

Matt Barnes
Architect Project Manager



Forward Planning
Kildare County Council
Aras Chill Dara,
Devoy Park,
Naas,
Co Kildare



Re: Submission to Draft Kildare County Development Plan 2023-2029

Ref: 2669
Date: 20.5.2022

Dear Sir/Madam,

As part of the public consultation process, please find enclosed a submission on behalf of my client Thoval Properties Ltd.

Best regards

Matthew Barnes

CC Thoval Properties Ltd





Submission to Draft Kildare County Development Plan

By: Thoal Properties Limited

Prepared by: Matt Barnes Architect

Date: 18.5.2022



PLANNING BACKGROUND

The draft development plan is open to submissions from the public. This submission is presented by one local house builder, Thoval Properties Ltd which owns a number of sites in County Kildare and is active in planning and construction of homes on a number of these sites. The impetus to make this submission is influenced by their ownership of one specific site at Sexes Bridge, Newbridge, Co Kildare which was de-zoned in the last development plan from residential to Amenity. There was a planning application 052742 for 160 units which was withdrawn.



This submission relating to Section 3 (Housing) of the Draft County Development Plan is the first part of a two-part submission, the second of which will be a submission to the Newbridge Local Area Plan when it is open for public submissions towards the end of 2022 or in 2023.

In general terms all the provisions of the Draft Kildare County Development Plan are supported by Thoval Properties Ltd as being appropriate to the proper planning and development of the area. The reason for the two-part submission is to support a consistent application of the planning principles of the Draft County Development Plan in the potential rezoning to residential use in the new Draft Newbridge Local Area Plan.

INTRODUCTION

The Draft Kildare County Development is subject to the National Planning Framework. Clause 3.1 lays out the policy framework:

National and regional policy reinforces the need for 'healthy placemaking' and the delivery of well-designed, affordable, adaptable, infill and brownfield development close to existing services and facilities. The overall aim of the Housing for All – A New Housing Plan for Ireland (2021), is that everyone in Ireland should have access to sustainable, good quality housing to purchase or rent, at an affordable price, in the right location.

Submission to the Draft Kildare County Development Plan



Such development should be supported by universal design and improved urban amenities, including public spaces and parks, social and community infrastructure, as well as enhanced permeability, accessibility and connectivity.

The Newbridge site in question presents a brownfield context of a brown field site within a few hundred metres of the Newbridge railway station. There is an opportunity for implementation of national policy at Draft County Development Plan and the future Newbridge Local Area Plan levels.

ALIGNMENT WITH NATIONAL POLICY

1. The overall aim of the **Housing for All- A New Housing Plan for Ireland (2021)** is to provide affordable housing in the right location. It is submitted that the site is in "the right location" due to proximity to the railway station and is surrounded by existing housing and community infrastructure. The community infrastructure consists of schools, green sports grounds and is within walking distance of the town centre. The market for affordable housing is the normal market segment that Thoval Properties Ltd serve. The company has experience of building all forms of housing from detached, semi-detached, duplex and apartments units as well as leisure facilities. This submission can offer a bottom-up perspective on a planning methodology to help identify and potentially help resolve the potentially conflicting policies of higher density with affordable construction in the right location. The planning proposed methodology is aligned with the policy of providing lifetime adaptable housing and does not propose any change to the policy and strategy of the Draft Kildare County Development Plan.

2. The policy of *"Creating and maintaining successful urban neighbourhoods requires the efficient use of land at densities which ensure the viability of a range of facilities, amenities, services and good public transport connections. All of these components should be set within a high-quality built environment in order to enhance liveability and create a good quality of life for all."*

In line with the settlement strategy, this chapter seeks to secure the provision of new homes tailored to the needs of the existing and projected population. In this way, supporting an all-community approach, with better quality of life, more efficient use of land, and greater integration of infrastructure and services."

It is submitted that zoning of viable sites close to public transport connections could be considered as a priority to provide good quality housing for all.

3. The Draft Development Plan has a strategy for:
 - a) *"Implementation and delivery of the Housing Strategy and Housing Need & Demand Assessment (HNDA)."* It is submitted that the decision to de-zone the site in the current Newbridge Local Area Plan was inconsistent with this strategy because the housing need has significantly increased since the last LAP was drafted.

- b) *Implementation of adopted Local Area Plans (LAPs) to drive the delivery of sustainable, dynamic urban centres, in line with the settlement strategy.*

It is submitted that the current Local Area Plan is inconsistent with the delivery of sustainable dynamic urban centre since de-zoning of the land close to the public train station requires a compensatory rezoning of land further away from the town centre.

- c) *Delivery of good quality housing to cater for diverse housing needs - mix of tenures and typologies to meet people's full lifecycle.*

It is submitted that a diverse mix of tenures and typologies should include homes that are adjustable in size for rightsizing-in-place to complement the current system of rightsizing by moving home.

- d) *Supporting implementation of the Metropolitan Area Strategic Plan (MASP) which seeks the sustainable development of the Dublin Metropolitan Area.*

The Newbridge railway station offers a critical piece of infrastructure for the Metropolitan Area Strategic Plan. The optimal use of existing infrastructure can be reinforced by zoning of land within walking distance of the railway station since existing car parking infrastructure for the railway station is already used to capacity.

- e) *Engaging in active land management to promote regeneration including utilising the Vacant Sites Register and other future vehicles, including the Zoned Land Tax.*

It is submitted that active land management can potentially include rezoning of the land bank that was previously de-zoned for reasons that may have been relevant seven years ago but are no longer relevant in terms of regional or county planning due to the changing conditions of housing needs. Thoval Properties Limited have participated in active land management in terms of zoning submissions, planning applications and construction in County Kildare for the past 30 years.

- f) *Collaboration with all internal Council departments to actively seek funding for housing and social infrastructure from national and European funding streams including Local Infrastructure Housing Activation Fund (LIHAF), Urban Regeneration and Development Fund (URDF), Rural Regeneration and Development Fund (RRDF), Town and Village Renewal Scheme (TVR), Serviced Sites Fund (SSF) and Affordable Housing Fund (AHF).*

It is noted that the neighbouring site is a Local Authority Housing Scheme with the completed infrastructure of an access road running along the boundary to my client's site. The road is therefore taken in charge and is a public access road constructed with public funding to create a residential infrastructure. It is submitted that the road infrastructure that is created by public funds could in principle be used to facilitate more private housing.

The land which the County Council Homes has constructed is at the same level as the subject site. One argument that was presented for de-zoning of the site was that the subject site was subject to flooding, however there is no historical evidence that this has been the case. If that was the case then Kildare County Council site would also be considered at risk of flooding, which is not the case. **A Flooding Risk Assessment is attached to this submission to support the argument that the site does not have any history or potential for flooding in the future.**

- g) *Ensuring that planning applications for residential developments over 20 units and commercial developments over 2,000m² are accompanied by an audit of social and*

community infrastructure and an implementation and phasing programme in relation to social and community infrastructure, so that facilities identified as needed are provided in a timely and co-ordinated fashion.

Any future audit of social and community infrastructure can more readily be addressed in a timely manner when the site is located within close proximity to existing community infrastructure which can be optimised with further housing but not overloaded.

1.1 Draft Development Plan Guidelines 2021

The draft Development Plan Guidelines 2021 recognise the need to allow for 'some degree of competition and choice in the residential development land market' (section 4.4.2). Importantly, under section 4.3.3, the guidelines state 'In providing housing sites for development within settlements, it may be necessary to zone more serviced land and sites for residential (or a mixture of residential and other uses), than would equate to meeting precisely the projected housing demand for that settlement. This approach recognises that a degree of choice in development sites to be provided locally is desirable to avoid restricting the supply of new housing development through inactivity on a particular landholding or site.'

In making provision for housing within settlements in the core strategy of a development plan, in certain instances a planning authority may therefore provide zoned residential sites in addition to those required to meet the settlement housing supply target. This means that a planning authority, after identifying the site/land requirements to meet the housing supply target for that settlement, may also identify additional sites/lands to ensure sufficient choice for development potential is safeguarded.'

Under the same section, the guidelines differentiate this 'additional provision' from sites which may not be delivered within the 6-year timeframe of a development plan. It considers that the additional provision would be in the order of 20 to 25% and that additional lands may include large-scale urban regeneration areas, transport-led development sites or SDZs. Lands qualifying for additional provisions should be phased in a clear sequence of priority.

The guidelines require that sites considered for zoning be consistent with sequential development patterns, proximate to services and facilities.

