

Data and Power Hub Services Limited

HV Connection and Sub Station, Grange Castle

Flood Risk Assessment

February 2021



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SECTION 1: Introduction

1.1 General

J. B. Barry and Partners Limited was commissioned by Data and Power Hub Services Limited to undertake a site specific Flood Risk Assessment (FRA) for Planning Permission for a 2 No. transmission lines, a 110kV Gas Insulated Switchgear substation compound and transformers/MV switch room compound at Grange Castle, Co. Dublin. 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).

The proposed development site is located in Grange Castle as shown in *Figure 1-1* below.



Figure 1-1: Location of Proposed Development (Source: Google Maps, annotation by J.B. Barry & Partners)

1.2 Proposed Development

The proposed development primarily comprises the provision of two no. 110kV transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation compound and Transformers / MV switch room compound along with associated and ancillary works and is described as follows:

The proposed 110kV GIS Substation and Transformers / MV switch room Compounds are to be located on lands to the south of the Power Generation Facility that was permitted under SDCC Reg. Ref. SD20A/0058 and to the north of the concurrent application for 2 no. two storey Information Communication Technology (ICT) facilities each with three storey plant levels and associated ancillary development that will have a gross floor area of 30,518sqm under SDCC Reg. Ref. SD20A/0324, and

within an overall landholding bound to the south by the Peamount Road (R120); and on lands that contain the 2 no. residential properties of Little Acre and Bulmer as well as agricultural lands and buildings within the townland of Milltown, Newcastle, Co. Dublin.

The proposed 110kV Gas Insulated Switchgear (GIS) Substation Compound includes the provision of a two storey GIS Substation building (with a gross floor area of 1,430sqm) (known as the Peamount Substation), car parking, lighting, associated underground services and roads within a 3.0m high fenced compound, and all associated construction and ancillary works. The Transformers / MV switch room compound includes three transformers plus MV switch room (200sqm), lighting and lightning masts, car parking, associated underground services and roads within a 3.0m high fenced and separate compound, and all associated construction and ancillary works.

Two proposed underground single circuit 110kV transmission lines will connect the proposed Peamount 110kV GIS Substation to the existing 2 no. single 110kV underground circuits within the Castlebaggot-Kilmahud circuit to the east. The proposed transmission will pass outside of the site underneath the R120, the former Nangor Road, Griffeen River and the newly realigned Baldonnell Road.

The development includes the connections to the proposed Peamount substation as well as to the Castlebaggot-Kilmahud circuit, changes to the attenuation pond permitted under SDCC Reg. Ref. SD20A/0058 and all associated construction and ancillary works.

The GIS sub-station, MV control building and substation transformers will be located on the northern portion of the site as seen in Figure 1-2 below. This portion of the site will be hereafter referred to as the northern portion of the site.



Figure 1-2: Portion of proposed development site

SECTION 2: Flood Risk Assessment Methodology

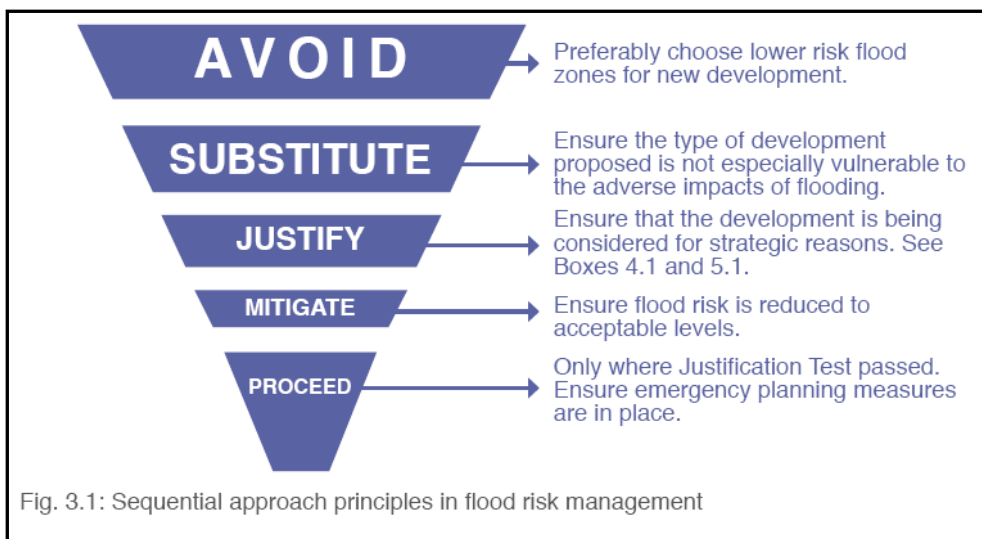
2.1 Methodology

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:

