

Appendix C – Site-Specific Flood Risk Assessment



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Belmayne 110 kV Substation

ESB Networks

Site-Specific Flood Risk Assessment

Document No.: PE595-F2687-R687-004

Date: March 2026

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Belmayne 110 kV Substation – Site-Specific Flood Risk Assessment

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Date	New Revision	Author	Summary of Change
March 2026	001	D. Ryan	OPW Flood Mapping Updates

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1 Introduction

1.1 Overview

ESB intend to apply for planning permission for the development of a new distribution 110/38kV/MV substation at a site in Belmayne, Clonsaugh, Dublin 17, which is accessed off the R139 road.

This Site-Specific Flood Risk Assessment (SSFRA) has been prepared to support the application.

1.2 Project Background

The proposed development is at a preliminary design stage and design elements of it are likely to change but the general technical requirements for the project will remain unchanged.

The proposed development will consist of the construction of a 110 kV/38 MV electrical substation and will include the following elements:

1. Construction of 1 no. substation compound (c. 5,650 sqm) securely enclosed with 2.6 m high palisade fencing and gates, containing:
 - i. 1 no. 110 kV Gas Insulated Switchgear (GIS) building (c. 707sqm; c. 12 m in height).
 - ii. 1 no. 38 kV Gas Insulated Switchgear (GIS) building (c. 232sqm; c. 7 m in height).
 - iii. no. Bunded 110 kV/38 kV Transformers (c. 5 m in height) with associated electrical equipment.
 - iv. no. Bunded 38 kV/MV Transformers (c. 5 m in height) with associated electrical equipment.
 - v. 2 no. fire walls (c. 5.5 m in height by c. 5 m length) separating the 110 kV/38 kV Transformers and 38 kV/MV Transformers.
 - vi. no. bunded Arc Suppression Coils (c. 4 m in height) with associated electrical equipment.
 - vii. 2 no. Neutral Earth Resistor (c. 2 m in height) and Neutral Earth Switch (c. 3.9 m in height).
 - viii. Perimeter RC wall with Stone Facing on West, North and South Elevations (2.6 m high).
2. Removal and reinstatement of 2 No. Gate Piers at existing entrance and provision of vehicular gate (5 m wide x 2.6 m in height);
3. All associated site development works including provision of new site entrance, internal access, lighting poles (c. 5.75 m in height), 3 no. lightning monopoles (c. 15 m in

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height), 1 no. Emergency, stand-by Diesel Generator, telecommunications, landscaping, site services including drainage, trenching and ducting and all other ancillary works.

The proposed site layout is illustrated on drawing PE492-D327-006-002 (latest revision), included in Appendix A.

1.3 Site of Proposed Development

1.3.1 Site Location

The proposed development is located at a site in Belmayne, Clonsaugh, Dublin 17, which is accessed off the R139 road. The boundary is depicted by the red line in the Figure 1-1. The site is located on and accessed from the R139.

The site is bounded by:

- The R139 road to the south;
- Bewley’s Production Facility to the east;
- the Clonshagh Stream/Mayne River to the north; and
- Greenfield lands to the west with a paved private roadway.

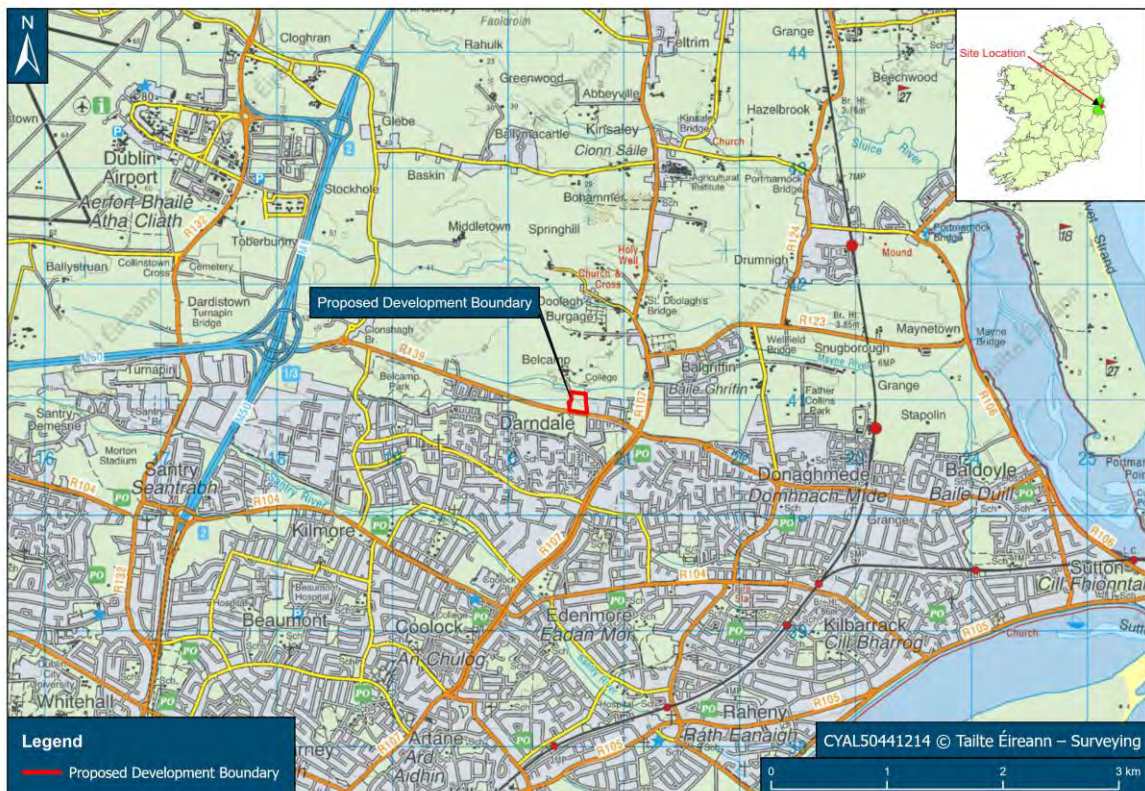


Figure 1-1: General Site Location



Figure 1-2: Site Boundary

1.3.2 Existing Site

The topography of the site is generally flat. Levels on the site range from 27.5 mAOD in the north, to 31.0 mAOD in the south-west of the site. This can be seen on the Existing Site Layout Drawing No. PE492-D327-006-002 (latest revision). These levels relate to ordnance datum Malin Head.

