Proposed Variation No 3

South Dublin County Development Plan 2022-2028

City Edge Strategic Urban Regeneration Framework 2026 (SURF)

Strategic Flood Risk Assessment Report (SFRA)

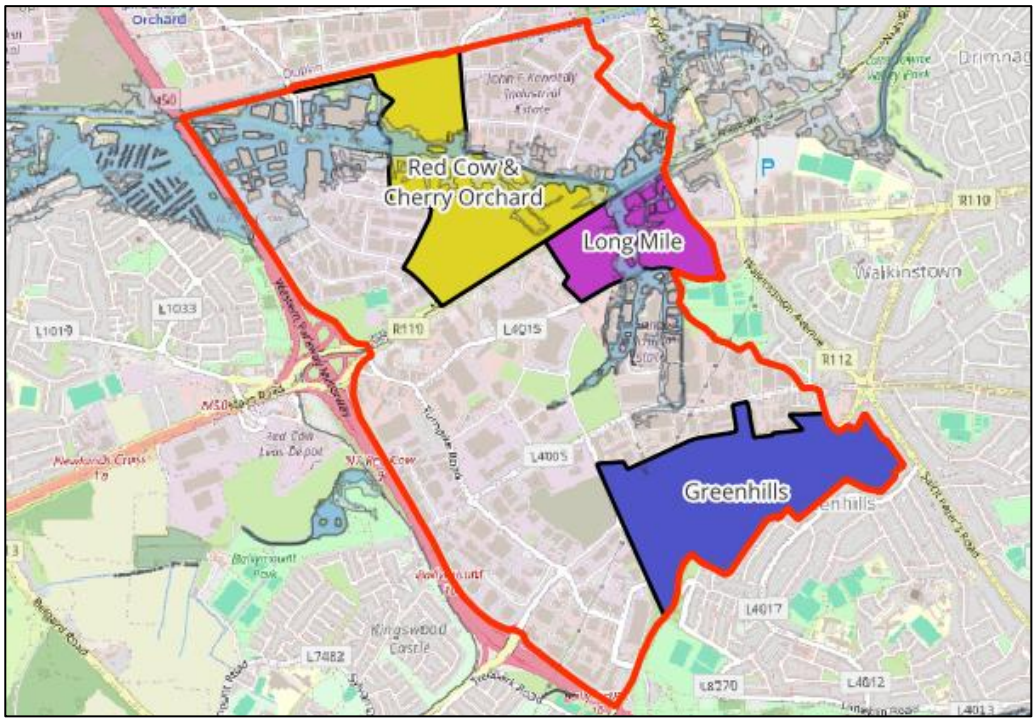
SDCC Comhairle Contae Átha Cliath Theas South Dublin County Council

South Dublin 2022-2028 County Development Plan

SOUTH DUBLIN COUNTY COUNCIL

CITY EDGE STRATEGIC URBAN REGENERATION FRAMEWORK

STRATEGIC FLOOD RISK ASSESSMENT (SFRA)



April 2026

CITY EDGE STRATEGIC URBAN REGENERATION FRAMEWORK

STRATEGIC FLOOD RISK ASSESSMENT (SFRA)

Nicholas O'Dwyer Ltd
Consulting Engineers
Nutgrove Office Park
Nutgrove Avenue
Dublin 14

April 2026

PROJECT NO. 20849					
Revision	**Reason for Revision**	**Prepared by**	**Reviewed by**	**Approved by**	**Issue Date**
-	Draft Issue	AN	KO	BD	09-04-2026
A	Updated following comments	KO	KO	BD	12-04-2026
B	Updated following comments	KO	KO	BD	13-04-2026
C					
D					

TABLE OF CONTENTS

1 INTRODUCTION 1

1.1 Commission 1
1.2 Project Overview 1
1.3 Scope 3
1.4 Report Structure 4
1.5 Study Area 5

2 METHODOLOGY 7

2.1 Introduction 7
2.2 Flood Risk Management 7
2.3 Flood Zones 8
2.4 Climate Change 9
2.5 Core Objectives and Principles of the Planning Guidelines 9
2.6 Scales of Flood Risk Assessment 9
2.7 Structure of a Flood Risk Assessment 10
2.8 Sequential Approach and Justification Test 10

3 FLOOD RISK IDENTIFICATION 12

3.1 Sources of Flood Risk 12
3.2 Flood Risk Data 15
3.2.1 Historical Flood Maps 15
3.2.2 Past Flood Events 16
3.2.3 SDCC Flood Zone Maps 18
3.2.4 National Indicative Fluvial Mapping (NIFM) 20
3.2.5 Geological Survey Ireland (GSI) Groundwater Flooding 21
3.2.6 Pluvial Flood Mapping (OPW and SDCC) 22
3.3 Flood Risk Identification Summary 24

4 HYDROMORPHOLOGICAL ASSESSMENT 25

4.1 Riparian Corridor 26
4.2 Riparian Vegetation 27
4.3 Riparian Buffer 27
4.4 Instream Works and Channel Modifications 28

5 SURF REVIEW AND MITIGATION 29

5.1 Overview 29
5.2 Identification of Key Areas of Fluvial Flooding 29
5.2.1 Red Cow and Cherry Orchard PDA 29
5.2.2 Long Mile PDA 31

5.2.3 Greenhills PDA 32
5.3 Conclusion 33
6 FLOOD RISK MANAGEMENT 35
6.1 Overview 35
6.2 Recommended Policies and Guidance 35
6.2.1 Managing Flood Risk 36
6.2.2 Managing Surface Water 36
6.3 Planning Context 37
7 JUSTIFICATION TESTS 38
7.1 Overview 38
7.2 Red Cow and Cherry Orchard PDA Justification Test 39
7.3 Long Mile PDA Justification Test 41
7.4 Greenhills PDA Justification Test 43
7.5 Conclusions 45
8 SFRA REVIEW AND UPDATE 46
9 CONCLUSION 46

TABLE OF FIGURES

Figure 1-1: City Edge Development Area by Local Authority Responsibility 2
Figure 1-2: Land Use Plan for City Edge – SDCC Area in red outline..... 3
Figure 1-3: Priority Development Areas (PDAs) within the SDCC part of City Edge..... 6
Figure 2-1: Source-Pathway-Receptor Model (source: Guidelines, 2009) 8
Figure 2-2: Indicative flood zone map extract (source: Guidelines, 2009)..... 8
Figure 2-3: Sequential approach principles in flood risk management (source: Guidelines, 2009) 11
Figure 3-1: Flow Network 13
Figure 3-2: Sewer 9B route 14
Figure 3-3: Trunk water mains in the City Edge area 15
Figure 3-4: Tailte Éireann historical flood plains map (1830)..... 16
Figure 3-5: Past Flood Events (source: Floodinfo.ie) 17
Figure 3-6: SDCC CDP 2022-2028 Flood Zones in the City Edge area (source: SDCC).. 18
Figure 3-7: Coastal Flood Extent Map – HEFS (Data source Floodinfo.ie) 19
Figure 3-8: NIFM Flood Extent Map – Medium Probability (source: Floodinfo.ie) 20
Figure 3-9: GSI Ground Water Flood Probability and SAR Seasonal Map (source: GSI). 21
Figure 3-10: OPW Pluvial Flood Map (source: Floodinfo.ie) 22
Figure 3-11: SDCC SFRA Pluvial Flood Map (Source: SDCC CDP)..... 23
Figure 4-1: Interaction between strategic and development hydromorphological assessments..... 25
Figure 4-2: Riparian Corridors for the Site 26
Figure 5-1: Fluvial Flood risk across the City Edge area..... 29
Figure 5-2: Red Cow & Cherry Orchard Flood Zone A & B Map (source: SDCC) 30
Figure 5-3: Long Mile PDA Development Plan Flood Zone Map including NIFM mapping (source: SDCC, Floodinfo.ie)..... 32
Figure 5-4: Greenhills PDA HEFS Flood Extent Map (source: SDCC) 33
Figure 7-1: Justification test for Development plans (source: DEHLG 2009) 38

TABLE OF TABLES

Table 2-1: Correlation between Rp and AEP 7
Table 2-2: Allowances in Flood Parameters for the Mid-Range and High-End Future Scenarios 9
Table 2-3: Matrix of vulnerability versus flood zone (source: Guidelines, 2009) 11
Table 3-1: Past Flood Event Details recorded on OPW Floodinfo.ie 17
Table 3-2: Policy SWRM1: Surface Water/Rainwater Management from the City Edge Surf 23
Table 3-2: Objective 3 of the City Edge Surf Policy SWRM2: Flood Risk and Camac Renaturalisation 27
Table 5-1: Review of Justification Test need 34

GLOSSARY OF ACRONYMS

Acronym	Description
AEP	Annual Exceedance Probability
CDP	County Development Plan
CFRAM	Catchment Flood Risk Assessment and Management
DCC	Dublin City Council
DEHLG	Department of the Environment, Heritage and Local Government
DHLGH	Department of Housing, Local Government and Heritage
EU	European Union
FAS	Flood Alleviation Scheme
FRA	Flood Risk Assessment
FRS	Flood Relief Scheme
GDSDS	Greater Dublin Strategic Drainage Strategy
GSI	Geological Survey Ireland
HEFS	High-End Future Scenario
LAP	Local Area Plan
MASP	Metropolitan Area Strategic Plan
MRFS	Mid-Range Future Scenario
NDP	National Development Plan
NIFM	National Indicative Fluvial Mapping
NPF	National Planning Framework
OPW	Office of Public Works
PDA	Priority Development Area
RSES	Regional Spatial and Economic Strategy
Rp	Return period (years)
SAR	Synthetic Aperture Radar
SDCC	South Dublin County Council
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SPR	Source–Pathway–Receptor
SuDS	Sustainable Drainage Systems
SURF	Strategic Urban Regeneration Framework
TII	Transport Infrastructure Ireland
TfL	Transport for London

1 INTRODUCTION

1.1 Commission

Nicholas O'Dwyer Ltd. was appointed by the South Dublin County Council (SDCC) to prepare a Strategic Flood Risk Assessment (SFRA) to supplement and inform the joint SDCC/DCC non-statutory City Edge Strategic Framework published in 2022 which provided a high level and long term vision and delivery strategy for the regeneration of the City Edge area to the year 2070. SDCC is now preparing a statutory plan focussing on the part of City Edge within its jurisdiction. The City Edge Strategic Urban Regeneration Framework (SURF) which is being brought forward as a proposed Variation to the South Dublin County Development Plan (2022-2028) will guide the planning of the area in the short to medium term. As a result this SFRA is being updated using the most up to date information for the parts of City Edge within the SDCC administrative area.

1.2 Project Overview

The City Edge Project is a transformative initiative to reimagine the Naas Road, Ballymount and Park West areas of Dublin as a new urban quarter providing up to 40,000 homes and 75,000 jobs. The City Edge lands straddle the South Dublin County Council (SDCC) and Dublin City Council (DCC) functional areas, and the project is a partnership between the two local authorities in a collaborative effort to deliver this large-scale regeneration scheme. At 700 Hectares, the scale of the project makes it unique in Ireland and one of the largest redevelopment opportunities in Europe.

The brownfield lands are located at the western edge of Dublin City, within the M50 and only 15 minutes from the City Centre, creating a unique opportunity for sustainable compact growth. The area as now envisaged has the potential to make a significant contribution to the delivery of much needed new homes and jobs, while also generating significant economic, climate and social benefits for the country. Based on the 10-minute city principle, a central aim of City Edge is to deliver a compact liveable quarter, whereby residents, workers and visitors can access essential daily needs locally by walking and cycling, and where longer trips are made on high quality public transport.

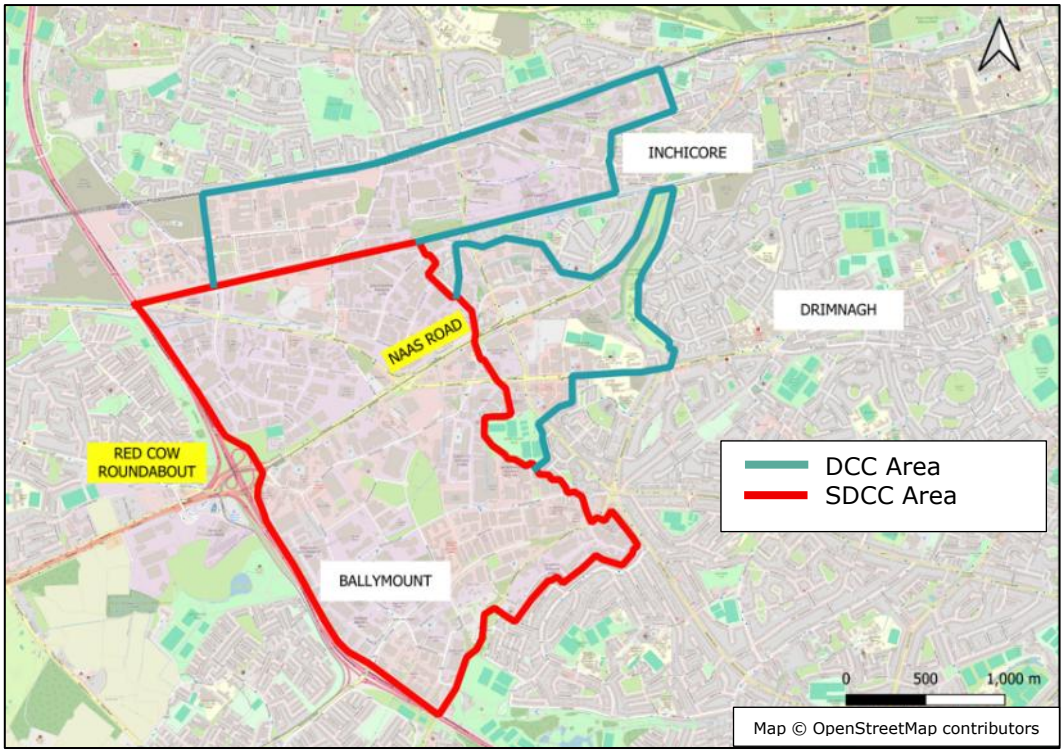


Figure 1-1: City Edge Development Area by Local Authority Responsibility

Following on from detailed analysis of the area and public consultation during September and October of 2021, the City Edge Strategic Framework was formulated and comprised a non-statutory plan that sets out a long-term, high-level vision and strategy for the regeneration of the area over a 50-year timescale.

To place the framework on a statutory footing SDCC is preparing a new Strategic Urban Regeneration Framework (SURF) for the City Edge area to be introduced as a variation to the South Dublin County Development Plan 2022-2028. This proposed Variation will give a statutory basis for the future planning of the area.

The proposed land use mix for the area is shown in Figure 1-2 in which the SDCC area is outlined in red.

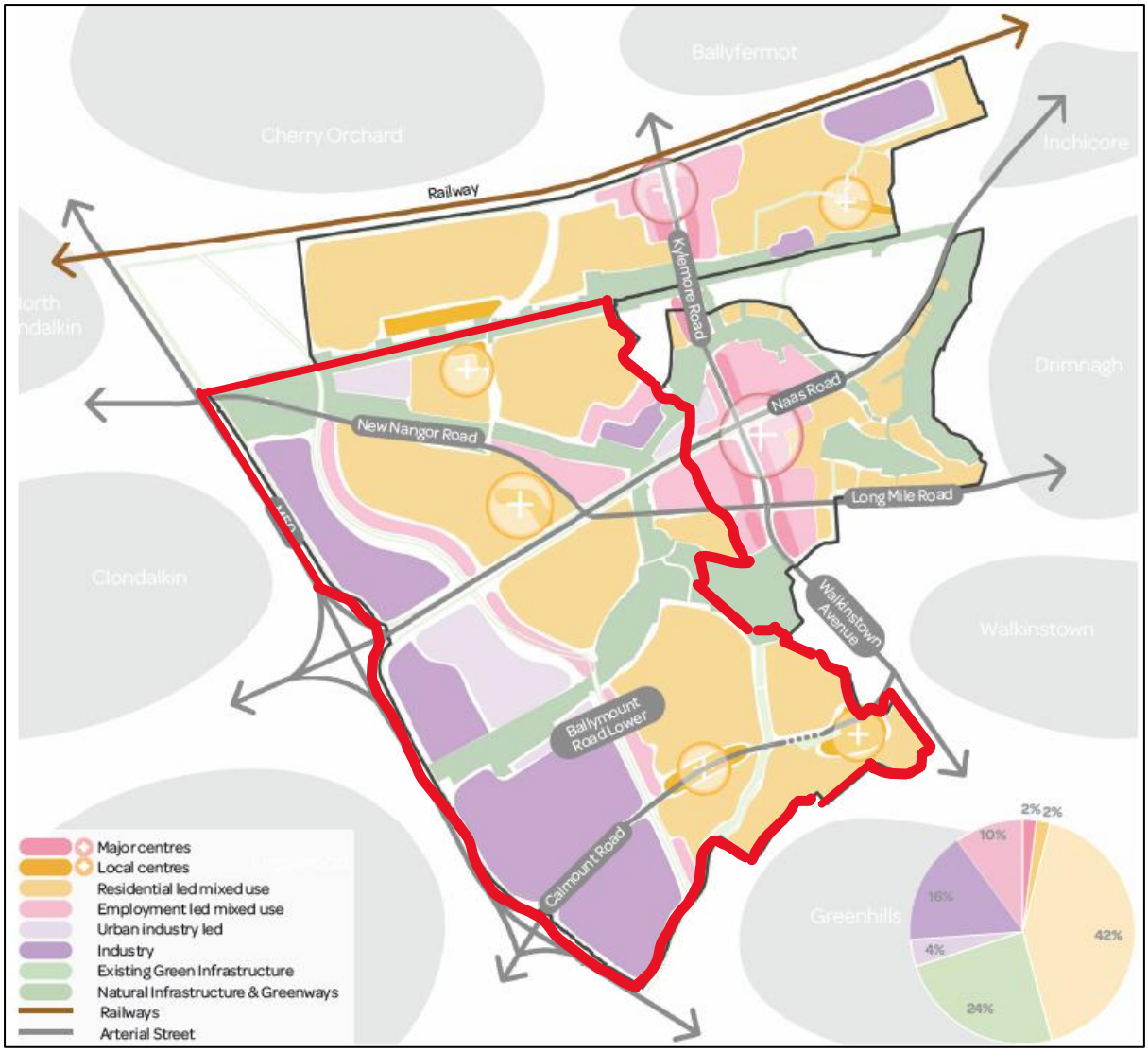


Figure 1-2: Land Use Plan for City Edge – SDCC Area in red outline

The SURF has identified three priority development areas (PDAs) within the City Edge area and incudes policy PDA1; *To give precedence to new development in City Edge locating within the identified Priority Development Areas, particularly higher intensity residential and employment development.*

The SURF also contains policy PDA4; *New development outside the PDAs will generally only be permitted where it is demonstrated that it would not result in piecemeal development, that adequate amenity will be provided, and that it would be compliant with the City Edge Strategic Urban Regeneration Framework (SURF) and relevant Development Plan policies.*

1.3 Scope

The scope of this SFRA is to provide a strategic overview of all forms of flood risk throughout the part of the City Edge Project area which falls within the SDCC administrative area but focusing particularly on the PDAs. This document and the associated mapping will be used as an evidence base by the developers to prepare flood risk assessments and drainage strategies. The aim is to:

- Provide an assessment of flood risk for the PDAs in accordance with "*The Planning System and Flood Risk Management – Guidelines for Planning Authorities*" (The Guidelines), 2009, published by the Department for the Environment, Heritage and Local Government and the Office of Public Works (OPW).