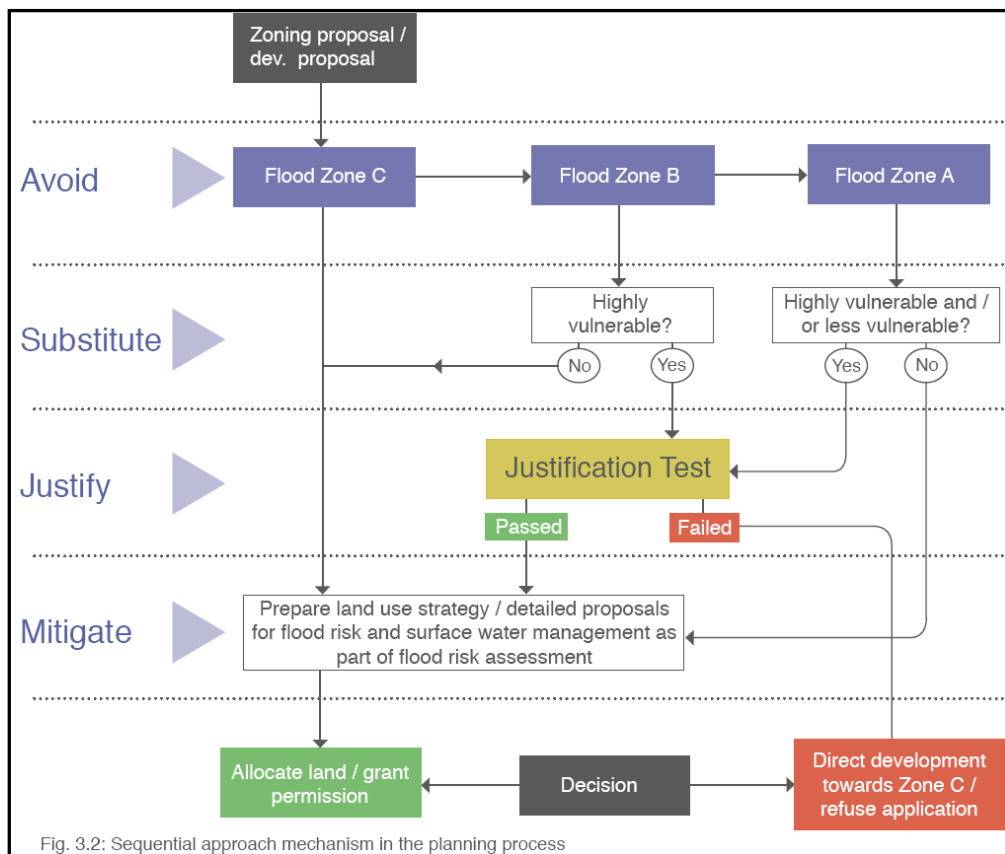
- Avoid development in areas at risk of flooding, particularly floodplains, unless there are proven wider sustainability grounds that justify appropriate development;
- Adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction and 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.



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.



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

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 electricity generating power stations and sub-stations are classified as 'Highly vulnerable development' the section highlighted in Table 3.2 presents the required actions for each flood zone.

As the 2 No. 110kV transmission lines will be underground, they will not be at risk of flooding and as such will not form part of this flood risk assessment.

	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.

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;
- The Preliminary Flood Risk Assessment (PFRA) map was obtained from the Catchment Flood Risk Assessment and Management study website www.cfram.ie;
- National CFRAM Study;
- Strategic Flood Risk Assessment for South Dublin County Council Development Plan 2016 - 2022
- Greater Dublin Strategic Drainage Study

SECTION 3: Existing Hydrological Environment

3.1 Salient Hydrological Features

The main hydrological feature of the area is the River Griffeen. The River Griffeen is a tributary to the River Liffey and flows in a north easterly direction approximately 250m to the south of the northern portion of the site. The transmission lines will pass under the River Griffeen. *Figure 3-1* below illustrates the main hydrological features associated with the site.