1.2 Development Plan Guidelines 2007

Under section 4.5 of the 2007 Development Plan Guidelines, planning authorities are required to identify lands in a sequential and co-ordinated manner. Section 4.19 describes the sequential approach which consists of:

- Zoning extending outwards from the centre of an urban area, with undeveloped lands closest to the core and public transport routes being given preference (leapfrogging should be avoided);
- Emphasis on encouraging infill opportunities and better use of under-utilised lands;
- Areas to be zoned should be contiguous to existing zoned development lands.



Other considerations include the physical suitability of a site and that it should offer 'best value for money'. This means sites to be zoned should be the most cost-effective when the delivery of infrastructure is considered

3.4 Strategic Context 3.4.1 Project Ireland 2040: National Planning Framework (NPF)

The Project Ireland 2040 Framework provides the context for the Kildare County Development Plan. One of the core principles of the framework provides for:

- a) *Prioritise the location of new housing provision in existing settlements as a means to maximising better quality of life for people through accessing services, ensuring a more efficient use of land and allowing for greater integration with existing infrastructure.*

It is submitted that rezoning of the Newbridge site for residential use would comply with this principle. The further issue raised by the 2040 Framework is the issue of density:

- b) *The NPF acknowledges that the physical format of urban development is one of our greatest national development challenges and identifies compact growth as one of the National Strategic Outcomes. This entails delivering a greater proportion of residential development within existing built-up areas of settlements and moving away from a reliance on greenfield development to meet our development needs. In order to avoid urban sprawl, the NPF advocates for increased residential densities in urban areas.*

The minimum density along public transport corridors is specified in the Draft County Development Plan under clause 3.7. The issue of density is not only a matter of spatial synergy but also an issue of lifetime adaptable design due to changing household sizes associated with an ageing population which is addressed in the Draft Kildare County Development Plan as follows:

- c) *The NPF recognises that planning affords an opportunity to facilitate and deliver a more socially inclusive society through better integration and greater accessibility at all stages of the lifecycle. It supports the **provision of lifetime adaptable homes** that can accommodate the changing needs of households over time. Specifically, the NPF requires that local housing policy will be developed with a focus on meeting the needs and opportunities of an ageing population.*

It is submitted that the policy to support the provision of lifetime adaptable homes faces a low knowledge base in how to design lifetime adaptable homes as identified by a 2018 publication "The Housing Flexibility Problem: A review of limitations and solutions." Sabine Ritter de Paris and Nino L Lopes; 2018. There is no agreed definition of flexible housing because there are four complex design domains of lifetime sizing, function, physical works and statutory procedures which have historically been challenging to align into an economic model for housing.

One methodology for ensuring the provision of lifetime adaptable homes can be based on the international standard: ISO 20887:2020: Sustainability in building and civil engineering works - design for disassembly and adaptability- Principles, requirements and guidance.

- d) *The NPF warns against the intensification of social housing in areas that are already dense with social housing and advocates for the development of diverse neighbourhoods with a balance of public and private housing to create healthy communities. The NPF states that in addition to the significant investment in social housing we also need to ensure that more affordable homes are built for sale or rent, particularly in our cities, towns and villages,*

enabling people to choose to live within their communities and closer to where they work. It indicates that this will be facilitated through more proactive land management and coordinated and efficient provision of enabling infrastructure, particularly on local authority and State-owned lands, as well as providing flexibility on design and density, particularly in our urban cores, to enable more cost-efficient construction and provide a variety of homes aimed at first-time buyers.

The Sexes bridge site owned by Thoal Properties Ltd is adjacent to a scheme of social housing. It is submitted that a mix of affordable housing in that location complies with the Draft Development Plan.

3.7 Residential Density and Building Height

The policy on density is specific along public transport corridors in table 3.1 below.

Table 3.1 outlines the density levels for different settlement types as per Sustainable Residential Development in Urban Areas - Guidelines for Planning Authorities, DEHLG (2009).

Category	Location for New Residential Development	General Density Parameters (Units per Hectare)
Larger Towns (Population > 5,000)	Town Centre & Brownfield Sites	Site Specific
	Public Transport Corridors	50 units per ha
	Inner suburban/infill	Site Specific
	Institutional Lands	35-50 units per ha
	Outer Suburban /'Greenfield'	30-50 units per ha
Smaller Towns & Villages	Centrally located sites	30-40+ units per ha

3.10 Mix of Dwelling Types

The Draft County Development Plan clarifies the future housing needs as follows:

- a) *The population of County Kildare is expected to rise by c. 44,000 persons between 2016 and 2031, which equates to a 19.7% increase.*

This projection indicates a change in market conditions which would support the rezoning of amenity land back to the original zoning for residential land use.

- b) *Kildare has a rapidly increasing '65 and over' age cohort. According to Census 2016, there were 22,104 people over 65 living in Kildare in 2016, representing 10% of the county's population, a figure which represents a 32.2% increase in that cohort of the population from the 2011 census. The Kildare Age Friendly Strategy 2019-2021, reports that the ageing of the population from this point onwards will represent one of the most significant demographic and societal developments and challenges that Ireland has encountered. It is projected that by 2031, 16% of the population of County Kildare will be over the age of 65 years, with this rate increasing to 21% by 2040.*

It is submitted that the societal challenge of housing an ageing population is closely related to material efficiency within the housing stock in terms of floor area per capita. The land in question is

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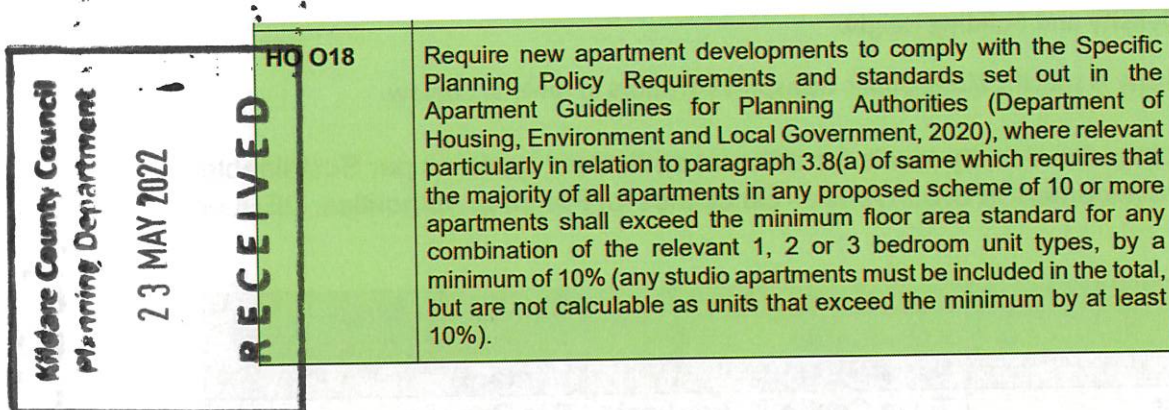
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therefore ideal for a fresh approach to planning and design to prioritise lifetime material efficiency. This principle is addressed further in the Draft Development Plan which Thoival fully support:

- c) *Support high-quality design in new housing and to promote housing that is attractive, safe, and adaptable to the needs of existing and future households. Kildare County Council will support innovative construction methods to deliver sustainable and adaptable housing.*

One of the policy objectives is to comply with the 2020 Apartment Design Guidelines which is supported by Thoival Properties Limited



3.11.1 Older People

Thoival Properties Ltd support the Kildare Age Friendly Strategy 2019-2021. It is important to provide:

- a) *For those who wish to continue to live independently in their community but wish to rightsize / downsize, it is important to provide a range of attractive and appropriately located accommodation choices which will in turn address the underutilisation of larger homes, particularly in more established areas*

It is submitted that there is a critical difference between rightsizing by moving home and rightsizing-in-place. Thoival Properties will observe with interest to see whether the outcome of HO A2 will include an evidence-based qualitative assessment to establish the demand for rightsizing-in-place to complement right-sizing by moving to age-specific housing.