- Undertake a Flood Risk Assessment Report assessing the hydrology and hydraulics and determining mechanisms of flooding in the project area, considering the anticipated future increases in rainfall, river flows and sea level rise because of climate change.

- Provide recommendations for future flood risk assessments for proposed developments and planning applications, in accordance with The Guidelines.

- Liaison with Consultants completing other types of assessment as well as public consultation.

It is important to note that, although prepared in compliance with the requirements of The Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009, the SFRA is a work in progress and is based on best available data at the time of preparing the assessment.

Accordingly, all information in relation to flood risk is provided for general policy guidance only and may be substantially altered in light of future data, provision of the Camac FAS data and analysis, or future flood events. As a result, all landowners and developers are advised that South Dublin County Council and their agents can accept no responsibility for losses or damages arising due to assessments of the vulnerability to flooding of lands, uses and developments. Owners, users and developers are advised to take all reasonable measures to assess the vulnerability to flooding of lands and buildings (including basements) in which they have an interest prior to making planning or development decisions.

This SFRA should be reviewed when a new Development Plan is being made, once the OPW flood map review of the River Camac is complete, following completion of significant flood relief schemes, including the Camac FAS, and after significant flood events to ensure that its content and emphasis remain relevant

1.4 Report Structure

This SFRA document is structured as below:

- **Section 1 (Introduction)** - provides an overview of the project and objectives of the SFRA.

- **Section 2 (Methodology)** - outlines the approach conducted for preparation of this SFRA.

- **Section 3 (Flood Risk Identification)** - provides a review of the existing information and the identification of any flooding or surface water management issues.

- **Section 4 (Hydromorphological Assessment)** – considers the current state of the watercourses and how they can be improved.

- **Section 5 (SURF Review and Mitigation)** – looks at the flood risk in the Priority Development areas to determine if a justification test is required.

- **Section 6 (Flood Risk Management Policies/Objectives)** - lists recommended policies to manage flood risk and surface water.

- **Section 7 (Justification Tests)** - provides whether a development proposal within an area at risk of flooding meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere.

- **Section 8 (Review and Update)** - provides a summary of the proposed update schedule for the SFRA

- **Section 9 (Conclusions)**

1.5 Study Area

This Strategic Flood Risk Assessment (SFRA) for the City Edge area was carried out only for the zone administered by South Dublin County Council as identified in Figure 1-2 and detailed risk review was focused on the PDAs in particular. This SDCC SFRA has considered interactions with the DCC area and other areas outside of the City Edge boundary.

The total area of City Edge under the SDCC is about 440ha of which 125ha are comprised of Priority Development Areas (PDAs). The PDAs within the SDCC area (Greenhills, Red Cow, and Long Mile PDA area) are shown in Figure 1-3.

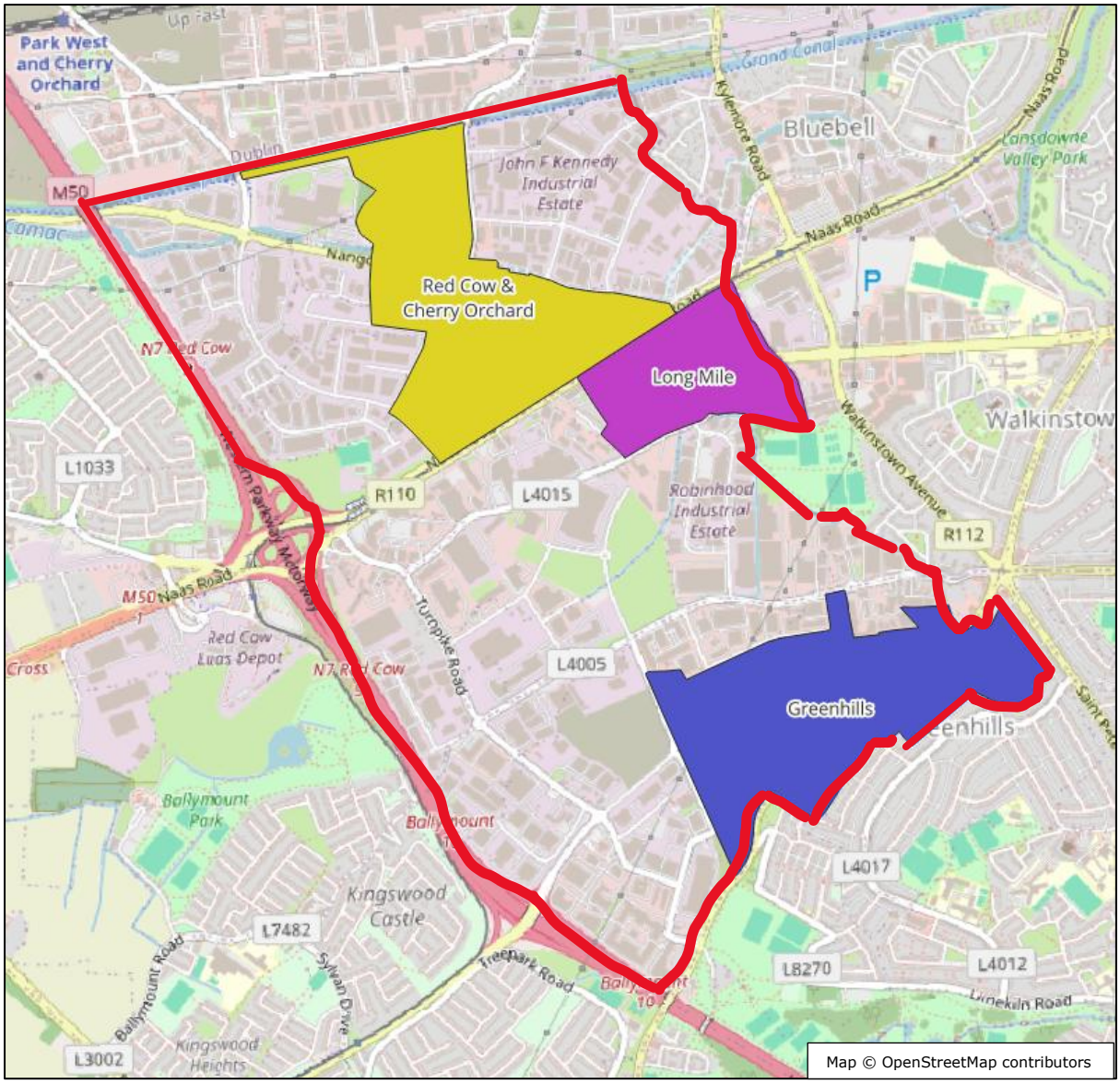


Figure 1-3: Priority Development Areas (PDAs) within the SDCC part of City Edge

2 METHODOLOGY

2.1 Introduction

This report has been prepared in accordance with the following documents:

- The National Planning Guidelines published by the OPW and the Department of the Environment, Heritage and Local Government (DEHLG) in November 2009 entitled 'The Planning System and Flood Risk Management Guidelines for Planning Authorities'
- City Edge Project – Strategic Framework Supplementary Analysis and Guidance (2025)
- South Dublin County Council Development Plan (2022-2028)

2.2 Flood Risk Management

Flood risk is defined as a combination of the likelihood of flooding occurring and the potential consequences arising from that flooding.

Guidelines define the likelihood of flooding as the percentage probability of a flood of a given magnitude or severity occurring or being exceeded in any given year. Return periods (Rp) are commonly used to express the frequency of flood events of a given magnitude. They represent the average interval between occurrences of such events. Alternatively, the likelihood of flooding can be expressed as an annual probability. For instance, a flood with a 1-in-100-year return period corresponds to a 1% chance of occurring in any given year. Annual Exceedance Probability (AEP) is the inverse of return period as shown in Table 2-1 below.

Table 2-1: Correlation between Rp and AEP

Return Period (RP Years)	Annual Exceedance Probability (AEP %)
1	100
10	10
100	1
200	0.5
1000	0.1

Consequences of flooding depend on the hazards associated with the flooding (e.g. depth of water, speed of flow, rate of onset, duration, wave action effects, water quality), and the vulnerability of people, property and the environment potentially affected by a flood (e.g. the age profile of the population, the type of development, presence and reliability of mitigation measures etc).

Flood risk = Likelihood of flooding x Consequences of flooding

The Source-Pathway-Receptor (SPR) Model is a general model to assess and inform the management of environmental risk. This model helps identify where the flood originates from, what the floodwaters path is and the areas in which assets and people might be affected by such flooding. *Figure 2-1* below shows a schematic representation of the S-P-R model.

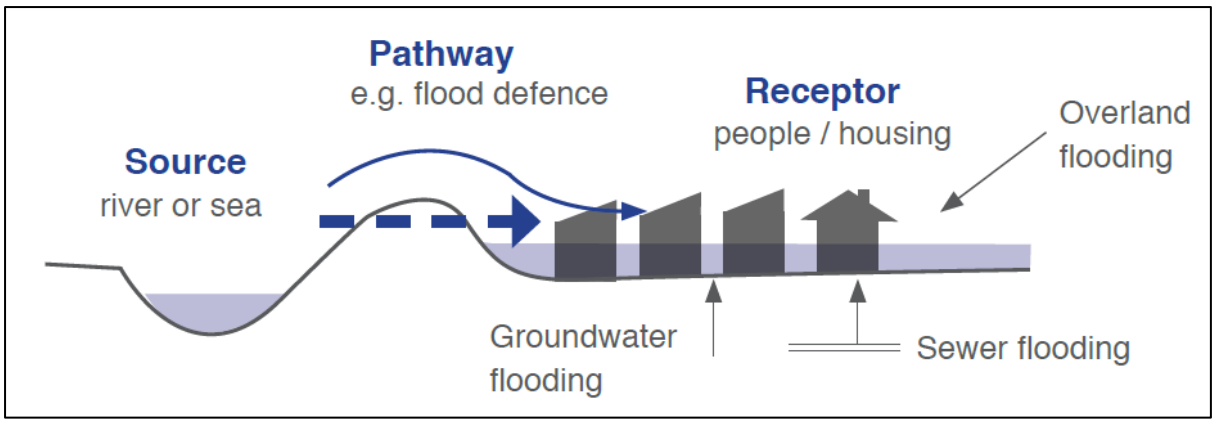


Figure 2-1: Source-Pathway-Receptor Model (source: Guidelines, 2009)

2.3 Flood Zones

The geographical areas within which the likelihood of flooding is in a range are defined as flood zones and are divided into three categories in The Guidelines (see *Figure 2-2*):

(i) **Flood Zone A**: High probability of flooding – Most forms of development are inappropriate within this zone, only water-compatible development would be allowed.
- probability of fluvial flooding is greater than 1 in 100 (1% AEP)
- probability of coastal flooding is greater than 1 in 200 (0.5% AEP)

(ii) **Flood Zone B:** Moderate probability of flooding – Highly vulnerable development (hospitals, Garda buildings, car parks, fire and ambulance stations, dwelling houses and strategic transport and utilities infrastructure) is deemed to be inappropriate within this zone.
- probability of fluvial flooding is between 1 in 100 (1% AEP) and 1 in 1000 (0.1% AEP)
- probability of coastal flooding is between 1 in 200 (0.5% AEP) and 1 in 1000 (0.1% AEP)

(iii) **Flood Zone C:** Low probability of flooding
- probability of fluvial flooding is less than 1 in 1000 (0.1% AEP)
- probability of coastal flooding is less than 1 in 1000 (0.1% AEP)

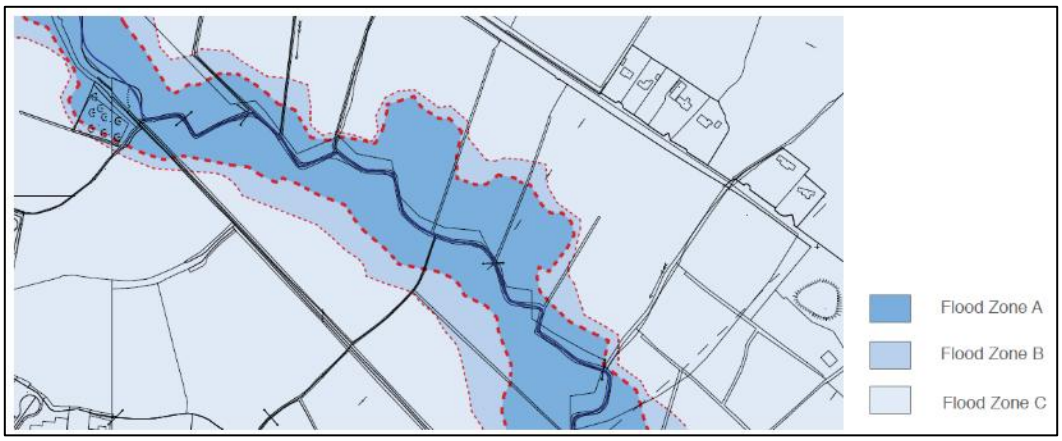


Figure 2-2: Indicative flood zone map extract (source: Guidelines, 2009)

It is important to note that The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009 ignore the presence of flood defences when defining Flood Zones; this is due to the fact that even areas that benefit from an existing flood defence can still be vulnerable due to the speed when overtopping or a breach or other failure takes place. Therefore, this residual risk of flooding where appropriate should be assessed as part of the application of the Justification Test and, if the site is zoned for development, through the site-specific flood risk assessment.

2.4 Climate Change

The Planning Guidelines (2009) advise taking a precautionary approach to climate change because its potential impacts are highly uncertain. The OPW outlines its guidance on climate change in the "Flood Risk Management Climate Change Sectoral Adaptation Plan," which suggests considering two possible climate scenarios: the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). The MRFS reflects what is considered a "likely" outcome based on varied future projections, while the HEFS depicts a more "extreme" possibility at the upper limits of those projections. Based on these scenarios, the OPW provides recommended allowances for climate change, as shown in *Table 2-2* below.

Table 2-2: Allowances in Flood Parameters for the Mid-Range and High-End Future Scenarios

Parameter	MRFS	HEFS
Extreme Rainfall Depths	+ 20%	+ 30%
Peak Flood Flows	+ 20%	+ 30%
Mean Sea Level Rise	+ 500 mm	+ 1000 mm

2.5 Core Objectives and Principles of the Planning Guidelines

The principal actions when considering flood risk management in the planning system are summarised below:

1. Identify and address flood hazards early in planning, integrating national, regional, and local assessments.
2. Prefer development in low or no flood risk areas; include all types of construction.
3. Allow development in flood-prone areas only if no reasonable alternatives exist that meet planning and sustainability goals.
4. Select suitable land use where development in risk zones is necessary.
5. Apply a precautionary approach to reflect uncertainties in flood datasets and climate change, ensuring designs consider future changes in risks.
6. If decisions are needed before plans or maps are updated, planning authorities may:
    - Amend development plans with thorough flood risk assessment and the Justification Test where required,
    - Assess proposals as per approach outlined in guidance, and/or
    - Wait for imminent review of development plan.
7. Identify and safeguard land needed for current and future flood management on official plans from development.
8. Manage flood risk from new developments through location, design, Sustainable Drainage Systems, and compensating for loss of floodplain.
9. Include flood risk as a key criterion in strategic environmental assessments of planning documents, using SEA to integrate flood risk with other considerations and demonstrate execution of sequential approach.