Figure 3-1: Hydrological Features of the Area (Source: FSU Web Portal, annotation by J.B. Barry & Partners)

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 subsoil type and aquifer vulnerability. The maps presented in *Figure 3-2* and *Figure 3-3* depict the subsoil type and aquifer vulnerability for the proposed development site. The GSI subsoil mapping (*Figure 3-2*) indicates that limestone sands and gravels is the dominant ground condition within the environs of the proposed development site.



Figure 3-2: GSI Subsoil Mapping (Source: www.gsi.ie, annotation by J.B. Barry & Partners)

Furthermore, the interactive web-mapping site classifies the aquifer vulnerability in this region as having an extreme vulnerability rating (*Figure 3-3*). 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 3-3: GSI Aquifer Vulnerability Mapping (Source: www.gsi.ie, annotation by J.B. Barry & Partners)

3.3 Flood Regime of the Area

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 recurring flooding at Peamont Road, approximately 1.6km to the west of the northern portion of the site and also shows a flood occurring at the junction of the R120 and R134, approximately 500m to the east of the northern portion of the site in 2000. This flooding was caused by the River Griffeen overflowing its banks after heavy rainfall and overtopping onto the road. The recorded floods within the vicinity of the site are shown in *Figure 3-4* below.

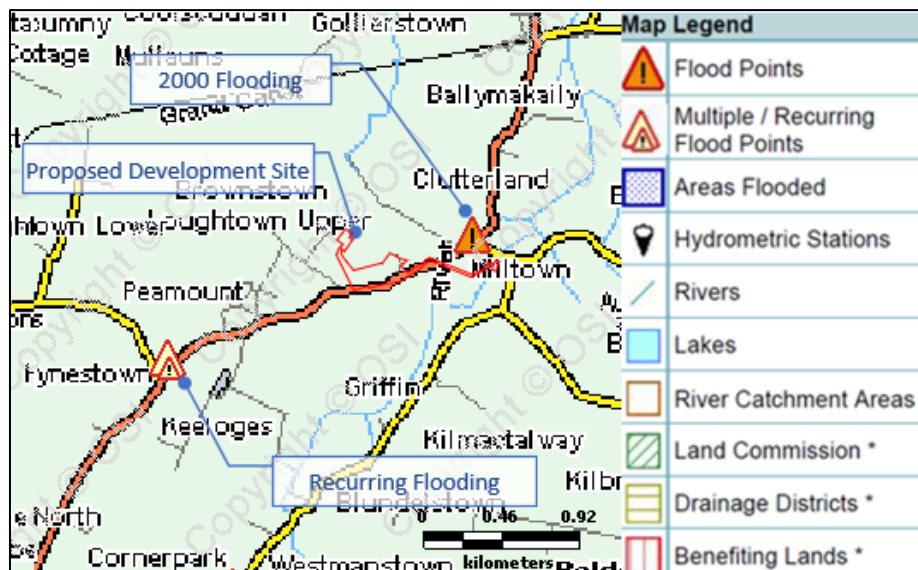


Figure 3-4: Location of historic flooding in the vicinity of the proposed site (Source: www.floodmaps.ie annotation by J.B. Barry & Partners)

3.4 Existing Flood Studies

3.4.1 GSI Groundwater Flood Maps

In response to the serious flooding of winter 2015/16 the GSI was commissioned to undertake a study of groundwater related flooding, with particular emphasis on limestone and karst regions. In June 2020 the GSI published its findings and published flood risk maps. Historic groundwater flood maps were produced which show maximum observed flood extents for locations of recurrent groundwater flooding, as well as predictive groundwater flood maps which present probabilistic groundwater flood events with flood extents predicted for a range of AEP's.

The GSI groundwater flood maps were examined as part of this study and it was determined that there have been no historic nor predictive groundwater related flood risks in the vicinity of the area.

3.4.2 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 3-5 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 River Griffeen is included in Appendix 1. The map shows that the flood extent of the River Griffeen does not extend to the proposed northern portion of development site and demonstrates that this portion of the site lies outside of the 0.1% Fluvial AEP event and is therefore located within **Flood Zone C**. The map shows that the transmission lines will cross the 1% AEP fluvial flood, however as discussed in Section 2.1, as these lines will be underground, they will not be at risk of flooding.