Actions

The Council will:

HO A1	Promote McAuley Place, Naas, as a national exemplar model of housing for older people and will seek to identify further opportunities in towns in each MD throughout the County for the Council (and other appropriate bodies) to expand this supported housing market.
HO A2	Undertake an evidence-based qualitative assessment to establish the demand for age-specific housing options, including 'right-sizing' within County Kildare

3.12 Social, Affordable Purchase and Cost Rental Housing.

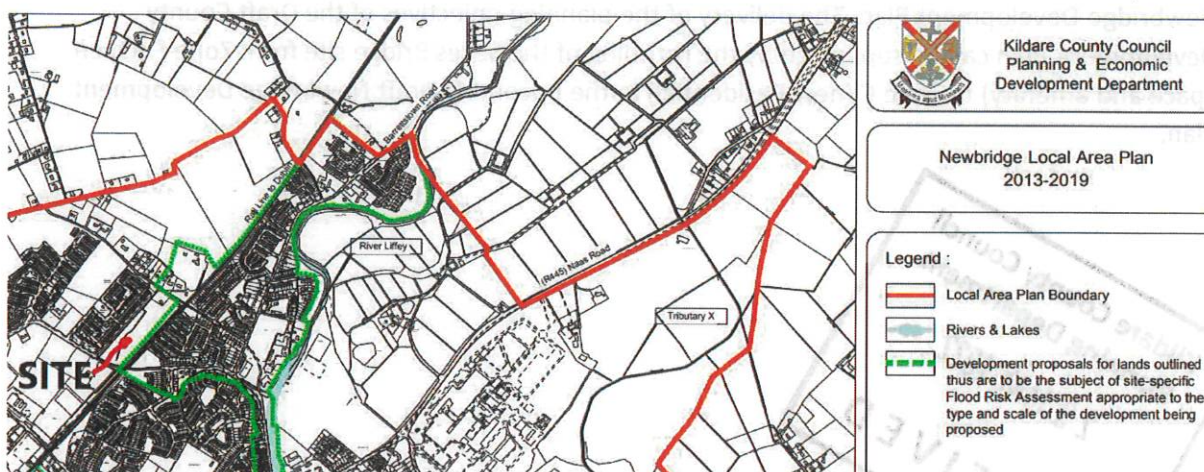
The range of demand for different tenure types are outlined in this section. It is submitted that while it is important to identify each type it is even more important to enable housing schemes to provide a diverse range of tenure types within one neighbourhood which are blind to tenure type.

	% Tenure Breakdown	Number of New Dwellings 2023-2031	Number of New Dwellings per Annum
New private ownership homes	31.50%	4360	436
New private rental homes	27.70%	3834	427
New affordable homes (Affordability Constraint)	10.60%	1467	164
New Social Housing homes	30.20%	4180	466
	100%	13,840	

Table 3.2 - Forecasted housing need by tenure type

3.17 Flood Risk Management.

The Strategic Flood Risk Assessment for the Newbridge Local Area Plan 2013-2019 did not address the site in question which is outside of green line area for site-specific Flood Risk Assessment.



It is submitted that the de-zoning of the site did not comply with the requirements of the "The Planning system and Flood Risk Management Guidelines for Planning Authorities, DEHLG (2009)"

It is noted that Policy HO P30 was in place at the date of the preparation of the current County Development Plan 2017-2023:

3.17 Flood Risk Management

Applicants will be required to comply with the requirements of The Planning System and Flood Risk Management Guidelines for Planning Authorities, DEHLG (2009) where appropriate and applicable.

Policy

It is the policy of the Council to:

HO P30	Require that site specific flood risk assessments are carried out where required, in accordance with the requirements of The Planning System and Flood Risk Management Guidelines for Planning Authorities
---------------	--

Although the site is located outside the Green Dotted Line in the SFRA Thoval properties Limited commissioned a Site-Specific report based on evidence, location and climate change projections. This report is attached to clarify there is no evidence of a fluvial flooding risk from existing water courses and rivers. Fluvial flooding is defined as:

when rivers and streams break their banks and water flows out onto the adjacent low-lying areas (the natural floodplains).

The attached report from JBA Consulting dated August 2021 identifies that there is a normal risk of pluvial flooding is defined by:

Pluvial flooding occurs when the amount of rainfall exceeds the capacity of urban storm water drainage systems or the ground to absorb it.

The attached report outlines how this can be overcome through normal infrastructure on the site with adequate outfalls for surface water within the principles and techniques of SUDS.

CONCLUSION

The Draft County Development Plan will pave the planning strategy for the upcoming Draft Newbridge Development Plan. The delivery of the planning objectives of the Draft County Development Plan can be supported by the rezoning of the Sexes Bridge site from Zone F (Open Space and amenity) to Zone C (new Residential) in the upcoming Draft Newbridge Development Plan.





Sexes bridge, Roseberry Newbridge

Flood Risk Review for Re-zoning
Application

August 2021



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WASHINGTON, D.C.

JBA Project Manager

David Casey
Unit 3, Block 660,
Greenogue Business Plaza,
Rathcoole,
Dublin.



Revision History

Revision Ref / Date Issued	Amendments	Issued to
13/04/2018	First Issue	Thoval Properties
12/08/2021	Second Issue	Thoval Properties

Contract

This report describes work commissioned by Mark Gilligan, on behalf of Thoval Properties, by a letter dated 06/02/2018. Thoval Properties representative for the contract was Mark Gilligan of Mark Gilligan Architecture. David Casey of JBA Consulting carried out this work

Prepared by David Casey BSc MSc PGCert MCIWEM
Senior Engineer

Reviewed by Ross Bryant BSc MSc CEnv MCIWEM C.WEM
Principal Analyst

Purpose

This document has been prepared as a Final Report to Thoval Properties. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

JBA Consulting has no liability regarding the use of this report except to Thoval Properties.

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Abbreviations

AEP.....	Annual Exceedance Probability
CFRAM	Catchment Flood Risk Assessment and Management
DoEHLG.....	Department of the Environment, Heritage and Local Government
FRA.....	Flood Risk Assessment
GSI.....	Geological Survey of Ireland
LAP	Local Area Plan
OPW	Office of Public Works
PFRA	Preliminary Flood Risk Assessment
RPG	Regional Planning Guidance
SFRA	Strategic Flood Risk Assessment



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1 Overview

The client has appointed JBA Consulting to undertake a flood risk review to inform a re-zoning assessment by Thoal properties for lands located at Sexes bridge, Roseberry, Newbridge, Co Kildare.

1.1 Aims & Objectives

This study is being completed to inform an application to Kildare County Council for the re-zoning of the site from Open Space & Amenity to New Residential.

The objectives are to:

- Identify potential sources of flood risk,
- Confirm the level of flood risk and identify key hydraulic features,
- Summarise the flood risk and support the re-zoning application.

Recommendations for development have been provided in the context of the OPW / DoEHLG planning guidance, "The Planning System and Flood Risk Management". An overview of the principles contained in this document is provided in Section 2.

1.2 Location

The site is located on the northern fringes of the Newbridge town urban environment, c1.1km from the town centre. Residential developments are located to the north-west and north-east of the site, refer to Figure 1-1. Further to the north and southwest, agricultural lands are predominant. The site is currently disused. A site visit was undertaken on 23/02/2018 to appraise the flood risk in the study area.

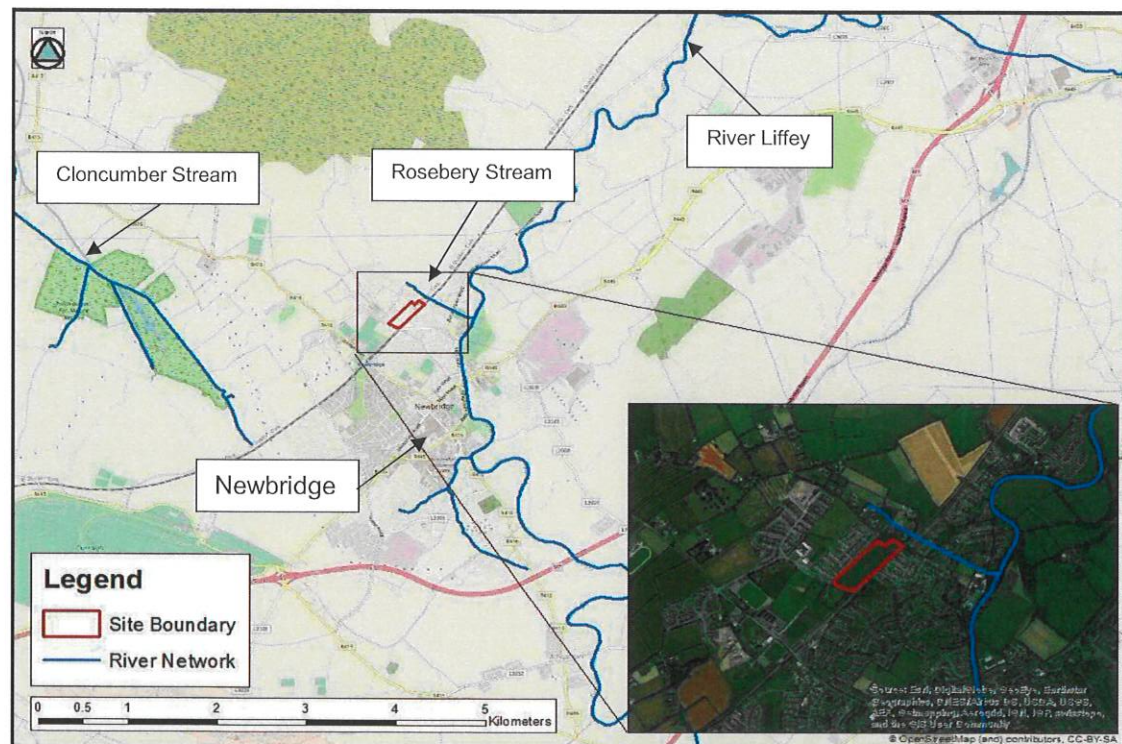


Figure 1-1: Site Location

1.3 Report Structure

Section 2 of this report gives an overview on the understanding of flood risk. Section 3 provides an overview of the study location and associated watercourses. Section 4 contains background information and initial assessment of flood risk. An overview of the technical approaches to the re-zoning application are provided in Section 5. Conclusions are highlighted in Section 6.