2.6 Scales of Flood Risk Assessment

Flood risk assessment is undertaken at a scale appropriate to the extent of the area being assessed and to the stage of the development proposals. The scales are:

- **Regional Flood Risk Appraisal** - provides a broad overview of the sources and consequences of all types of flood risk through a region and highlights areas where a more comprehensive study needs to be conducted. It is the regional authorities' responsibility to undertake regional flood risk appraisals.

- **Strategic Flood Risk Assessment** - provides an assessment of all types of flood risk to be considered during land use planning decisions. These assessments will help the Planning Authorities to assign suitable sites for development, whilst identifying opportunities for reducing flood. These are usually prepared as part of County Development Plans or Local Area Plans.

- **Site-Specific Flood Risk Assessment** - is required in accordance with the DEHLG document "The Planning System and Flood Risk Management" when a Local Authority considers there is a risk of flooding. A site-specific flood risk assessment is undertaken to assess all types of flood risk for a new development. This requires identification of the sources of flood risk, the effects of climate change on the flood risk, the impact of the proposed development, the effectiveness of flood mitigation and management measures and the residual risks that then remain.

This document is a strategic flood risk assessment which is appropriate to the development planning stage. At this stage there are land uses proposed but no specific building construction proposals.

2.7 Structure of a Flood Risk Assessment

The Flood Risk Management Guidelines recommend a staged approach to flood risk assessment that covers both the likelihood of flooding and the potential consequences. The stages of appraisal and assessment are:

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 LAPs 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.

2.8 Sequential Approach and Justification Test

The sequential approach is outlined by the Guidelines and the principles are defined in *Figure* 2-3 below. In summary, development in areas with a high risk of flooding should be avoided.

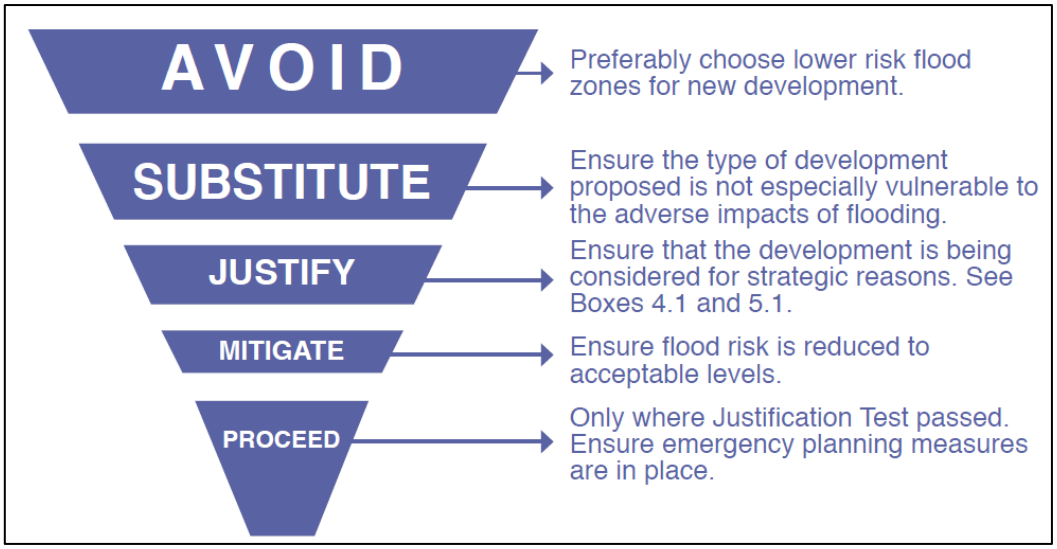


Figure 2-3: Sequential approach principles in flood risk management (source: Guidelines, 2009)

The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of developments that are being considered in areas of moderate or high flood risk. The test comprises the following two processes:

1. The Plan-making Justification Test - used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land which is at moderate or high risk of flooding.
2. The Development Management Justification Test - used at the planning application stage where it is intended to develop land at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be inappropriate for that land.

Exceptions to the development restrictions are provided where re-zoning is not possible through the Justification Test. Many towns and cities have central areas that are affected by flood risk and have been targeted for growth. To allow the sustainable development of these urban centres, development in areas of flood risk may be considered necessary. For allowing development in such areas, the Justification Test must be passed.

Table 2-3 below shows the types of development that would be required to meet the Justification Test.

Table 2-3: Matrix of vulnerability versus flood zone (source: Guidelines, 2009)

	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

3 FLOOD RISK IDENTIFICATION

3.1 Sources of Flood Risk

Flood risk assessment for a development site involves flood risk identification i.e. confirmation of all sources of flooding and surface water management issues, quantification of the associated risks and proposal of mitigation measures. A review of all recorded and historical flooding incidents in the area is carried out followed by qualitative appraisal of the identified risks and their impact on the proposed development and associated risks elsewhere. The possible sources of flooding to the development site may include and are described as below:

1. Fluvial Flooding

Fluvial flooding occurs when rivers and streams break their banks and water flows out onto the adjacent low-lying areas (the natural floodplains). This can arise where the runoff from heavy rain exceeds the natural capacity of the river channel and can be exacerbated where a channel is blocked or constrained or, in estuarine areas, where high tide levels impede the flow of the river out into the sea.

Different rivers will respond differently to rainfall events, depending on a range of factors such as the size and slope of the catchment, the permeability of the soil and underlying rock, the degree of urbanisation of the catchment and the degree to which flood waters can be stored and slowly released into lakes and along the river's floodplains. A storm of a given rainfall depth and duration may cause flooding in one river, but not in another, and some catchments may be more prone than others to prolonged rainfall or a series of rain events. River flooding can occur rapidly in short, steep rivers or after some time, and some distance from where the rain fell, in larger or more gently flowing rivers. Changes in rainfall patterns, such as by climate change, will have different impacts on flood magnitudes and frequency in different catchments.

The main rivers that can potentially contribute to flooding in the City Edge Project area are listed and identified below in *Figure 3-1*.

- Camac River
- Ballymount Stream
- Robinhood Stream
- Walkinstown Stream

Because of the development of the area the natural floodplains are no longer available to effectively dissipate the effects of increased water level on the area so the risks of damage that could be caused by fluvial flooding may be amplified.

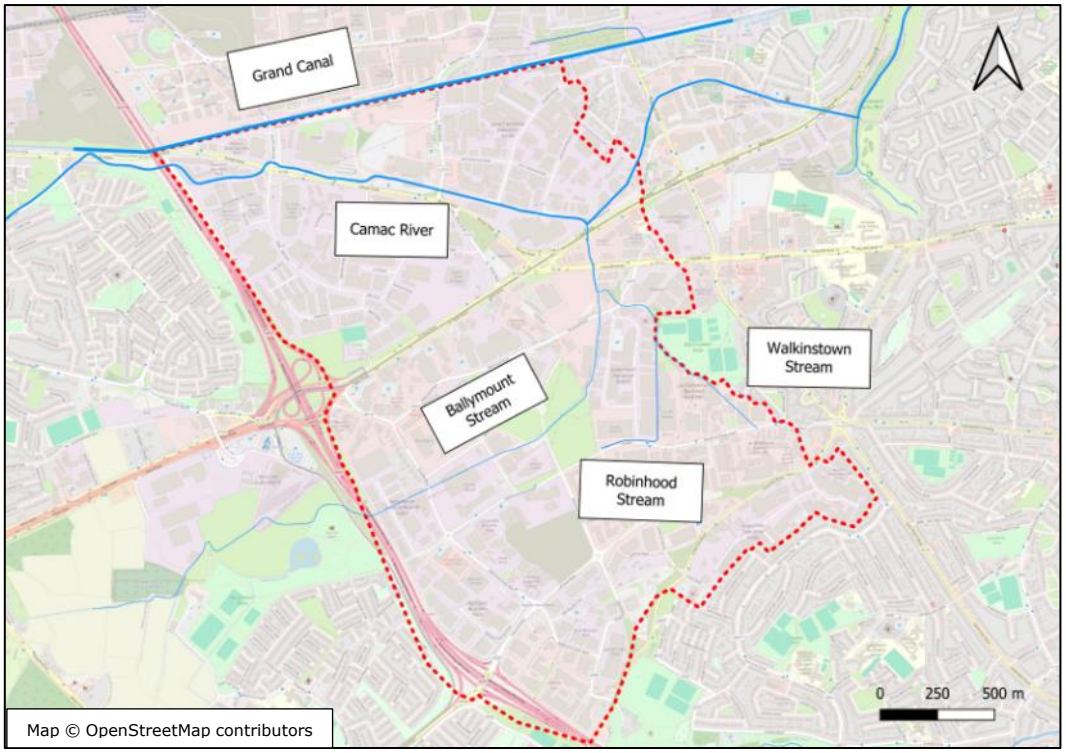


Figure 3-1: Flow Network

2. Coastal Flooding

Coastal flooding occurs when sea levels along the coast or in estuaries exceed neighbouring land levels, or overcome coastal defences where these exist, or when waves overtop over the coast. Wind speed and direction and low-pressure systems can force water into estuaries and harbours, cause surge effects, and create extreme wave conditions.

3. Pluvial Flooding

Pluvial flooding occurs when the amount of rainfall exceeds the capacity of urban storm water drainage systems or the ground to absorb it. This excess water flows overland, ponding in natural or man-made hollows and low-lying areas or behind obstructions. This occurs as a rapid response to intense rainfall before the flood waters eventually enter a piped or natural drainage system. This type of flooding is driven in particular by short, intense rainstorms.

4. Groundwater Flooding

Groundwater flooding occurs when the level of water stored in the ground rises as a result of prolonged rainfall, to meet the ground surface and flows out over it, i.e. when the capacity of this underground reservoir is exceeded. Groundwater flooding tends to be very local and results from the interaction of site-specific factors such as local geology and tidal variations. While water level may rise slowly, groundwater flooding can last for extended periods of time. Hence, such flooding may often result in significant damage to property and disruption.

In Ireland, groundwater flooding is most commonly associated with turloughs in the karstic limestone areas prevalent in the west of Ireland.

5. Flooding from artificial sources

The above causes of flooding are all natural; caused by either extreme sea levels or heavy or intense rainfall. Floods can also be caused by the failure or exceedance of capacity of built or man-made infrastructure, such as bridge collapses, from blocked or under-sized drainage systems or other piped networks, or the failure or overtopping of reservoirs or other water-retaining embankments (such as raised canals).

The Grand Canal passes through north side of the project area and has several locks to control the water level in the canal and allow barges to navigate. There are no overflow weirs on this section but the canal is raised along much of the area so a breach in the bank could cause flooding. Regular inspections and maintenance are undertaken by Waterways Ireland and the risk from this source is considered to be low.

Most of the sewer system comprises of separate storm and foul networks in the project area. However, the storm network is intertwined with the culverted River Camac system. Any river flood defence which increases water levels in the river may lead to a storm sewer system flooding caused by increased water levels at outfall points.

The 9B Sewer is the main trunk foul sewer network which runs through the project area as shown in *Figure 3-2.* Information from Uisce Éireann indicates that Sewer 9B is operating at its hydraulic capacity now and thus the SDCC Development Plan (2022-2028) and City Edge SURF include upgrading the sewer as an objective. Possible misconnections of surface water to foul sewer network may increase the risk of surcharge of foul sewer network as foul sewer networks are typically designed to accommodate up to 1 in 30-year rainfall events. Surcharging of the foul sewer could contribute to flooding in pluvial events. There is a combined sewer overflow near the Robinhood Stream culvert under the Naas Road and this could contribute to flooding in extreme events.

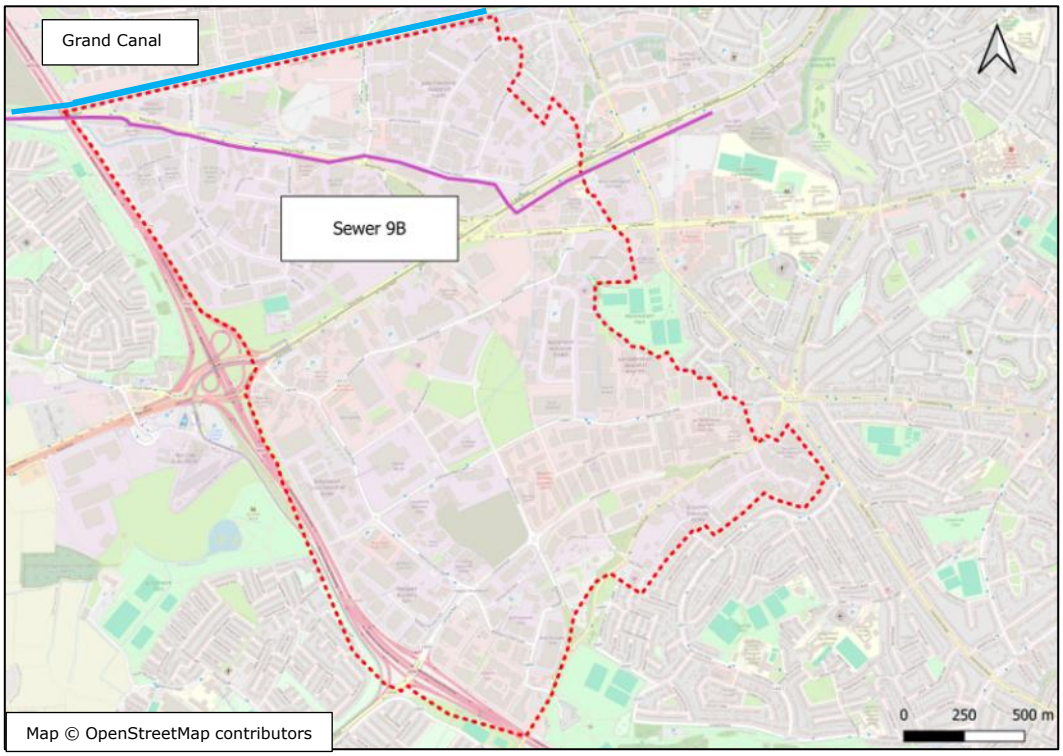


Figure 3-2: Sewer 9B route

There are also several Uisce Éireann water transmission mains in the City Edge area which could give rise to flooding in case of a catastrophic burst. These are shown in Figure 3-3.

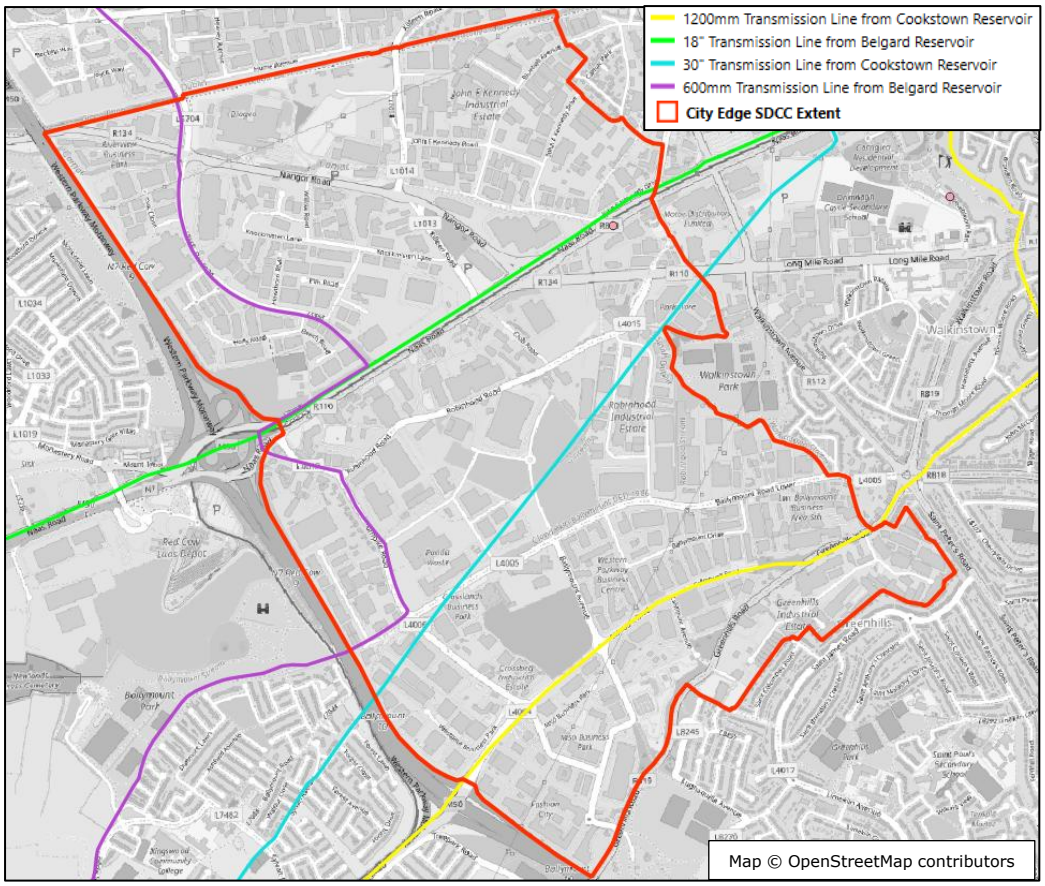


Figure 3-3: Trunk water mains in the City Edge area

3.2 Flood Risk Data

The following data sources were used to determine the flood risk in the area from the sources of flooding mentioned previously:

i- Tailte Éireann Historical Flood Maps
ii- Past Flood Event Maps
iii- SDCC County Development Plan (CDP) Flood Zone maps (developed from the OPW Catchment Flood Risk Assessment and Management (CFRAM) Indicative Flood Zone Maps)
iv- National Indicative Fluvial Mapping (NIFM)
v- Geological Survey Ireland (GSI) Groundwater Flooding
vi- Pluvial Flood Mapping (OPW and SDCC)

3.2.1 Historical Flood Maps

The Irish Townland and Historical Map Viewer was accessed to establish whether the development site is located on historical flood plains. The map in *Figure 3-4* below shows historical map captured from the year 1830 which indicates several historical flood plains within the City Edge area. Further assessment of these on the 25" maps shows that each mapped site is the location of a historic quarry or gravel pit and they were not identified on the 6" or 25" maps as liable to flood.

