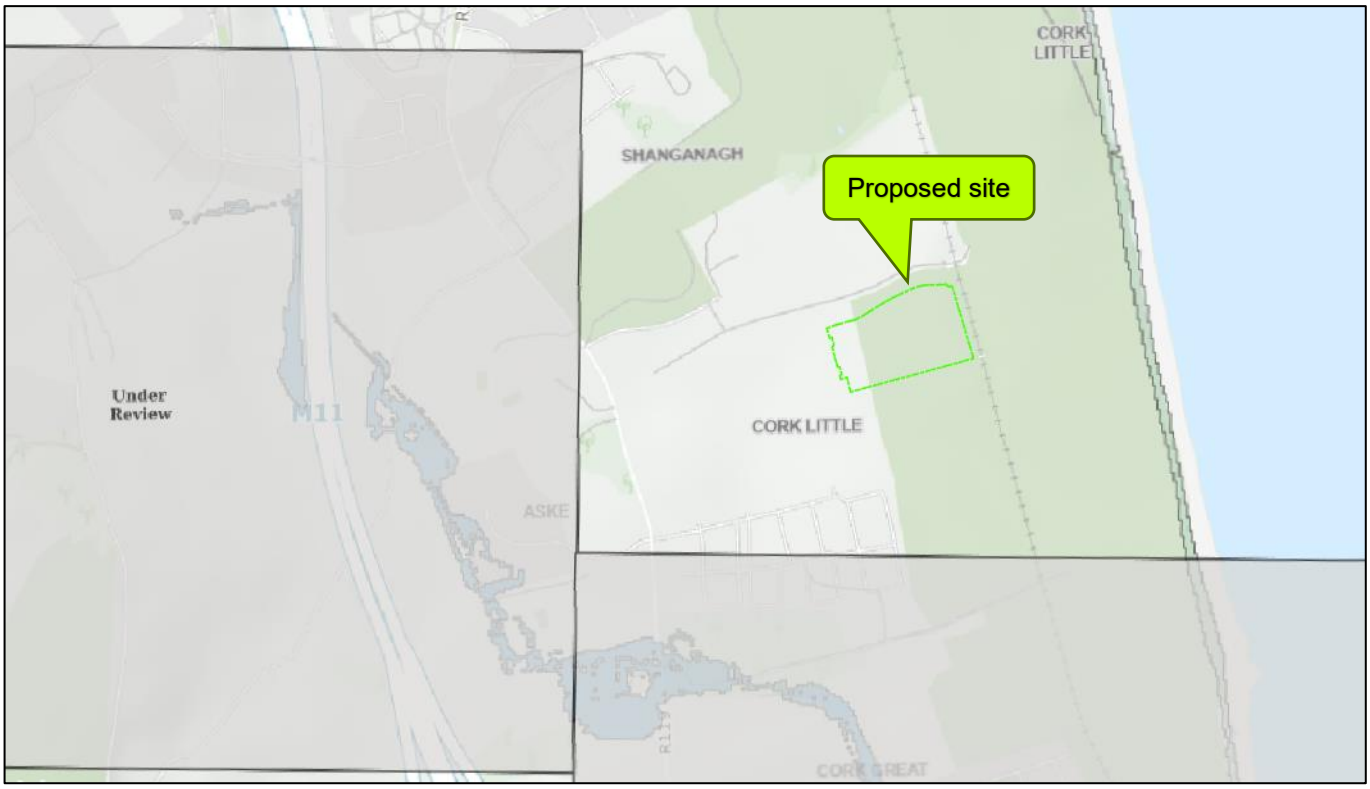


Figure 3-1 – OPW Floodmap General Viewer

3.1.2 Historical Flood Records

The GeoHive map viewer (http://map.geohive.ie/mapviewer.html) was consulted to review available historic mapping for the proposed site which can contain evidence of historical flooding incidences or occurrences. The maps consulted were the pre-1900's historic 6-inch colour and 25-inch maps. Figure **3-2** and Figure 3-3 below illustrates the historic maps for the site environs.