2 Relevant Guidance

2.1 The Planning System and Flood Risk Management Guidelines

In November 2009, the Department of Environment, Heritage, and Local Government issued a guideline document to Planning Authorities in relation to Flood Risk Management titled “*The Planning System and Flood Risk Management Guidelines*”.

These Guidelines are issued under Section 28 of the Planning and Development Act 2000 which requires Local Planning Authorities and An Coimisiún Pleanála to implement these guidelines when assessing planning applications under the Planning Acts.

These Guidelines set out the policy on development and flood risk in Ireland and provide a framework for the integration of flood risk assessment into the planning process. The objective is to ensure that flood risk is considered at all stages in the planning process.

The core objectives of the Flood Risk Management Guidelines are to:

- Avoid inappropriate development in areas at risk of flooding.
- Avoid new developments increasing flood risk elsewhere.
- Ensure effective management of residual risks for development permitted in floodplains.
- Avoid unnecessary restriction of national, regional or local economic and social growth.
- Improve the understanding of flood risk among relevant stakeholders.
- Ensure the requirements of European Union and national law, in relation to the natural environment and nature conservation, are complied with at all stages of flood risk management.

Flood zones are defined in the Flood Risk Management Guidelines as “*geographical areas within which the likelihood of flooding is within a particular range*”. There are three types of flood zones as noted below in Table 2-1.

Table 2-1 - Definition of Flood Zones

Flood Zone	Description
A	Probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding).
B	Probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 and 0.5% or 1 in 200 for coastal flooding)
C	Probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all areas of the plan which are not in zones A or B.

2.1.1 Sequential Approach

The Guidelines set out a staged approach for the consideration of flood risk in relation to developments. This staged approach is as follows:

Stage 1: Flood risk identification – to identify whether there may be any flooding or surface water management issues related to either the area of regional planning guidelines, development plans and LAP’s or a proposed development site that may warrant further investigation at the appropriate lower-level plan or planning application levels.

Stage 2: Initial flood risk assessment – to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to scope the extent of the risk of flooding which may involve preparing indicative flood zone maps. Where hydraulic models exist the potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures can be assessed. In addition, the requirements of the detailed assessment should be scoped; and

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 or land to be zoned, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

2.1.2 Definition of Vulnerability Classes

The Flood Risk Management Guidelines grade types of development in accordance with how vulnerable they would be to flooding. Table 2-2 below outlines the typical developments under the three vulnerability classes.

Table 2-2 - Definition of Vulnerability Classes

Class	Description
Highly Vulnerable (including essential infrastructure)	Includes: Garda, ambulance, fire stations, hospitals, schools, residential dwellings and institutions, essential infrastructure such as primary transport and utilities distribution including electricity generating power stations and <u>sub-stations</u> , water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less Vulnerable	Includes: buildings for retail, leisure, warehousing, commercial, industrial and non-residential institutions, land and buildings for holiday, agriculture or forestry, waste treatment, mineral working and processing, local transport infrastructure.
Water Compatible Development	Includes: flood control infrastructure, docks, marinas, wharves, navigation facilities, ship building, fish processing, water-based recreation and tourism (excluding accommodation), lifeguard and coastguard stations, amenity open space and outdoor sports and recreational facilities.

Underlining indicates uses relevant to this development.

As can be seen from Table 2-2, the proposed development is classified as Highly Vulnerable Development.

2.2 Dublin City Development Plan 2022 – 2028: Strategic Flood Risk Assessment

Dublin City Council has undertaken a Strategic Flood Risk Assessment (SFRA) to inform the 2022-2028 Development Plan. The purpose of this work is to provide a broad assessment of flood risk to inform strategic land-use planning decisions, in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009. These Guidelines were issued under the Planning and Development Act 2000 and recognise the significance of proper planning to manage flood risk.

The Strategic Flood Risk Assessment (SFRA) produced for the 2022 – 2028 Dublin City Development Plan states the allowances to be provided for future scenarios. These are shown in Table 2-3 below.

Table 2-3: Dublin City Development Plan 2022 – 2028 SFRA: Climate Change Allowances by Vulnerability and Flood Source

Development vulnerability	Fluvial climate change allowance (increase in flows)	Tidal climate change Allowance (increase in sea level)	Storm water / surface water
Less Vulnerable	+20%	+0.5m (MRFS)	20% increase in rainfall
Highly Vulnerable	+20%	+0.5m (MRFS)	20% increase in rainfall
Critical or extremely vulnerable (e.g. hospitals, major sub-stations, blue light services)	+30%	+1.0m (HEFS)	30% increase in rainfall

3 Flood Risk Identification

3.1 Adjacent Watercourses

The Clonshagh Stream (an anabranch of the River Mayne) and River Mayne flows from west to east approximately 30 m to the north of the proposed development, as outlined in Figure 3-1 below. The Clonshagh stream splits from the River Mayne and rejoins at the corner of the site.



Figure 3-1: Adjacent Watercourses

3.2 Existing Surface Water Infrastructure

The existing site is currently greenfield with no surface water connection/discharge to the local surface water infrastructure.

Dublin City Council records indicate that there are 2 no. 300 mm concrete surface water sewer running west-south in the R139, south of the proposed development, as shown in Figure 3-2 and Appendix A.



Figure 3-2: Existing water infrastructure

3.3 Historical Flooding at the Site

A review of historical flooding was undertaken using the Office of Public Works (OPW) website <http://www.floodinfo.ie>. This website forms a record of all available flood records held by the OPW, all local authorities and other relevant state organisations such as the EPA and Department of Environment, Climate and Communications.

The closest occurrence is a single flood event (ID-677) at Balgriffin Park, located approx. 1.0 km downstream from the site which occurred in June 1993 as a result of heavy rainfall (report included Appendix B). Given the location of this incidence to the site of the proposed development, it is not considered to pose a risk to the site.



Figure 3-3: OPW Flood History Database

3.4 Geology

The Geological Survey of Ireland (GSI) mapping the site is underlain by till derived from limestones, with the area surrounding the River Mayne identified as alluvium.

Site investigations carried out on the surroundings lands indicate the presence of clays with infiltration testing failed.