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2 Understanding Flood Risk

Flood risk is generally accepted to be a combination of the likelihood (or probability) of flooding and the potential consequences arising. Flood risk can be expressed in terms of the following relationship:

$$\text{Flood Risk} = \text{Probability of Flooding} \times \text{Consequences of Flooding}$$

Furthermore, an assessment on flood risk requires an understanding on the relationship between potential sources of flooding. This is described as Source-Pathway-Receptor model, refer to Figure 2-1. Potential sources of flooding are rainfall and excessive sea levels while the principal pathways are river watercourses, drains and coastal floodplains. Receptors are identified as people, property and the environment.

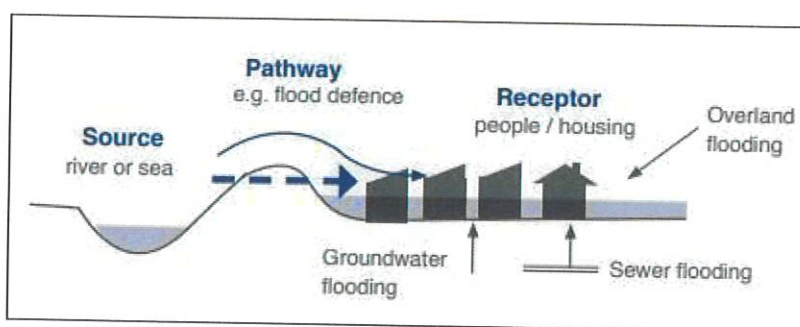


Figure 2-1: Source-Pathway-Receptor

2.1 Probability of Flooding

The likelihood or probability of a flood event (whether tidal or fluvial) is classified by its Annual Exceedance Probability (AEP) or return period (in years). A 1% AEP flood has a 1 in 100 chance of occurring in any given year. Refer to Table 2-1.

In this report, flood frequency will primarily be expressed in terms of AEP, which is the inverse of the return period, as shown in the table below and explained above. This can be helpful when presenting results to members of the public who may associate the concept of return period with a regular occurrence rather than an average recurrence interval, and is the terminology which will be used throughout this report.

Table: Conversion between return periods and annual exceedance probabilities

Return period (years)	Annual exceedance probability (%)
2	50
10	10
50	2
100	1
200	0.5
1000	0.1

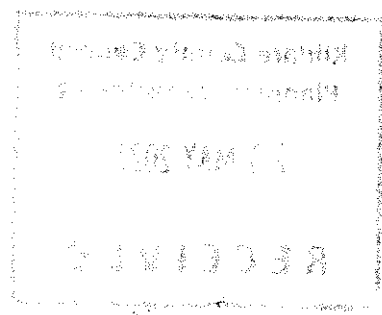
Table 2-1: Return Periods

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2.2 Flood Zones

Flood Zones are geographical areas illustrating the probability of flooding. For the purposes of the Planning Guidelines, there are 3 types or levels of flood zones, A, B and C which are outlined in Table 2-2 and Figure 2-2.

Zone	Description
Flood Zone A	Where the probability of flooding is highest; greater than 1% (1 in 100) from river flooding or 0.5% (1 in 200) for coastal/tidal flooding.
Flood Zone B	Moderate probability of flooding; between 1% and 0.1% from rivers and between 0.5% and 0.1% from coastal/tidal.
Flood Zone C	Lowest probability of flooding; less than 0.1% from both rivers and coastal/tidal.

Table 2-2: Flood Zone Classification

It is noted that the classification of the flood zones is based on the flood risk presented from coastal and river flooding only and does not include pluvial (surface water) sources. Pluvial flood risks are managed through the application of a site specific flood risk assessment.

It is important to note that the definition of the flood zones is based on an undefended scenario and does not take into account the presence of flood protection structures such as flood walls or embankments. This is to allow for the fact that there is a residual risk of flooding behind the defences due to overtopping or breach and that there may be no guarantee that the defences will be maintained in perpetuity.



Figure 2-2: Indicative Flood Zones (OPW & DoEHLG 2009)

The core philosophy in the assessment of flood risk is identified as the sequential approach. The sequential approach is an important tool in ensuring that development, particularly new development, is first and foremost directed towards land that is at low risk of flooding. It should be noted that the preferred development location is within Flood Zone C. This is especially true for residential developments. Figure 2-3 provides an overview of the sequential approach philosophy while a schematic outlined the process is provided in Figure 2-4.

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Key Messages

The key principles of a risk-based sequential approach to managing flood risk in the planning system are set out in this chapter. They are:

- **Avoid** development in areas at risk of flooding;
If this is not possible, consider substituting a land use that is less vulnerable to flooding.
- Only when both avoidance and **substitution** cannot take place should consideration be given to **mitigation and management of risks**.
- Inappropriate types of development that would create unacceptable risks from flooding should not be planned for or permitted.
- **Exceptions** to the restriction of development due to potential flood risks are provided for through the use of a **Justification Test**, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated.



Figure 2-3: Flood Assessment Approach

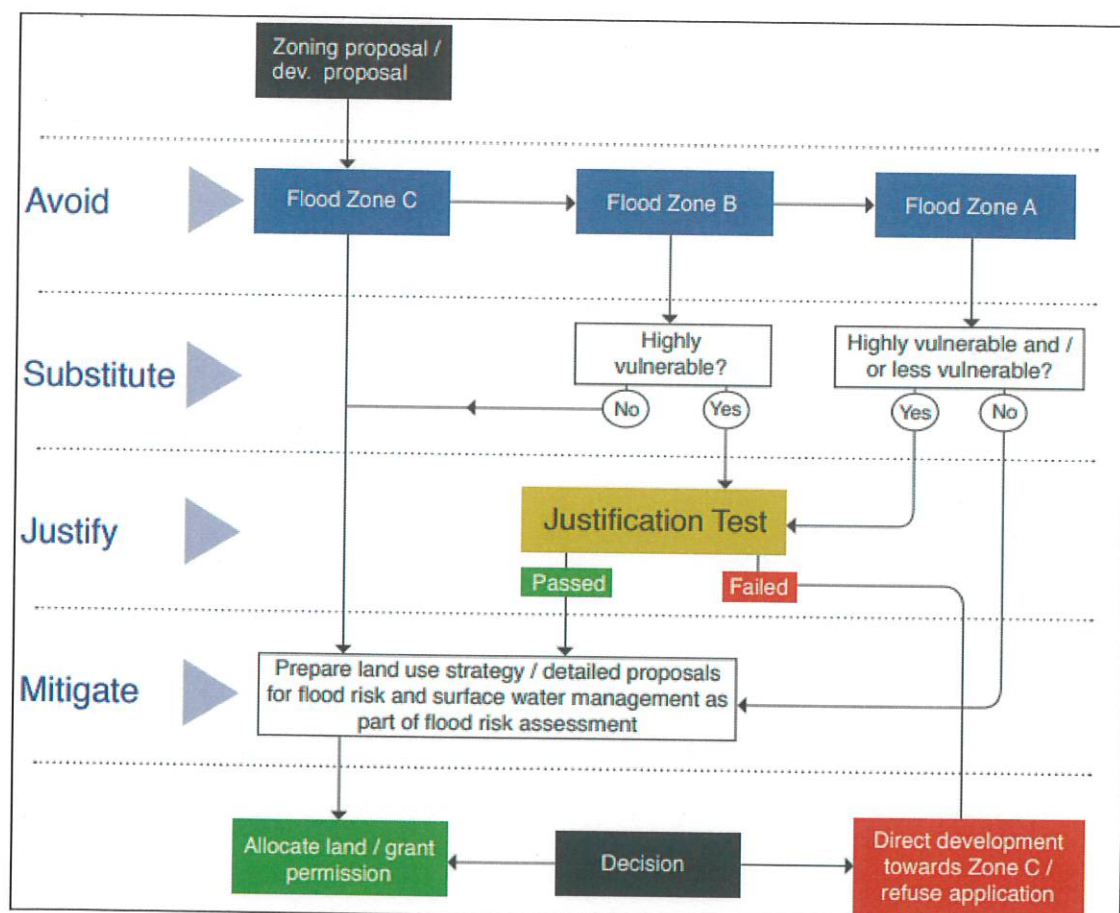
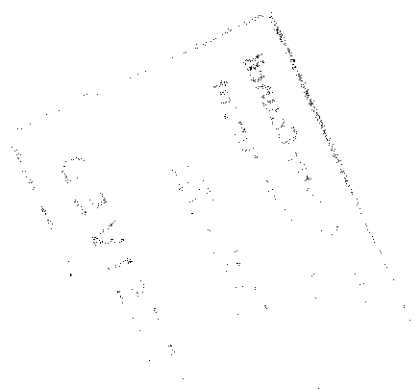


Figure 2-4: Sequential Approach



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2.3 Consequence of Flooding

Consequences of flooding depend on the hazards caused by flooding (depth of water, speed of flow, rate of onset, duration, wave-action effects, water quality) and the vulnerability of receptors (type of development, nature, e.g. age-structure, of the population, presence and reliability of mitigation measures etc.).