This extract also provides the flood level of the River Griffeen in the vicinity of the proposed development site during the 1% and 0.1% AEP fluvial events. To the east of the northern portion of the site and where the transmission lines will cross under the river Griffeen, at Node 09GRIF00582D, water levels in the river are +69.30OD and +69.49mOD for the 1% and 0.1% AEP flood events respectively. Meanwhile, the flood levels in the river to the south of the northern portion of the site at Node 09GRIF00649 are +73.58mOD and +73.59mOD for the 1% and 0.1% AEP flood events respectively.

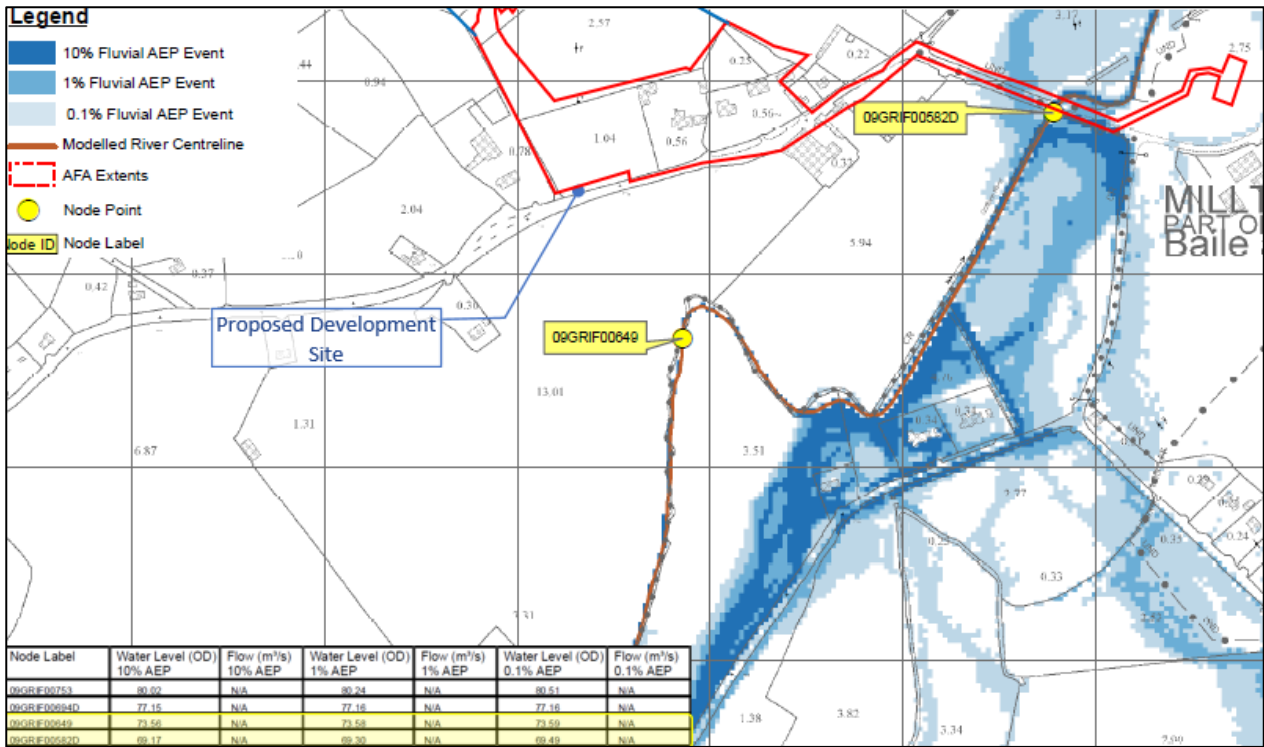


Figure 3-5: Extract CFRAMS Fluvial Flood Extent Map

3.4.3 South Dublin County Council Strategic Flood Risk Assessment

The South Dublin County Council (SDCC) Strategic Flood Risk Assessment (SFRA) was developed as part of the South Dublin County Development Plan 2016-2022. The SFRA provides an area-wide assessment of all types of significant flood risk to inform strategic land use planning decisions. The SFRA enables SDCC to allocate appropriate sites for development and identify how flood risk can be reduced as part of the development plan process.

As part of the SFRA flood zone maps were generated for the area. *Figure 3-6* shows an extract from the South Dublin County Council SFRA Flood Zone Map below in the vicinity of the proposed development. The full map is included in Appendix 2. From this figure it can be seen that the northern portion of the proposed development site lies outside of Flood Zones A, and B and can therefore be considered to lie within **Flood Zone C**. This map is consistent with the CFRAMS map in that the northern portion of the site is within Flood Zone C and the transmission lines will cross under the 1% AEP flood at the River Griffeen.