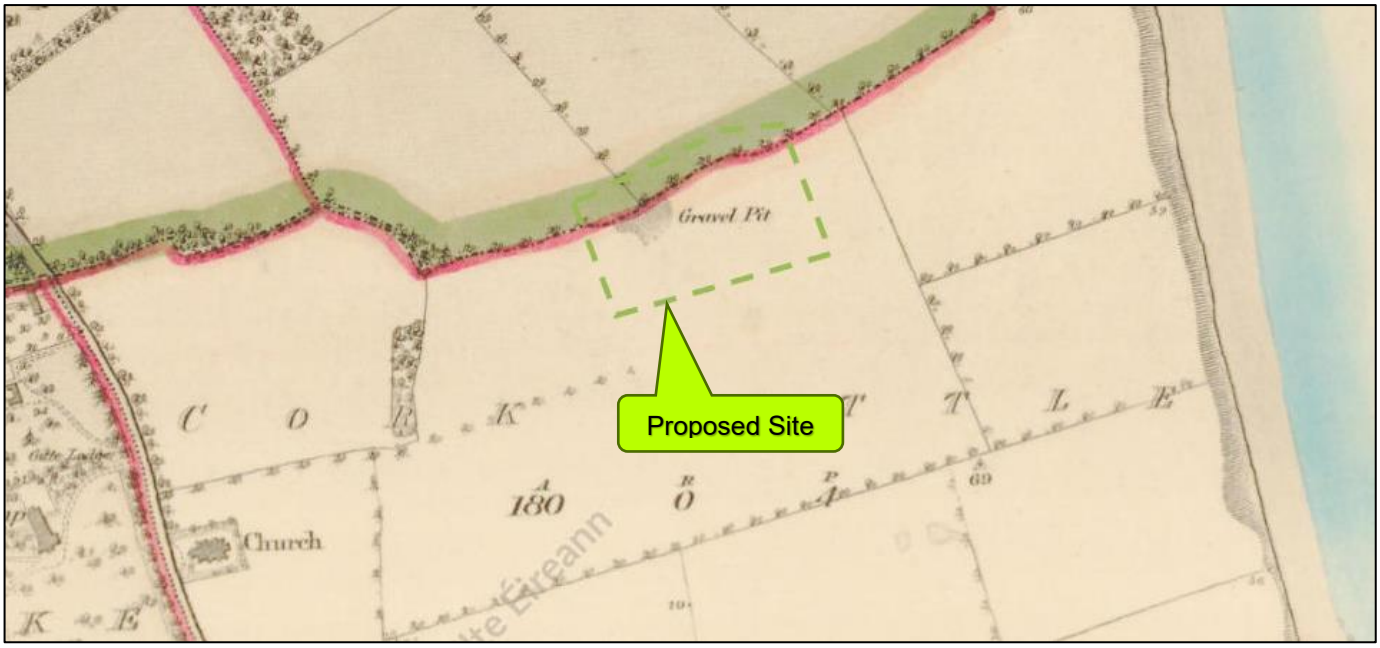


Figure 3-2 – OSI 6 Inch Colour Map

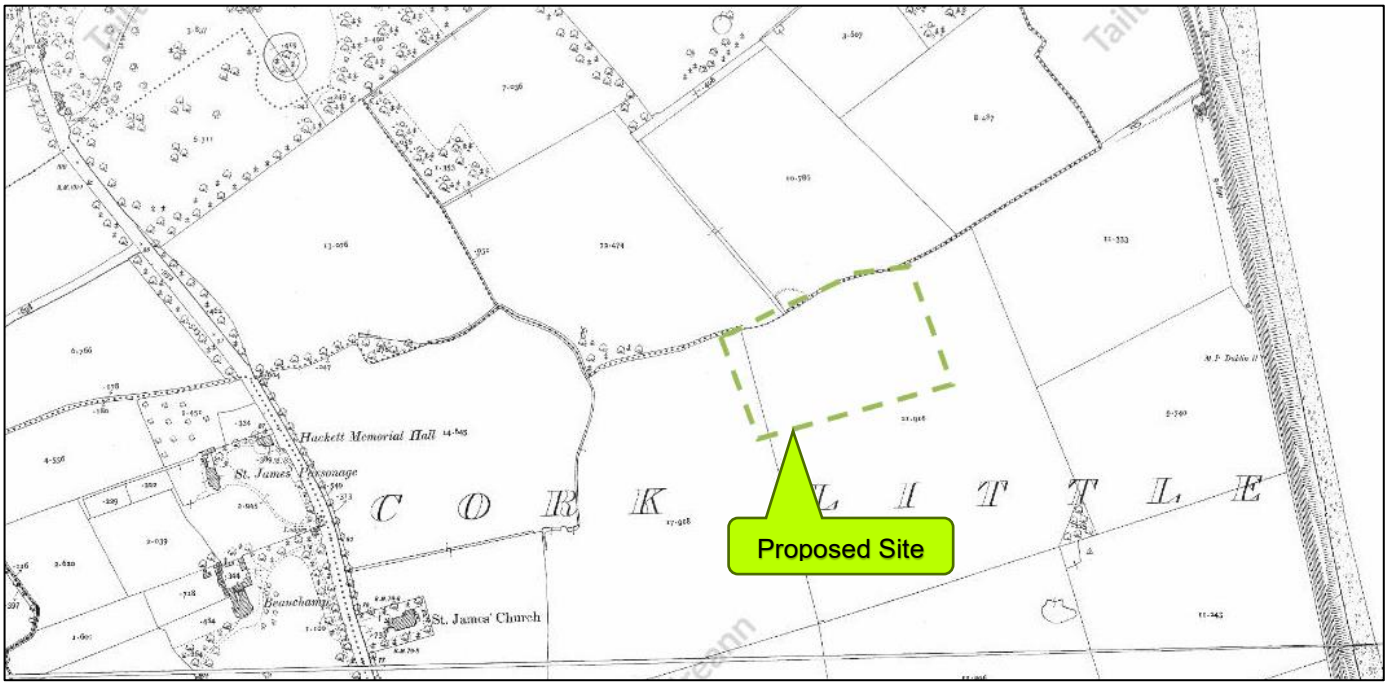


Figure 3-3 – OSI 25 Inch Map

With reference to the pre-1900's historic maps, no indication of historical or anecdotal instances of flooding were observed within the environs of the site. A historical gravel pit is indicated within the site extents and has been

confirmed on site to the west of the proposed residential units. No development is proposed within the area of the historical gravel pit.