The 'Planning System and Flood Risk Management' provides three vulnerability categories, based on the type of development, which are detailed in the table over page and are summarised as:

- Highly vulnerable, including residential properties, essential infrastructure and emergency service facilities;
- Less vulnerable, such as retail and commercial and local transport infrastructure;
- Water compatible, including open space, outdoor recreation and associated essential infrastructure, such as changing rooms.



3 Site Background

3.1 Land use

Review of Figure 3-1, the current planning zoning under the Newbridge LAP 2013-2019 (extended by a further 2 years) confirms that the site is zoned as Open Space & Amenity. It is noted that under the previous Newbridge LAP 2003 the site was zoned as residential. The site is currently a greenfield site.

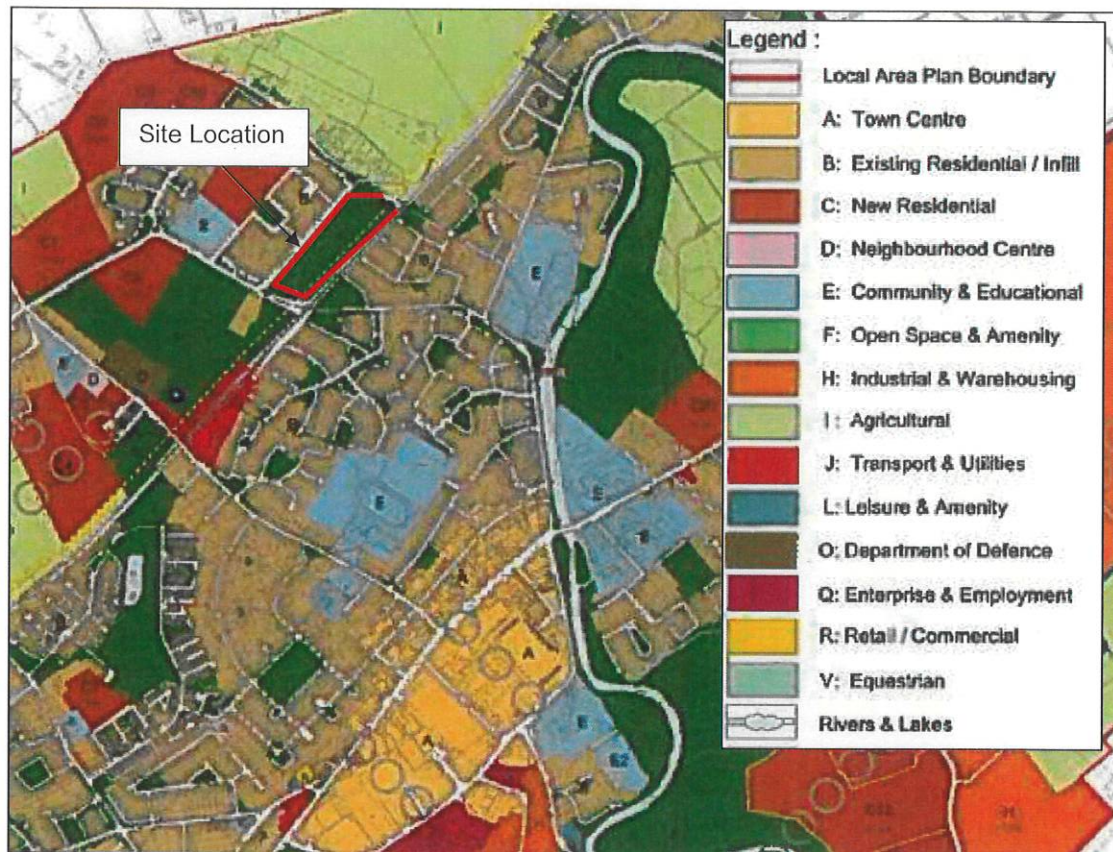


Figure 3-1: Newbridge Land Use Zoning

3.2 Watercourses

The main watercourse in the area is identified as the River Liffey which is located c. 550m to the east. The River Liffey flows in a northerly direction through Newbridge Town before turning in an easterly direction c. 4km north of the town. The River Liffey has a catchment area of 478km² at Newbridge Town.

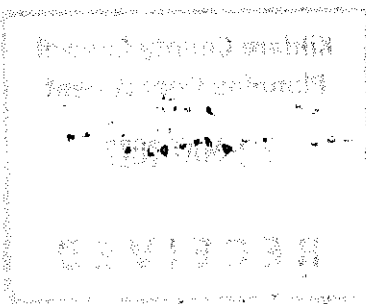
The Cloncumber Stream is located c. 2km to the southwest, where it rises in the townland of Morristownbiller and runs in a north-westerly direction.

The Rosebery Stream is located c. 150 northeast of the site boundary which is a tributary of the River Liffey. It runs for c. 1.3km.

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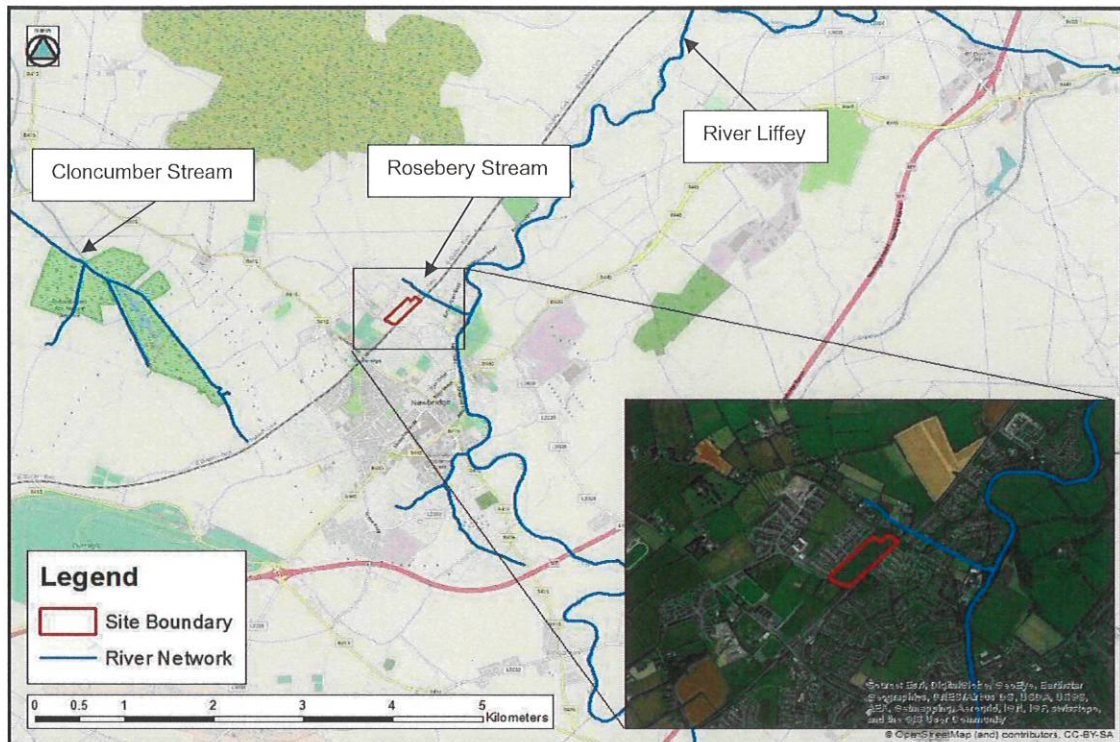


Figure 3-2: Site Location & Hydrological

3.3 Local and site topography

The site covers an area of approximately 130 ha. The site is relatively level with a slight fall towards the centre.