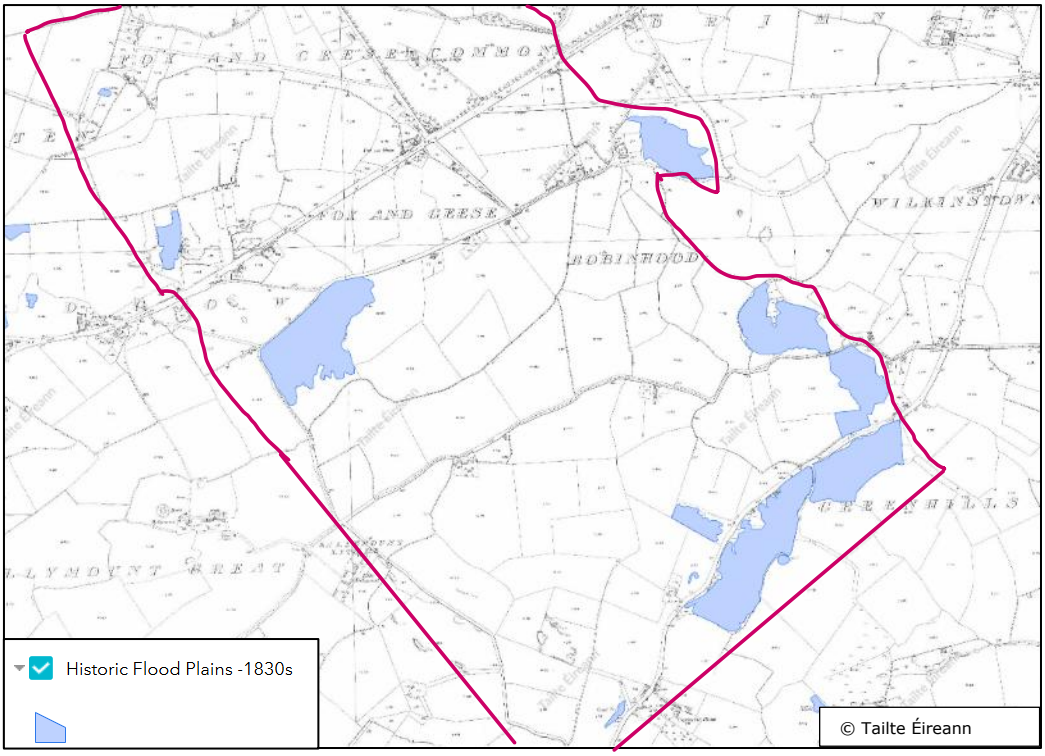


Figure 3-4: Tailte Éireann historical flood plains map (1830)

3.2.2 Past Flood Events

Figure 3-5 shows that the development area may have been subject to past flooding, and this can also be seen by the past flood event points. A past flood event is defined as the occurrence of recorded flooding at a given location on a given date or on a recurring basis.

The reported flood events recorded on the OPW flood database at Floodinfo.ie are summarised in Table 3-1.

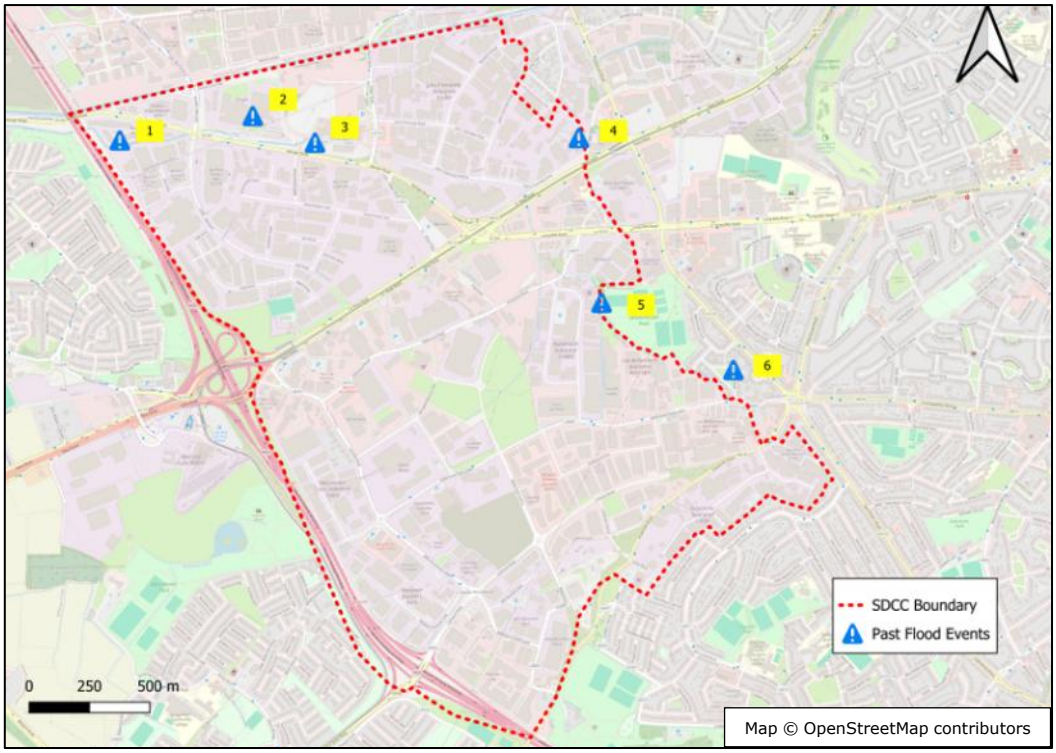


Figure 3-5: Past Flood Events (source: Floodinfo.ie)

Table 3-1: Past Flood Event Details recorded on OPW Floodinfo.ie

	Flood Event	Record Types
1	Flooding at Riverview Business Centre, New Nangor Road, Dublin 12	23/10/2011
2	Flooding at Diageo, Nangor Road, Dublin 12	23/10/2011
3	Camac, November 2000	5/11/2000
4	Camac Culvert Old Naas Road recurring	Recurring Flood
5	Robinhood Stream Walkinstown Recurring	Recurring Flood
6	Flooding at Walkinstown Crescent, Walkinstown, Dublin 12	23/10/2011

3.2.3 SDCC Flood Zone Maps

The SDCC Development Plan 2022-2028 used the outputs from the OPW National Catchment-based Flood Risk Assessment and Management (CFRAM) Programme to develop flood maps for development control purposes. The OPW undertook the CFRAM in consultation with the Local Authorities and supported by external engineering consultants. The CFRAM was a point in time study conducted in 2011. The OPW notes that flood risk can change and has an ongoing programme of work to continue to assess the flood risk across the country, from all flooding sources. As well as informing future measures and investment, this programme of work meets Ireland's requirements under the EU Floods Directive.

To allow for the impacts of climate change the SDCC Development Plan 2022-2028 used the CFRAM High-End Future Scenario flood extents when defining flood zones A and B across the county. The fluvial flood risk to the City Edge area as per these SDCC flood zone maps is shown below in *Figure 3-6.*

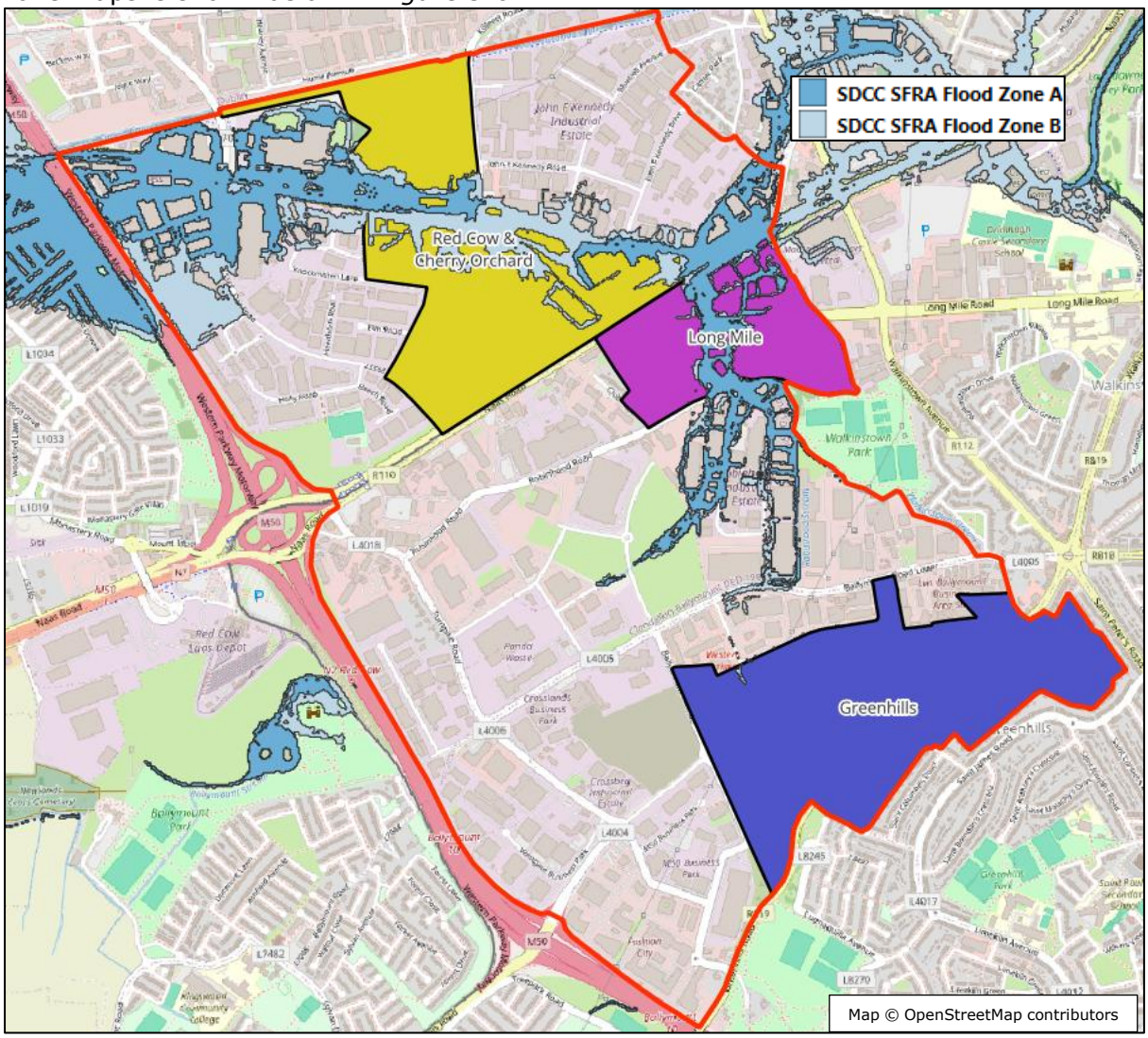


Figure 3-6: SDCC CDP 2022-2028 Flood Zones in the City Edge area (source: SDCC)

From the flood zone map it can be seen that there is flood risk surrounding the route of the Camac and its tributaries. The flood zone extents are particularly extensive in the north-west corner of the City Edge area. Significant areas of flood risk can be seen in the Red Cow & Cherry Orchard PDA and the Long Mile PDA, while there is only a small area of flood risk in the Greenhills PDA.

Development in zones of flood risk should follow the principles of the sequential approach, with water compatible or lower vulnerability development preferred to high vulnerability development.

As per the CDP requirements a site-specific flood risk assessment is required for development proposals in flood zones.

The fluvial flood risk to the PDAs is examined in more detail in Section 5.2 of this SFRA.

Coastal Flood Risk

The River Liffey from Islandbridge to the Sea is potentially at a risk of coastal flooding as shown in *Figure 3-7*. However, the SDCC City Edge area is situated at elevations between 40m to 70m above sea level so the site has no potential risk of coastal flooding, even allowing for 1m of sea level rise due to climate change.

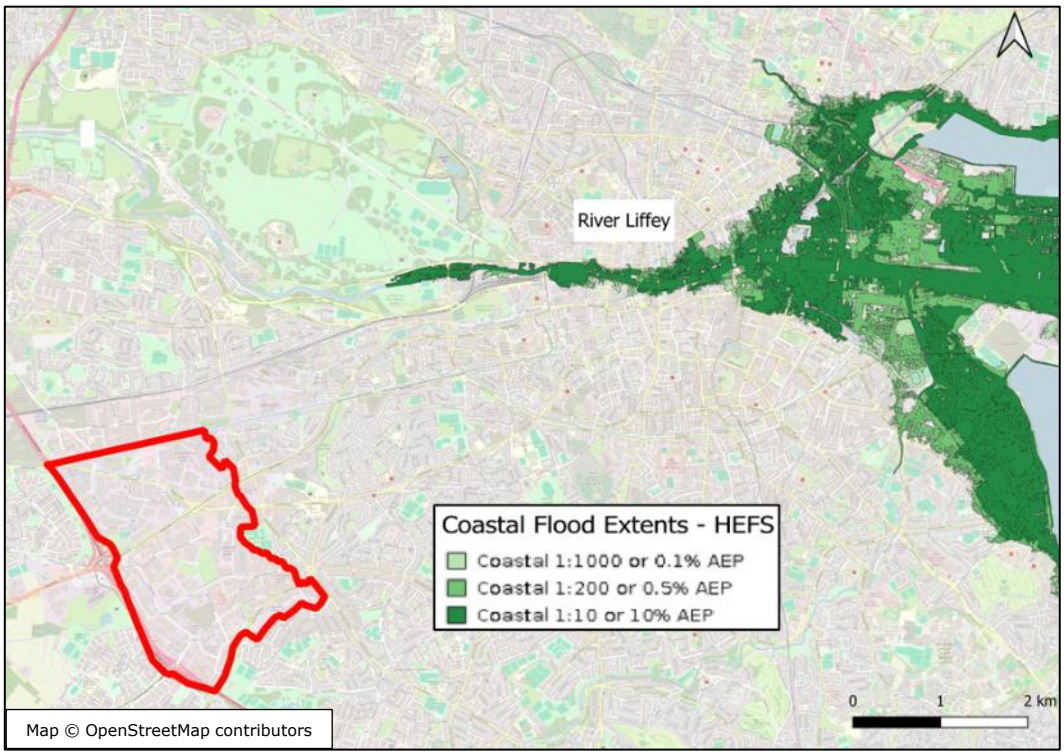


Figure 3-7: Coastal Flood Extent Map – HEFS (Data source Floodinfo.ie)

3.2.4 National Indicative Fluvial Mapping (NIFM)

The National Indicative Fluvial Mapping (NIFM) River Flood Extents – Present Day Maps describes the modelled extent of land that might be flooded by rivers 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. Data has been produced for catchments greater than 5km^2 in areas for which flood maps were not produced under the National CFRAM Programme. In the City Edge area the only stream modelled by NIFM was the Ballymount Stream.

Figure 3-8 shows the flood extents of the Ballymount stream. Flooding from other reaches of river may occur, but has not been mapped, and so areas that are not shown as being within a flood extent may therefore be at risk of flooding from unmodelled rivers.

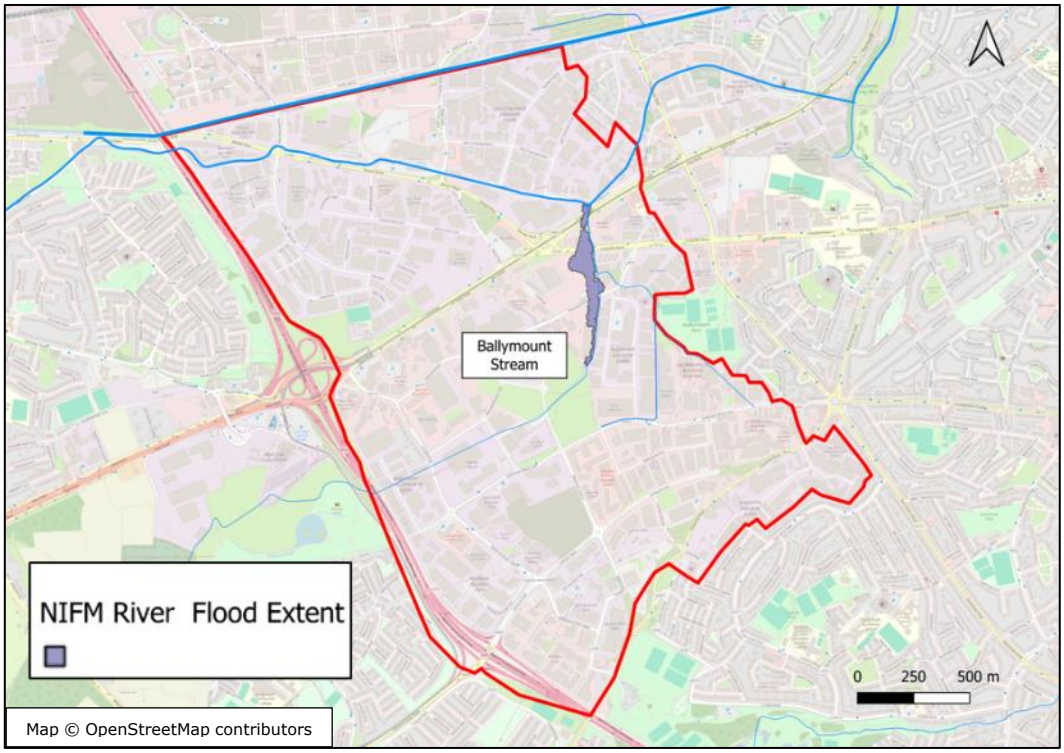


Figure 3-8: NIFM Flood Extent Map – Medium Probability (source: Floodinfo.ie)

3.2.5 Geological Survey Ireland (GSI) Groundwater Flooding

The Groundwater Flood Probability Maps shows the probabilistic flood extent of groundwater flooding in limestone regions. These maps are focussed primarily (but not entirely) on flooding at seasonally flooded wetlands known as turloughs. It should be noted that the predictive maps are limited to locations where the flood pattern was detectable and capable of being hydrologically modelled to a sufficient level of confidence.