3.1.3 Historical Flooding

The Office of Public Works (OPW) interactive map viewer http://www.floodinfo.ie/map/floodmaps was consulted to view any historic flood events located within the proposed site. Flood events identified fall outside the proposed development site. Refer to extract in Figure 3-4 which shows the Crinken Woodbrook Stream recurring Flood which is outside the proposed site environs.

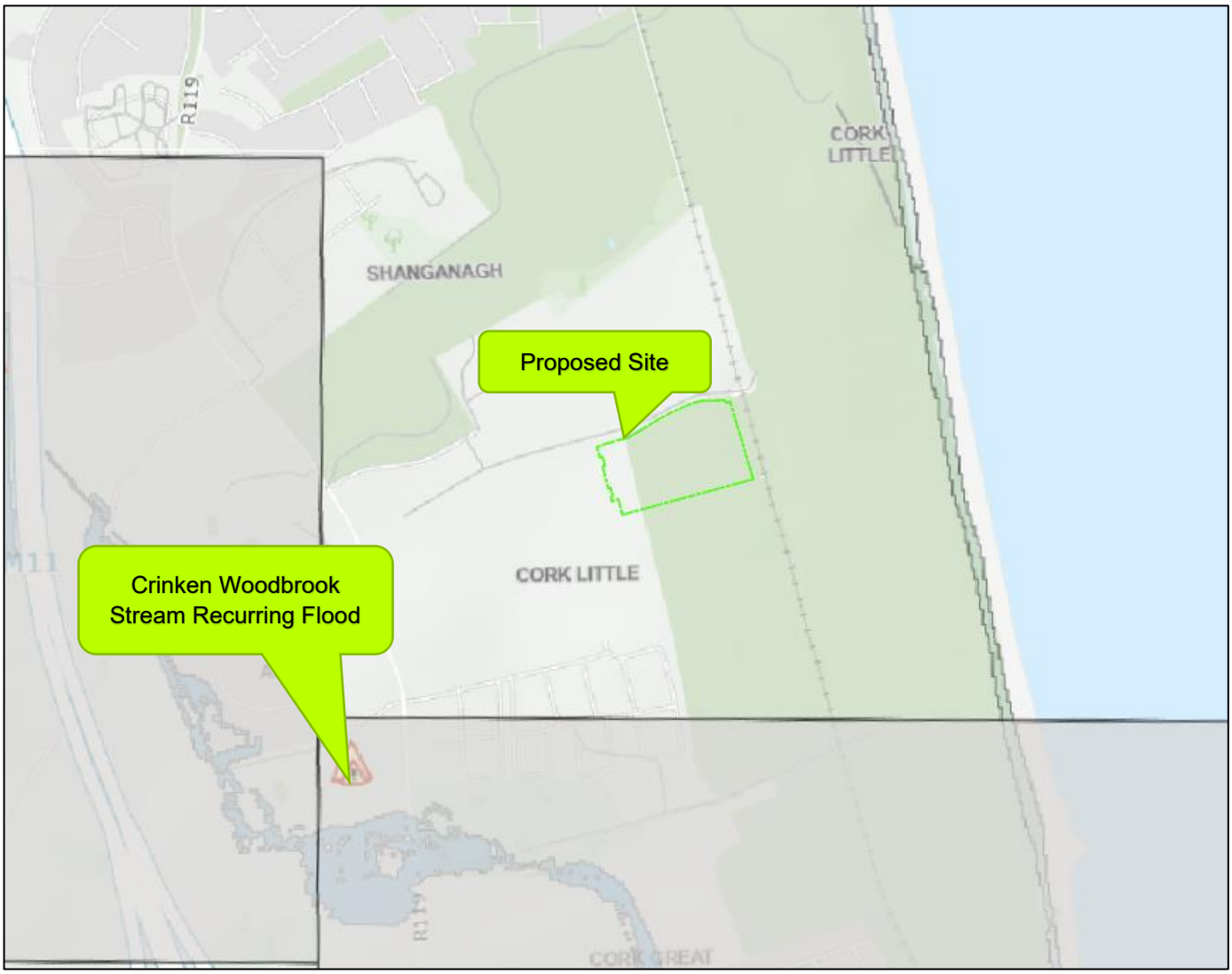


Figure 3-4 - Historic Flood Events

3.1.4 Geological Survey of Ireland Mapping

The soils maps of Geological Survey of Ireland (GSI) were consulted to determine the presence of alluvium deposits in the vicinity of the site. Deposition of Alluvium deposits can be an indicator of areas which have flooded in the recent geological past.