The surrounding lands are higher than the site. A railway line runs along the site's eastern boundary, while local access roadways border the site to the north and south. A residential development borders the site to the west. No flow pathway onto the site was identified from the surrounding lands.

Drainage channels run along the site's northern and eastern boundaries. Standing water was observed in the channels but no obvious flow direction noted. No outlet was identified during the site visit. Refer to Figure 3-3 for photographs taken during the site visit.



Western Boundary-Rosconnell Estate



Eastern Boundary-Railway Line



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Plate 1-Southern Boundary- Station Road



Plate 2- Development Lands



Plate 3- Eastern Drainage Channel

Figure 3-3: Site Photographs

3.4 Site Geology

The Geological Survey of Ireland (GSI) groundwater and geological maps of the site were reviewed. The subsoil within the site and surrounding area consists of 'Alluvial (marl)'. This type of subsoil may indicate historic flooding in the quaternary records.

The underlying bedrock is classified as Waulsortian Limestones, which is described as massive unbedded lime-mudstone. There are no karst features located within the site or immediate surrounding area. The associated groundwater vulnerability, which indicates the risk to the underlying groundwater body for the site is classified as 'high'. This indicates an overburden depth of 3-10m at the site.



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4 Flood Risk Identification

An assessment of the potential and scale of flood risk at the site is conducted using historical and predictive information. This identifies any sources of potential flood risk to the site and reviews historic flood information. The findings from the flood risk identification stage of the assessment are provided in the following sections.

4.1 Flood History

A number of sources of flood information were reviewed to establish any recorded flood history at, or near the site. This includes the OPW's website, www.floodmaps.ie and general internet searches.

The OPW host a National Flood hazard mapping website, www.floodmaps.ie, which highlights areas at risk of flooding through the collection of recorded data and observed flood events. See Figure 3-1 for historic flood events in the area.

Review of Figure 4-1 provides no recorded instance of historic flooding at the site or immediate surrounding area. The nearest recorded historic flood event was recorded at Hosbery and Milltown Rd, c. 700m east of the site. The flood events are classified as recurring flooding following heavy rainfall.

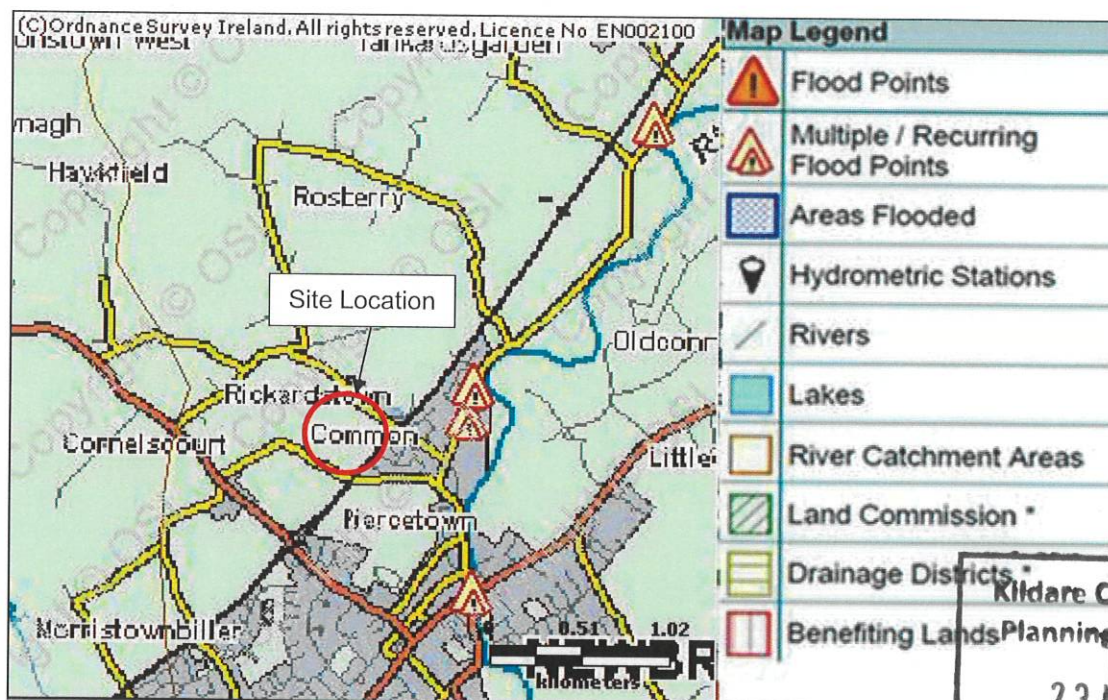


Figure 4-1: Floodmaps.ie

4.1.1 Internet Search

An internet search was conducted to gather information about whether or not the site was affected by flooding previously. While there were no results for flooding affecting the site itself there were reports of flooding in the areas as mentioned above.

4.2 Predictive Flooding

The area has been a subject to two predictive flood mapping or modelling studies and another related study. In chronological order these are:

- OPW Preliminary Flood Risk Assessment (2011);
- Newbridge Development Plan 2013-2019.
- Eastern Catchment Flood Risk Assessment and Management Study (2016);

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The level of detail presented by each method varies according to the quality of the information used and the approaches involved. The Eastern CFRAM is the most recent and most detailed assessment of flood extent and supersedes the fluvial flood outlines presented in the LAP and the OPW PFRA study.

4.2.1 OPW Preliminary Flood Risk Assessment

The preliminary Flood Risk Assessment (PFRA) is a requirement of the EU Flood Directive (2007/60/EC). One of the PFRA deliverables is flood probability mapping for various sources: pluvial (surface water), groundwater, fluvial and tidal. The PFRA is a preliminary or 'indicative' assessment and analysis has been undertaken to identify areas potentially prone to flooding. The OPW PFRA study has largely been superseded by the CFRAM programme however, it does provide valuable information regarding pluvial and groundwater flooding. Refer to Figure 4-2 for OPW PFRA flood extents at the site and surrounding area.

Review of the PFRA study highlights pluvial/surface water or groundwater flooding at the site. This is likely based on the low-lying topography of the site in comparison to the surrounding lands.