The historic groundwater flood maps show maximum observed extents of flooding, both groundwater and surface water, over various periods. The Maximum Historic Groundwater flood map shows maximum observed flood extents for locations of recurrent groundwater flooding in limestone regions. The map is primarily based on the winter 2015/2016 flood event, which in most areas represented the largest groundwater flood event on record. As a complementary dataset to the historic groundwater flood map, the Winter 2015/2016 Surface Water Flooding map shows fluvial (rivers) and pluvial (rain) floods in Ireland, excluding urban areas, during the 2015/2016 flood event.

The GSI also publishes SAR Seasonal flood maps which are a series of remote-sensing based flood maps which outline the peak flood extents over each winter season between 2015 and 2021. Unlike the flood maps described above, these maps are based solely on remote sensing information and does not distinguish between groundwater and surface water floods.

It can be observed from *Figure 3-9* that no risk of surface flooding has been recorded, and no groundwater flooding events have been recorded at the development site shown in red outline. Therefore, the risk of groundwater flooding can be considered low.

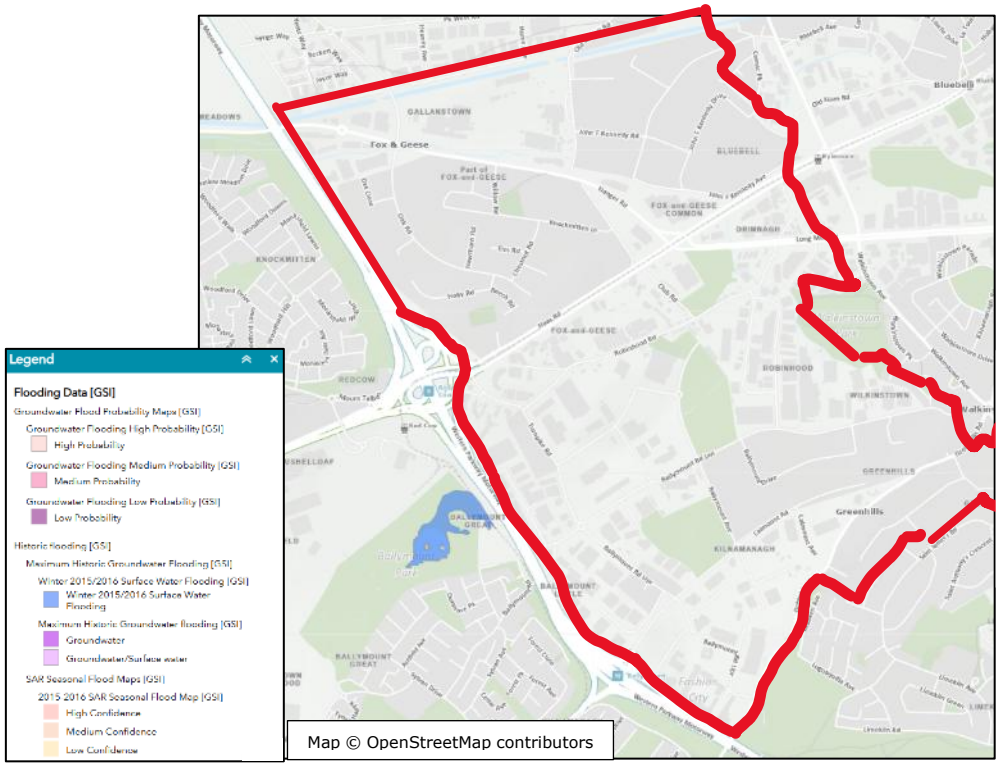


Figure 3-9: GSI Ground Water Flood Probability and SAR Seasonal Map (source: GSI)

3.2.6 Pluvial Flood Mapping (OPW and SDCC)

The pluvial flooding map from OPW as shown in the Surface Water Management Plan of the City Edge Framework (2022) is shown in Figure 3-10 below.

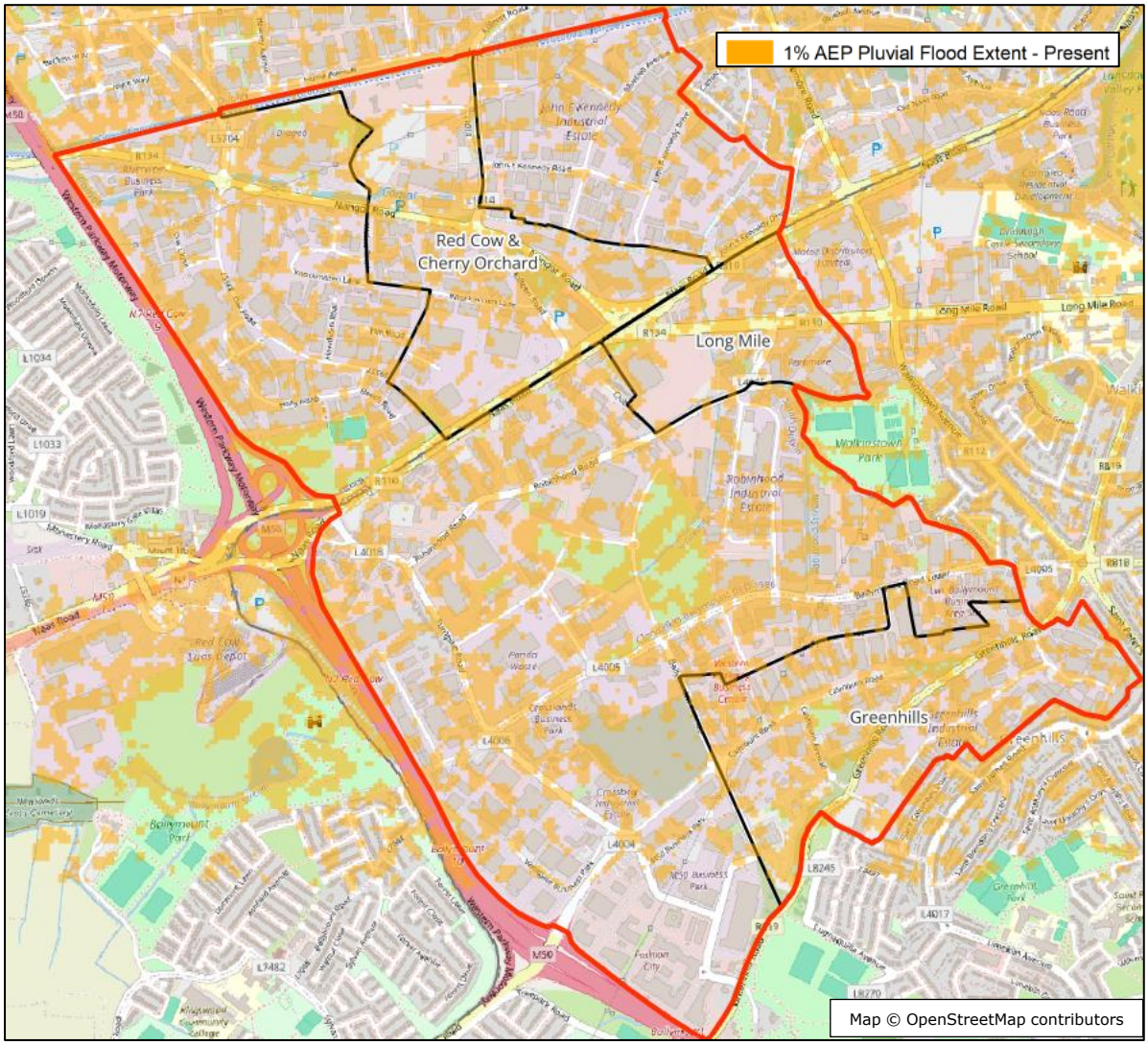


Figure 3-10: OPW Pluvial Flood Map (source: Floodinfo.ie)

In addition the SDCC development plan SFRA includes pluvial flood maps for the county. The extract from that map is shown in *Figure 3-11.*

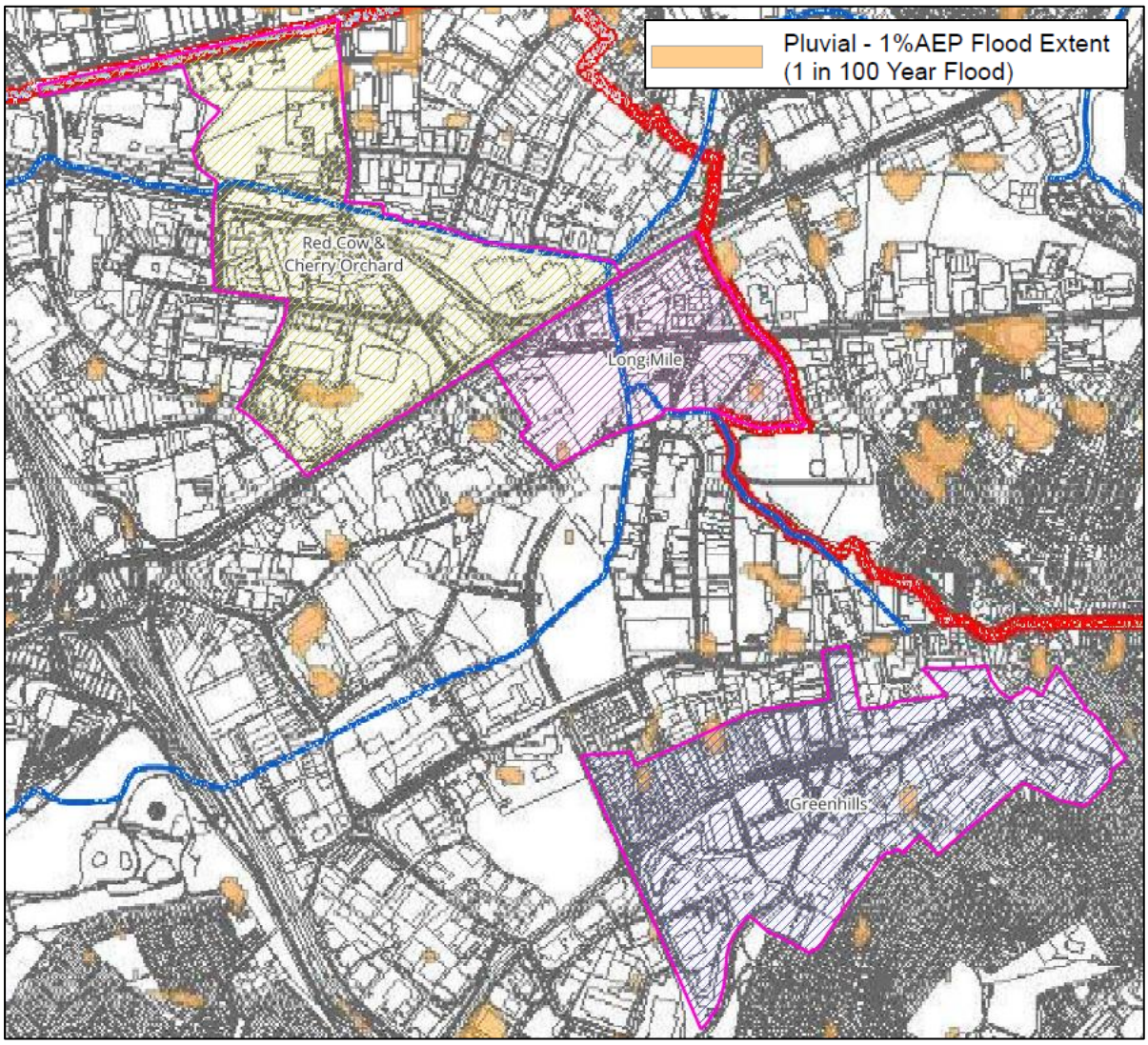


Figure 3-11: SDCC SFRA Pluvial Flood Map (Source: SDCC CDP)

The pluvial flood map generally indicates areas of depressions which may fill if drainage outlets reach capacity or become blocked. Proper drainage design in accordance with the SuDS principles of the SURF, the City Edge Framework (2022) Surface Water Management Plan and the SDCC Development plan will mitigate this risk.

The City Edge SURF includes the below policy and objectives relating to surface water management. SWRM1 Objective 2 requires the preparation of a Surface Water / Rainwater Management Plan at Priority Development Area or Neighbourhood level.

Table 3-2: Policy SWRM1: Surface Water/Rainwater Management from the City Edge Surf

Policy SWRM1: Surface Water /Rainwater Management
Reduce surface water run-off by delivering a high quality, coordinated Sustainable Urban Drainage System (SuDS) integrated with the public realm and public open space within the Priority Development Areas and across City Edge.

SWRM1 Objective 1: To prepare a Surface Water Drainage Study for each Priority Development Area.
SWRM1 Objective 2: To require the preparation of a Surface Water / Rainwater Management Plan, at Priority Development Area or Neighbourhood level at planning application stage.
SWRM1 Objective 3: To incorporate natural infrastructure and SuDS as part of all new development within City Edge, in accordance with the agreed Surface Water / Rainwater Management Plan, in compliance with the approaches contained in the documents Sustainable Drainage Systems (SuDS) Explanatory, Design and Evaluation Guide, (SDCC, 2022) and Rainwater Management Plans – Guidance for Local Authorities (DHLGH, 2024).
SWRM1 Objective 4: To ensure effective operation and maintenance of SuDS measures, so that such systems are operating to their designed capacity.
SWRM1 Objective 5 : To account for climate change, and any changes to the amount of impermeable areas over the design life of the development, in accordance with the GDSDS (and any future updates to this Study).
SWRM1 Objective 6: To continue to engage with Uisce Éireann with a view to agreeing a programme of local surface water interventions to free up foul water capacity.

3.3 Flood Risk Identification Summary

The City Edge area is likely to be impacted by fluvial flooding from the River Camac and its tributary watercourses. The likely extent of the flood zone is shown in the flood zone mapping. The mapping is the best available at the current time but will be superseded by the Camac FAS mapping once the baseline dataset becomes available.

The pluvial flood risk mapping shows extensive areas potentially at risk, however this mapping is an identification of topographic depressions rather than a representation of the flood risk since it does not consider the underlying surface water drainage network. Additional assessment of any residual pluvial risk should be undertaken as part of the surface water / rainwater management plan which is required under SWRM1 Objective 2.

Other residual risk arises from potential breach or overtopping of the Grand Canal, or from foul sewer overflows or surcharging, and from bursts on the trunk water main network. The risk of these occurring at the scale required to cause significant flooding is considered low so they are not considered further in this SFRA.

4 HYDROMORPHOLOGICAL ASSESSMENT

At a SFRA level the hydromorphological assessment is undertaken to identify the key pressures acting on the river. The assessment was based on aerial photography and available mapping due to the inaccessible nature of the stream from surrounding developments.

For the watercourses within the City Edge area the key pressures to be found are:

- Bank protection (concrete)
- Bed protection (concrete)
- Channel straightening/re-alignment
- Culverts, including long culverts
- Increased channel energy
- Over-deepening
- River-floodplain disconnection

Development Hydromorphological Assessments are to be undertaken where lands are partially or wholly within the Riparian Corridors identified as part of the Development Plan. The Development Hydromorphological Assessment will include the following considerations:

• An assessment of the existing river reach, identify existing hydromorphological pressures, determine deviation from a "Natural" form and propose restorative measures to improve Hydromorphological integrity and resilience throughout the river reach.

• Key assessment parameters shall include: Flow, River Continuity, Planform, Sediment Regime, & Riparian Vegetation.

• Where proposed development lands are within the Riparian Corridor but are not directly adjacent to a watercourse, measures should focus on SuDS to manage the quality and quantity of surface water runoff and promote biodiversity.

• In general restorative measures should create "Room for the River" and in time allow river systems to return to a state of equilibrium with rich biodiversity, developed ecosystem service provision and resilience to future shocks such as climate change. Potential restorative measures are described below.