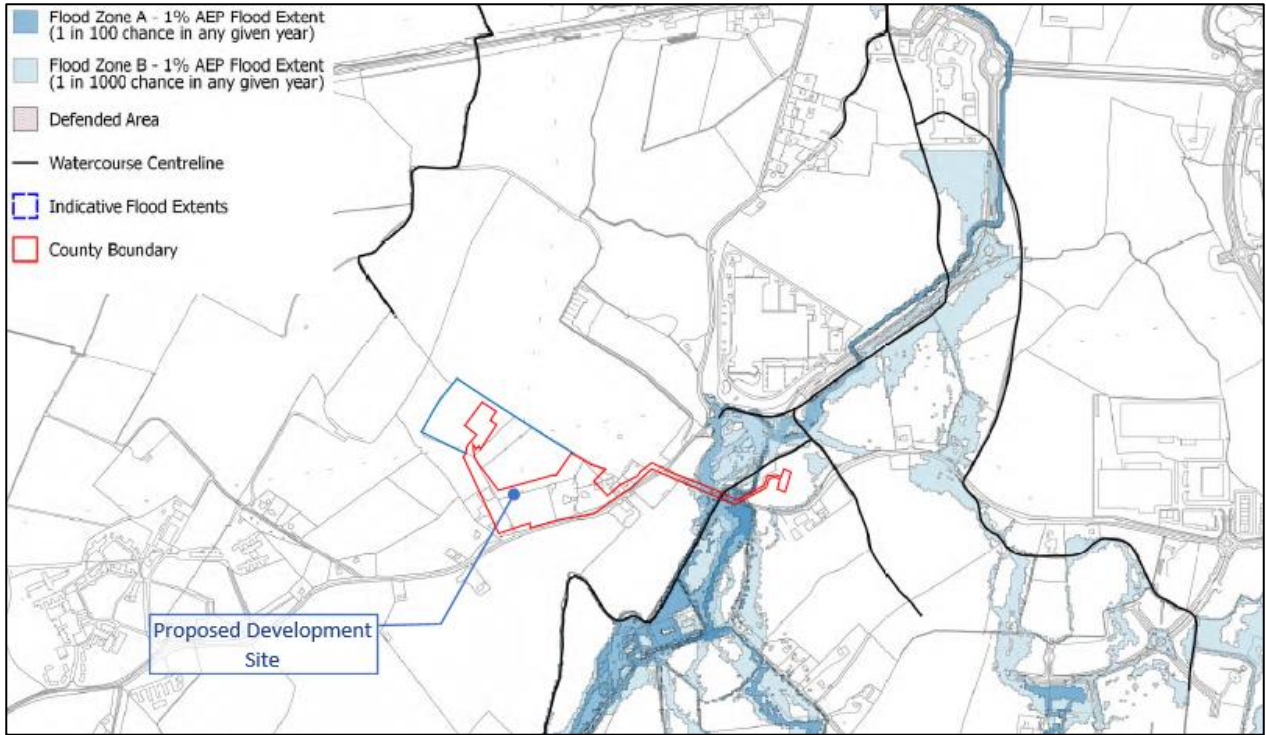


Figure 3-6: Extract from the South Dublin County Council SFRA Flood Extent Map

SECTION 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.

Coastal Flood Risk

The CFRAMS Map in Appendix 1 and South Dublin County Council SFRA flood map in Appendix 2 both indicate that the proposed development site lies outside of the 0.1% AEP coastal flood event and hence is located within **Flood Zone C** for Coastal flood risk, where the risk of flooding is low.

Fluvial Flood Risk

The CFRAMS Map in Appendix 1 and South Dublin County Council SFRA flood map in Appendix 2 both indicate that the proposed development site lies outside of the 1% AEP and extreme fluvial flood extents. Both maps indicate that the transmission lines will cross under the River Grifeen 1% AEP flood, however as these will be underground, they will not be at risk to flooding. Therefore, the proposed development site lies within Fluvial **Flood Zone C** – low flood risk. The OPW Summary Local Area Report shows no indication of previous fluvial related flooding at the proposed site.

Groundwater Flood Risk

The aquifer vulnerability map (refer to *Figure 3-3*) classifies the site as having an 'extreme vulnerability' which indicates a high water table and hence a risk of groundwater related flooding. However, 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.