3.5 Groundwater Flooding

Groundwater flooding data produced by Geological Survey Ireland (GSI) was reviewed as part of this assessment. The Groundwater Flooding Probability maps show the expected flood extent of groundwater flooding in limestone regions for annual exceedance probabilities (AEP's) of 10% 1% and 0.1%. These maps were created using groundwater levels measured in the field, satellite images and hydrological models.

There is no history of groundwater flooding at the site, and the site is not identified within the groundwater flooding probability extents.

3.6 Pluvial Flooding

Pluvial flooding occurs due to insufficient capacity in the local drainage network system which results in overland flows as well as the ponding of water in topographically low points. It is typically associated with high intensity rainfall. While pluvial flooding is an important consideration, it can be addressed by site specific drainage and management measures aimed at mitigating the effects of pluvial flooding.

Dublin Pluvial Study flood extent maps, attached in Appendix C, indicate pockets of pluvial flooding on the site.

The proposed surface water drainage system will be designed to best practice to provide protection from surface runoff (pluvial flooding) due to direct rainfall. The Sustainable Drainage Systems (SuDS) techniques proposed in the design of the works will ensure that the natural drainage patterns are replicated and no negative impact results from the development in terms of water quality discharged from the development or in the quantity of runoff from the development. The proposed drainage design for the scheme is detailed in the Engineering Services Report included separately in the planning pack.

Storm water drainage systems, consistent with the criteria set out in the Greater Dublin Strategic Drainage Study (GDSDS) Code of Practice for Developers, will generally minimise the risk of flooding from pluvial sources and these measures are appropriately catered for by Dublin City Council's design requirements under the planning application process.

In view of this and given there are no previous flood events on record for the site to suggest that the site is at risk to pluvial flooding, the site is not considered to be at risk to pluvial flooding nor increase the risk elsewhere.

3.7 OPW Community-Scale Flood Maps

As part of Ireland's obligations under Directive 2007/60/EC on the assessment and management of flood risks, known as the "*Floods Directive*", the OPW was engaged in the generation of mapping to provide predictive estimates of the extent of floodplains as part of its Catchment Flood Risk Assessment Management Studies (CFRAMS).

These maps have been updated and are now called termed 'OPW Community Scale Maps'. The OPW's updated Community-scale Flood Maps are a combination of:

- CFRAMS 2018;
- National Flood Map Reviews; and.

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- Completed Flood Relief Schemes.

These maps are ‘predictive’ flood maps showing areas predicted to be inundated during a theoretical or ‘design’ flood event with an estimated probability of occurrence, rather than information for actual floods that have occurred in the past.

The OPW Community-scale Flood Maps maps present indicative extents of lands at risk of flooding, predicted flood depths and predicted water levels in watercourses. The mapping indicates the following:

- Indicative extent of lands with 1 in 10 chance of flooding in any given year;
- Indicative extent of lands with 1 in 100 chance of fluvial flooding or 1 in 200 chances of tidal flooding in any given year; and
- Indicative extent of lands with 1 in 1000 chance of flooding in any given year.

The site is included within the Fingal East Meath CFRAM Study area.

It is noted that the River Mayne flood maps in the area surrounding the site are currently ‘Under Review’ by the OPW (Area Reference: belcamp_park42 – Map Review Reference MR017¹). It is noted that this reviewed started in October 2015 and the review commenced “*following an objection, submission and/or further information received*”.

Following consultation with the OPW, the following response was received in November 2025:

“The flood maps are being updated here as there has been development along the Mayne River in Balgriffin since the original maps were made which has seemingly reduced flood risk. A consultant is currently undertaking hydraulic modelling for it. The draft maps are currently programmed to be put online for consultation in February, and final maps to follow in April.”

It is noted that this may result a reduction in the flood levels and extents in the area. A conservative approach was taken in compiling this assessment and the current available extents and levels have been used.

¹ It is noted that the OPW database notes this as MR018, but following correspondence with the OPW, this is a labelling error and should be MR017

3.7.1 Fluvial Flood Risk

OPW Community-scale Flood Maps mapping has been prepared for the River Mayne which include the extents and predicted flood levels. Map No. e09bel_exfcd_f1_42 which is applicable to the site is included in Appendix D.



Figure 3-4: OPW Community-scale Present Day Fluvial Flood Mapping

Following a review of the maps, the site of the proposed development is shown outside the extents of the 1 in 1000-year flood extents.

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Furthermore, from a review of the modelled flood levels within the River Mayne adjacent to the site, the 0.1% AEP fluvial flood level is estimated at 25.28 mAOD. The site lies approximately equidistant between nodes 1MA5284 and 1 Ma2273. The level at the site of the proposed development was estimated by interpolating between these two nodes and is shown in Table 3-1.

Table 3-1: Flood Levels on the River Mayne

Model node	10% (mAOD)	1% (mAOD)	0.1% (mAOD)
1Ma5284	38.26	38.36	38.38
1Ma2273	11.79	11.97	12.17
Site Location	25.03	25.17	25.28

The site of the proposed development is 28.65 mAOD at the lowest point nearest the River Mayne, and as such, it is considered that with an allowance for freeboard and climate change, the site is above the estimated flood level.

3.7.2 Coastal Flood Risk

Given the proposed site is located inland and is remote from any coastal areas and associated risk of coastal flooding. In view of the above, coastal flood risk is not considered any further in this report as there is no risk to the proposed development.



Figure 3-5: OPW Community-scale Present Day Coastal Flood Mapping

3.8 National Indicative Fluvial Mapping

The OPW released National Indicative Fluvial Mapping (NIFM) in 2021, and it is now publicly available on floodinfo.ie. The NIFM comprises preliminary maps for areas not included in the CFRAMS and are greater than 5 km². These predictive flood maps indicate fluvial flood extents for a series of return periods and scenarios.