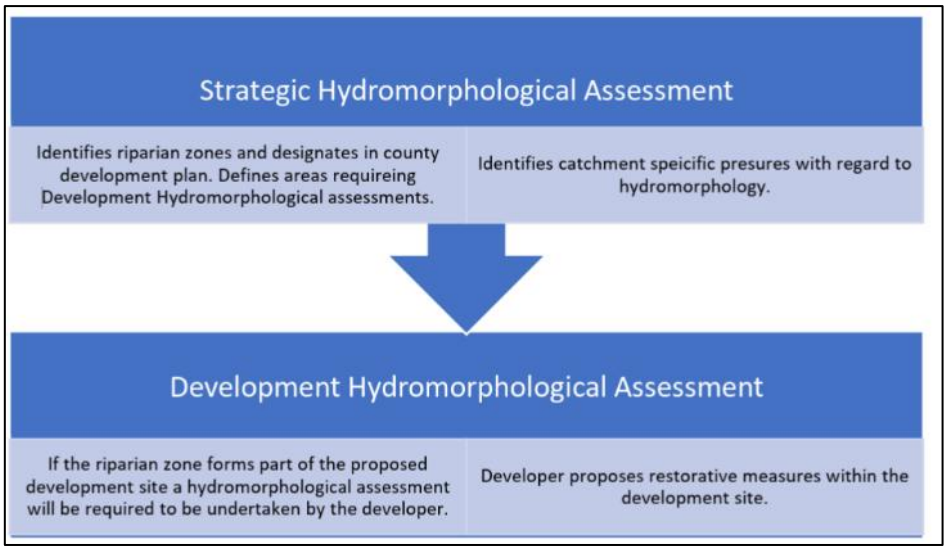


Figure 4-1: Interaction between strategic and development hydromorphological assessments

4.1 Riparian Corridor

Riparian Corridors protect watercourses and their natural processes including ecological, biogeochemical, hydromorphological and flood resilience in the face of climate change. These zones act as the interface between rivers and adjoining lands and are key to managing flood risk within catchments of all sizes. Maintaining and enhancing Riparian Corridors creates "room for the river" and the benefits that entails including reducing risk to persons and property from flooding.

The riparian corridors of the County include rivers, streams and other watercourses and are important for water quality as well as providing green infrastructure and biodiversity links. The riparian corridor of the River Camac and tributaries and the associated flood zones as shown in the SDCC development plan 2022-2028 are shown in *Figure 4-2*.

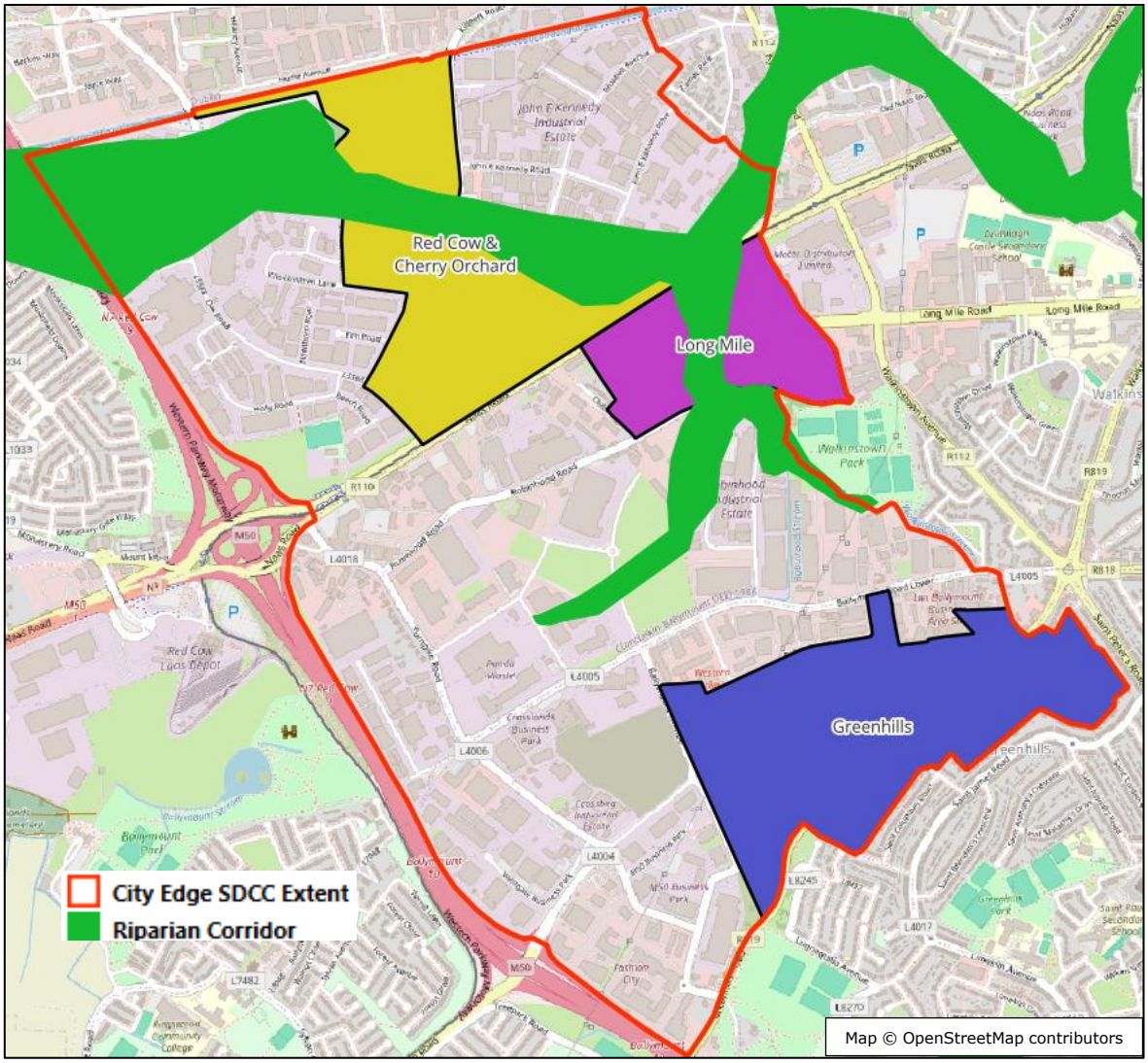


Figure 4-2: Riparian Corridors for the Site

The City Edge SURF includes policies and objectives in relation to river renaturalisation which include:

Table 4-1: Objective 3 of the City Edge Surf Policy SWRM2: Flood Risk and Camac Renaturalisation

SWRM2 Objective 3:
To promote the naturalisation of the Camac watercourses and protect native riparian vegetation by ensuring that a minimum 20m vegetated riparian buffer from the top of the riverbank is maintained / reinstated along the Camac watercourses within any development site proposing redevelopment and/or a significant extension.

4.2 Riparian Vegetation

Riparian vegetation acts with flow, sediment and topography to influence channel form, instream habitat, nutrient dynamics, temperature and flow patterns. Therefore, removal of upland and riparian vegetation through agriculture and urbanisation disrupts land-water linkages leading to reductions in water quality, simplification of stream channels, less stable thermal and flow regimes, and ultimately, reduced ecosystem integrity. Riparian vegetation is a key source of beneficial in-stream nutrients and carbon, provides shade aiding thermally sensitive species (e.g. salmonids) and directly influences channel morphology (bank stabilisation, source of large woody debris).

Designating and maintaining riparian corridors along the major watercourses and their tributaries maximises ecosystem services provided by the watercourses. Vegetative riparian buffers ecosystem services include:

- Interception and reduction of potential pollutants from both agricultural and urban sources
- Attenuating flood waters
- Bank stabilisation
- Reducing runoff volumes
- Habitat provision and refuge
- Ecological corridors
- Vegetal debris that falls into the watercourse is an important source of nutrients for instream biota
- Thermal shading of watercourse
- Amenity value

4.3 Riparian Buffer

The immediate riparian buffer should be "re-wilded" as much as possible. Any development within the riparian buffer strip, including pedestrian/cycle paths and highly managed parkland, should be minimised. Within these riparian buffer zones explicit care should be given to the variety of plant species. The vegetation within the riparian buffer should be native and appropriate to the location and soil water regime, preferably from a local source. Inclusion of riparian trees is important as currently the majority of catchments in the Dublin region have very little tree cover. Providing buffer strips adjacent to the

watercourses and limiting instream works maintains existing flow/flood regimes as well as important ecological corridors for aquatic and terrestrial flora and fauna.

4.4 Instream Works and Channel Modifications

As noted at the beginning of Section 4, some of the primary pressures within the South Dublin catchments are the significant morphological alterations as a result of culverting, canalisation and construction of flow regulation structures such as weirs. Key ecosystem services and habitat types cannot return to the urban catchments without some River Restoration measures being undertaken within the main river channel. Possible options include:

- De-culverting of Watercourses
- Introduction of large woody debris
- Establishment of in-stream vegetation
- New meander in impounded river channel
- Reconnecting a remnant meander
- Current deflectors
- Narrowing channel with aquatic ledges
- Creating a sinuous low-flow channel in an over-widened channel
- Creation of on-line bays
- Fixing whole trees into the riverbank for flow diversity
- Gravel reworking to restore a low-flow channel
- Weir removal
- Review of/reduction in maintenance

The impact of these measures on the current channel morphology and maintenance practices varies significantly. Options such as introducing Large Woody Debris would likely have a minimal impact on flooding while providing substantial benefits in the form of flow heterogeneity and habitat creation.

5 SURF REVIEW AND MITIGATION

5.1 Overview

The SURF review is carried out to examine the extent of flooding that may affect the PDA areas and to consider the land uses proposed in respect of their potential vulnerability to flooding.

The main risk to the area is fluvial flooding from the Camac River or its tributaries.

5.2 Identification of Key Areas of Fluvial Flooding

The SDCC 2022-2028 identifies areas of Flood Zone A (at risk in a 1% AEP event) and Flood Zone B (at risk in a 0.1% event) throughout the county. The information used to develop those maps was gathered from a number of sources. In the Camac catchment the area identified as Flood Zone A and B was taken from the CFRAM fluvial mapping of the High-End Future climate change Scenario (HEFS). This differs from normal OPW practice which considers Flood Zones A and B based on the present-day climate scenario.

In order to remain consistent with the overall County Development Plan, Flood Zone A and B are considered in this SFRA to be based on the HEFS events.

The key areas identified of fluvial flood risk from the CFRAM assessments are highlighted below in *Figure 5-1*. The interaction between these flood risk areas and the Priority Development Areas is considered in more detail in the following sections.

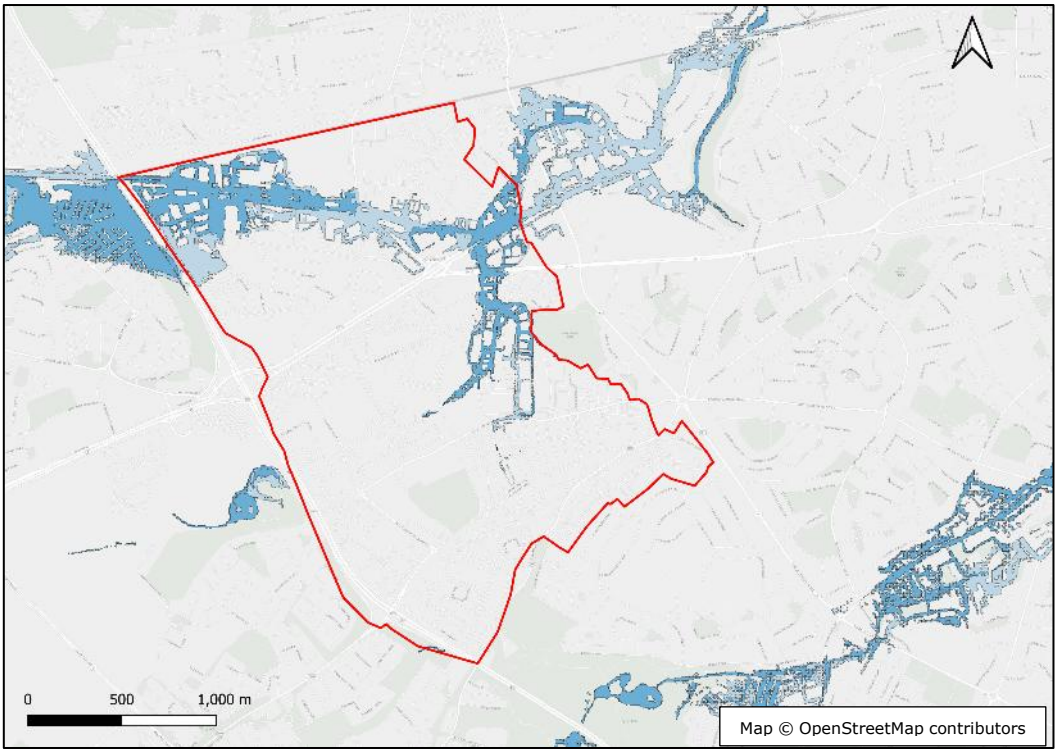


Figure 5-1: Fluvial Flood risk across the City Edge area

5.2.1 Red Cow and Cherry Orchard PDA

The Camac bisects the Red Cow & Cherry Orchard PDA. The PDA is bordered by the Grand Canal to the north and by the Naas Road to the south. Although the Camac is open where it enters the PDA at the Diageo site it is crossed by multiple culverted entrances upstream

and it enters a long culvert as it passes through the PDA. Through the PDA the river mainly follows the line of New Nangor Road.

A storm (surface) water drainage network discharges to the River Camac. The area is heavily developed by mainly industrial units. The PDA does not benefit from any existing formal flood defences. The Camac Flood Relief Scheme project is ongoing in this area but flood mapping from the scheme is not yet available at the time of this report.

The SDCC Development Plan 2022-2028 has zoned this area as REGEN - To facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. This zoning is compatible with the proposed PDA layout and uses.

The SDCC Development Plan 2022-2028 flood zone maps (for the HEFS climate change scenario) are shown in *Figure 5-2*.

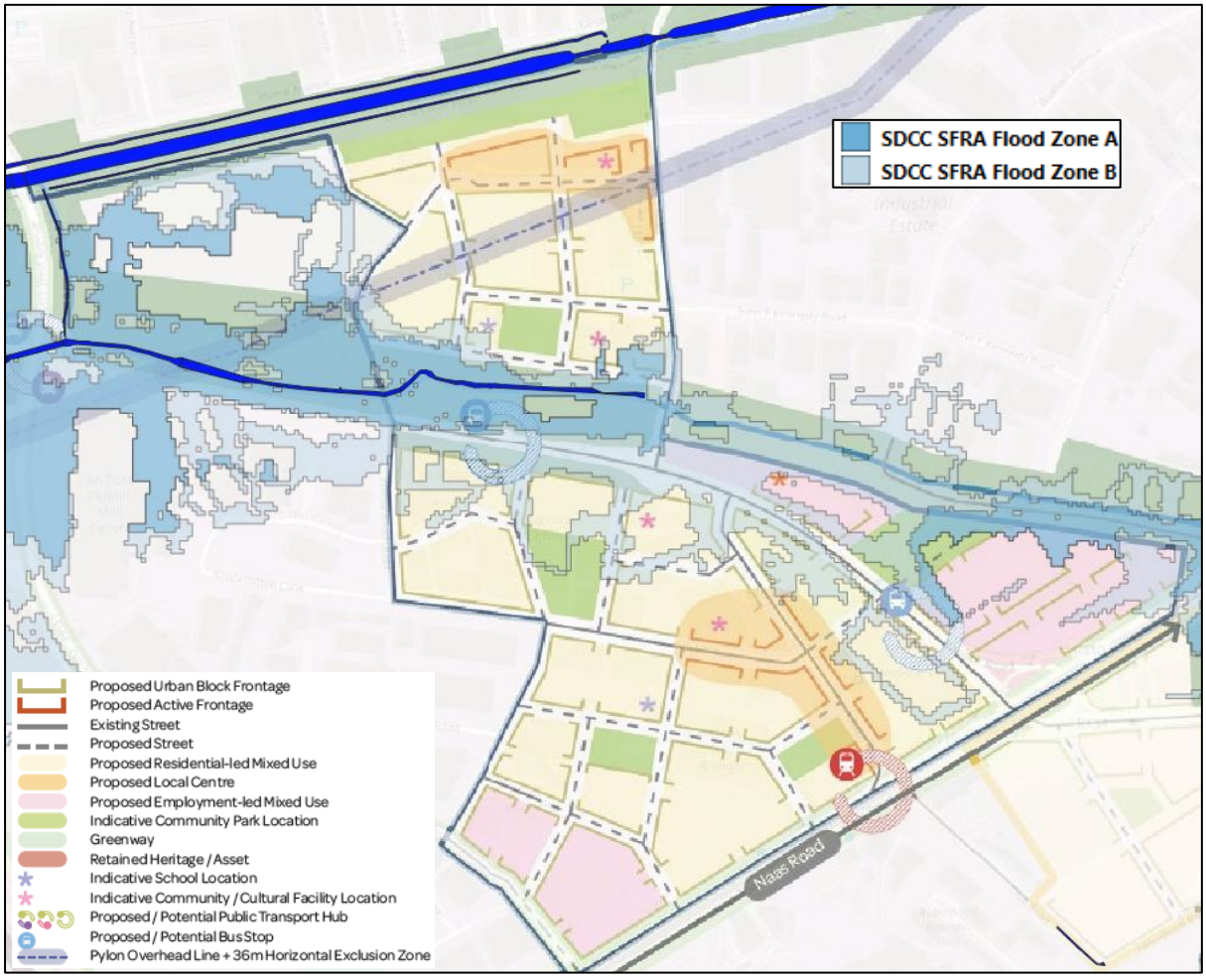


Figure 5-2: Red Cow & Cherry Orchard Flood Zone A & B Map (source: SDCC)

Some blocks in the east of the PDA and in the north-western part of the PDA at Killeen Road are impacted by Flood Zone A in the SDCC mapping. *Figure 5-2* shows several areas of proposed residential led development to each side of the Camac route which are within Flood Zone B mapping. Additional areas surrounding these are impacted by Flood Zone B including one indicative school location to the north of the Camac in the centre of the PDA.

Development proposals in or close to the areas shown as at risk on the map should be subject to site specific flood risk assessment to determine the risk at the site and the

justification test should be applied if required by the guidelines in force at the time of the proposal and based on the vulnerability category of the proposed development.