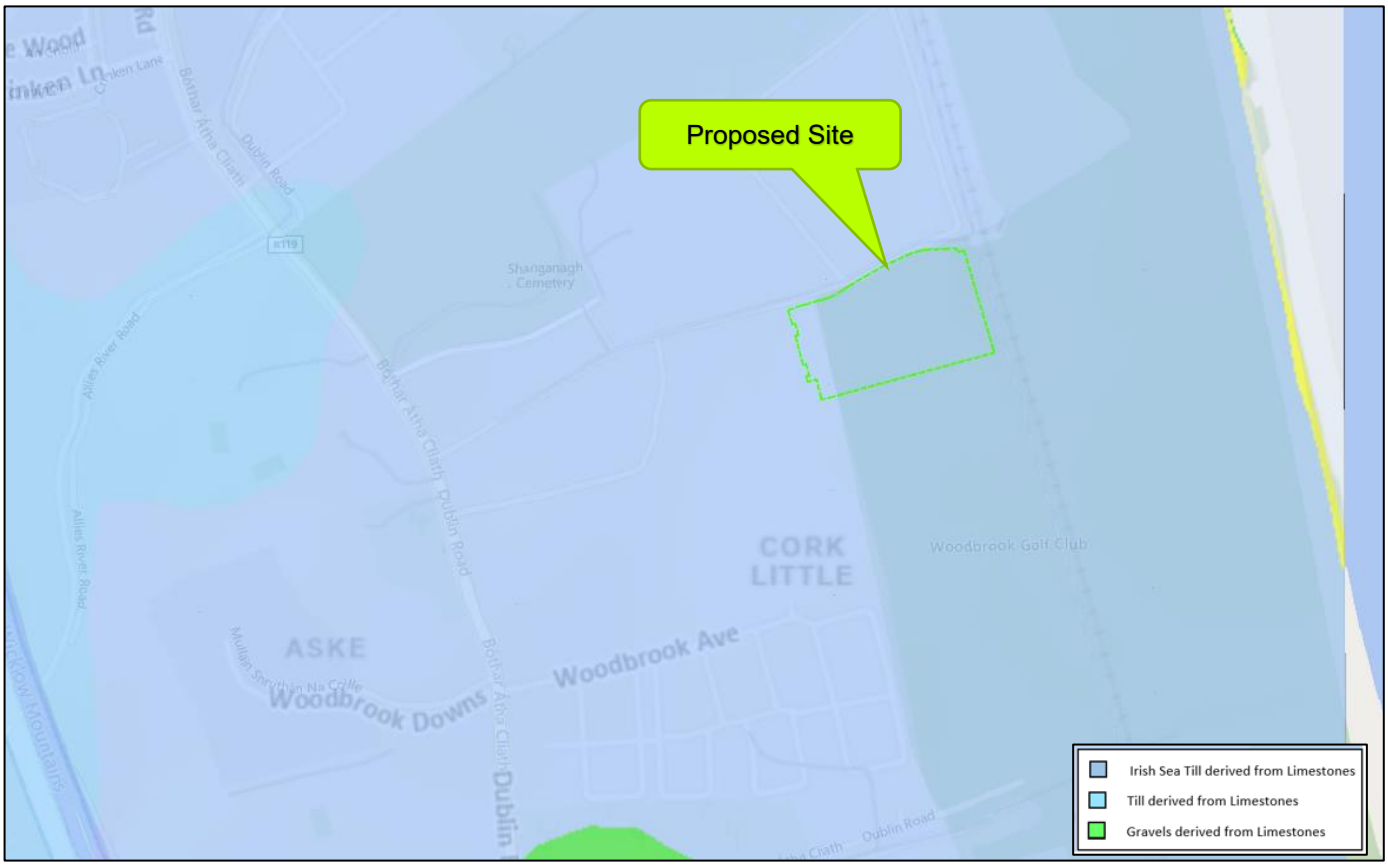


Figure 3-5 – GSI Soils Map

Figure 3-5 above shows the soils mapping for the proposed development site contains Irish Sea Till derived from limestones, which does not indicate alluvium deposits within the proposed site.

3.1.5 Dun Laoghaire – Rathdown County Development Plan 2022-2028

The Strategic Flood Risk Assessment (SFRA) produced as part of the Dun Laoghaire – Rathdown County Development Plan (DLR CDP) 2022-2028 includes Flood Zone Maps which covers the proposed site. Figure 3-6 below is an extract of the floodmap for the region, which indicates that the proposed site is outside Flood Zone A (1% Annual Exceedance Probability) and Flood Zone B (0.1% Annual Exceedance Probability). The DLR CDP SFRA Floodmap has been included as Appendix A of this report.