Pluvial Flood Risk

The OPW Summary Local Area Report 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 GSDS. With these mitigation measures in place pluvial flood risk is not considered to be significant.

Artificial Drainage Systems Flood Risk

No artificial drainage systems have been identified at the proposed site, and consequently artificial drainage systems flood risk is not relevant.

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 for a GIS substation, control room, transformers, and all ancillary equipment. 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 Less 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

4.4 Detailed Flood Risk Assessment

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.

SECTION 5: Conclusions

5.1 Summary of Results

A flood risk assessment for the proposed development at the Grange Castle, Co. Dublin has been undertaken in accordance with the methodology recommended in the FRM Guidelines. The following is the summary of the flood risk assessment:

- The proposed development consists of 2 No. transmission lines, a 110kV Gas Insulated Switchgear substation compound and transformers/MV switch room compound at Grange Castle, Co. Dublin. All highly essential infrastructure will be located on the northern portion of the site. The transmission lines will be underground and as such will not form part of the flood risk assessment.
- The River Griffeen flows in a north easterly direction approximately 250m from the northern portion of the site. Historical flood data gathered from www.floodmaps.ie has indicated that the river flooded approximately 1.6km to the west of the northern portion of the site, however there has been no flooding on the site itself.
- The CFRAMS Map and South Dublin County Council SFRA Flood Map both indicate that the site lies within **Flood Zone C**. The CFRAMS map provides water levels for the 1% and 0.1% AEP floods at locations close to the site.
- The type of development is defined as 'Highly Vulnerable Development'. Using the sequential approach mechanism, it is assessed that a justification test is not required for the proposed development.

5.2 Recommendations

To protect the proposed development against flooding, it is recommended that the development is constructed with a finished floor level (FFL) above the 0.1% AEP fluvial flood event. The FFL should incorporate a freeboard of 0.5m as per the South Dublin County Council SFRA and include a further 0.3m allowance for the effects of climate change, as per the Greater Dublin Strategy Drainage Study (GSDSDS). The CFRAMS map in Appendix 1 shows that the 0.1% AEP fluvial flood level at Node 09GRIF00649 approximately 200m south of the northern portion of the site is +73.59mOD.

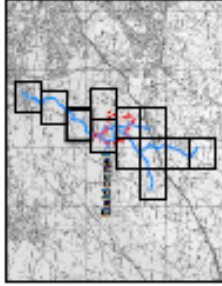
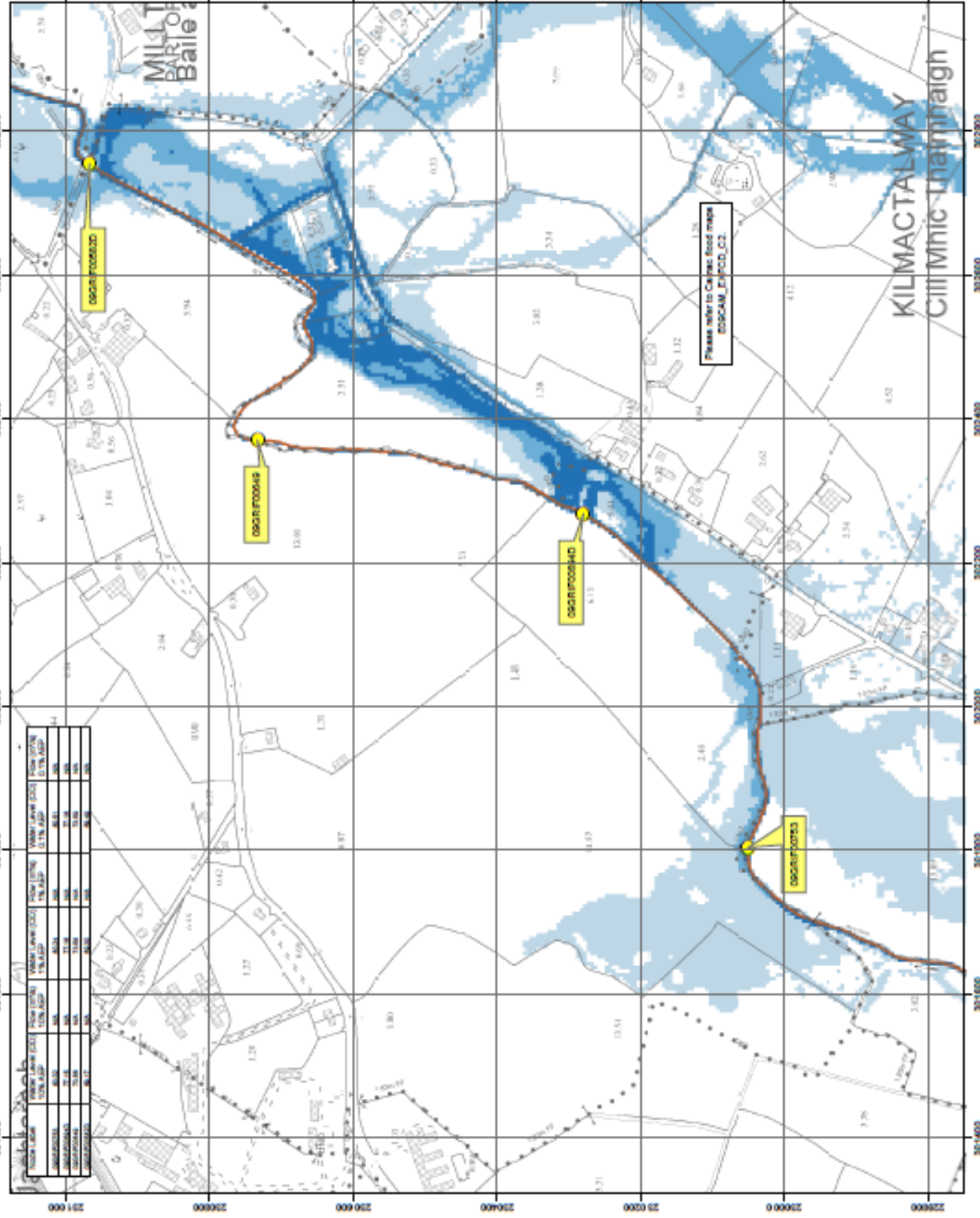
Therefore, the minimum FFL should be set at (+73.59mOD + 0.5m + 0.3m) **+74.39mOD**. This also ensures that that the minimum FFL is above the 0.1% AEP fluvial flood level.