5.2.2 Long Mile PDA

The Ballymount Stream joins the Robinhood Stream just as it enters the Long Mile PDA from the south. The Robinhood Stream is generally open through the PDA although it passes through culverts at the Robinhood Road crossing and the Long Mile Road crossing, as well as at a small crossing within a property. As the stream exits the north of the PDA it enters a culvert below the Naas Road from where it joins the culverted section of the Camac River. The PDA is bordered by the Naas Road to the north and by the Robinhood Road and Walkinstown Avenue Park to the south. The PDA is bisected by the Long Mile Road which runs in an East-West direction through the PDA.

An extensive storm (surface) water drainage network discharges to the River Camac. The area is heavily developed consisting of mainly light industrial units with extensive surface parking. The PDA does not benefit from any existing formal flood defences. The Camac Flood Relief Scheme project is ongoing in this area but flood mapping from the scheme is not yet available at the time of this report.

The SDCC development plan 2022-2028 has zoned this area as REGEN - To facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. This zoning is compatible with the proposed PDA structure.

The SDCC Development Plan 2022-2028 flood zone maps (for the HEFS climate change scenario) are shown in *Figure 5-3.* The figure also includes the area shown on the National Indicative Fluvial Mapping (NIFM) as at risk in a 1% AEP present day event. The NIFM mapping is generally considered to be a less accurate source than CFRAM and is useful for identifying lands which should be subject to site specific investigations rather than definitively identifying the presence of a flood risk.

The greatest extent of flood risk is to the development blocks on the east bank of the Robinhood Stream. North of the Long Mile Road parts of the development plots proposed for employment led mixed use development are within Flood Zone A and B, while south of long mile road on the east bank of the Robinhood River parts of proposed Residential Led mixed use development are at within Flood Zone A and B.

To the west of the Robinhood Stream, part of the plot closest to Robinhood Road is within Flood Zone B.

The blocks bordering the west side of the stream are all partially within the area identified as at risk of flooding in the NIFM. While this does not give a definite indication of flood risk these areas should be subject to site specific investigations at the development stage.

Development proposals in or close to the areas shown as at risk on the map should be subject to site specific flood risk assessment to determine the risk at the site and the justification test should be applied if required by the guidelines in force at the time of the proposal and based on the vulnerability category of the proposed development.

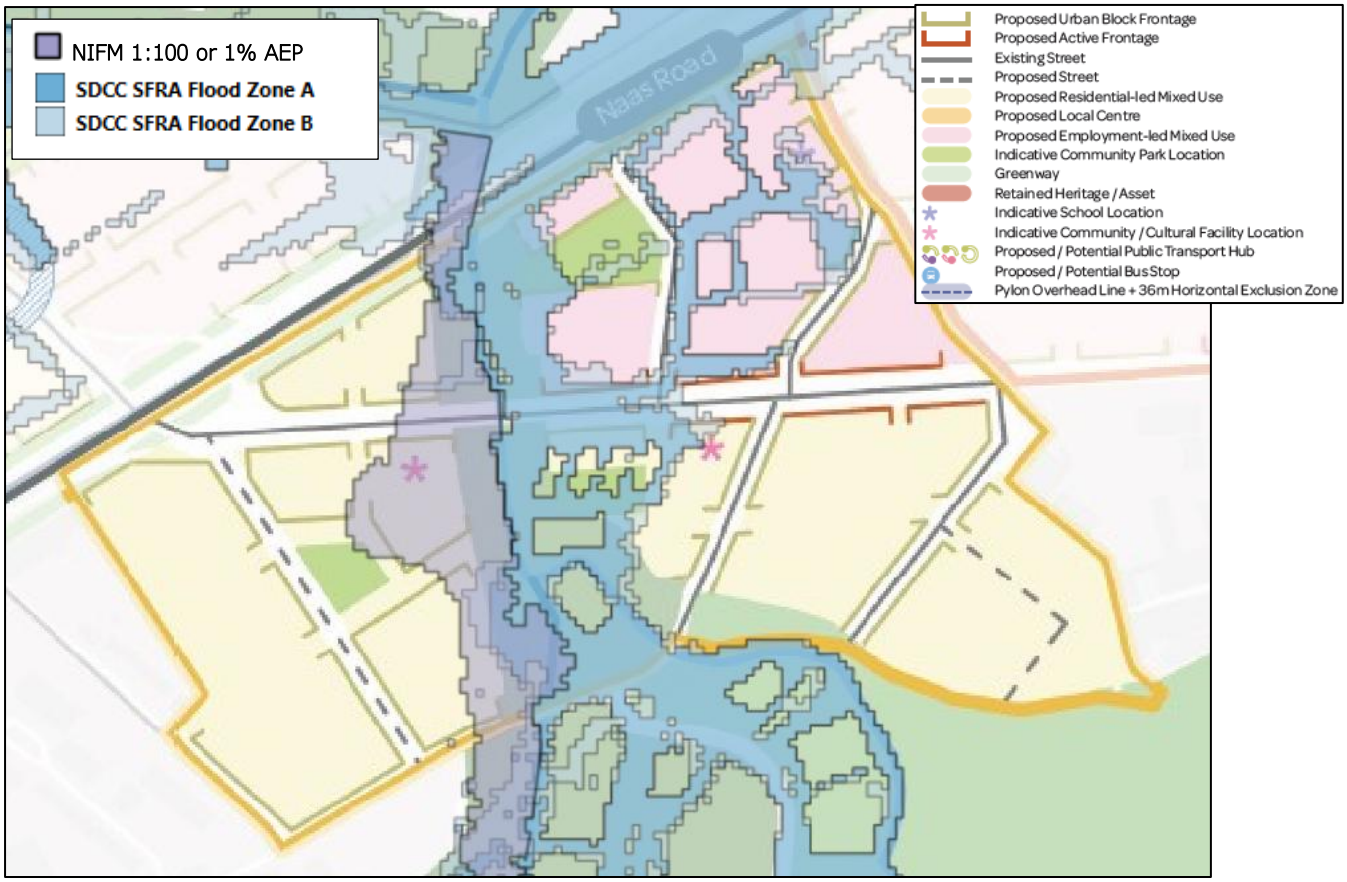


Figure 5-3: Long Mile PDA Development Plan Flood Zone Map including NIFM mapping (source: SDCC, Floodinfo.ie)

5.2.3 Greenhills PDA

There are no streams or rivers within the Greenhills PDA. The PDA is bordered by the Naas Road to the north and by the Robinhood Road and Walkinstown Avenue Park to the south.

The area north of the Greenhills Road is served by surface water networks which discharge to the Ballymount and Robinhood Streams. South of the Greenhills Road the surface water network discharges to a piped network which ultimately discharges in Landsdowne Valley Park. The area is heavily developed consisting of mainly light industrial units. The PDA does not benefit from any existing formal flood defences. The Camac Flood Relief Scheme project is ongoing in this area but flood mapping from the scheme is not yet available at the time of this report.

The SDCC development plan 2022-2028 has zoned this area as REGEN - To facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. This zoning is compatible with the proposed PDA structure.

The NIFM shows no areas of flood risk within the PDA. The SDCC Development Plan 2022-2028 flood extent maps (for the HEFS climate change scenario) are shown in *Figure 5-4.*

The development plan flood maps show a small area of Residential led mixed use development at the north-west corner of the PDA in the vicinity of Ballymount Drive is partly within Flood Zone B.

Development proposals in or close to the areas shown as at risk on the map should be subject to site specific flood risk assessment to determine the risk at the site and the justification test should be applied if required by the guidelines in force at the time of the proposal and based on the vulnerability category of the proposed development.

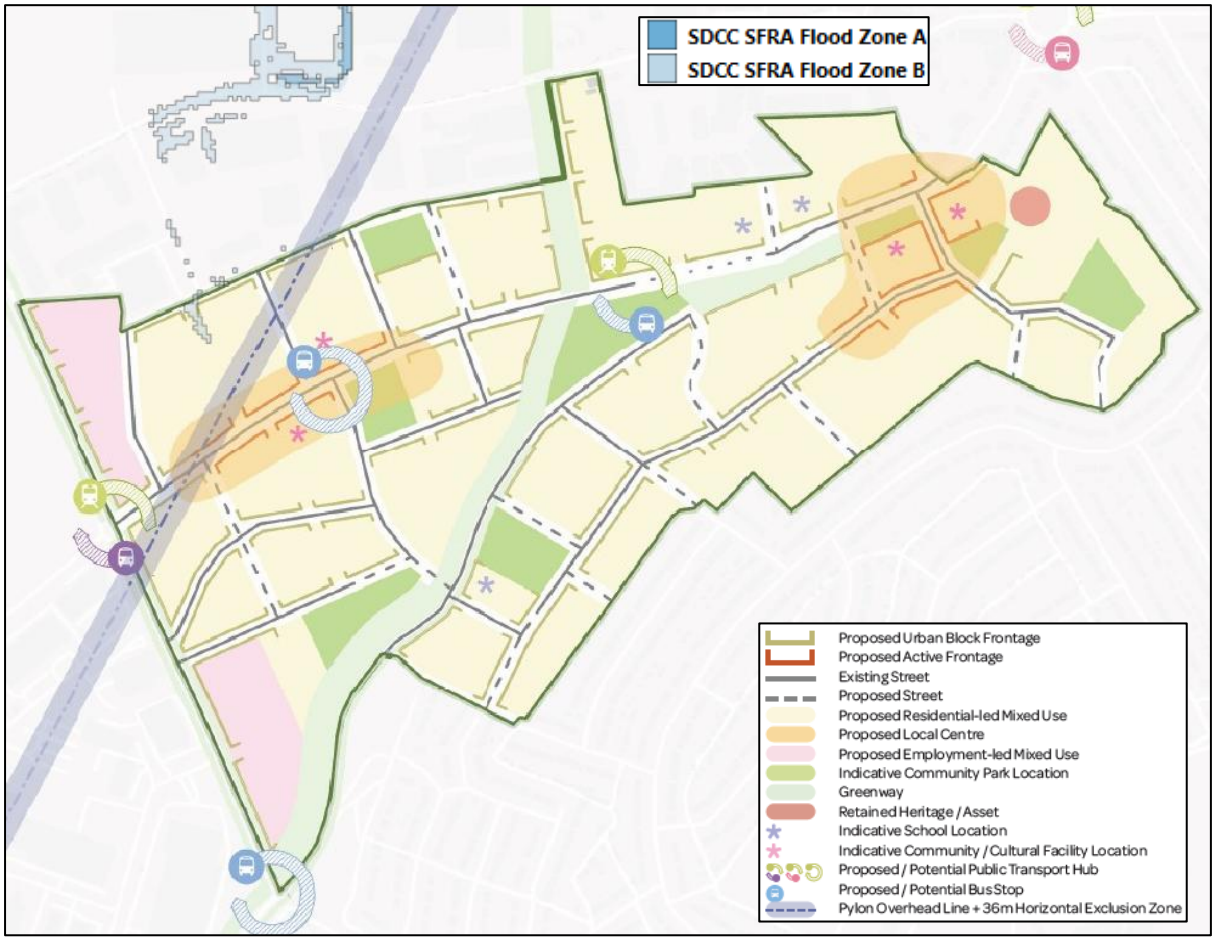


Figure 5-4: Greenhills PDA HEFS Flood Extent Map (source: SDCC)

5.3 Conclusion

The flood risk identification has demonstrated that there are some areas at risk in Flood Zone A and B in the PDAs.

The land uses impacted include proposed residential led mixed use and employment led mixed use. The vulnerability category of the residential-led mixed use type can be highly vulnerable or less vulnerable depending on the ground floor use. The vulnerability category for the employment led mixed use type is likely to be less vulnerable.

Both of these vulnerability categories require a justification test for development in flood zone A, and the highly vulnerable category requires a justification test for development in flood zone B. The review of the requirement for a justification test for each PDA is set out in the table below.

Table 5-1: Review of Justification Test need

PDA	Category	Flood Zone A	Flood Zone B
Red Cow and Cherry Orchard	Highly Vulnerable	Yes* (Residential) Needs Justification Test	Yes* (Residential) Needs Justification Test
	Less Vulnerable	Yes (Employment) Needs Justification Test	Yes (Employment) No Justification Test
Long Mile	Highly Vulnerable	Yes* (Residential) Needs Justification Test	Yes* (Residential) Needs Justification Test
	Less Vulnerable	Yes (Employment) Needs Justification Test	Yes (Employment) No Justification Test
Greenhills	Highly Vulnerable	No	Yes* (Residential) Needs Justification Test
	Less Vulnerable	No	No

* Indicates the category will depend on the building typology at detailed development stage

In line with government policy as demonstrated in "The Planning System and Flood Risk Management – Guidelines for Local Authorities" (DEHLG 2009) a justification test has been prepared based on the land use plan for these development plan proposals. This is carried out in Section 7 of this report.

During detailed development planning as the building lines and building typologies are determined a more detailed FRA and justification test for these areas will be required.

Where a site-specific FRA determines that highly vulnerable development is proposed for Flood Zone A nothing in this SFRA shall be taken as permitting such development. In such a case the sequential approach should be taken to avoid or mitigate the risk.

6 FLOOD RISK MANAGEMENT

6.1 Overview

Future developments and climate change are some of the key factors that are increasing the risk of flooding events across Ireland and globally. Several key drivers, including urban development expansion, could see an increase in flood risk from various sources. For example, increased foul drainage from an increased local population places a greater pressure on the local sewer system. This has the potential to increase the risk of sewer flooding, especially in areas with combined sewers which drain foul and surface water. A decrease in permeable ground cover due to urban development may increase the risk of surface water and ordinary watercourse flooding.

The pressure of accommodating more developments may mean a larger number of developments being proposed for sites within higher risk Flood Zone areas, placing them at greater risk of flooding. The impact of development and projected future population growth may not only have an impact on the flood risk presented by different flood sources but present a greater overall flood risk to people and properties due to the cumulative risk from each source. To meet flood risk mitigation requirements whilst facilitating housing and employment development needs, local policy targeting the impact of future growth on flood risk is required.

The Planning Guidelines recommend a sequential approach to spatial planning, promoting avoidance rather than justification and subsequent mitigation of risk. The implementation of the Planning Guidelines on a settlement basis is achieved through the application of the policies and objectives contained within Chapter 11 of the South Dublin CDP 2022-2028. The use and application of the policies and guidelines constitute the formal plan for flood risk management. This approach has been implemented in the process of preparing the SURF including through identifying PDAs, and suitable types and intensities of development.

6.2 Recommended Policies and Guidance

In following the Planning Guidelines, development should always be located in areas of lowest flood risk first and only when it is established that there are no suitable alternative options should development of the lowest vulnerability class proceed. It is possible to consider measures which reduce risk such as defences together with on-site mitigation measures.

The SURF develops more detail about how the REGEN objective should be achieved allowing for comprehensive mixed-use development across the area.

In areas where the PDA development blocks overlap with Flood Zone A only water compatible uses should be permitted unless it is shown in a justification test that a more vulnerable development must occur in that location. In areas where the PDA development blocks overlap with Flood Zone B following a site-specific FRA, ground floors should be limited to water compatible or less vulnerable uses such as commercial, enterprise, or retail with residential use located on upper levels where appropriate.

Development in Flood Zone A and Flood Zone B may be premature until completion of the Camac FAS baseline flood modelling. Development in Flood Zones A and B shall be subject to a Site-Specific Flood Risk Assessment as per The Planning System and Flood Risk Management Guidelines. An FRA of appropriate detail should accompany applications for development to demonstrate that they would not have adverse flood risk impacts. Such flood risk assessments should consider:

i. Residual risks and ensure development does not block flow paths and does increase flood risk elsewhere.

ii. The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the floodplain.

iii. Compensatory storage for development that results in a loss of floodplain must be provided.

In addition to the SDCC CDP policies and objectives in relation to Flood Risk, Surface Water Management, and Riparian corridors, the SURF includes policies and objectives in the following categories which relate to flood risk and can be read in the SURF document.

- NIOS1: Natural Infrastructure and Open Space
- SWRM1: Surface Water/Rainwater Management
- SWRM2: Flood Risk and Camac Renaturalisation
- UTL1: Utilities

The below sections further build on the findings presented throughout the SFRA and provide recommendations that the Council can adopt as part of their flood risk planning policies in addition to the Strategic Framework's approach to flooding, SuDS and natural Infrastructure. These recommendations are split into two (i) managing flood risks and (ii) managing surface water. The recommendations in relation to development are set out to provide some guidance should any applications for development come forward in advance of a statutory plan.

6.2.1 Managing Flood Risk

All new developments in areas of flood risk shall be subject to a Site-Specific Flood Risk Assessment as per The Planning System and Flood Risk Management Guidelines. A FRA of appropriate detail should accompany applications for developments to demonstrate that they would not have adverse flood risk impacts. Such flood risk assessments should consider:

- Residual risks and ensure development does not block flow paths and does increase flood risk elsewhere.

- The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the floodplain.

- Compensatory storage for development that results in a loss of floodplain must be provided.

- Existing open watercourses should be retained with maintaining an appropriate riparian zone.

6.2.2 Managing Surface Water

- Councils and developers should comply with surface water requirements of the Greater Dublin Strategic Drainage Strategy (GDSDS).

- An integrated surface water management strategy should be developed to ensure that all necessary public surface water infrastructure is in place to service new developments.

- Council should consider implementation of further surface water flood risk mitigation requirements for any proposed developments within high flooding risk areas.