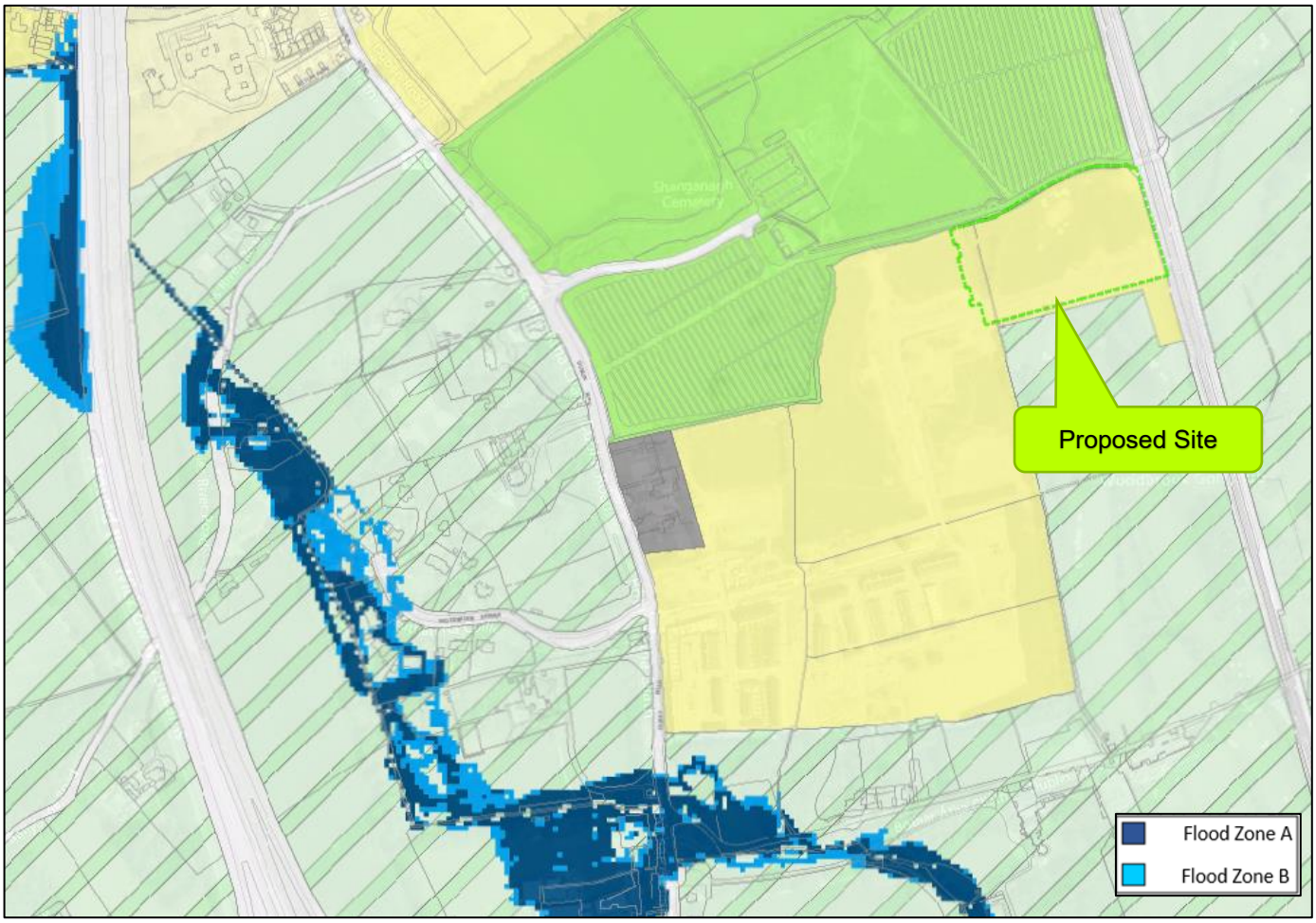


Figure 3-6 - DLR CDP SFRA Floodmap

3.1.6 Woodbrook – Shananagh LAP SFRA 2017-2023

The Woodbrook-Shanganagh Local Area Plan 2017-2023 came into effect on 1st August 2017. On 12th September 2022 it was extended for a further period of 5 years from 11th October 2022 to 10th October 2027.

The proposed development site is noted in this SFRA to be within Flood Zone C (Low Probability), and that it is designated for new residential development as per the objectives listed in Woodbrook-Shanganagh LAP. Also the site location is 200m east of the flood zone A. The LAP SFRA Floodmap has been included as Appendix B of this report.

4. Conclusion and Recommendations

4.1 Conclusion of Flood Risk Identification

The purpose of the *Stage 1 Flood risk identification* process is to establish whether a flood risk issue currently exists or may exist in the future. If a potential flood risk issue is identified the risk will be investigated in further detail by undertaking a *Stage 2 – Initial flood risk assessment.* However, if no potential flood risk is identified then the overall assessment can conclude at this point.