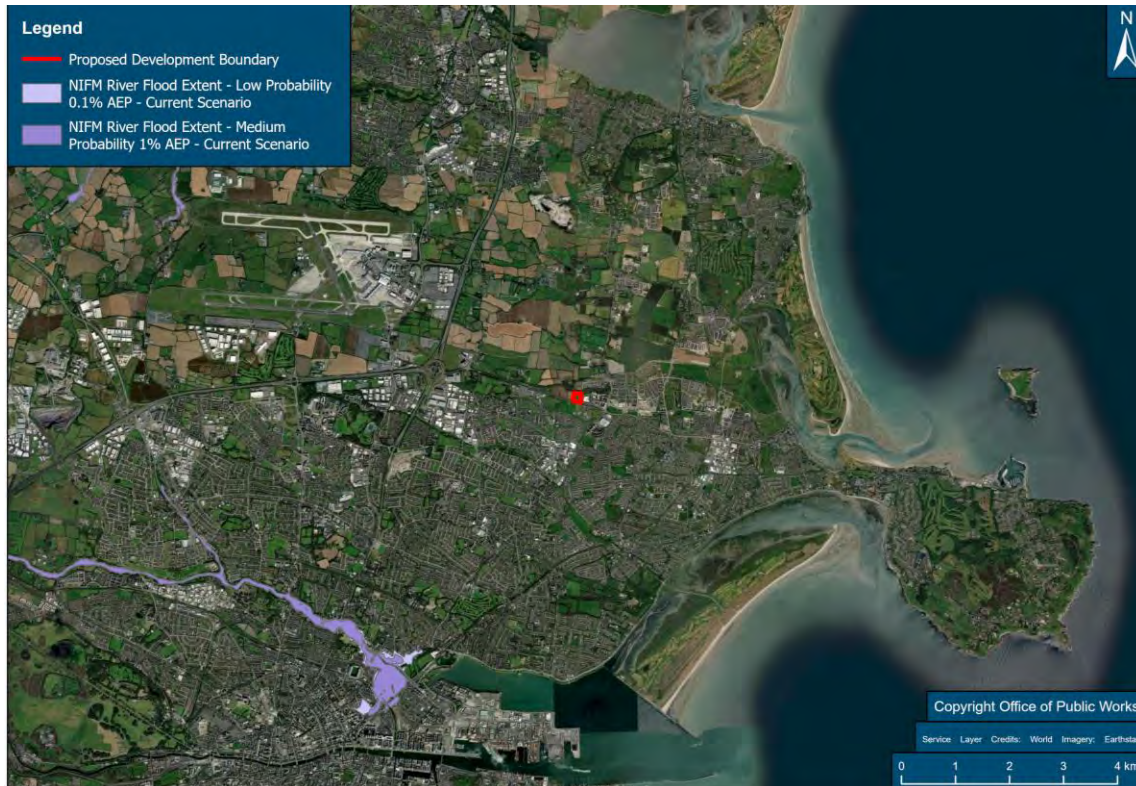


Figure 3-6: National Indicative Fluvial Mapping

Flood maps have been developed for the current scenario, and also for two potential future scenarios; the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS), taking into account the potential impacts of climate change. The MRFS assumes a 20% increase in peak flow and the HEFS assumes a 30% increase in peak flows above the current scenario estimations.

The site is not identified as being at risk in the MRFS or HEFS.

3.9 Dublin City Development Plan 2022 – 2028: Strategic Flood Risk Assessment

Dublin City Council has undertaken a Strategic Flood Risk Assessment (SFRA) to inform the 2022-2028 Development Plan. The SFRA applied the Justification Test for Strategic Development Regeneration Areas (SDRAs). As part of the strategic flood risk assessment, a series of flood maps indicating the flood zone were prepared and include the area surrounding the site (designated as Area 29 in the Justification Tests). An extract from the maps is shown in Figure 3-7.



Figure 3-7: Extract from DCC SFRA (site boundary in green)

As can be seen from the above, the site is shown to be within Flood Zone C. The SFRA also noted that the area has a low sensitivity to climate change.

3.10 Existing Flood Defences

The SFRA noted that there are no formal defences in this area.

The OPW Flood Risk Management Plan database notes there is “*No Proposed Measure: No structural Flood Relief Scheme is proposed at this time for Belcamp Park*”. And there is a “*relatively low level of flood risk to this community from river*”.

3.11 Estimate of flood risk

From a review of the available information, the site of the proposed development is considered to be in Flood Zone C and outside the extents of the 1:1000-year flood extents as outlined above.

4 Flood Risk Assessment

4.1 Potential Sources of Flooding

4.1.1 Fluvial Flood Risk

Fluvial flooding arises following a river exceeding the capacity and overtopping the banks onto the adjacent lands/floodplain.

The reviewed OPW Community-scale Flood Maps mapping and NIFM maps indicate that the site of the proposed development is located outside the modelled flood extents. The SFRA indicates that the site is considered to be within Flood Zone C.

4.1.2 Coastal Flood Risk

The proposed site is located inland and is remote from any coastal areas and associated risk of coastal flooding. In view of the above, coastal flood risk is not considered any further in this report as there is no risk to the proposed development.

4.1.3 Pluvial Flood Risk

Pluvial flooding occurs due to insufficient capacity in the local drainage network system which results in overland flows as well as the ponding of water in topographically low points. It is typically associated with high intensity rainfall. While pluvial flooding is an important consideration, it can be addressed by site specific drainage and management measures aimed at mitigating the effects of pluvial flooding.

The proposed surface water drainage system will be designed to best practice to provide protection from surface runoff (pluvial flooding) due to direct rainfall.

4.1.4 Groundwater Flood Risk

Groundwater can sometimes present a risk of flooding when high groundwater levels prevent surface water from infiltrating below ground level during extreme rainfall events. This can result in site flooding in the form of ponding.

The available mapping would suggest that the proposed development would be unlikely to be impacted by groundwater. As such, groundwater is not considered to be significant with regard to flood mechanisms in the area.

4.2 Appropriate Development and the Justification Test

The Planning System and Flood Risk Management Guidelines outline the types of development that would be considered appropriate to each flood zone as per Table 4-1 below. A justification test is required in instances where development is proposed in areas of moderate or high flood risk.

The development types and land uses which are classed as “Highly Vulnerable” must be subjected to a justification test for Flood Zones A and B. Similarly, the development types and land uses which are classed as “Less Vulnerable” must be subjected to a justification test for Flood Zone A.

Table 4-1 - Matrix of Vulnerability versus Flood Zones

	Flood Zone A	Flood Zone B	Flood Zone C
Highly Vulnerable Development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less Vulnerable	Justification Test	Appropriate	Appropriate
Water Compatible Development	Appropriate	Appropriate	Appropriate

As outlined in the above sections, the site of the proposed development falls within Flood Zone C (as per the DCC SFRA), and as such highly vulnerable development (Sub-stations), is considered Appropriate, and as such, not subject to a Justification Test.