- Council and developers should incorporate SuDS measures into any public realm, street network and within public open spaces.

- Developers should aim to achieve greenfield runoff rates via their proposed SuDS measures and ensure that surface water runoff is managed as close to the source as possible.

- Developments should maximise the use of open spaces to ensure spaces for water to flow during times of flood. Developers should aim to incorporate permeable paving in hardstanding areas to provide flood mitigation benefits in new developments.

6.3 Planning Context

The City Edge area was identified in the Metropolitan Area Strategic Plan (MASP) of the Regional Spatial and Economic Strategy for the Eastern and Midlands Regiosn (RSES) as being within both the South West corridor and the City Centre within M50 area. These were listed for strategic brownfield regeneration. The MASP noted the following under residential development:

Naas Road /Ballymount – significant brownfield lands in South Dublin and Dublin City Council areas, with potential for residential development and more intensive employment/ mixed uses
and for Employment/Mixed use it noted:
Re-intensification of underutilised lands including Naas Road and older industrial estates, subject to feasibility study (city centre within the M50 section of MASP), *and Re-intensification of older industrial estates at Naas Road/ Ballymount* (south western corridor section of MASP)

The SDCC Development Plan 2022 to 2028 includes the core strategy and settlement strategy vision statement "*Maximise the potential of the County to deliver a compact settlement form in line with National and Regional population targets, with a strong focus on regeneration and the redevelopment of brownfield over greenfield lands.*" This is in line with the National Planning Framework strategic objective for Compact Growth.

Policy CS2 of the SDCC development plan 2022 to 2028 is to:
Deliver a development framework for the regeneration of the City Edge lands in conjunction with Dublin City Council which underpins the strategic aims of the National Planning Framework and Regional Spatial and Economic Strategy.

The PDA lands are all subject to the Zoning Objective REGEN in the current development plan. This zoning is to facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. The proposed PDA land uses are compatible with this zoning.

7 JUSTIFICATION TESTS

7.1 Overview

The SURF review in Section 5 determined that there are areas within the PDAs where highly vulnerable land use is proposed within Flood Zone A or B, and where less vulnerable land use is proposed within Flood Zone B. In both of these cases a justification test is required to be passed. The questions for the justification test for development plans are given in Box 4.1 of The Planning System and Flood Risk Management – Guidelines for Local Authorities (2009) and is reproduced in Figure 7-1 below.

Box 4.1: Justification Test for development plans

Where, as part of the preparation and adoption or variation and amendment of a development/local area plan[1], a planning authority is considering the future development of areas in an urban settlement that are at moderate or high risk of flooding, for uses or development vulnerable to flooding that would generally be inappropriate as set out in Table 3.2, all of the following criteria must be satisfied:

1 The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.

2 The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular:

(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement[2];

(ii) Comprises significant previously developed and/or under-utilised lands;

(iii) Is within or adjoining the core[3] of an established or designated urban settlement;

(iv) Will be essential in achieving compact and sustainable urban growth; and

(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.

3 A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.

N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment.

Figure 7-1: Justification test for Development plans (source: DEHLG 2009)

7.2 Red Cow and Cherry Orchard PDA Justification Test

The SDCC development plan 2022-2028 has zoned most of this area as REGEN - To facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. This zoning is compatible with the proposed PDA structure. (A small portion along the Canal is zoned 'OS' for Open Space).

The SDCC Development Plan 2022-2028 flood extent maps for this area (for the HEFS climate change scenario) were shown in *Figure 5-2.*

JUSTIFICATION TEST FOR DEVELOPMENT PLANS
1. The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.
The proposed urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy and the South Dublin County Development Plan (2022-2028). As noted in Section 6.3 of this report, the area has been identified in the Metropolitan Area Strategic Plan (MASP) of the Regional Spatial and Economic Strategy for the Eastern and Midlands Regions (RSES) for strategic brownfield regeneration and in particular that the Naas Road /Ballymount area has significant brownfield lands in South Dublin County Council area, with potential for residential development and more intensive employment/mixed uses The SDCC development plan 2022-2028 identifies the City Edge area as a mixed-use regeneration area and includes: *CS2 Objective 1: To prepare a Local Area Plan or other appropriate mechanism for the zoned Regeneration (REGEN) lands and other lands at Naas Road / Ballymount as defined by the City Edge Project boundary. The LAP or equivalent will commence in 2022 and provide a framework for the sequential and phased development of the lands, integrating sustainable transport, land use and blue and green infrastructure. The City Edge Strategic Framework will inform this Statutory Plan.* The City Edge SURF fulfils the requirements of CS2 Objective 1 above.
2. The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular:
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;
The subject Site is Zoned REGEN. The SURF expands upon the range of regeneration uses within the site.
ii. Comprises significant previously developed and/or under-utilised lands;
The subject lands are primarily industrial or semi-industrial lands that are developed at a relatively low intensity with little to no residential land use. Having regard to the requirement under national, regional and local plans for the regeneration of serviced brownfield lands to deliver higher intensity urban regeneration, the subject lands need to be regenerated and should include a significant quantum of residential and more intensive employment land-use.
iii. Is within or adjoining the core of an established or designated urban settlement;
City Edge Area is designated within the RSES's South-Western Development Corridor for urban consolidation and capacity is also identified for urban

development under the core strategies contained in the SDCC Development Plan.

iv. Will be essential in achieving compact and sustainable urban growth;

As indicated by their designation at national, regional and local levels, the subject lands, being primarily under-utilised industrial and semi-industrial brownfield lands, are essential to achieving compact and sustainable urban growth. The redevelopment of this area will ensure the efficient use of public investment in infrastructure to date, including the Luas Red line, the Kildare Rail line, Grand Canal greenway etc. and will help to support and facilitate future investment in projects such as Bus Connects, Dart +, and new rail stations.

v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.

The subject lands have been explicitly identified for regeneration due to their location with regard to the core of the urban settlement, their serviced nature and the fact that they have excellent public transport connections, both existing and planned. There are no more suitable alternative lands for the particular mixed use residential and employment led regeneration identified in the SURF.

3. A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.

This SFRA sets out a strategic approach to managing fluvial, pluvial and canal-related flood risk across the SURF lands. Flood risk is primarily associated with the Robinhood Stream and the Ballymount Stream with affected areas lying largely within Flood Zone B and a limited extent of Zone A. The Camac Flood Alleviation Scheme (FAS) will provide more robust modelling of the pre-scheme Flood Zones.

The SURF identifies proposed land-uses at a block level within the PDAs but under SWRM2 Objective 1 it requires site specific FRA for development in flood risk areas. SWRM2 Objective 3 requires the retention or reinstatement of a riparian buffer for any development along watercourses.

The SURF SWRM1 objectives for surface water/rainwater management require the preparation of a rainwater management plan for each PDA or neighbourhood area and require the use of SuDS measures to reduce runoff to watercourses.

Together, these measures demonstrate that flood risk can be managed appropriately through implementation of the policies and objectives of the SURF, and that development will not cause unacceptable adverse impacts elsewhere.

Conclusion: The Justification Test for Development Plans has been applied and satisfied. The SURF demonstrates that development of the lands will enable compact and sustainable regeneration while appropriately managing flood risk. The SFRA is an iterative document and will be updated pending further pre-scheme results from the Camac FAS.

7.3 Long Mile PDA Justification Test

The SDCC development plan 2022-2028 has zoned this area as REGEN - To facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. This zoning is compatible with the proposed PDA structure.

The SDCC Development Plan 2022-2028 flood extent maps for this area (for the HEFS climate change scenario) were shown in *Figure 5-3.*

JUSTIFICATION TEST FOR DEVELOPMENT PLANS
1. The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.
The proposed urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy and the South Dublin County Development Plan (2022-2028). As noted in Section 6.3 of this report, the area has been identified in the Metropolitan Area Strategic Plan (MASP) of the Regional Spatial and Economic Strategy for the Eastern and Midlands Regions (RSES) for strategic brownfield regeneration and in particular that the Naas Road /Ballymount area has significant brownfield lands in South Dublin County Council area, with potential for residential development and more intensive employment/mixed uses The SDCC development plan 2022-2028 identifies the City Edge area as a mixed-use regeneration area and includes: *CS2 Objective 1: To prepare a Local Area Plan or other appropriate mechanism for the zoned Regeneration (REGEN) lands and other lands at Naas Road / Ballymount as defined by the City Edge Project boundary. The LAP or equivalent will commence in 2022 and provide a framework for the sequential and phased development of the lands, integrating sustainable transport, land use and blue and green infrastructure. The City Edge Strategic Framework will inform this Statutory Plan.* The City Edge SURF fulfils the requirements of CS2 Objective 1 above.
2. The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular:
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;
The subject Site is Zoned REGEN. The SURF expands upon the range of regeneration uses within the site.
ii. Comprises significant previously developed and/or under-utilised lands;
The subject lands are primarily industrial or semi-industrial lands that are developed at a relatively low intensity with little to no residential land use. Having regard to the requirement under national, regional and local plans for the regeneration of serviced brownfield lands to deliver higher intensity urban regeneration, the subject lands need to be regenerated and should include a significant quantum of residential and more intensive employment land-use.
iii. Is within or adjoining the core of an established or designated urban settlement;
City Edge Area is designated within the RSES's South-Western Development Corridor for urban consolidation and capacity is also identified for urban

development under the core strategies contained in the SDCC Development Plan.
iv. Will be essential in achieving compact and sustainable urban growth;
As indicated by their designation at national, regional and local levels, the subject lands, being primarily under-utilised industrial and semi-industrial brownfield lands, are essential to achieving compact and sustainable urban growth. The redevelopment of this area will ensure the efficient use of public investment in infrastructure to date, including the Luas Red line, the Kildare Rail line, Grand Canal greenway etc. and will help to support and facilitate future investment in projects such as Bus Connects, Dart +, and new rail stations.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.
The subject lands have been explicitly identified for regeneration due to their location with regard to the core of the urban settlement, their serviced nature and the fact that they have excellent public transport connections, both existing and planned. There are no suitable alternative lands for the particular mixed use residential and employment led regeneration identified in the SURF.
3. A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.
This SFRA sets out a strategic approach to managing fluvial, pluvial and canal-related flood risk across the SURF lands. Flood risk is primarily associated with the Camac River with affected areas lying largely within Flood Zone B and a limited extent of Zone A. The Camac Flood Alleviation Scheme (FAS) will provide more robust modelling of the pre-scheme Flood Zones. The SURF identifies proposed land-uses at a block level within the PDAs but under SWRM2 Objective 1 it requires site specific FRA for development in flood risk areas. SWRM2 Objective 3 requires the retention or reinstatement of a riparian buffer for any development along watercourses. The SURF SWRM1 objectives for surface water/rainwater management require the preparation of a rainwater management plan for each PDA or neighbourhood area and require the use of SuDS measures to reduce runoff to watercourses. Together, these measures demonstrate that flood risk can be managed appropriately through implementation of the policies and objectives of the SURF, and that development will not cause unacceptable adverse impacts elsewhere.
Conclusion: The Justification Test for Development Plans has been applied and satisfied. The SURF demonstrates that development of the lands will enable compact and sustainable regeneration while appropriately managing flood risk. The SFRA is an iterative document and will be updated pending further pre-scheme results from the Camac FAS.

7.4 Greenhills PDA Justification Test

The SDCC development plan 2022-2028 has zoned this area as REGEN - To facilitate enterprise and/or residential-led regeneration subject to a development framework or plan for the area incorporating phasing and infrastructure delivery. This zoning is compatible with the proposed PDA structure.

The SDCC Development Plan 2022-2028 flood extent maps (for the HEFS climate change scenario) are shown in *Figure 5-4.*

JUSTIFICATION TEST FOR DEVELOPMENT PLANS
1. The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.
The proposed urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy and the South Dublin County Development Plan (2022-2028). As noted in Section 6.3 of this report, the area has been identified in the Metropolitan Area Strategic Plan (MASP) of the Regional Spatial and Economic Strategy for the Eastern and Midlands Regions (RSES) for strategic brownfield regeneration and in particular that the Naas Road /Ballymount area has significant brownfield lands in South Dublin County Council area, with potential for residential development and more intensive employment/mixed uses The SDCC development plan 2022-2028 identifies the City Edge area as a mixed-use regeneration area and includes: *CS2 Objective 1: To prepare a Local Area Plan or other appropriate mechanism for the zoned Regeneration (REGEN) lands and other lands at Naas Road / Ballymount as defined by the City Edge Project boundary. The LAP or equivalent will commence in 2022 and provide a framework for the sequential and phased development of the lands, integrating sustainable transport, land use and blue and green infrastructure. The City Edge Strategic Framework will inform this Statutory Plan.* The City Edge SURF fulfils the requirements of CS2 Objective 1 above.
2. The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular:
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;
The subject Site is Zoned REGEN. The SURF expands upon the range of regeneration uses within the site.
ii. Comprises significant previously developed and/or under-utilised lands;
The subject lands are primarily light industrial lands that are developed at a relatively low intensity with little to no residential land use. Having regard to the requirement under national, regional and local plans for the regeneration of serviced brownfield lands to deliver higher intensity urban regeneration, the subject lands need to be regenerated and should include a significant quantum of residential and more intensive employment land-use.
iii. Is within or adjoining the core of an established or designated urban settlement;
City Edge Area is designated within the RSES's South-Western Development Corridor for urban consolidation and capacity is also identified for urban

development under the core strategies contained in the SDCC Development Plan.

iv. Will be essential in achieving compact and sustainable urban growth;

As indicated by their designation at national, regional and local levels, the subject lands, being primarily under-utilised industrial and semi-industrial brownfield lands, are essential to achieving compact and sustainable urban growth. The redevelopment of this area will ensure the efficient use of public investment in infrastructure to date, including the Luas Red line, the Kildare Rail line, Grand Canal greenway etc. and will help to support and facilitate future investment in projects such as Bus Connects, Dart +, and new rail stations.

v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.

The subject lands have been explicitly identified for regeneration due to their location with regard to the core of the urban settlement, their serviced nature and the fact that they have excellent public transport connections, both existing and planned. There are no suitable alternative lands for the particular mixed use residential and employment led regeneration identified in the SURF.

3. A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.

This SFRA sets out a strategic approach to managing fluvial, pluvial and canal-related flood risk across the SURF lands. Flood risk is primarily associated with the Robinhood Stream with the small affected area lying within Flood Zone B. The Camac Flood Alleviation Scheme (FAS) will provide more robust modelling of the pre-scheme Flood Zones.

The SURF identifies proposed land-uses at a block level within the PDAs but under SWRM2 Objective 1 it requires site specific FRA for development in flood risk areas. SWRM2 Objective 3 requires the retention or reinstatement of a riparian buffer for any development along watercourses.

The SURF SWRM1 objectives for surface water/rainwater management require the preparation of a rainwater management plan for each PDA or neighbourhood area and require the use of SuDS measures to reduce runoff to watercourses.

Together, these measures demonstrate that flood risk can be managed appropriately through implementation of the policies and objectives of the SURF, and that development will not cause unacceptable adverse impacts elsewhere.

Conclusion: The Justification Test for Development Plans has been applied and satisfied. The SURF demonstrates that development of the lands will enable compact and sustainable regeneration while appropriately managing flood risk. The SFRA is an iterative document and will be updated pending further pre-scheme results from the Camac FAS.

7.5 Conclusions

The Justification Test for Development Plans has been applied to the City Edge SURF PDAs and has been satisfied. The SURF demonstrates that development of the lands will enable compact and sustainable regeneration while appropriately managing flood risk. The SFRA is an iterative document and will be updated pending further pre-scheme results from the Camac FAS. Site specific FRAs for individual developments will be carried out where the development is proposed in a flood risk area, and further justification testing will be applied during the site specific FRAs where necessary.

8 SFRA REVIEW AND UPDATE

This SFRA is a live document which is to be used to assist in allocating sites for any future development and general decision making at Statutory Plan stage. An update to the SFRA should be triggered by the review cycle for the County Development Plan, or by the publication of revised flood mapping for the River Camac by the Camac FAS. Development within the current flood zones would be premature prior to the publication of the updated flood mapping.

There are a number of key outputs from possible future studies and datasets, which should be incorporated into any update of the SFRA as availability allows. Not all future sources of information should trigger an immediate full update of the SFRA; however, new information should be collected and kept until it is updated.

Additional information will arise from the OPW and SDCC flood relief schemes over the period of this Development Plan, not only will these studies revisit the CFRAM assessment, but once schemes are in place the definition of risk will change significantly for existing development, and possibly also for undeveloped lands. Any updates of the CFRAM Studies arising from future iterations and extensions of the CFRAM should be incorporated into SFRA updates. Detailed, site specific FRAs may be submitted to support planning applications. Whilst these reports will not trigger a review of the Flood Zone maps or SFRA, they should be retained and reviewed as part of the next Development Plan cycle.

9 CONCLUSION

This SFRA has been prepared to inform the City Edge Strategic Urban Regeneration Framework in the SDCC administrative area. The development proposals for the PDAs have been reviewed against the recommendations set out in The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009 and the South Dublin County Council Development Plan 2022-2028.

The SURF land-use designations aim to avoid areas of high flood risk and where this is not achieved the Justification Test has been applied and the plan is found to be appropriate given its current level of detail.

It is noted the Flood Zones are based on best currently available data, but that a more detailed, site specific, flood risk assessment may produce locally varying flood outlines. There are a number of triggers which may prompt a review of the SFRA, or will require a slight change in specification for site specific flood risk assessments, including the completion of various ongoing schemes.