In relation to the site of Woodbrook Dart Gateway Development, based on the *Stage 1 - Flood risk identification* findings discussed above in Section 3 the flood risk study shall be concluded at this point as the proposed site is not at risk from flooding from any source.

The Stage 1 flood risk assessment is completed in accordance with The Guidelines and the following conclusions can be drawn:

- There is no historic risk of flooding at the proposed site.
- The OPW CFRAM flood extent maps studies have not been carried out in the area of the proposed site and therefore do not show any flood risk at the site. On the basis of the maps the proposed site could be considered to be located within Flood Zone C - low probability of flooding.
- Given that the proposed site is located in Flood Zone C, low probability of flooding, the development is appropriate from a flood risk perspective subject to it meeting the normal range of proper planning and sustainable development requirements.
- Given that the proposed site is located in Flood Zone C and is an appropriate development, consideration of the Justification Test is not required.
- The Strom Water Impact Assessment Report has taken into consideration potential blockages and surface water flow routes and has been reviewed as part of the Stage 1 Storm Water Audit.

4.2 Recommendations

The following recommendations should be considered.

- The proposed discharge for the storm-water outfall to the existing storm water network should be set at a maximum discharge rate of QBAR or 2 l/s/ha, whichever is the greater as per the ‘Greater Dublin Strategic Drainage Study Volume 2 – New Developments’ guidelines. Discharge rates to be agreed with Dun Laoghaire Rathdown County Council at planning stage.
- The design for the proposed storm-water drainage is to take into consideration all other standards for drainage design, from the ‘Greater Dublin Strategic Drainage Study Volume 2 – New Developments.’
- Suitable Sustainable Urban Drainage systems (SUDs) are to be used within the proposed development to reduce surface water runoff from the site where feasible and designed in accordance with CIRIA report C753 ‘The SuDS Manual V-6’.
- A Stage 1 Storm Water Audit is to be submitted as part of the final planning submission in accordance with DLRCC Development plan requirements. A stage 2 Storm Water Audit is to be carried out at detail design stage and prior to construction stage.

APPENDICES

Appendix A. DLRCC Development plan SFRA Floodmap

Mapping Notes

1. The lines of the Road Proposals shown are diagrammatic only and may be subject to change.
2. Wave Overtopping layer is relevant to the following maps only: Map No's. 2, 3, 4, 7, 10 & 14 unless noted otherwise.
3. These flood maps contain Land Use Zonings & Flooding information only. Please refer to the Land Use Zoning maps for more detailed land use objectives.

Flood Zone Map

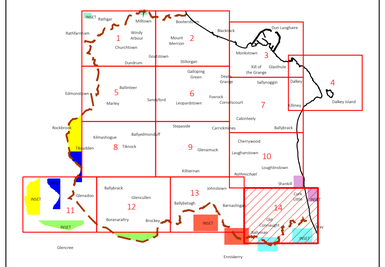
COMHAIRLE CHONTAE DHÚN LAOGHAIRE-RÁTH AN DÚIN