5 Conclusion & Recommendations

A Site-Specific Flood Risk Assessment was carried out to support the planning application for the proposed 110 kV Substation at Belcamp.

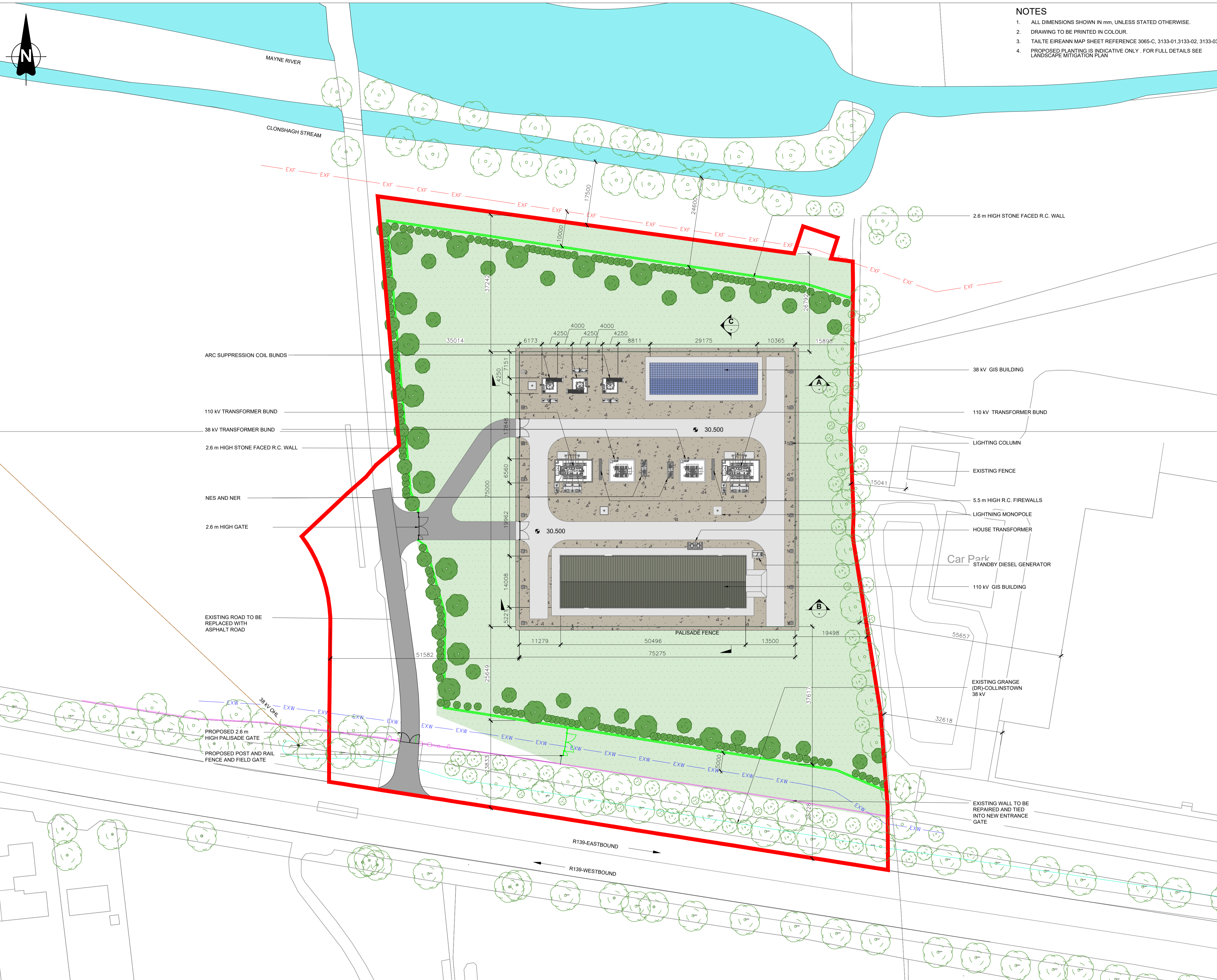
Based on the assessment undertaken, there is no significant risk of flooding to the proposed development. The site of the proposed development is located within Flood Zone C for fluvial and coastal flooding as defined by the Planning System and Flood Risk Management Guidelines for Local Authorities.

The site of the proposed development falls outside the modelled flood extents of the River Mayne and is therefore considered to not be at risk of fluvial flooding. Furthermore, the site is not at risk from coastal flooding or at risk from groundwater flooding.

Surface water proposals for the proposed works will be developed to mimic the natural drainage patterns of the site in accordance with the Best Management Practices of SuDS. The surface water proposals will replicate the greenfield drainage conditions of the site where possible, and will not increase the risk of pluvial flooding elsewhere.

Vulnerable development (Substation) is considered appropriate in Flood Zone C, and is not subject to a Justification Test.

Appendix A Proposed Site Layout



NOTES

1. ALL DIMENSIONS SHOWN IN mm, UNLESS STATED OTHERWISE.
2. DRAWING TO BE PRINTED IN COLOUR.
3. TAILTE EIREANN MAP SHEET REFERENCE 3065-C, 3133-01,3133-02, 3133-03
4. PROPOSED PLANTING IS INDICATIVE ONLY . FOR FULL DETAILS SEE LANDSCAPE MITIGATION PLAN

LEGEND	
PLANNING BOUNDARY	
COMPOUND STONE	
COMPOUND ROAD	
TARMAC ROAD	
EXISTING TREES	
PROPOSED TREES	
EXISTING MEADOW GRASS	
PROPOSED FINISHED LEVEL	30.500
PALISADE FENCE	
POST & WIRE FENCE	
STONE WALL	
EXISTING FOUL WATER	EXF
EXISTING WATERMAIN	EXW
LIGHTNING MONOPOLE	LP
LIGHTNING POST	
EXISTING WALL	