5.3 Impact of the proposed development on the existing flood regime of the area

To prevent any increased flooding at the downstream reach of the River Griffeen from the proposed development, it is proposed to implement SuDS measures as discussed in the Water Service Report in order to limit the discharge from the site to the greenfield discharge rates. The implementation of these SuDS measures will not increase the risk of flooding elsewhere. It is considered that the proposed development will have a negligible impact on the existing flood regime of the area.

Appendix 1:

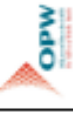
CFRAMS Flood Map



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

- LEGEND**
- 10% Flooded ASP Swath
 - 1% Flooded ASP Swath
 - 0.1% Flooded ASP Swath
 - Marked River Catchment
 - APN CORNERS
 - Node Point
 - Node Label

FINAL



The Office of Public Works
 12, Duke's Quay
 Dublin 1
 D02 027

OPW
 Office of Public Works

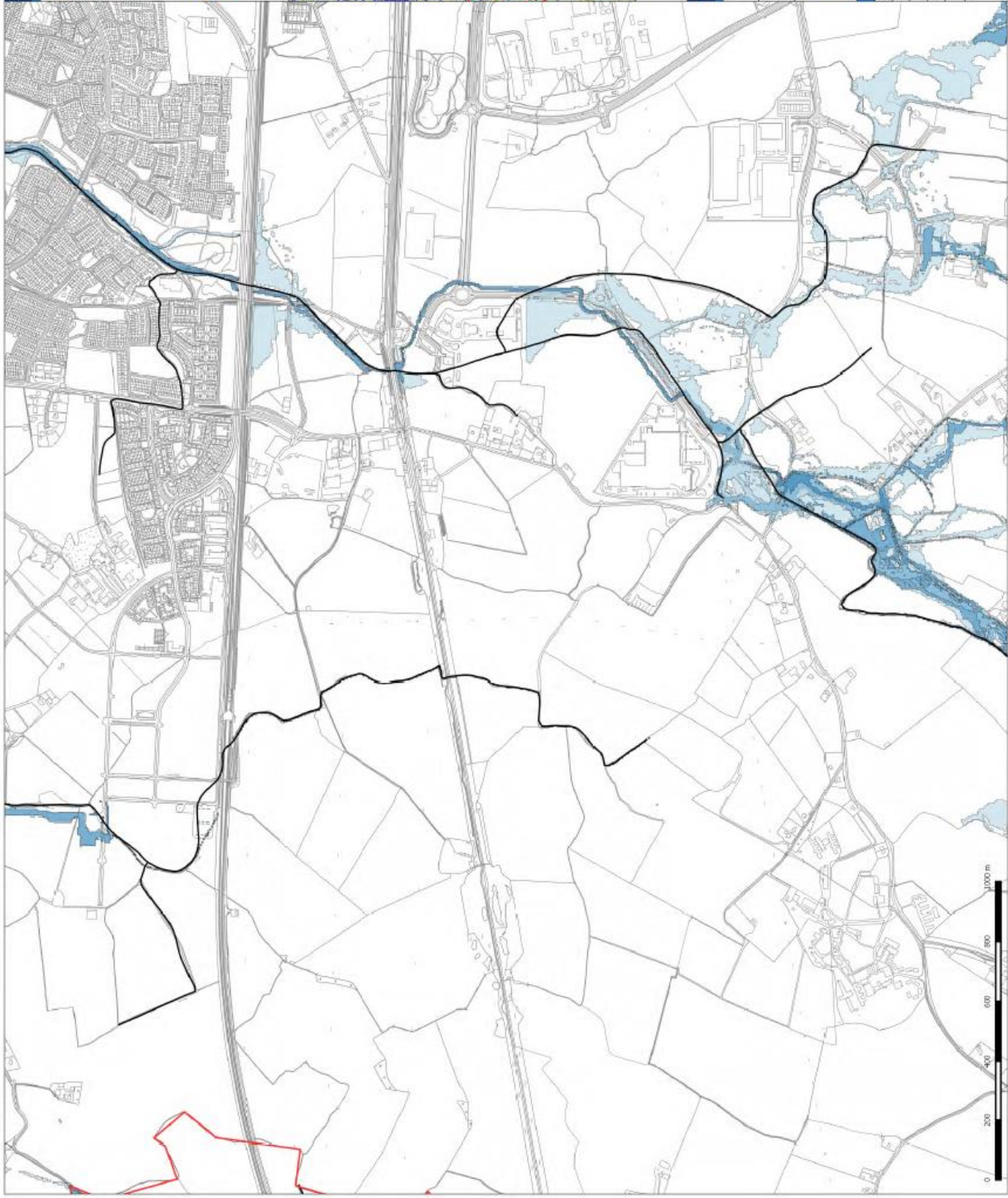
RPS
 Risk Prevention Solutions

Map Name: RPS
 Project Name: RPS
 Client: OPW
 Date: 25 July 2018
 Approved By: G.L.
 Checked By: G.L.
 Drawing No: EN001015
 Map Series: Page 1 of 12
 Drawing Scale: 1:5,000 @ A3