DÚN LAOGHAIRE-RATHDOWN COUNTY COUNCIL

COUNTY DEVELOPMENT PLAN 2022-2028

Adopted March 2022

dlr Comhairle Contae County Council



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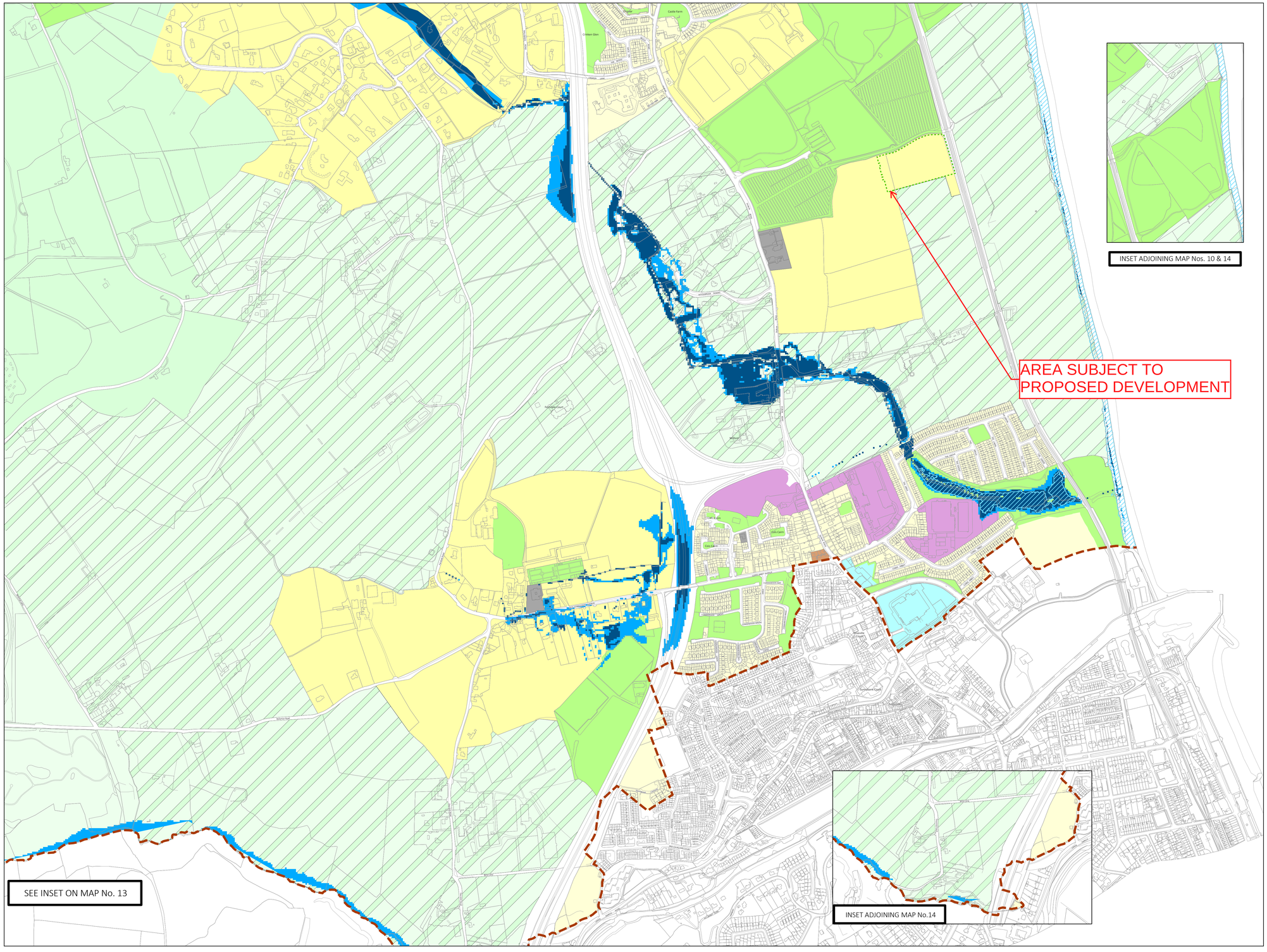


Land Use Zonings

Objective A	To provide residential development and improve residential amenity while protecting the existing residential amenities.
Objective A1	To provide for new residential communities and Sustainable Neighbourhood Infrastructure in accordance with approved local area plans.
Objective A2	To provide for the creation of sustainable residential neighbourhoods and preserve and protect residential amenity.
Objective B	To protect and improve rural amenity and to provide for the development of agriculture.
Objective DC	To protect, provide for and-or improve mixed-use district centre facilities.
Objective E	To provide for ecomonic development and employment.
Objective F	To preserve and provide for open space with ancillary active recreational amenities.
Objective G	To protect and improve high amenity areas.
Objective GB	To protect and enhance the open nature of lands between urban areas.
Objective LIW	To improve and provide for low density warehousing/light industrial warehousing uses
Objective MIC	To consolidate and complete the development of the mixed use inner core to enhance and reinforce sustainable development.
Objective MOC	To provide for a mix of uses which complements the inner core, but with less retail and residential and more emphasis on employment and services.
Objective MTC	To protect, provide for and-or improve major town centre facilities.
Objective NC	To protect, provide for and-or improve mixed-use neighbourhood centre facilities.
Objective OE	To provide for office and enterprise development.
Objective TLI	To facilitate, support and enhance the development of third level education institutions.
Objective W	To provide for waterfront development and harbour related uses.
Objective SNI	To protect, improve and encourage the provision of sustainable neighbourhood infrastructure