- REFERENCE DRAWINGS**
- PE492-D327-002-001(LATEST REVISION) FOR SITE LOCATION MAP
 - PG406-D100-087-003(LATEST REVISION) FOR 38 kV BUILDING PLANS & SECTIONS
 - PG406-D100-087-004(LATEST REVISION) FOR 38 kV BUILDING ELEVATIONS
 - PG406-D100-087-005(LATEST REVISION) FOR 110 kV GIS BUILDING PLANS & SECTIONS
 - PG406-D100-087-006(LATEST REVISION) FOR 110 kV GIS BUILDING ELEVATIONS
 - PG406-D100-088-001(LATEST REVISION) FOR 110 kV TRANSFORMER BUND
 - PG406-D100-088-001(LATEST REVISION) FOR 38 kV TRANSFORMER BUND
 - PG406-D100-088-003(LATEST REVISION) FOR TYPICAL HOUSE TRANSFORMER DETAILS
 - PG406-D100-088-006(LATEST REVISION) FOR TYPICAL NES DETAILS
 - PG406-D100-088-007(LATEST REVISION) FOR TYPICAL NER DETAILS
 - PG406-D100-088-008(LATEST REVISION) FOR 15 M LIGHTNING MONOPOLE
 - PG406-D100-088-010(LATEST REVISION) FOR TYPICAL ROAD & COMPOUND DETAILS
 - PG406-D100-088-011(LATEST REVISION) FOR TYPICAL DRAINAGE DETAILS
 - PG406-D100-088-012(LATEST REVISION) FOR TYPICAL LIGHTING COLUMN
 - PG406-D100-088-013(LATEST REVISION) FOR TYPICAL GENERATOR DETAILS
 - PG406-D100-088-014(LATEST REVISION) FOR TYPICAL TIMBER POST & RAIL DETAILS
 - PG406-D100-088-017(LATEST REVISION) FOR DETAILS OF STONE FACED RC WALL
 - PG406-D100-088-018(LATEST REVISION) FOR DETAILS OF TIMBER GATES
 - PG406-D100-002-001(LATEST REVISION) FOR TYPICAL PALISADE FENCE
 - PG406-D100-003-001(LATEST REVISION) FOR TYPICAL PALISADE GATE
 - PE492-D327-006-003(LATEST REVISION) FOR ROAD ENTRANCE AND SIGHTLINES

REV	DATE	REVISION DESCRIPTION	DRN	PROD	VER	APP
1	FEB 26	ISSUED FOR PLANNING APPLICATION				
0	NOV 25	ISSUED FOR PLANNING APPLICATION	LMCM	LMCM	ROT	SD

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PURPOSE OF ISSUE - PRELIMINARY UNLESS INDICATED
 CLIENT APPROVAL PLANNING TENDER CONSTRUCTION AS-BUILT

CLIENT: **ESB NETWORKS**

PROJECT: **BELMAYNE 110 kV SUBSTATION**

CONTRACT: **I_DN0810**

DRAWING TITLE: **BELMAYNE 110 kV SUBSTATION PROPOSED SITE LAYOUT PLANNING**

PRODUCTION UNIT: **Transmission and Distribution Delivery**

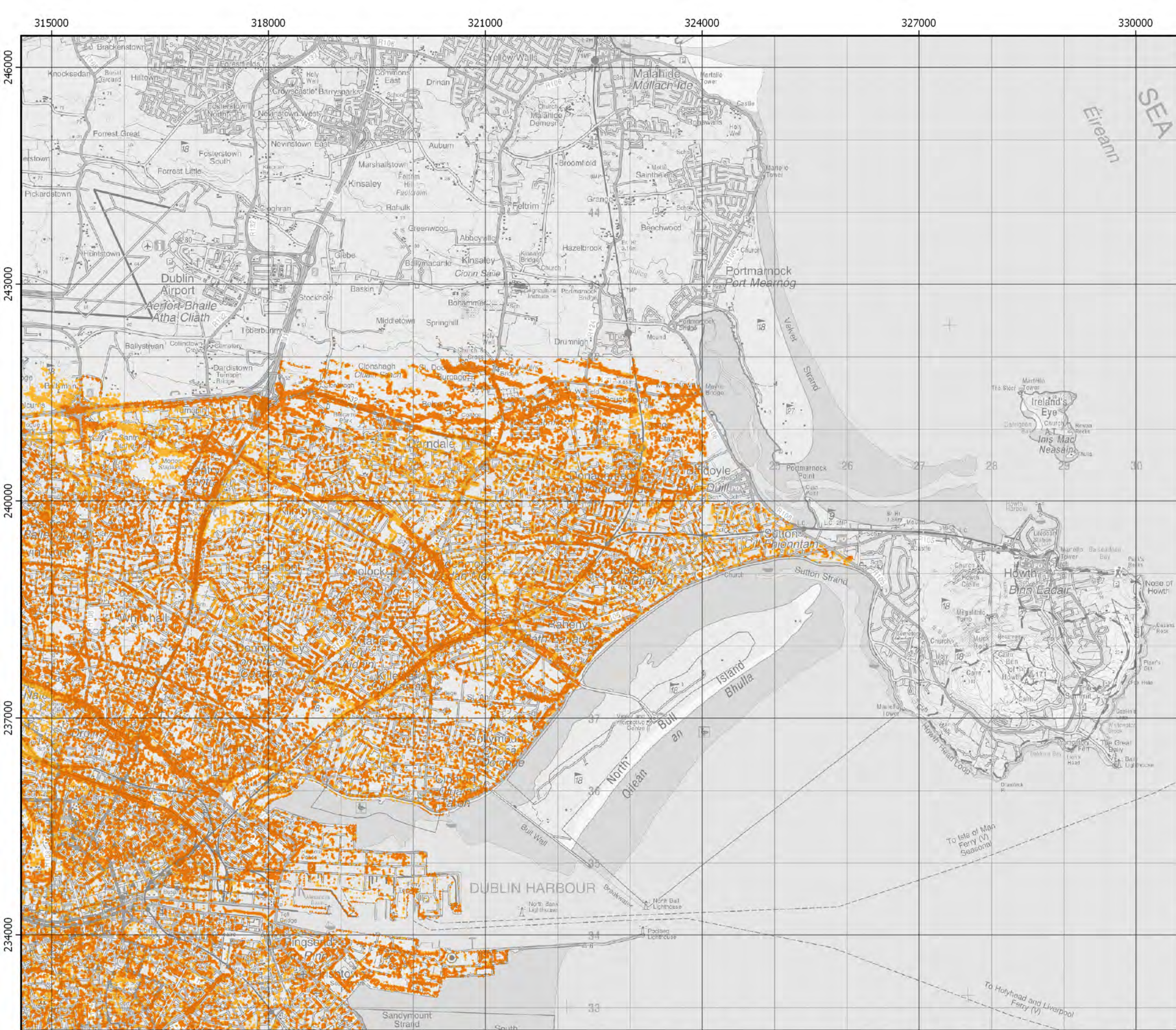
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L.McManus	L.McManus	R.O'Coole	S. Donnelly	10/03/2026
CLIENT REF	NO. OF SHTS	SIZE	SCALE	
TC235264	1	A1	1:500	