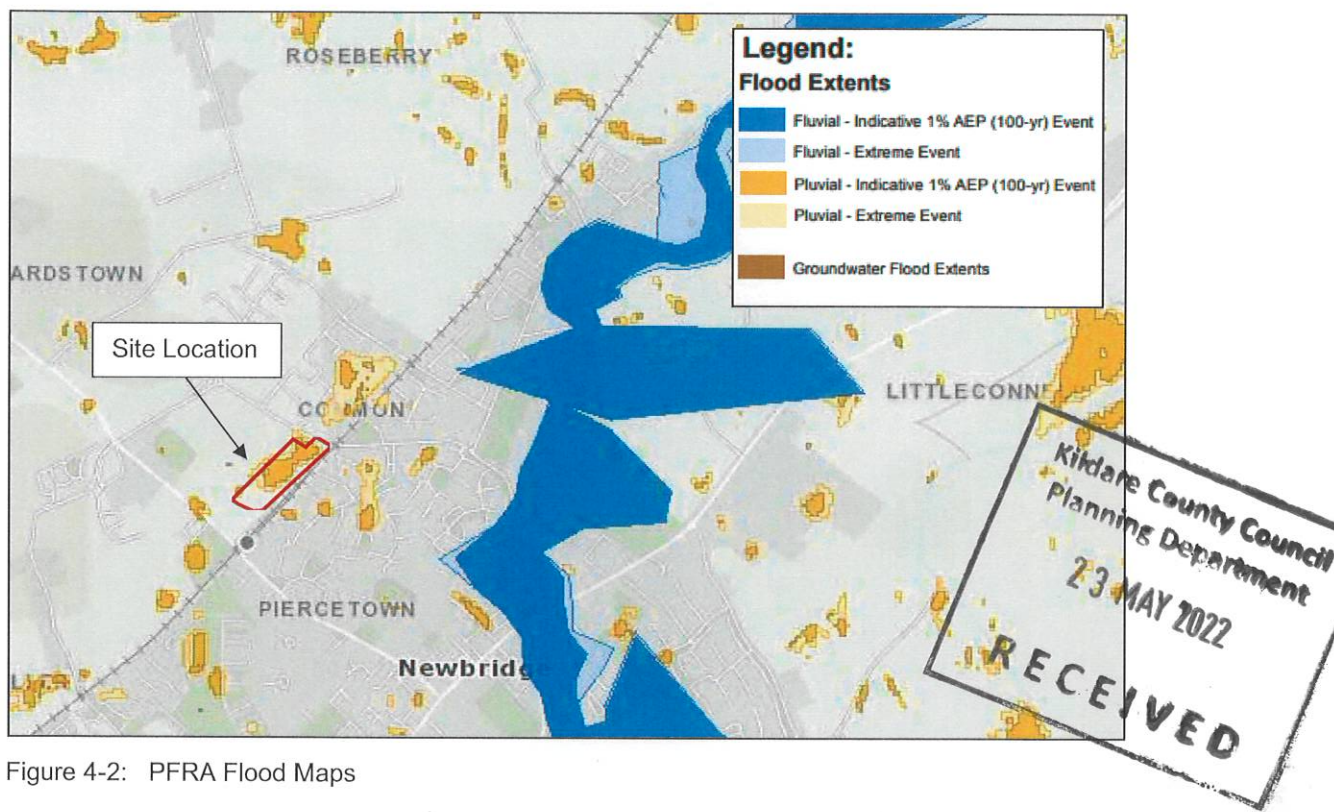


Figure 4-2: PFRA Flood Maps

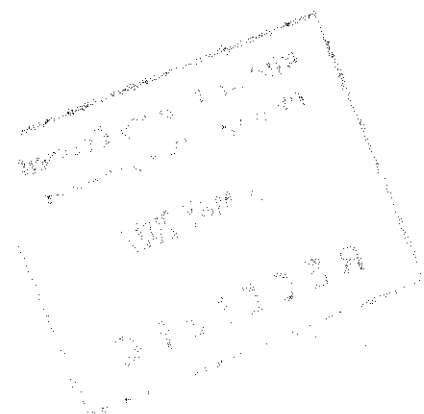
4.2.2 Newbridge Local Area Plan 2013-2019

In accordance with Section 19 of the Planning & Development Act 2000, as amended, the members of Kildare - Newbridge Municipal District at their municipal district meeting on Wednesday 19th December 2018 adopted the following resolution for the Newbridge Local Area Plan 2013 - 2019;

"To extend the life, by a further 2 years (up to and including 22nd December 2021), of the Newbridge Local Area Plan (2013-2019), in accordance with the provisions of Section 19 of the Planning & Development Act, 2000, (as amended).

The plan sets out the overall strategy for planning and sustainable development for the town. Under the Newbridge LAP, the site is zoned as F-Open Space & Amenity.

As part of the Newbridge LAP a Draft Strategic Flood Risk Assessment (SFRA) was prepared for the town. The aim of the Draft SFRA was to guide development, inform strategic land-use decisions and ensure that flood risk management is fully integrated into the LAP. The Draft SFRA flood maps place the site within Flood Zone A and B, Refer to Figure 4-3. It seems likely that this classification is based on the OPW's PFRA mapping, which shows pluvial risk to the site. This is an incorrect application of the development of the Flood Zones, and will be discussed further in Section 5.1.



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Classification of the site within Flood Zone A triggered the Plan Making Justification Test (JT) for the site, which is identified as Site No.1 Rosconnell in the SFRA. The site failed the JT due to the mapped flood risks and the availability of more suitable development lands.

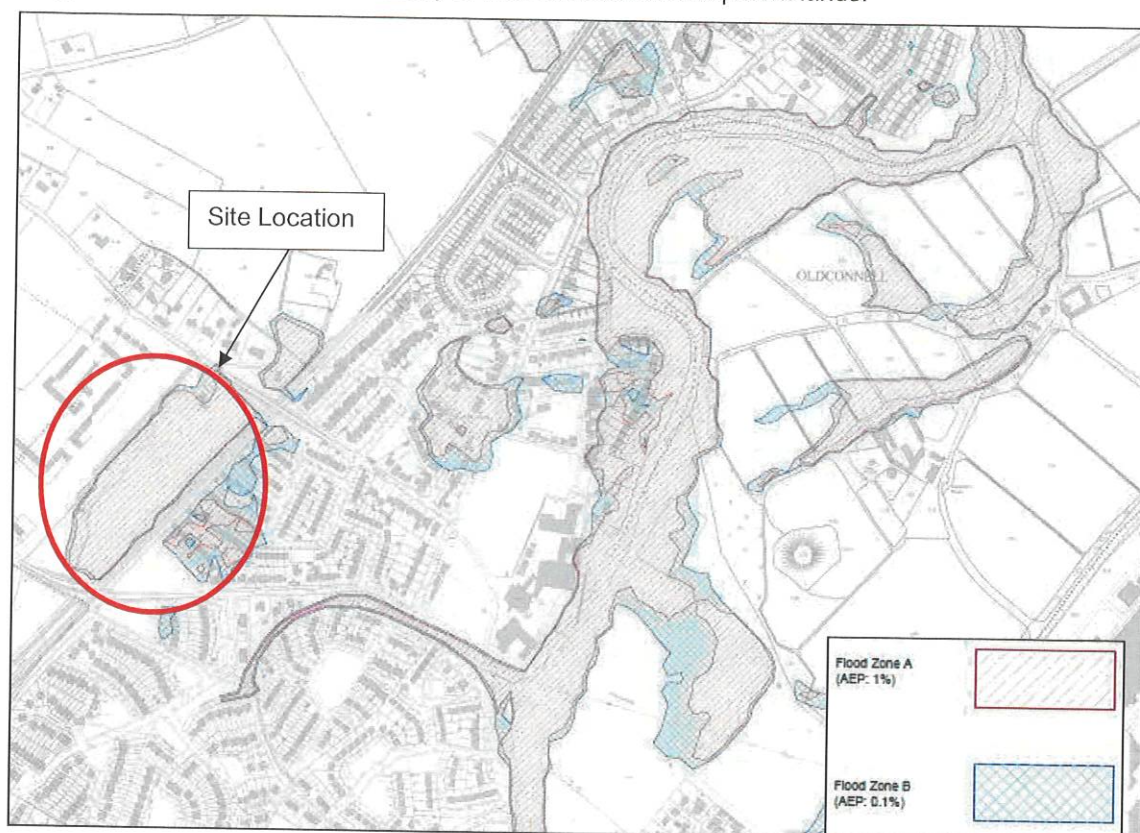


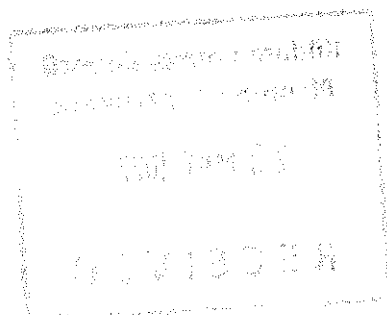
Figure 4-3: Newbridge SFRA Flood Maps

4.2.3 Catchment Flood Risk Assessment and Management Study (Eastern CFRAM)

The Eastern CFRAM Study produced the most detailed mapping currently available in the Kildare region. It commenced in June 2011 with final flood maps issued during 2016. The Eastern CFRAM Study involved detailed hydraulic modelling of rivers and their tributaries, including the River Liffey and the Rosebery Stream, which are the nearest watercourses to the site. Following the detailed hydraulic modelling, flood maps were produced for the 10%, 1% and 0.1% AEP flood events.

The available flood maps have been reviewed and confirm that the site is not at risk of inundation from the River Liffey or Rosebery Stream during both the 1% & 0.1% AEP flood events, refer to Figure 4-4. The findings were confirmed during the site visit.





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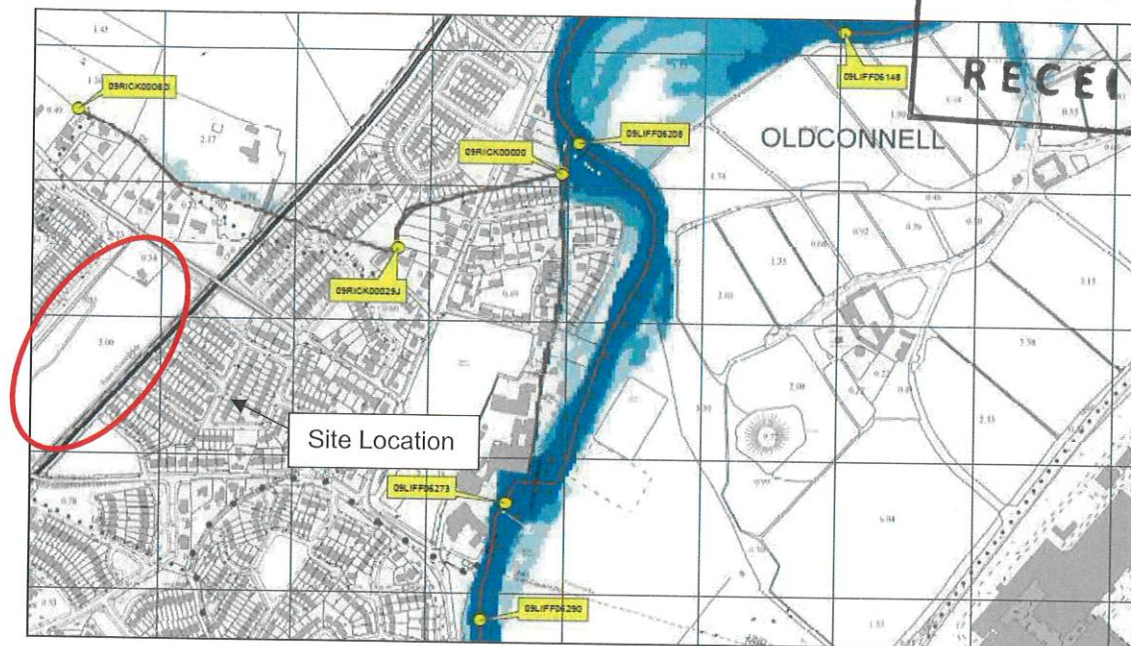