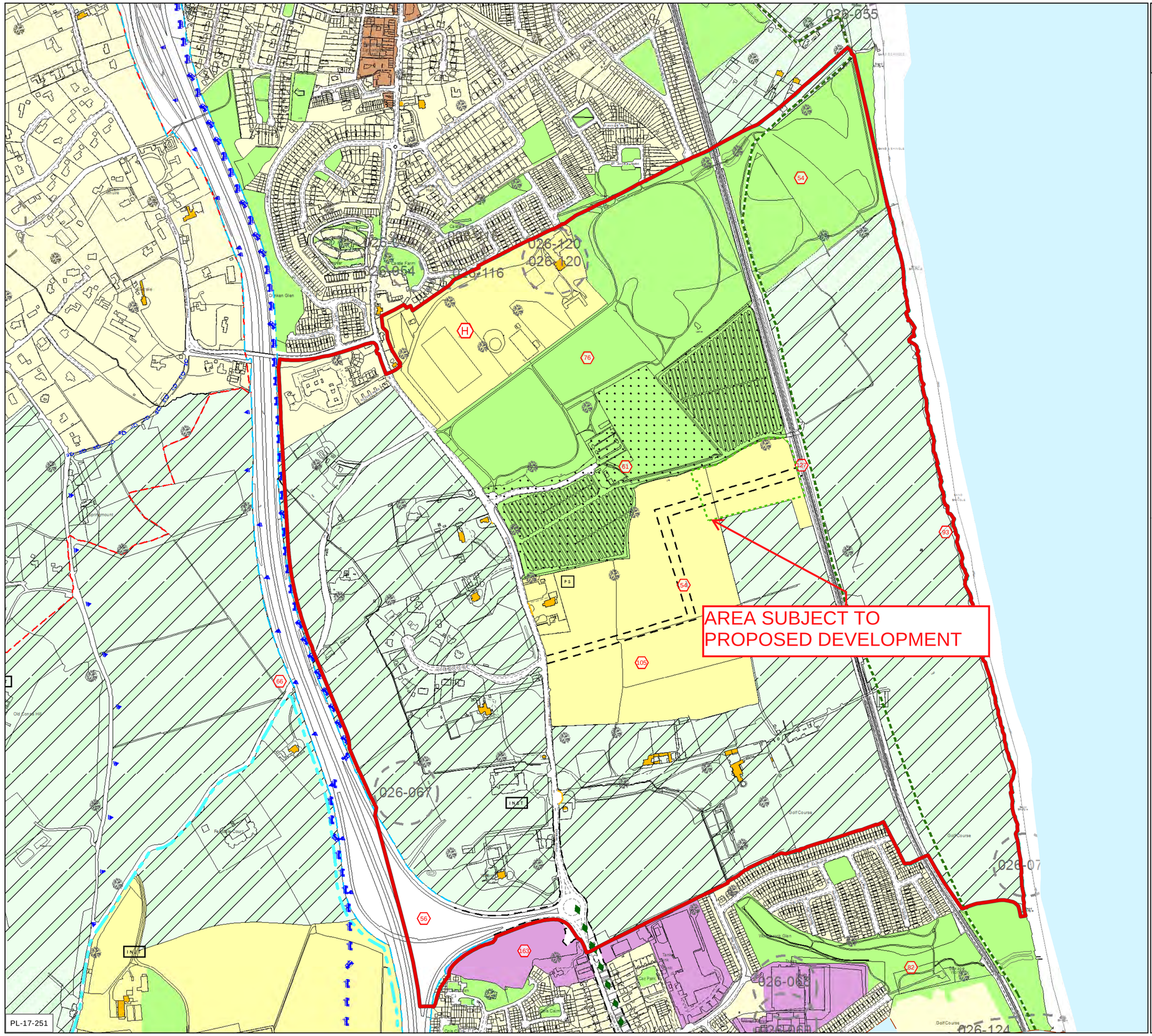
Areas of Flood Risk Concern

- Fluvial - Surface Water
- Pluvial - Surface Water
- Pluvial - Foul
- Flood Zone A
- Flood Zone B
- Wave Overtopping
- County Boundary

Metres
0 50 100 200 300 400 500

Director of Planning: M Henchy
Senior Planner: L McGauran

Appendix B. Woodbrook -Shananagh LAP SFRA Floodmap



Woodbrook - Shanganagh Local Area Plan

Adopted 03 July 2017

Draft Local Area Plan Boundary

County Boundary

Use Class Zoning Objectives

Objective A	To protect and-or improve residential amenity.
Objective A1	To provide for new residential communities in accordance with approved local area plans.
Objective E	To provide for ecomonic development and employment.
Objective F	To preserve and provide for open space with ancillary active recreational amenities.
Objective GB	To protect and enhance the open nature of lands between urban areas.
Objective NC	To protect, provide for and-or improve mixed-use neighbourhood centre facilities.

Other Objectives

- 6 Year Road Proposal
- 6 Year Motorway Proposal
- Strategic Road Reservation
- Proposed Luas Line Extension
- Proposed Quality Bus/Bus Priority Route
- Public Right-of-Way
- Proposed Sutton to Sandycove Walkway/Cycleway as a component part of the National East Coast Trail Cycle Route
- Protected Structures
- Record of Monuments and Places (For Areas of Archaeological Potential)
- To preserve Views
- To protect and preserve Trees and Woodlands
- To protect and/or provide for a Burial Ground
- Boundary of lands for which a Local Area Plan will be prepared
- 22 — Specific Local Objective
- H — County Council Housing Programme Site
- PS — To provide for a Primary School
- INST — To protect and/or provide for Institutional Use in open lands

Planning and Organisational Innovation

M. Henchy
Director

dlr Comhairle Contae County Council

County Development Plan
Land Use Zoning Objectives

Senior Planner:	D. Irvine	Chief Technician:	M Hevehan
Prepared By:	Zara Horan	Drawn By:	A. Ayeni
Date: July 2017	Scale: 1:6,000	**Drawing No:**	**Map 3**

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