DRAWING NUMBER: **PE492-D327-006-004-001**

Appendix B OPW Historic Flood Events Report

Appendix C Dublin City Pluvial Study Mapping



- LEGEND**
- 10% AEP Pluvial
 - 1% AEP Pluvial
 - 0.5% AEP Pluvial

IMPORTANT USER NOTE:
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 Jonathan Swift Street
 Trim
 Co. Meath



Comhairle Cathrach
 Bhaile Atha Cliath
 Dublin City Council

Dublin City Council
 Civic Offices
 Wood Quay
 Dublin 8

Project:
DUBLIN PLUVIAL STUDY (FloodResilienCity)

Map: **DUBLIN CITY - PLUVIAL FLOOD EXTENT MAP**

Map Type:	EXTENT - 180min Rainfall		
Source:	PLUVIAL		
Map Area:	URBAN		
Scenario:	CURRENT		
Drawn by:	IH	Date:	Aug - 2016
Checked by:	MC	Date:	Aug - 2016
Approved by:	JM	Date:	Aug - 2016
Map No.:	E09DCC_EXP_CD_F0_02		
Revision:	F0		
Map Scale:	1:50,000	Plot Scale:	1:1 @ A3

Appendix D OPW Community-Scale Flood Maps mapping & NIFM Maps

Legend

- Proposed Development Boundary
- River Flood Extents - Present Day - High Probability (10% AEP)
- River Flood Extents - Present Day - Medium Probability (1% AEP)
- River Flood Extents - Present Day - Low Probability (0.1% AEP)







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0 0.25 0.5 0.75 1 km



Legend

-  Proposed Development Boundary
-  Coastal Flood Events - Present Day - Low Probability (0.1% AEP)
-  Coastal Flood Events - Present Day - Medium Probability (0.5% AEP)
-  Coastal Flood Events - Present Day - High Probability (10% AEP)


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Legend

-  Proposed Development Boundary
-  Coastal Flood Extents - Mid-Range Future Scenario - Low Probability (0.1% AEP)
-  Coastal Flood Extents - Mid-Range Future Scenario - Medium Probability (0.5% AEP)
-  Coastal Flood Extents - Mid-Range Future Scenario - High Probability (10% AEP)





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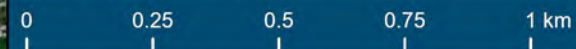


Legend

-  Proposed Development Boundary
-  River Flood Extents - Mid Range Future Scenario - High Probability (10% AEP)
-  River Flood Extents - Mid Range Future Scenario - Medium Probability (1% AEP)
-  River Flood Extents - Mid Range Future Scenario - Low Probability (0.1% AEP)

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Legend

- Proposed Development Boundary
- River Flood Extents - High-End Future Scenario - Low Probability (0.1% AEP)
- River Flood Extents - High-End Future Scenario - Medium Probability (1% AEP)
- River Flood Extents - High-End Future Scenario - High Probability (10% AEP)



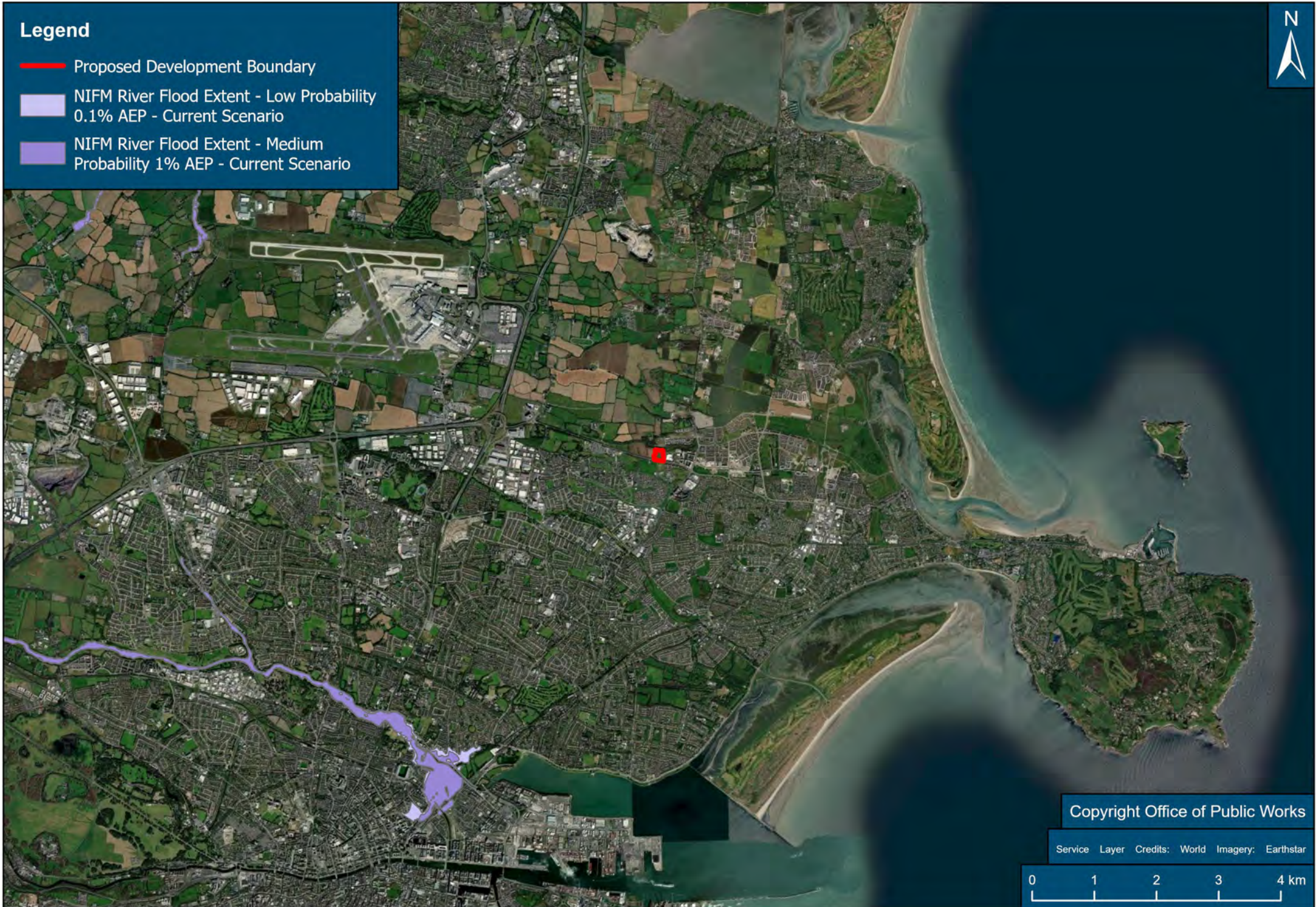
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0 0.5 1 1.5 km