Node Label	Node UTM (Easting)	Node UTM (Northing)	Node UTM (Easting)	Node UTM (Northing)
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DGR/FLOODS	291000	291000	291000	291000
DGR/FLOODS	291000	291000	291000	291000
DGR/FLOODS	291000	291000	291000	291000
DGR/FLOODS	291000	291000	291000	291000
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DGR/FLOODS	291000	291000	291000	291000

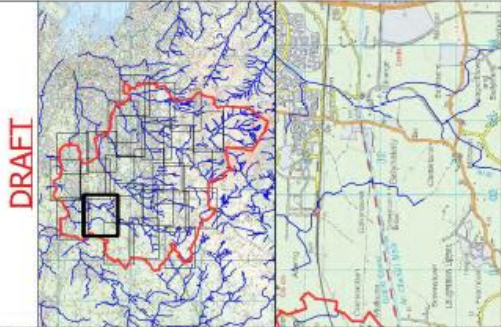
Appendix 2:

South Dublin County Council Strategic Flood Risk Assessment Flood Map



Legend

- Flood Zone A - 1% AEP Flood Extent (1 in 100 chance in any given year)
- Flood Zone B - 1% AEP Flood Extent (1 in 1000 chance in any given year)
- Defended Area
- Watercourse Centreline
- Indicative Flood Extents
- County Boundary



DRAFT

South Dublin County Council
 Dublin's Capital
 A New Vision
 South Dublin County Council

Project Strategic Flood Risk Assessment

Title Fluvial Flood Zone Mapping

Figure MDW857_0004

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Notes: 1. The viewer of this map should refer to the 2004, 2008, 2010 and 2015 editions of the Strategic Flood Risk Assessment for the most up-to-date information.

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