Figure 4-4: Eastern CRAM Flood Map

4.3 Sources of flooding

The initial stage of a Flood Risk Assessment requires the identification and consideration of probable sources of flooding. These sources are described below:

4.3.1 Fluvial

From reviewing the Eastern CFRAM flood maps, the site is identified as being located within Flood Zone C. No recorded instance of flooding at the site or surrounding area have been found. The available flood mapping did not identify flow pathways from either the Liffey or Rosebery Stream to the site, and this was confirmed visually during the site visit.

It is noted that the Newbridge SFRA places the site largely within Flood Zone A, i.e. at high risk of flooding from the 1% AEP flood event. However, no evidence for this outline could be identified, and it seems likely that the extent is actually based on pluvial risk, as depicted in the PFRA, rather than fluvial risk. This is discussed further in Section 5.1.

In summary, based on review of the available information and the topography of the local area, there is no confirmed fluvial flood risk to the site.

4.3.2 Pluvial

Pluvial, or surface water, flooding is the result of rainfall-generated flows that arise before run-off can enter a watercourse or sewer. The OPW PFRA mapping shows that the local areas of the site are at risk from the indicative 1% AEP pluvial event, and the remainder of the site is at risk from pluvial extreme flood events. This is primarily due to the site topography which can be described as low-lying and surrounded by higher lands. As identified during the site visit, the ground has poor drainage characteristics and the subsoils are identified as 'Alluvial Marl', which is a clay based and relatively impermeable.

Drainage ditches run along the site's northern and eastern boundary which drain surface water from the site. There is a shallow fall towards the north-eastern corner of the site. The drainage channels onsite are directed towards this corner. Due to heavy undergrowth, it was not possible to visually confirm the presences of a culvert. The landowner indicated the presence of a culvert and subsequent drainage channel to the north. Review of LIDAR data confirms that there is no external surface water flow onto the site while there is a natural fall north of the site towards the River Liffey, that could convey surface water flows from the site. This will need to be assessed further during a site-specific flood risk assessment. Appropriate site levels and stormwater connections need to be investigated as part of the mitigation measures

The identified pluvial/surface water flooding risks within the site should be assessed during the site-specific FRA, but are not considered to be an impediment to the sustainable development of the site.

4.3.3 Groundwater

The OPW PFRA maps were reviewed and do not indicate groundwater flooding at the site or sounding area. The GSI groundwater vulnerability for the site is classified as 'high' which indicates a groundwater depth of 3-10m. Furthermore, there are no karst features in the area which would indicate areas at risk of groundwater flooding.

Based on the information above, there is a low risk of groundwater flooding at the site.

5 Re-zoning Assessment

5.1 Critique the Draft SFRA-Newbridge LAP 2013

The site is currently zoned as Open Space & Amenity. This zoning was based on the Newbridge SFRA and Justification Test which stated that the site lies within Flood Zone A/B, and would have been identified as an appropriate land use in a high flood risk location.

The Newbridge Draft Strategic Flood Risk Assessment (SFRA) was undertaken in 2013 as part of the overarching Newbridge Local Area Plan 2013-2019. The SFRA was completed prior to the release of the Eastern CFRAM flood maps, therefore they were not included in the assessment of flood risk sources. The SFRA was released in draft format and has not been updated since the initial release.

The main sources of flood risk identification within the SFRA are the historic 6" and 25" maps, subsoil mapping, the PFRA mapping and floodmaps.ie. However, the OSI 6" maps have been reviewed and shows no indication of flooding in the area. Although it is stated that the sources were researched, there is no information provided on the outcome of this research. Particular attention is placed on Table 2 of the SFRA, the Flood Risk matrix, which is incomplete. Table 2 forms the basis of further assessment within the SFRA and specifically the Justification Test. There is no clear identification of source-pathway-receptor model for the development in the SFRA, and no assessment has been undertaken on the likely sources. In summary, no basis has been provided on the scale of flood risk in Newbridge that subsequently informed the outcomes of the Justification Test.

Following review of the data currently available, no evidence of fluvial risk to the subject site was identified. It is possible that the classification of the site within Flood Zone A/B under the SFRA was based on pluvial flood risks, as shown in the OPW's PFRA mapping. Although the SFRA is correct in identifying pluvial flood risk, to the site, it is not the intention of the Planning Guidelines that this source of risk should be included in the delineation of the Flood Zone. Instead, pluvial flood risk should be flagged to be addressed as part of a site specific flood risk assessment and would not generally be seen as an impediment to development.

A Development Plan Justification Test is included in the SFRA. The failure of the site to pass the development level Justification Test is solely based on the conclusion that the site is located in Flood Zone A/B.

Chapter 5 of the SFRA - Monitoring and Review states that once the OPW CFRAM mapping becomes available, a review of the SFRA should be undertaken. The CFRAM maps have been finalised for Newbridge and show that the site is situated within Flood Zone C. The SFRA is classified as a 'live' document which is intended to be updated and review regularly with new relevant information that may become available during the lifetime of the Newbridge Local Area Plan 2013.

Based on the findings above, a review of the SFRA should be triggered and land use zonings modified accordingly based in the Eastern CFRAM study.



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6 Conclusion

The site is located at Sexes bridge, Roseberry, in the northern fringes of Newbridge Town and is an undeveloped greenfield site. Review of the OSI mapping confirms that no historic development has occurred within the site boundary. The site is predominantly surrounded by residential properties to the north-west and south-east.

The site is zoned as Open Space/Amenity based on the draft Newbridge SFRA 2013-2019, which places the site within Flood Zone A/B. Historically, the site was zoned as residential under the Newbridge 2003 LAP. This was rezoned based on the findings of the Newbridge SFRA 2013-2019; however, there was no discussion on the specific source of flood risk in the SFRA.

The final OPW CFRAM flood maps for Newbridge were released during 2016. Review of the CFRAM flood map for the site confirms that it lies within Flood Zone C and therefore, is at a low risk of flooding. Furthermore, review of the local topography and site visit confirms that there is no overland flow pathway to the site from any fluvial waterbody in the area.

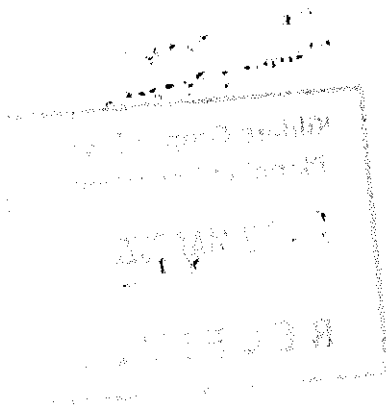
The Newbridge LAP 2013-2019 is classified as a live document and within the Monitoring and Review section, publication of the CFRAM would trigger a review and potential updates

It is noted that the site elevation is lower than the surrounding lands and has poor drainage characteristics. Review of the OPW PFRA flood map indicates that the site is at risk of pluvial flooding. Drainage channels are onsite that can convey surface waters to the north. This is not normally an impediment to development as the pluvial flood risk can be managed within the development through detailed drainage design, stormwater management system and a site specific flood risk assessment

In summary, the appraisal of flood risk at the site is as follows:

- The most detailed flood study undertaken in the area, the Eastern CFRAM Study, shows that the site is located in Flood Zone C;
- The proposed residential use is appropriate for development within Flood Zone C;
- Potential pluvial flood risks to the site can be managed through the development of a site specific flood risk assessment;
- The identified pluvial flood risks can be managed through the appropriate use of a stormwater system, providing mitigation to the site and to neighbouring lands and development;
- Based on review of the local topography there are no identified flow pathways to the site from any watercourses;
- Rezoning the site to Residential is an appropriate use, and is in line with the core principles of the Planning System and Flood Risk Management Guidelines.







JBA
consulting

Offices at
Dublin
Limerick

Registered Office
24 Grove Island
Corbally
Limerick
Ireland

t: +353 (0) 61 345463
e: info@jbaconsulting.ie

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