Legend

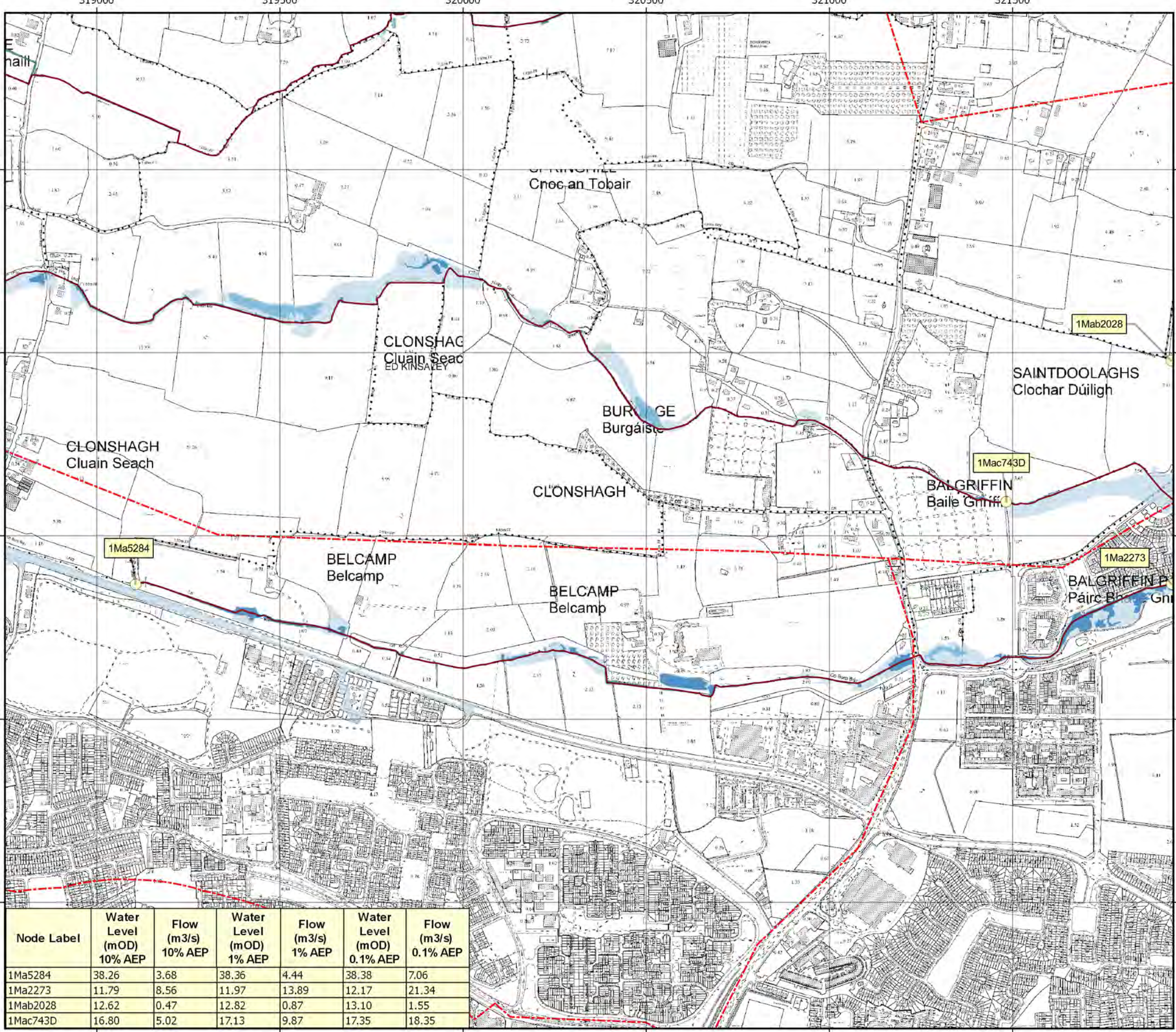
- Proposed Development Boundary
- NIFM River Flood Extent - Low Probability
0.1% AEP - Current Scenario
- NIFM River Flood Extent - Medium
Probability 1% AEP - Current Scenario



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LEGEND

- AFA Boundary
- Defended Area
- Modelled River Centreline
- Node Point
- 10% AEP Fluvial Extent (High Risk)
- 1% AEP Fluvial Extent (Medium Risk)
- 0.1% AEP Fluvial Extent (Low Risk)
- Flood Defence - Embankment
- Flood Defence - Wall
- Gate
- NODE123 Node Label
- Standard of Protection of Flood Defence

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Project:
FINGAL EAST MEATH FRAM STUDY

Map:
**Mayne Model
FLUVIAL FLOOD EXTENT MAP**

Map Type:	EXTENT		
Source:	FLUVIAL		
Map Area:	HPW		
Scenario:	CURRENT		
Drawn by:	IH	Date:	Nov - 2017
Checked by:	JM	Date:	Nov - 2017
Approved by:	JM	Date:	Nov - 2017
Map No.:	MAY/HPW/EXT/CURS/002		
Revision:	F1		
Map Scale:	1:10,000	Plot Scale:	1:1 @ A3

Node Label	Water Level (mOD) 10% AEP	Flow (m3/s) 10% AEP	Water Level (mOD) 1% AEP	Flow (m3/s) 1% AEP	Water Level (mOD) 0.1% AEP	Flow (m3/s) 0.1% AEP
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1Ma2273	11.79	8.56	11.97	13.89	12.17	21.34
1Mab2028	12.62	0.47	12.82	0.87	13.10	1.55
1Mac743D	16.80	5.02	17.13	9.87	17.35	18.35